Involving parents in health-based physical education: an action research project

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Involving Parents in Health Based Physical Education:
An Action Research Project

by

Louise Hulbert

A Master's Thesis submitted in partial fulfilment
of the requirements for the award of Master of
Philosophy of the Loughborough University of Technology.

Louise Hulbert. July 1988
SYNOPSIS

This study was an action research project based on a "Healthy Lifestyles" course taught to 1st year girls in a London secondary school.

The study was divided into three parts:

1. An analysis of the 'teacher as researcher' role in schools
2. An analysis of parental involvement in a "Healthy Lifestyles" Project
3. An evaluation of a "Healthy Lifestyles" open evening for parents

The results showed that:

1. Parents are interested in their children's work on health issues and this demonstrated the potential of involving them more closely.

2. By using pupils' involvement on a health course lasting a few short weeks parents knowledge and attitudes can be influenced.

3. This project was more effective in reaching the parents of upper band children than those in middle and lower bands.

4. Parents' perceptions of health and fitness issues was based on inaccurate, or lack of, knowledge and this needs to be taken into account when teaching children about health and fitness issues.

5. Short courses on health and fitness need to be reassessed for their effectiveness in the long term if the promotion of health is to continue to involve parents.

Using action research techniques enables a teacher to be more reflective and consequently more aware of the impact of their teaching on pupils.
ACKNOWLEDGEMENTS

This research project would not have been possible without the help, cooperation and guidance of many people. I would therefore like to acknowledge the following as contributing to its development:

The staff, parents and pupils of Edmonton School for their cooperation and willingness to participate in the activities involved in the project and for providing much valuable data.

The Director of Education for Enfield, and Mr. J.R. Hulley, Headmaster of Edmonton School, for allowing the project to take place in the chosen school.

Mr. T. Williamson, formerly P.E. Adviser for Enfield, for providing support and encouragement.

Ms. H. Mulford, Assistant to the Advisers in Enfield, for patiently supervising the production of teaching materials.

The Department of Physical Education and Sports Service at University of Technology, Loughborough.

Finally, my special thanks must go to Mr. Len Almond, Research Supervisor, who provided inspiration, guidance and encouragement throughout the project.
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<td>E.P.A.</td>
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1.0 CHAPTER ONE

1.1 INTRODUCTION

The recent publicity given to the high incidence of coronary heart disease in Great Britain has to some extent increased public awareness of the importance of healthy lifestyles. However, it has become apparent that a large proportion of the general public do not participate in regular physical activity which would promote health and recent research has shown that children of school age are on the whole very inactive. (Dickenson, 1986) It is now well documented that regular, vigorous physical activity is a vital part of a healthy lifestyle but as yet this concept has not been incorporated into the general lives of many of the population.

The knowledge, attitude and behaviour of individuals therefore form an important focus for any attempt to promote activity for health and the child in school is greatly influenced by the knowledge, attitudes and behaviour of his/her parents and so the promotion of active lifestyles through a curriculum project needs to aim at the child and parents together. This study investigates the problems of involving parents in a Health Based Physical Education Project in a secondary school and attempts to evaluate the effectiveness of a scheme designed to promote activity within families and to raise interest and awareness of the role of exercise in health.

The study comprises of three main areas - Health Based Physical Education, Parental Involvement and Action Research and each of these is reviewed in some detail.

Health Based Physical Education is a relatively new area, and is regarded by some as a "bandwagon" to be jumped on or missed. During the early part of this decade investigation showed that only 600 schools in the whole of England and Wales were involved in developing Health Based Courses in Physical Education, yet by 1986 a dipstick survey in 5 local authorities showed that 60% of schools were then doing so. (Almond, personal
communication) Although the area is expanding rapidly, there is very little research available which provides evidence about what is effective and what is not. It is evident then that research is vitally needed to provide a concrete basis for development and progress.

The area of Parental Involvement in education has been well researched and documented, but usually in areas other than Physical Education. Physical Education teachers have tended not to be heavily involved with parents, except perhaps in an extra curricular context, but the participation of parents in programmes for health promotion in the school is vital. It is therefore necessary to investigate this area and to research into ways of encouraging parents to support health based courses.

The final facet of the study - method of research - looks at the whole area of research in education. The author was faced with the problem of deciding on what sort of procedure to use for investigation. An Action Research perspective was selected because it is practitioner based and encourages the teacher to research and reflect on his/her own practice and to document the findings and open them to critique. This study is therefore an Action Research programme which attempts to gain some understanding of the problems of teaching Health Based Physical Education and of involving parents in supporting the endeavour. It was not possible to identify clear objectives for study and so it was decided to document as completely as possible the process of teaching a course and of examining parental involvement.

Chapter 2 examines current physical education programmes and through a historical perspective shows how the practice and theory of physical education have become disassociated over a prolonged period of time. Some problems which are characteristic of traditional P.E. curricula are outlined, and finally, some suggestions for an alternative approach are examined.
Chapter 3 is a discussion of the issues involved in parent participation in education. The first part of the chapter looks at the historical development of parental involvement in education and outlines the various forms in which it may exist, showing that these forms are "school centred", "child centred" or less commonly "parent centred". Evidence is presented which shows that in this area also, practice has somewhat lagged behind theory and reasons for this are discussed. The second part of the chapter looks at the area of Health Education and reviews the literature which presents a positive case for parental involvement in this aspect of the curriculum which focuses heavily on attitude development. Finally, the area of Physical Education is discussed and it will be shown that if a health focus is to be adopted, parental participation is not only desirable but crucial.

Chapter 4 reviews literature available on research in education and examines specifically the method known as Action Research. Initially Action Research is explained and reasons for its adoption in education as a preferable alternative in traditional research methods are outlined, focusing on "the teacher as researcher". It will be shown that Action Research in education holds a number of advantages over traditional research methods and has been adopted in various forms which are all based on the teacher researching his/her own practice but which differ from each other in various ways. The latter part of the chapter deals with models of Action Research of Kemmis, Elliot and Ebbut and outlines some of the problems associated with this method of investigation, showing that teachers may find it difficult to adopt a research stance to their teaching for a number of practical and theoretical reasons.

Chapter 5 describes the problem to be investigation, which became apparent while the author was teaching a short specific course on Health and Fitness - that parental support needed to be enlisted if these courses were to promote maximum benefits. The project school is outlined with background information on current levels of parental involvement and existing P.E. curricula. The objectives of the Healthy Lifestyles Project
are outlined, and the process of design of all of the aspects of the project are described in detail.

Chapter 6 describes results obtained from the various research instruments used during the project. The first part of the chapter deals with data about parental participation in various aspects of the project and provides information on various levels of involvement. Parents' knowledge of health and fitness factors and changes in this knowledge are outlined before tabulating data about parents' exercise behaviour both before and after the project. Parental attitudes to their daughters' activity levels are then outlined, as are their attitudes and behaviour relating to diet. Finally, parents were asked to express their views on the project and these are tabulated here.

Less formal sources of information included teacher observations in lessons and written feedback from pupils and parents and Chapter 7 provides a written account of these sources. Weekly observations made of lesson occurrences are outlined in the first half of the chapter, while the second half is devoted to written comments made by pupils and parents in the "Health and Fitness Files" used as a teaching material, which provide a great deal of useful information on pupil and parent perceptions of the project.

The final chapter is a written account of conclusions and speculations drawn from the results and reflections gained and made throughout the project. Parental participation, parents' perceptions and knowledge of health and fitness, activity patterns and diet are all dealt with and discussed in relation to the possible effectiveness of the project and other reasons for changes. Pupil and parents' perception of the project are also speculated upon. Problems encountered during the research project were found to fall into 3 categories - practical, relationships and researcher focused and these areas are discussed before suggesting ways in which both the research project and research methods could be improved upon. Ways in which the research may be useful to others are suggested.
after which some final conclusions which may be drawn from the study are forwarded.
CHAPTER TWO

WHY THE NEED FOR A HEALTH FOCUS IN PHYSICAL EDUCATION

2.1 INTRODUCTION

The recent literature on the adoption of a Health Focus in Physical Education in some ways appears to be stating the obvious in its proposals that physical education can contribute greatly to the development of individuals' health and fitness. However, closer inspection shows that although there has traditionally been a link between P.E. and Health, this link has become increasingly tenuous in reality as both society and curricula have changed.

This chapter shows how the theory and practice of Physical Education have become desynchronised and a historical perspective is outlined which shows how the present situation has been reached. It will be shown that the adoption of a Health Focus is an attempt to bridge the "performance gap" which has been created over the years and must be regarded as lifestyle education with long term aims.

The physiological rationale for a health focus is closely examined and it will be shown that the adoption of active lifestyles can overcome a number of common hypokinetic problems, but special emphasis is given to coronary heart disease which is beginning to reach epidemic proportions in the Western World. It will also be shown however, that a broader rationale may be needed to provide a creditable and stable base on which to build a programme.

The final part of the chapter describes some of the problems associated with traditional P.E. curricula and reviews the area of an alternative approach with a health focus and shows how content, teaching strategies and methods of evaluation all need to be closely examined if the long term aims of Health Based Physical Education are to be achieved.
2.2 A HEALTH FOCUS: THE LINK BETWEEN P.E., FITNESS AND HEALTH

Whilst it is generally assumed that taking part in physical activities enhances fitness and health it has not always been made clear how or why. The relationship between fitness and health is not altogether clear, but there has been a strong tendency to equate physical education with physical fitness and to assume that physical fitness and health are similar.

According to Haskell et al (1985) "becoming physically fit and improving health status are interrelated, but they are not synonomous". In distinguishing between health and fitness, Haskell et al argue that although a high level of fitness is usually associated with good health, improving fitness does not automatically increase resistance to disease. They also make the point that a person suffering from a serious disease like emphysema can improve their physical fitness without having any effect on the severity of their disease. Finally, they argue that while participation in physical activity may improve fitness and health at the same time, the improvement in the latter may be brought about by biological changes which are quite different to those which caused the former to be enhanced. For example endurance training may increase aerobic capacity (an aspect of fitness) and reduce coronary heart disease (an aspect of health) at the same time. The improvement in aerobic capacity occurs as a result of increased oxygen transportation and utilisation capacity, whereas the reduction in coronary heart disease is likely to be the result of alterations in lipoprotein metabolisms or fibrinolytic mechanisms. Dowling (1987) points out that there is little research evidence to support claims of a direct link between physical activity and primary prevention of specific diseases, but a good deal of evidence now exists which shows relationships between physical activity and secondary prevention (see for example, Armstrong's work on Physical Activity and Cardiac Risk Factors. (Armstrong, 1984) Also a recent study by Paffenberger (1986) has shown that regular participation in physical activity is associated with longevity.
In arguing the case for the need for increased activity levels in the promotion of health and fitness it is therefore important to specify exactly what is meant by these terms. Dowling and Almond (1986) use Balkamm's teleological analyses of fitness as a basis for the Health Based P.E. Project's rationale. (Balkamm, 1986) Balkamm sees health as an "achievement brought about by sufficient and appropriate use of the body's organs. Health can only be achieved by intelligently choosing behaviours compatible with the purposes built into our bodies. (Almond and Dowling, 1986) The end of health is seen as "the harmonious state of being, resulting from the mind choosing purposes expressed in behaviours that are consistent with the purposes inherent in bodily function". Balkamm differentiates between health and fitness by saying that health is a state of enjoying the realisation of potentials implicit in bodily design and definition, whereas fitness has some extrinsic goal, usually a performance, as its object, making the body and its condition a means to an end. (Balkamm, 1986)

Dowling and Almond go on to point out that fitness tends to be activity specific, i.e. "fit for tennis", "fit for rowing", and that a person aspiring towards fitness tends to strive for constant improvement, whereas the person who is concerned with health is usually more interested in maintaining a certain level of functioning. (Dowling & Almond, 1986)

It can be seen then that the area is far from clear. It cannot be denied however that the value of physical activity in the promotion of health is very strong. Fentem and Bassey, in their book "Exercise - The Facts" state that "It is clear that physical activity is of considerable benefit to everyone both physically and mentally and should be seen as a necessary element in the pattern of daily living at all ages". (1981). In this area, physical education obviously has a part to play. Dowling states that "the role of physical education in Health Education is much broader than fitness per se: physical fitness ...... forms a part of a health focus, but the mental and physical well being of a pupil encompasses the fostering of
lifelong participation in activity of various kinds ..." (Dowling, 1987, p. 14)

Both of these quotations show that current literature is promoting a holistic view of health, including mental as well as physical wellness, and this needs to be borne in mind when looking at a health focus in physical education.

To sum up this section, it would seem that the health focus in physical education is based on a total view of health and proceeds on the assumption that participation in a variety of physical activities can contribute to the achievement of health. The term 'health' is regarded as the harmonious state brought about by full and appropriate utilisation of the body's potentialities.

2.3.0 THE NEED FOR A HISTORICAL PERSPECTIVE

2.3.1 Those who are currently campaigning for a change in focus in Physical Education have pointed out that many present day programmes have a number of inherent problems. [See for example Dickenson 1986, Almond and Dowling 1986, Williamson 1987] These problems seem to exist because of the "credibility" or "performance gap" that exists between the theory and practice of physical education. (Ebbut, 1983) Physical Education teachers are able to express a variety of aims for their programmes, but in many cases are unable to provide any evidence that stated objectives are being achieved. In 1976, Kane pointed out that many proposed objectives in physical education are very difficult to evaluate and that "where teachers are concerned with such general and relatively imprecise outcomes they make judgements based mostly on their personal philosophy and perceptions." (Kane, 1976, p. 90)

The personal philosophies of many P.E. teachers pay more than lip service to criteria which are steeped in historical tradition. This influence of traditional values contributes to the "performance gap" which many authors feel is apparent in physical education. (Biddle, 1981, Almond, 1983) Many of the aspects of P.E. which are regarded as problematic in
modern curricula can be traced back to times when they served a specific purpose. The following historical perspective traces the development of physical education in schools and shows quite clearly how the "performance gap" between the theory and practice of physical education have come about over a long period of curriculum development.

Although education expanded quite considerably during the twelfth and thirteenth centuries in Europe, "physical education" of a sort generally took place at the courts of noblemen or at specialist institutions, where socially desirably physical accomplishments like dancing, fencing and combat were pursued. Not until the nineteenth century did physical activities become organised in British schools, and even at that time these activities were "extra-curricular" rather than an accepted part of the timetable. However, these extra curricular roots are very important as they underpin a great deal of the twentieth century rationale for physical education. The development of games in the public and grammar schools forms one part of a two pronged fork of evolution of physical education, the other being the progress made in state schools in the late nineteenth and twentieth centuries.

2.3.2 Games in the eighteenth and nineteenth centuries

The boys' public schools during the late eighteenth and early nineteenth centuries appear to have been rather brutal institutions, where masters and boys were often in conflict and older boys wielded a great deal of power over younger pupils. According to Smith (1974) discipline in school was maintained by "ubiquitous flogging, primitive living conditions and bad food ... grit and stamina were required for survival. Brutality was encouraged both by primitive living conditions and by the severity of punishments inflicted by the masters" (p. 8-9). The boys themselves evolved the prefect-fagging system, where younger and weaker boys were forced to serve their older, stronger peers. The older boys seemed to have greater control over the schools than the masters whose government was ineffective. At the same time, athleticism was becoming an increasingly desirable characteristic among the ruling classes who frequented these schools.
Against this background of "pupil power" team games began to develop in the public schools. From crude beginnings, ball games developed into formal games with set rules and penalties, while other activities were also becoming popular. According to Smith, "Some form of cricket or football, athletics and cross-country running were universal features by 1840, part of a vast array of sports such as boating, boxing, angle stick, swimming, fives, racquets and quoits". (Smith, 1974) All of these activities were organised by the boys with little or no help from the masters and became an increasingly important and time consuming part of school life. In the early Nineteenth century, boys at Rugby and Winchester spent 3 hours a day, six days a week on cricket. The hierarchical nature of the boys' social order within the school was evident in the description of a football game in Tom Brown's Schooldays, "with the younger boys crowded into the goals and doing little or nothing for two hours, the game was fought out by teenage roughs and heroes". (McIntosh, 1968, p. 25)

Although they were already an important part of school life, the activities were essentially extra-curricular, and in general met with hostility rather than encouragement from heads and masters. In 1818, the head of Westminster School banned a rowing race against Eton on the grounds of unhealthy publicity and the beer drinking that would follow the race. However over the middle part of the century, a gradual change took place as the public schools underwent reform. The growing "middle class" that had emerged as a result of the Industrial Revolution were placing pressure on the public schools to make their curricula more relevant and useful. "The ambitious fathers of this section of the population saw education as fulfilling their aspiration both for the careers of their sons and for their social advancement." (Smith, 1974. p. 11) Thus a new breed of headmaster appeared in the public schools, of which Mathew Arnold at Rugby was an example. At the same time, the rapidly expanding grammar schools sought to emulate the public schools, and so changing attitudes towards games and other activities had a profound effect on a much broader community.
Arnold, now head at Rugby, and his peers, adopting a more humane stance, sought to improve relationships between masters and boys and to generally improve the overall atmosphere of the school community. He befriended the older boys and institutionalised hitherto informal powers of sixth formers. Arnold personally enjoyed games and physical activity, and he may have seen them in school as being useful in stamping out the then common undesirable behaviour of poaching and drunkenness amongst pupils. However, there is no evidence, according to Smith (1974) that he believed that games served any purpose "other than to provide a healthy means of satisfying the needs of exercise and exhuberance" (p. 13). Despite his apparently simple motives, over the next few years the organisation of team games under the leadership of older boys began to play an important part in public school education.

The "games ethic" according to Managan, is the "subscription to the belief that important expressive and instrumental qualities can be promoted through team games (in particular loyalty, self control, perseverance, fairness and courage, both moral and physical)". (Managan, 1983) During the second half of the nineteenth century this philosophy was widely adopted in the grammar and public schools, and although the activities remained extra-curricular, encouragement and even coaching was now common from the masters of the schools. Games and physical activities have persisted in these schools even during times of economic hardship when playing fields and facilities could have gone by the way, and athleticism has flourished. The main reasons for this persistence appear to have more to do with social control and moral health than with physical health. (Managan, 1983)

Thus the development of games in the public schools provides one strand of the modern rationale for P.E. The extra-curricular nature of these activities, and the responsibility of the boys in organising themselves, making their own rules and so on, no doubt did contribute to the social and moral development of their participants. There appears to have been much less emphasis placed on the physical health benefits of participation in these activities.
2.3.3 The Second Strand - The State Schools

While the middle classes were adhering to the "games ethic", the vast majority of the population in the elementary schools were not provided for as far as physical education is concerned until the late nineteenth century. The elementary schools did not have the problem of occupying pupils outside of lesson time and had little space or facilities, and so extra-curricular activities were practically non-existent until that time. Where they did exist, they were in the form of military drill, free standing gymnastic exercises and playground games. Unlike the public schools, physical education in elementary schools developed mainly through formal curricular channels, which took a great deal of time.

The Fisher Education Act of 1870 opened the gates to compulsory physical education. The bill itself did not make physical education a statutory subject, but it did allow school boards to introduce it if they desired. The School Board of London did just this and with government funding, schools employed drill sergeants to instruct boys only, in exercises from the War Office "Field Exercise Book". Such exercises were thought unsuitable for girls. Her Majesty's Inspectorate for the City of London believed physical education in the form of military training "would lead to health and physical development". (McIntosh, 1974, p. 21) The problem of physical activity for girls was solved in 1878 when Swedish gymnastics was introduced into the London Board's girls' schools. The pattern of drill for boys and gymnastics for girls continued until the 1890's, when "Chesterton's English System of Drill and Gymnastics" was designed to "counteract the effects of school life". (McIntosh, 1974, p. 23) By the end of the nineteenth century the London School Board had made physical exercise obligatory, and specified three twenty minute sessions per week for older pupils, with three fifteen minute sessions for infants. The final report of that School Board, published in 1904 stated that physical education in school consisted of:-
a) Free standing exercises  
b) Exercises with apparatus  
c) Swimming Instruction  
d) Games (in and out of school hours)  

The differences in approach in grammar/public schools and elementary schools are obvious here. The former still regarded student organised team games as the nucleus of physical education, whereas in the latter, games were looked upon as being supplementary to the physical developmental purposes of exercise.  

"The physical development of the frames of growing boys and girls imperatively requires, therefore in such cases, some from of drill or gymnastics and it becomes incumbent on teachers to make themselves familiar with these exercises that are best suited for developing a healthy frame without undue strain on the scholar." (Board of Education, 1900, para. 29)  

Thus the importance of physical fitness and health was stated. This dual approach to physical activity tended to persist, although some pioneering work was being done in a number of independent girls' schools, where physical education teachers trained at Madame Osteberg's College in Dartford were developing P.E. in the curriculum. Games, gymnastics, swimming and dancing were all integral parts of the programme in these schools.  

2.3.4 The link between fitness, health and physical education became more prominent at the turn of the century, largely due to the Boer War. The fitness of recruits for the army at this time was found to be desperate. In Manchester in 1899, 12000 men volunteered for recruitment and 8000 were rejected. Only 1200 were accepted as being fit in all respects. There was an immediate demand for military training in state schools to improve the fitness of boys and the Board of Education responded by issuing the "Model Course of Physical Training for use in the Upper Departments of Elementary Schools". This was based on the War Office issued "Infantry Training", 1902, and brought objections from both teachers and the medical profession. In 1904 a report on the Model Course was published which stated
that there were no underlying "general principles educed from a consideration of the functions of physical exercise in a well ordered course of general education for children". (Report, 1904, vol. 203) These objections, together with the influence of followers of Madame Osterberg who were developing Swedish Gymnastics, resulted in a de-militarisation of the 1908 syllabus for P.T. issued by the Board of Education.

A further step in the de-militarisation process was taken in 1908, when the Medical Department was set up at the Board of Education. One of its functions was to oversee Physical Training in schools. Not only did this squarely place physical training in the "fitness and health" pigeon hole, but it further protected it from military influences. Although the influence of drill and military training was still evident for some years, the Fisher Education Act in 1918 made it possible for L.E.A.'s to provide a variety of facilities for physical activities in schools, including gymnasiums, games fields, swimming pools, camp sites and so on. This could have heralded a major revolution for P.E. in state schools, with games playing an increasingly important part, but in reality facilities remained in short supply, especially in elementary schools. However, the programme did become more diverse. In elementary schools, Swedish exercises, playground games, swimming and field games (where facilities allowed) became part of the programme. In the secondary schools, fixed and portable apparatus was provided for gymnastics and a range of team games introduced.

This introduction of team games into state schools marked the first stage of the merging of the two approaches. As McIntosh states:

"Hitherto, the purpose of the curriculum had been to promote organic and functional physical development and to inculcate habits of discipline and cleanliness ... The introduction of games was the introduction of a new objective for the curriculum: to provide for a moral and social education."

(McIntosh, 1976, pp. 29-30)
The shortage of facilities however meant that in elementary schools, gymnastics formed the major part of the P.E. programme, and over the next 20 years, "Posture" became the keyword in schools. In 1933 a new syllabus for P.T. was issued which stated that: "The ultimate criteria of the success of any scheme or system of P.T. is the carriage, nobility and equilibrium of the human body. If there is one test of strength, tone and balance of the body it is posture, for this depends on the coordination of the muscles acting on the skeleton. Good posture indicates health and soundness; bad posture the reverse." (Board of Education, 1932, p. 81) Thus although games had been allowed in the curriculum since 1906, the Board of Education provided few facilities and little help or support for teachers, and the medical ethic for physical training continued.

2.3.5 The 1940s - Child Centred Physical Education

The 1940s brought fundamental changes in education and physical education. The 1944 Education Act provided secondary education for all under the tripartite system, so there was no longer the need for different P.E. curricula for those in elementary schools and those in grammar schools. The act also forced L.E.A.'s to provide facilities for physical education in schools, including games and sports. Thus indoor and outdoor areas for physical education became more widespread.

At the same time, 3 major influences on P.E. emerged in Britain, which transformed the programme in many schools, and contributed to a more intellectually based child centred approach.

Modern Educational Dance and Rudolph Laban

In 1940, Rudolph Laban and Lisa Ullman came to Britain to demonstrate their new Dance which had developed in Central Europe, to the Ling Association Conference. This dance regarded movement primarily as a mode of expression but, according to Laban, many functional effects would be felt as a result of participation ... "a person who has learnt to distinguish the feel of pressing and gliding in all their shades of intensity will be able to do the practical tasks in which transitions
between these two effects are involved incomparably better and easier, than a person who has hitherto never experienced such feel consciously". (Laban, 1947) Teachers, especially women, were attracted to this new form of "movement" and the Board of Education was under pressure to promote it in schools. Over the next few years, modern educational dance became very fashionable, and its protagonists claimed that the art of movement was fundamental to all aspects of P.E. Thus the "movement" movement was founded, and has remained influential in physical education to the present day, although its claims are now less sweeping and more realistic.

The development of gymnastics
The second influence felt at this time was in the area of gymnastics. Sophia Pidgeon had begun to develop a new form of gymnastics based on remedial gymnastics during the 20s and 30s. She later worked with A. Bilborough to devise a gymnastics scheme which "put children in situations where each of them used his own initiative and found his own way of solving physical problems". (McIntosh, 1976, p. 38) Thus educational gymnastics was founded, and widely adopted, and later it too became an integral part of the "movement" approach to physical education.

Obstacle Courses
Once again, defeat in wartime drew attention to the fitness of the male population when the evacuation of Dunkirk created a concern that soldiers were not fit, and that military training was ineffective. Obstacle training was introduced into the armed forces in order to develop agility, fitness and a number of personal attitudes to achievement and endurance. This approach was soon adopted into primary schools and climbing apparatus and obstacles provided for them.

These three influences blended to form a new type of child centred physical education, which concentrated on pupils solving movement problems in their own way and according to their own ability. However, this is in sharp contrast to the inclusion of games or sports in the programme, which has come about since the provision of facilities in schools has improved. By the
1960s, games, gymnastics, dance, swimming, athletics and outdoor activities were all widely accepted as integral parts of physical education curricula, although there tended to be differences between boys' and girls' programmes. During the 1970s, the effects of the "Leisure Boom" were felt, with P.E. programmes being broadened, especially in secondary schools, in an attempt to "educate for leisure". Older pupils are offered a wide range of "options" in the hope that each pupil will find at least one which they will wish to pursue in their leisure time, in order to lead more fulfilling lives.

2.3.6 The Current State of Play

According to McIntosh, "In one hundred years from 1870 to 1970 the curriculum of physical education developed from simple military drill to a variegated and bewildering pattern of activities so that in any one school, primary or secondary, the actual curriculum depended on the choice and qualifications of the physical education teachers". (McIntosh, 1976, p. 43)

It is true that currently a pupil in his secondary school career alone, may experience gymnastics, dance, a multitude of games, athletics, swimming, aerobics, health related fitness, outdoor pursuits, circuit training, weight training, amongst other activities. All are fairly common aspects of physical education today. Over the last century and a half, a number of philosophies or objectives for physical education have emerged which gradually formed a team of priorities, with a constantly changing order of merit. Need to let off steam, contrast to sedentary nature of school life, character building, physical development, moral development, social development, education for leisure, developing problem solving skills - all have become parts of the rationale for physical education. However, it appears that over the years little has been done to test the reliability of these aims, and in some cases they have persisted despite a profound change in the nature of the activities. For example, when the public school boys organised their own activities, made up their own games, devised their own rules and so on, no doubt they did undergo experiences whereby they were likely to develop socially, but can the same be said when activities are inflicted on pupils by teachers because the
teacher feels they are valuable? A full circle seems to have turned, for some teachers are now including "creating games" as part of their programme, encouraging pupils to develop an understanding of what games are about, by making up their own, in much the same way that 19th century public schoolboys did. (Almond, 1986) Similarly objectives relating to physical development and health came to prominence when the programme consisted of rigorous exercises which ensured that every pupil underwent an appropriate amount and range of movements. Now, it is quite possible that many older pupils, under the options systems which exist at many schools, may choose activities because of their potential lack of movement. (Cockerill and Hardy, 1987) Claims that P.E. improves the physical fitness of these pupils are consequently invalidated.

Thus it is possible that the performance gap between what teachers think is happening and what is actually happening as a result of physical education has emerged. Objectives for physical education which have been handed down from generation to generation of physical education teachers may well be out of synchronisation with the programme that is being offered and with education and society in general.

2.4 TEACHER ATTITUDES TO HEALTH AND FITNESS IN THE CURRICULUM

The promotion of health and fitness through physical education is a major area where there appears to be a lack of congruence between teachers' aims and reality. Surveys have suggested that teachers generally feel that fitness and health play a major part in physical education. In 1977, teachers from five local authorities were asked about the role of health and fitness in physical education and 95% felt that it had an important part to play. More recently, the Health Education Council Initial Teacher Education Project found that 90% of teachers and students believed that P.E. departments should be teaching about health.

These results contrast sharply with those of the Schools' Council Inquiry into P.E. which took place in the early 70s when P.E. teachers were asked to rank objectives for their subject.
"Organic development" was ranked 4/9 by male teachers and 8/9 by female teachers, indicating perhaps that they did not feel it necessary at that time to emphasise that particular area. When they were asked about what they felt the outcomes of their P.E. programmes were, "general physical development" rated very highly, only below social awareness and responsibility. This may indicate that the teachers felt that physical development happened as a matter of course in P.E. and did not need special emphasis. This possibility is supported by evidence cited by Almond and Dowling (1986). In discussion with P.E. teachers, replies to the question "Can you identify ways in which you encourage a concern for health and fitness in your programmes?" indicated that teachers saw fitness as their main concern, but it was a spin off from the normal programme, with health being regarded mainly as hygiene and diet.

A picture begins to emerge of a situation where many P.E. teachers may assume that because they are teaching through physical activity, physical fitness and health are automatic biproducts which do not need specific emphasis. However, there is little evidence to support this assumption. Recent surveys of physical education curricula in schools (Hill, 1986) show a pattern of physical activities which does not obviously provide a concern for health and fitness.

Proponents of a health focus in physical education believe that the time has come for P.E. teachers to seriously examine their programmes, the behaviour of their pupils and the broader social context in order to bring about changes which will close the gap between theory and practice. However evidence provided by Booth (1986) shows that teachers are interested in slotting health and fitness into their existing framework, and did not see the need for an underlying rationale which would synchronise with their practice. This is to some extent caused by the "day to day confrontation of teaching which drains many teachers of energy and enthusiasm". (Almond, 1982) Thus the short periods of time which are available to teachers are not sufficient for many to develop their curricula in step with education and society in general.
A great deal of evidence which has come to light recently has raised the awareness of teachers and the public to the need to be concerned about the health of our young population. This evidence forms a large part of the rationale for a health focus in physical education. The following section outlines the evidence which has been influential in promoting a health focus in physical education.

2.5 PHYSIOLOGICAL RATIONALE FOR A HEALTH FOCUS

2.5.1 Much of the literature arguing in favour of a health focus in physical education has centred around the increase in lifestyle related diseases, especially "hypokinetic" diseases or diseases related to or caused by a lack of regular exercise (e.g. Armstrong, 1984, 1987). In our society where infectious diseases have been largely overcome by improvements in living conditions and medical science, hypokinetic diseases have been rising at a significant rate, especially coronary heart disease which the World Health Organisation claims may be the greatest epidemic the world has ever faced. (WHO, 1971)

Britain appears to be lagging behind the rest of the civilised world as far as prevention of coronary heart disease is concerned. Although in other Western countries, the disease is on the decline, in Britain doctors are the only members of the society whose mortality rate from heart disease has reduced. (Anon., 1980) In 1968 an American middle age male had a 40% greater chance of dying from coronary heart disease than an Englishman, but by 1976 America's figures were in fact lower than those in England and Wales. According to Cooper (1986) the number of deaths from heart attacks in the U.S. decreased by 28% between 1968 and 1984 and during the same period deaths from stroke and hypertension decreased by 50% and 68% respectively. These improvements were brought about by a lower incidence of diseases, and not by improvements in treatment.
In accounting for these improvements, Cooper cites reduction in cigarette smoking, decrease in blood pressure, improved diet (especially reduction of cholesterol intake) and improved exercise habits, all brought about as a result of a massive education programme in the U.S. from 1968 onwards. It is worth noting that this education programme was much more effective with white collar workers (38% reduction in deaths from heart attack) than with blue collar workers (18%). In G.B. similar associations have been found. (Shaper et al, 1981)

Each year in Britain, 180,000 people per year die of coronary heart disease, and it is felt by many that a large proportion of their deaths could be prevented through better education of the public, and of children in particular. For example, Dawson has stated that in combating coronary heart disease, "ideally, primary prevention is to be preferred and this would entail ensuring that young children were socialised into lifestyles which promoted cardio-vascular health". (Dawson, 1986)

Although coronary heart disease usually only becomes obvious in middle to old aged subjects there is growing evidence to suggest that its open manifestation is merely the final event in a long process and that the roots of the problem are to be found in much younger subjects. (Montoye, 1985) Among the medical profession at least coronary heart disease is beginning to be recognised as a paediatric problem.

What is Coronary Heart Disease?
The coronary arteries are blood vessels supplying the heart and under certain conditions these arteries become narrower (atherosclerosis) and hardened (arteriosclerosis), making it difficult for blood to pass through. In extreme cases the passageway can become completely blocked, cutting off the supply of blood to a part of the heart - a heart attack. The area of heart affected effectively "dies" and its location dictates how severe the heart attack is.
Why is it a Paediatric Problem?
Atherosclerosis is apparently caused by fatty substances (lipids), calcium, and other materials accumulating on the inner walls of the arteries, leading to the build up of fatty streaks under the inner lining. It has now been shown that those fatty streaks can be present in the arteries of 3-4 month old babies, that they are quite common in 5 year olds and by the age of ten are a regular feature. According to Armstrong and Davies (1980a) "regardless of geographic or ethnic origin most people have developed coronary artery fatty streaks by the age of 20 years". (Enos et al, 1983; McGill, 1980) The incidence of fatty streaks may apparently progress to coronary heart disease over a prolonged period of time and be catalysed by "coronary risk factors" (Small, 1977; Armstrong, 1987) these being "those abnormalities demonstrable in persons free of clinical coronary heart disease and known to be associated with significantly increased risk of developing the disease in subsequent years". (Stamler et al, 1966) Risk factors have been identified as hyperlipidaemia, especially high levels of cholesterol in the blood, hypertension, cigarette smoking, obesity, physical inactivity, heredity, amongst other less well documented factors like stress level and caffeine intake.

Armstrong and Davies (1980a, 1980b) have reviewed the area of coronary risk factors in children and have found a very high incidence of these phenomena in children. Armstrong presents the following evidence in his physiological rationale for health and fitness in schools. (Armstrong, 1987)

High Serum Cholesterol
Armstrong states that 1 in 4 children are likely to have levels of blood cholesterol which are in excess of that considered to be the critical level as far as coronary heart disease is concerned. However, this may be understating the case, as it has been found that cholesterol exists in the body in two forms - low density lipoprotein cholesterol (LDL-C) and high density lipoprotein cholesterol (HDL-C). It is LDL-C which is effective in the build up of fatty streaks and HDL-C in fact interferes in the process. It is therefore the comparative
levels of LDL-C and HDL-C which are crucial in assessing coronary risk, and in a random sample of 13-15 year old boys Wilcox et al (1981) found that 30% had LDL-C levels compatible with coronary risk.

**Hypertension**
Although there is no simple critical level, approximately 20% of adults are thought to have levels of blood pressure which place them at risk and so it is likely that a similar proportion of children are affected.

**Cigarette Smoking**
Smoking among adults has generally decreased in this country over the last decade, but amongst schoolchildren has increased by 3%. (P.E.A., 1986) Smoking becomes a real problem in adolescence and has particularly increased amongst adolescent girls. (Wilcox and Gillies, 1984) By the age of 16, approximately 27% of children in British schools smoke regularly. (Dobbs and Marsh, 1983)

**Obesity**
Using the criteria of 25% body fat for boys and 30% for girls, 6% of pupils in this country are classified as obese. Longitudinal studies have shown that obesity is very persistent with 70-80% of obese children developing into obese adults.

**Physical Inactivity**
In the U.S., a study by Gilliam et al (1982) of seven year olds in a summer camp has produced surprising results. By monitoring the children's heart rate throughout the day, Gilliam was able to assess exactly how active they were over a prolonged period. One would expect that in a summer camp environment where activity is positively encouraged activity levels would be high. However, Gilliam states that in order to promote cardio-vascular fitness, seven year olds would need to raise their heart rate to a maximum of 160 for a period of at least 30 minutes per day. He found that on average, girls' heart rates reached this level for 9 minutes per day, and boys for 21 minutes per day. On average 80% of their time was spent
on low intensity physical activity. This study seems to indicate that young children do not, as a matter of course, lead naturally active lives which automatically enhance their physical fitness and health. The same study showed that school life in fact decreased the activity levels of pupils. It is apparently easy to be deceived by the amount of activity which takes place in the playground at break and lunchtimes. At a glance there may appear to be a great deal of running and chasing, but on closer inspection Lloyd found that the majority of pupils of primary age spent most of their time standing about or sitting in groups. (Lloyd, 1987) It would appear to be a mistake to assume that young children naturally lead lives which promote health and fitness, and so some sort of intervention may be deemed necessary.

Other studies of young children have demonstrated that their degree of inactivity is alarming and as one might expect, the problem is even more pronounced with older pupils. Dickenson (1986) undertook a survey of 500 11-16 year olds in the West Midlands, and gained information on their activity levels and patterns. He found that over 80% of his sample did less than 30 minutes vigorous activity per week outside of their P.E. lessons. Vigorous activity was taken as being any activity which made the pupils sweaty or breathless. The problem was worse with girls than boys and became more pronounced as the pupils got older - 80% of 16 year old girls did no vigorous physical activity outside of their P.E. lessons. When this is set against the knowledge that in order to promote cardiovascular fitness, an individual needs to take part in rigorous physical activity for a minimum of 20 minutes, at least three times per week, the problem can be seen to be a serious one. (Armstrong, 1986) Other teachers who have replicated Dickenson's survey in their own schools have encountered similar results, often to their surprise. "I was devastated, shocked. I had no idea how little my pupils did with themselves in their free time." (Health Education Council, 1986a)
Combinations of Risk Factors
People who experience a combination of coronary risk factors have an increased chance of suffering from coronary heart disease which is substantially greater than the sum of their individual contributions. Gilliam et al (1977) has shown that in his sample of children, only 1 child in 3 had no risk factors, 1 in 5 had 3 factors present, and 1 in 10 had 4 factors present. Although this was a study of American children, work done by Armstrong in Great Britain supports these findings.

2.5.2 Other Hypokinetic Problems
Another less dramatic but no less widespread hypokinetic problem is back pain. Armstrong (1984) reports that 88,000 people per day fail to go to work because of back pain and there is evidence to suggest that £500,000,000 is lost to the nation each year as a result of back problems. (HMSO, 1985) The extent of the problem is indicated by Barlow (1983) who maintains that over half the adult population suffers from severe low back pain and sciatic pain. According to Whitehead and Corbin "The majority of cases of low back pain are related to muscle weakness or inflexibility" (1986) particularly in the abdomen and back.

Poor muscle fitness, in terms of strength, endurance and flexibility is one of the obvious results of hypokinesis.

Stress related illnesses are another aspect of hypokinesis. According to Almond, stress related illnesses amongst children have increased by 13% in recent years and are becoming an increasingly demanding problem. (Almond, 1986a) The ability to handle stress effectively is also an important factor in prevention of coronary heart disease.

There is obviously an alarming depth to the problem of diseases which are related to lack of physical activity. It needs to be discussed how, by increasing activity levels, these problems can be overcome.
2.5.3 Why the Need for Increased Physical Activity

The physiological rationale for a health focus in physical education is based upon evidence that regular participation in physical activity can, to a greater or lesser extent, have beneficial effects on an individual's predisposition to various hypokinetic diseases. The area is not, however, as straightforward as we may have been lead to believe as far as children are concerned, and so a fairly close examination of literature is necessary. (Montoye, 1985) The following section deals with the relationship between physical activity and the coronary risk factors, and later other hypokinetic factors.

Level of Serum Cholesterol

In adults, there is a growing amount of evidence that participation in vigorous aerobic exercise promotes the production of HDL-C in the blood and therefore reduces coronary risk. (Stamford University Medical School, quoted by Cooper, 1986b) However, the picture during childhood is not quite so clear. In an analysis of the literature Montoye (1985) has shown that most studies show no significant difference in total cholesterol levels in active and inactive children. Pucsok and Matos (1984) did find a significantly lower total cholesterol level in 16 trained, compared to 20 untrained, boys, but no significant difference in girls, trained or untrained. Studies of HDL-C levels or the ratio of HDL-C in total cholesterol in trained and untrained children have proved to be more definitive and Valimaki (1980) Birk (1982) and Devant (1983) have all shown significant differences in this area.

A number of studies have been done on the effects of exercise programmes on blood lipids, but few have employed adequate controls. (Montoye, 1985) Hunt and White (1980), Linder et al (1979) found no significant changes in blood lipids of children after their participation in exercise programmes. Fisher and Brown (1982) found that 12/13 year olds after taking part in 30 minutes of vigorous activity per day, 5 days per week for 12 weeks showed a decrease in total cholesterol and an increase in HDL-C/total cholesterol ratio. Nizankowska,
Blaz and Abramowicz (1983) compared 35 children who had been training in a school of sport for 3 years with 35 children of the same mean age in an ordinary school. In the school of sport, 10 periods of physical activity was the norm and in the ordinary school 2 periods of sport was normal. They found that the school of sport pupils had a much higher HDLC level than those from the ordinary school.

Although research results are by no means equivocal, some evidence suggests that there is a case for increased physical activity in an attempt to improve the ratio of HDL-C in total blood cholesterol of children. It is possible that short exercise programmes which last only a few weeks for the purpose of a research project may well have little or no effect on blood lipids. Evidence gained from studies of habitually active children and on adults would seem to indicate that a long term programme of activity is necessary to produce beneficial effects.

Hypertension

Few studies have been carried out on the relationship between physical activity and blood pressure. A number of studies in the United States have shown that training programmes generally have little effect on Blood Pressure in children. (Linder, Durant and Mahoney, 1983; Bryant et al, 1984; Dwyer et al 1983) However Fisher and Brown reported significant decreases in diastolic blood pressure in 12-13 year olds in their study (1982) after a vigorous 12 week exercise programme. Hagberg et al (1983) have also demonstrated that aerobic exercise can be valuable in reducing arterial blood pressure in hypertense children.

Once again, research results appear to be contradictory, but this may be due to problems and inconsistencies in methodology. However, there would appear to be enough evidence to support the view that hypertension, in both adults and children, can be to some extent alleviated by regular participation in aerobic exercise.
Cigarette Smoking
The relationship between smoking and habitual physical activity in children is not well investigated. However, one Finnish study suggests that more active children are less likely to smoke than their less active peers. (Laakso et al, 1979) Whether smokers are less likely to be active because of the adverse effects smoking has on cardio-respiratory functions, or whether active pupils are less likely to smoke because of their general attitude to health are hypotheses open to debate. However, Armstrong feels that if pupils are frequently placed in situations where the adverse effects of smoking on their cardiorespiratory systems become obvious, i.e. in performing aerobic activities, they may be encouraged to adopt more prudent habits. (Armstrong, 1987, p. 22).

Physical activity cannot therefore be shown to have a direct effect on smoking as a coronary risk factor, but may only be seen as a possible motivator in encouraging pupils to resist the habit.

Obesity
Generally, studies have shown that obese children are less active than lean children. (Parizkova, 1974; Savis et al, 1979) This is probably due to their reduced aerobic power, brought about by the greater metabolic cost of exercise. (Pangrazi, 1987) When this is coupled with the fact that obese children tend to have a reduced maximal oxygen uptake, it leads to a situation whereby these children will have a far greater perception of exertion than their more slender peers, for a given task. Thus a vicious circle exists - fat children are likely to exercise less than normal, so are more likely to increase weight/body fatness, and consequently are even less likely to want to exercise because of the increased exertion necessary.

In trying to overcome obesity diet is usually regarded as the primary means of progression. However, one study of 13 year old obese girls showed that they already ate less than their slimmer peers, but they also exercised two-thirds less in total time. (Johnson et al, 1956) This would seem to indicate that increasing activity levels is crucial.
Many studies have shown that increasing the amount of exercise can reduce body fat, particularly in obese children. (Brownell and Kay, 1982; Bryant et al, 1984; Fisher and Brown, 1982) The main advantage of this method of reducing body fat over dieting on its own is that muscle mass is retained and the metabolic rate of the subject remains at a normal level and does not reduce significantly as is the case in many severe diets. (Fox and Corbin, 1987) Also aerobic exercises of adequate intensity and duration can produce calorie burning effects even after the exercise has finished, and can also decrease appetite.

It is obvious then that increase in physical activity levels is a vital factor in overcoming obesity, particularly in childhood where the adoption of sensible habitual exercise patterns can help to control body fatness through life. The situation is further complicated however when one considers that there are two types of obesity - hypertrophic and hydroplasic. Hypertrophic obesity is the most common form and occurs when the subject has a normal number of fat cells in the body, but each one is very full of fat. Regular exercise with dietary modifications can effectively reduce the amount of fat in the cells, and therefore reduce obesity. Hydroplasic obesity however occurs when the subject has an above average number of fat cells, which can result in a lifetime battle of trying to keep the amount of fat in each cell to a minimum. It has been discovered that there are two stages of life when this form of obesity develops - during the first few weeks of life, and between the ages of 9-14 years. During this latter period, the adoption of good exercise habits can help to control weight gain, and is therefore of great importance to the P.E. programme. (Armstrong, 1986)

The argument is now widely publicised that participation in physical activities, particularly prolonged aerobic activity (Armstrong, 1983) can help to minimise the effects of cardiac risk factors on an individual. However, research evidence is not completely supportive that this is the case with children,
especially in the areas of hypertension, blood lipids and cigarette smoking. As Montoye states, "It might be that coronary heart disease risk factors are not closely related to exercise habits or work capacity. It is possible for example, that exercise does not have a profound effect on the development of atherosclerosis in human beings, but that a programme of vigorous activity may permit some people to live longer in spite of atherosclerosis". (Montoye, 1985, p. 143) He does go on to qualify his statement by pointing out that there are many methodological problems involved in studying the activity patterns of children, especially in leisure time and so research results may be unreliable. It is also possible that exercise may need a relatively long period of time to be effective in this area - a twelve year old has not been able to exercise strenuously for the same period of time as a 40 year old jogger.

Persuasive evidence has recently been forwarded by Paffenberger et al (1986) which strongly supports the case for increased activity levels in both prolonging life and reducing risk of coronary heart disease. In his study of 17,000 Harvard alumni over a number of years, Paffenberger found that "men whose weekly energy output in walking, climbing stairs and playing sports totalled 2000 or more k cals/week had a 28% lower all cause death rate than less active men". He found that in all age groups there was a definite trend towards a lower death rate as physical activity increased from less than 500 to 2000 or more k cals/week. In the area of coronary heart disease, it was found that participation in light sports did not appear to influence the incidence of coronary heart disease, but vigorous sports tended to avert the disease.

The important point to note from all of this research is that participation in vigorous activities may well reduce coronary risk for a number of reasons, but only when participation continues throughout life. Paffenberger states that "the rate of death from any cause was reduced with increased physical activity by alumni, but that the sports activity level in their student days did not have a similar effect on subsequent mortality". (Paffenberger, 1986, p. 664) This would seem
to indicate that if a health focus is adopted, it must be a very long term project, with the emphasis on making vigorous physical activity an accepted part of the LIFESTYLE of pupils, to be carried through their adult life.

Effects of Physical Activity on Other Hypokinetic Problems

Low Back Pain
As has been previously stated, a large proportion of low back pain problems can be prevented or relatively easily alleviated with appropriate exercise habits. The originator of the term "Hypokinetic Disease", Franz Kraus, did a great deal of work with low back pain sufferers in the 1950s. Using the Kraus Weber Tests of Minimum Muscular Fitness, Kraus found that most sufferers failed the tests, but with exercise therapy not only did their scores improve but the back problems were overcome. (Kraus, 1954) Follow up studies showed however that patients who stopped exercising soon regained their low back problems as their test scores diminished. Once again the need for activity to be regarded as a lifelong necessity is emphasised.

Whereas in the previous section aerobic activity was found to be beneficial, in this area, activity which promoted flexibility and muscle fitness is thought to be optimal. For example inflexible hamstrings can lead to leg pain and referred pain in the lower back, and shortened hip flexors can cause a forward tilting pelvis resulting in lordosis and therefore low back pain. (Corbin and Fox, 1987) Similarly abdominal muscles are important in maintaining the body's posture and creating support for the lower back. Thus a programme of activities which ensures that flexibility and muscle fitness are maintained or improved can have a beneficial effect in this area, although as Handley points out postural re-education may be as important in this area. (Handley, 1986) The case for prevention of back pain by increased emphasis in P.E. has been well argued by Parker Dodd (1986).
Stress Related Illness

When placed in a stressful situation, the body automatically undergoes chemical changes which prepare it for energy demanding physical activity. (Pride, 1986) This is known as the fight or flight stress reaction. Hormones are produced and flow into the bloodstream to prepare the body for action. In modern society, many situations which individuals regard as stressful cannot be overcome by "fighting or flying". McGrath (1970) found that stress was likely to be experienced when an imbalance existed between what people thought they were capable of and what is demanded of them. Anxiety can be created when demands are either too great or too small. (Csikzentmihalyis, 1975) Body changes brought about the the stress response - increased heart rate, more rapid and deeper breathing, raised body temperature, increased oxygen utilisation and muscle tension can have derogatory effects on health if they are not dissipated in the physical activity for which they are intended. (Pride, 1986) The frequent surges of blood pressure which are experienced if a subject is often placed in stressful situations can lead to heart attack or other related illnesses like fatigue, headaches, muscular pain and duodenal ulcers.

It is impossible to totally avoid stress in modern society, and a small amount of stress is often thought to enhance performance. It is therefore important for individuals to learn to 'manage' stress rather than avoid it. Biddle and Pain (1987) have identified two major pathways to stress management - physical relaxation and physical activity, although Pride has added that the first important step is recognising that one is under stress. (Pride, 1986) Physical activities like Tai Chi and Yoga as well as relaxation techniques like Jacobson's 'progressive relaxation' are suggested by Biddle and Pain as effective methods of coping with stress. The value of vigorous physical activity should not be underrated also. Providing that the activity is not over competitive, which could lead to frustration and feelings of incompetence, the following benefits may be attained:-

i. Strong reduction in muscular tension after vigorous exercise as a compensation for previous exertions
ii. Vigorous exercise is precisely what the fight/flight syndrome prepares the body for, and so would be an appropriate response

iii. Feelings of enjoyment, competence and satisfaction resulting from exercise

iv. Exercise can provide a balance of activities alongside work or home responsibilities

v. Exercise can provide pleasurable social contact

vi. Prolonged aerobic exercise can lead to the production of endorphines in the body, which promotes a feeling of euphoria in a subject (Biddle and Pain, 1987)

A number of studies have found that exercise re-education programmes can enhance stress management. (See for example Horavits et al, 1985)

A number of important points become apparent from this information. The first is that again, exercise can only be beneficial in this area if it is regarded as a habitual part of the general lifestyle. Secondly, it is crucial that individuals select physical activities which are appropriate to them, and not that some external agent imposes an activity which to the subject may in itself be stressful. For example, an obese subject is likely to find prolonged jogging a very stressful activity, but may derive many benefits from swimming.

It would appear that increased participation in physical activity throughout life is an important factor in overcoming a number of health problems which are gaining ground in our society and this forms a strong physiological rationale for a health focus in P.E. However, this may be seen as a rather narrow platform from which to argue the case and in some senses a "negative" attitude towards health, as well as being a potentially short lived basis for arguments.
THE NEED FOR A WIDER BASED RATIONALE

Two major objections can be made against the adoption of a rationale which relies so heavily on cardio-vascular prevention. The first has to do with medical advancement. Recent studies in the U.S. have shown that fatty acid substances called Omega 3 can, when taken in by humans, cut blood levels of cholesterol, lower blood pressure, inhibit the tendency of blood to form damaging clots and reduce inflammation. (Barnett, 1987) Thus, the beneficial effects of exercise in this area can be gained from other sources, as Omega 3 is commonly found in fish, deer and some plants.

The second objection has to do with the definition of "health" in health based physical education. The physiological arguments already outlined may lead one to believe that health is concerned only with absence of disease, but Balkamm's definition obviously implies a great deal more - the full and intelligent utilisation of the human bodies potentials. Almond (1986) sums up the differences when he states that Health Based work is concerned with "enhanced functioning" rather than "dysfunction" or "adequate functioning". He feels that the majority of the literature in the area reflects the concern that most people do not take part in enough physical activity to maintain adequate functions, and the previous review would appear to support this view. He feels that a health focus in physical education should be promoting a far more positive and holistic view of health.

There are however problems in the promotion of this view. Allen (1981) in his book "Lifegain" states that health may be "having energy to burn at the end of the day, feeling super, great, happy, satisfied with what you've done, looking forward to a long and healthy future, feeling good about yourself and others". Some would no doubt say that regular physical activity can help an individual towards this ideal and those who have attained this level of being may agree, but those who have not may disregard such ethereal statements as being without foundation. Until research evidence provides academic credibility for such claims it is difficult to see them being widely accepted by the general public.
There are a number of positive effects of exercise which can be used to promote a more positive view of health. For many years exercise enthusiasts have reported getting a "high" from exercise, but only recently has this effect been found to have a physiological basis. (Cooper, 1986a) The production of endorphines in the body during vigorous exercise, which have similar effects to morphine – killing pain and creating a feeling of euphoria – is now used to explain the "alternative high". The argument that "exercise makes you feel great" now has a sound physiological base and may no longer lead to scepticism, and may be used without reserve in any rationale for a health focus. (Although Cooper's tale of the marathon runner who ran 17 miles with a broken leg without realising it because of the pain killing effect of the endorphines in his body may cause one to question this!) (Cooper, 1986b)

Another positive effect of exercise is the enhancement of self esteem and self concept. Self concept, according to Gruber, is our perception of self, whereas self esteem is the value we place on our image of ourself. (Gruber, 1985) He says that, "Self esteem is a basic element in a child's personality development and is believed to be a motivational springboard into future emotional experiences which, over time, shape elements of personality into more definable constraints". (P. 30)

The poor self esteem of young people in our society is apparently becoming a serious problem. In answering the question "what is it like to be young today?", Bateman paints a very dim picture when he says that "40% of young people are currently unemployed and in many areas will never have a job ... They are portrayed by much of the media as a violent, destructive, glue sniffing, weird, mindless, apathetic group ... They live in a world racked by hate, terror, famine and disaster - a world that as young people they are unable to influence - denied money (in a world where material goods reign supreme) - status, and work, young people represent a group disenfranchised by society". (Bateman, 1985) This situation can lead to young people having
very negative feelings about themselves, as this is the image constantly reflected to them from society. Low self esteem is a problem in itself but can also lead to secondary problems, for example Rice (1987) has stated that low self esteem is a predisposing factor in drug abuse in young people.

Initially, a baby's self concept is largely a body concept as it is the infant's only means of action and communication. Thus the body is an important aspect of the self image which later develops and determines the individual's self esteem. (Gruber, 1986) It is therefore logical to expect that any activity which has an effect on the body and its functioning will affect, to some extent, the self esteem of an individual. Large numbers of studies have been carried out on the relationship between physical activity and self concept on esteem, with generally positive results. In a meta-analysis of 27 of such studies, Gruber found that 18 gave significant positive results, while nine reported nonsignificant results. The research generally indicated that handicapped children generally derived greater benefits from exercise programmes than normal children, but normal children did experience slight improvement in self esteem. It was also found that in differentiating between 4 types of activity used, physical fitness and aerobic activities were far more effective than perceptual motor programmes, learning of sports skills or creative movement programmes. Gruber explains this by saying that, "The immediate feedback one gets from meeting daily fitness goals in activities that do not require complex motor skills may partially explain the large effects of it. The pupil readily detects improvements and may have a feeling of body mastery as he or she successfully meets the demands of fitness activities". Also of interest to physical education teachers is the finding that where teachers utilised teaching methods whereby children were involved in the decision making process, self esteem was raised more effectively than where teacher dominated methods were used. "One cannot help but feel important when consulted by a significant authority figure about class activities." (Gruber, 1986, p. 41)
Research on adults has, according to Gruber, been inconclusive. (Morgan et al, 1970; Morgan, 1982, 1985) However, some studies have found significant changes in body cathexis of which physical self esteem is a component, as a result of exercise programmes. (Horowitz et al, 1985) Horowitz concludes that a great deal of research on exercise and its effects on tension, anxiety and depression "supports the conclusion that aerobic exercises contributes to an improved sense of well being, self esteem and body cathexis".

It must not be assumed that by simply taking part in physical activities the self esteem of an individual will be enhanced. The activities have to be carefully selected and planned according to the needs of that individual. A person with poor hand/eye coordination is unlikely to feel any better about him/herself if exposed to highly technical activities where his/her shortcomings will be exposed, e.g. in tennis or striking games. However, if an individual is exposed to situations where they will achieve success through the attainment of goals they are likely to accord themselves a higher status.

To sum up this area, a number of positive benefits may occur as a result of participation in physical activities, particularly in the area of social development. Apart from improvements in self esteem, studies have shown that in a lot of cases, subjects generally felt "good" as a result of exercise programmes. Bragg, in a study of student teachers' responses to a compulsory 6 week fitness schedule, found that "an active lifestyle had changed their attitudes towards themselves and others, and also influenced their own approach to their work". (Bragg, 1986) 94% of the students were determined to remain active and among reasons given were that they "felt good", felt they had more control and confidence and were less tired. Cooper (1986) reports that individuals who exercise regularly are likely to have a more positive attitude to life, be less depressed, to suffer less hypochondria and have an enhanced self image.
PROBLEMS WITH TRADITIONAL P.E. CURRICULA

A great deal of evidence has been presented which gives a very positive picture of the contribution that physical activity can make to the life of any individual, not only in preventing the onset of hypokinetic diseases but also in adding a positive dimension to life. In other words in contributing towards the health of individuals. Since physical education deals primarily with physical activity, it would be sensible to assume that it has a major role to play in health education in schools. There is, however, some doubt that traditional P.E. curricula are actually structured in a way which promotes those various benefits, and a review of recent literature uncovers a number of problems which are implicit in many P.E. programmes.

Many articles have been published over the last few years which have outlined a number of possible shortcomings of traditional curricula. (e.g. Almond, 1983; Dickenson, 1986; Biddle, 1981; Fox and Whitehead, 1987) The problems identified fall into 3 main categories: inappropriate philosophies, imbalance of activities and over emphasis on didactic teaching styles. The first of these has been dealt with in some detail in an earlier section. Suffice it to say here that many of the aims professed by P.E. teachers may be totally inappropriate to modern physical education and are leftover from previous generations.

Imbalance of activities is a major problem in current programmes. In a survey of P.E. curricula in our local education authorities, Hill (1986) found that many secondary schools spent up to 70% of programme time on "games", particularly competitive team games, with relatively little time spent on body management activities, individual or aesthetic activities. This overemphasis on games and competitive activities may be having a detrimental effect on pupil development if what we are aiming for is lifelong participation. Competition may be a big "turn off" to many pupils. In the mid seventies McIntosh wrote, "There may be something wrong with a system of P.E. which places competitive sport firmly in the timetable thereby writing into
school life the inevitable failure on the field of most children". (1974) More recently, the view was suggested by Sparkes, "If children are continuously placed in competitive contexts in which their inventive needs cannot be met, then their enthusiasm and interest is likely to wane rapidly, the end result for many will be to cease participation in any sort of activity". (Sparkes, 1986) Certainly Dickenson found in his study that over 50% of the pupils would rather do something other than competitive games in P.E. (1987)

An over emphasis on competitive sports and games with great emphasis on skill acquisition can therefore lead to poor self esteem for the pupil who constantly "fails", and a switching off of large numbers of people from any sort of activity, for failure in competitive sport may lead an individual to assume that he/she is "no good" at any sort of physical activity. (Biddle, 1985a) Thomas's study provides evidence of the detrimental effects that an imbalanced programme can have on future attitudes to activity, for example, those comments made by the young women in her survey, "I don't think at any stage I was encouraged to understand that I could actually succeed..." "you know sport isn't just for the people brilliant at it, it's fun. That didn't really come over in school P.E. in my day..." (Thomas, 1986)

The teaching strategies most commonly adopted by P.E. teachers may also be a problem in the development of a health focus. Research by Spackman (1986), Rose (1986) and Knott (1986) has found that P.E. teachers of both sexes "display a penchant for a prescriptive approach to learning and a preference for addressing a whole class where there is little opportunity for feedback from students". (Almond and Dowling, 1986) Put simply, if P.E. teachers are aiming to equip pupils with the skills required to carry on with participation in activities which will promote healthy living, then they need to consider intellectual and social skills as well as physical skills. Both Cook (1987) and Pain (1986) have stressed the importance of developing decision making skills in pupils in areas of health education and Corbin et al have outlined the need for
evaluative and problem solving skills in the "Stairway to Lifetime Fitness". (Corbin et al, 1985)

Facey (1982, 1984, 1985) has argued strongly that the way to develop such social skills is through involving pupils in their own learning. He says "It is not the job of the teacher to tell young people what to do with their lives, but it is their duty as caring adults to provide enough information for them to make their own decisions and act positively on those decisions. (Facey, 1985, p. 44) This point is reinforced by Matharu (1987) when she says, "If we are teaching a health focus in P.E. where there is a requirement for people to accept responsibility for decision making in their lifestyles, there would appear to be the need to incorporate taking responsibility for making decisions, otherwise we are continuing the age old questionable practice of "telling" people what they should do and assuming they accept and do it".

It is therefore not only the content of P.E. curricula which may need serious re-examination, but also alternative strategies for teaching which aim to involve pupils in and throughout the learning process may need to be developed.

2.8 AN ALTERNATIVE APPROACH TO PHYSICAL EDUCATION

Physical education with a health focus would therefore aim to equip pupils with the knowledge, skills (social, intellectual and physical) and motivation which will allow them to maintain a healthy, active lifestyle, throughout life. Fox and Whitehead's model of "student centred physical education" (1987) shows diagrammatically the various concepts involved.
While this model deals with the various skills involved, and builds the model around the individual it says little about the motivational aspects which are vitally important. Almond's model (shown overleaf) for a health focus draws attention to aspects which underpin the motivation issues. It links together the students' experience of an activity with self esteem and motivation. If pupils perceive their experience of activities as "bad" then they are unlikely to continue to participate.

**FOCUS**

**ACTIVITY**: HOW AN ACTIVITY IS EXPERIENCED - GOOD EXPERIENCE EMPOWERMENT

(1) Making an activity accessible
(2) Knowing how to plan - put into action - "Active Lifestyle"
in them through choice. Thomas's work provides real examples of these suppositions. The statement made by "Dot", one of the women in her survey, aptly demonstrates how important the pupils' experience is. Speaking of P.E. she says, "It was a drag ... the biggest thing that happened was hockey. One afternoon a week at a place we called 'Siberia' because it was on the side of a hill and we were supposed to run twice round this field before we played. After one circuit I was wheezing like a grampus. It rather put me off hockey". (Thomas, 1985).

The term "empowerment" is also included in this model. This implies a transfer of power to the pupil, by equipping them with the knowledge and skills necessary to organise their own activities and is obviously vital in long term lifestyle education. Again, empowerment links with self esteem and motivation, as a pupil who feels capable is likely to have a raised self esteem and feel more motivated to continue participation.
It begins to become evident that in the adoption of a health focus, it is not merely the **content** of a programme which needs close examination but also teaching methods and strategies and methods of evaluation. If a teacher is aiming to encourage pupils to adopt active healthy lifestyles which are maintained throughout life, then s/he must apparently develop teaching strategies which allow pupils to develop responsibility for their own learning, provide experiences which will enhance the pupils' self esteem and also monitor those pupils' feelings about the work they are doing. Traditional games oriented curricula may, for many pupils, not be meeting these criteria and so a number of changes may be necessary to enhance many pupils' experiences of physical education.
3.0 CHAPTER THREE

THE IMPORTANCE OF PARENTAL INVOLVEMENT IN EDUCATION

3.1 INTRODUCTION

Parental involvement in education has developed since the turn of the century and is today apparent in a number of different forms. The reasons for wanting parents to be involved in education are varied and to some extent these reasons delineate the form the involvement takes. This chapter shows how participation by parents in the education process has developed to the present day and reviews the area of discussion about what form it should take. It will be shown that practice in the area has somewhat lagged behind the theory and reasons for this will be outlined focusing mainly on the various aspects of parents' and teachers' attitudes and how these two differ.

Health Education is one aspect of education where parental involvement is thought to be particularly vital and where a good deal of research evidence exists to support this assumption. The second part of this chapter reviews the role of parents in Health Education and shows that both direct and indirect effects may occur as a result of parent/child interaction. These effects are shown to have a crucial bearing on Health Education.

The final part of the chapter deals with Physical Education and physical activity. It outlines how parents can influence pupils' habits and attitudes to physical activity in general and develops a case for inclusion of parents in Health Based Physical Education Programmes.

3.2 PARENTAL INVOLVEMENT IN EDUCATION

3.2.1 Parental involvement in education is a concept which has mainly evolved out of a concern for pupils' welfare and achievements in school based activities. It is, however, a concept which is developing more and more foci and which is gradually changing in character as both society and schools undergo change. It is therefore necessary to outline the development of the parental involvement movement from its roots early in the century to the present day.
"Parental involvement" in education during the early part of this century consisted mainly of schools trying to affect what went on in the homes of their pupils, and of a concern for their moral and physical welfare. The official handbook for teachers - "Suggestions for the Consideration of Teachers and Others Concerned in the work of Public and Elementary Schools" contained sections which encouraged teachers to impress school values on the home, from 1905 onwards, e.g. "Much of the moral shipwreck of young people can be traced to parental ignorance or neglect ... education authorities can provide moral, no less than the physical and intellectual well being of the scholar ... if only they can induce parents to resume control of their children". In 1931, the Hadow Report on nursery and infants schools was published and had a "distinctly Victorian flavour of teachers dispensing advice to ignorant but grateful working people". (Mortimore, 1984) The Report also pointed out that beneficial effects on health and hygiene had occurred as a result of teachers giving talks to the newly formed parents' associations. At this stage therefore, schools were seen as providing information to parents on aspects of health which were not being covered by other agencies, and as setting moral standards for these parents to follow. Parents had no role within the school and in most cases, in the public sector, at least, were physically excluded except on special occasions like open days. "NO PARENTS PAST THIS POINT" notices were fairly common at school gates until the 1960s.

The development of the welfare state and improved standards of living after the Second World War to a large extent did away with the need for schools to play a role in health and hygiene of the masses. However, over the middle years of the century, changes in thinking occurred which led to the publication of the Plowden Report which maintained that "one of the essentials for educational advance is a closer partnership between the two parties to every child's education". (ch. 4, para 10.2. p. 37) Those changes in thinking were mainly a response to concerns about continuing underachievement at school of pupils from the lower socio-economic groups and the development of
environmental theories of intelligence. (Tizard et al, 1981) A succession of reports (Early Learning, 1954; the Crowther Report, 1959; Douglas, 1964; Jackson and Marsden, 1962) all highlighted the problem of working class underachievement in schools. Educationalists generally developed the view that the source of the problem lay in parental ignorance, lack of interest in education and poor pupil-parent interaction, and better home-school relationships were seen as a means of overcoming this problem. (Mortimore, 1984) The Plowden Report therefore recommended the setting up of Community Schools, especially in the newly identified Social Priority Areas, as a means of developing home-school contacts, as well as suggesting a minimum programme for all schools which included open days, school booklets, yearly reports and parent/teacher talks. The emphasis was obviously on deprived areas with high proportions of pupils from lower socio-economic groups, as the feeling generally held was that these parents needed to be made aware of what was good for their children in terms of educational success. Although the Plowden Report used terms like "partnership", "involvement" and "participation", they had limited connotations in that the emphasis was still on a one-way flow of traffic, with parents learning what was best from schools.

The first major signs of change in this situation occurred as a result of the action-research project in Educational Priority Areas, which was a response to the Plowden Report. Between 1968 and 1971 the project, under the direction of people like Midwinter and Halsey, began to develop methods of involving parents in a more egalitarian way, so that "all concerned with education should share both teaching and learning roles", the implication being that teachers can learn as much from parents as parents can from teachers. However, despite various innovations in these E.P.A.'s, the idea has not been widely adopted. Parents have been "involved" very much in a teacher directed way where their role is "more like the child's than the teachers". (Halsey, 1972, A35) Involvement at the level of consultation is apparently exceptional.
During the 1970s and 1980s, progress has been fitful in nature. There have been initiatives to involve parents in the education of their children on a practical basis, and also legal measures designed to enhance parents' "rights" in education. Examples of the former of these aspects include encouraging parents to help their children to read (Hewison, 1981) even though the Bullock Report (1975) placed little importance on parents doing so. Parents are also more often invited into schools, to accompany children on school outings (Watt, 1977) and in some areas home-school liaison teachers exist to act as a bridge between families and the school. It must be noted that parents' involvement is much more common in nursery and primary schools than in secondary schools.

Parents' "rights" have developed since the 1960s as a result of pressure from consumer groups like the Advisory Centre for Education (ACE) and the Confederation for the Advancement of State Education (CASE), and also by a series of legal measures which have sought to give parents greater involvement in decision making in education. In 1975 the Taylor Committee was set up by the government to investigate the management and government of schools. The report of this committee resulted in the 1980 Education Act which compelled L.E.A.'s to publish their rules governing admission to schools and to make arrangements for parents to express a preference, and set up an appeals procedure. Schools were also expected to make available to parents information about the school, including examination results. Finally parent governors were to be appointed to all schools. This was closely followed by the 1981 Education Act which "makes explicit certain already existing parental rights as well as outlining 'newer' rights, to be involved with decision making over assessment procedures, definition and extent of special educational needs, special educational placement and review processes". (Wolfendale, 1983) The latest measure to improve parents' access to schools is in the form of the 1986 Education Act which stipulates that all parents should be circulated with an annual report by the governing body, which is a "Summary of the steps taken by the governing body in the discharge of their functions". The distribution of this report is to be followed by a meeting where the report
would be officially presented and allows parents the chance to "discuss the discharge by the governing body, the headteacher and the local education authority of their functions".

3.2.2 The current position is therefore one in which there is apparently far greater scope for parental involvement at all levels of the education process than was the case 30 years ago. Parents' legal rights have broadened, research has shown that parents can enhance their children's attainment levels by contributing to the learning process (Tizard et al, 1982), that parents who participated in interaction schemes develop more positive attitudes towards education. (Armstrong and Brown, 1979) However, there is some doubt that in practice parental involvement is living up to its theoretical image. Torkington (1986) says of the current situation ... "on the whole, I ... see little development beyond the position reached in the early 1970s". (Haigh, 1987) sums up the present situation when he says, "Heads look back patronisingly on an age when each school had a line on the playground marked 'no parents past this point'. Today parents, by contrast, crowd into cloakrooms before and after school; they line up along the back wall in assembly, tie aprons for art, mend the broken toys, cover the ageing books, apply make-up when the school play comes round, provide ethnic cookery lessons and supply babies for a variety of curricular needs from human biology to close observational drawing with chalks". He goes on to say that "Much of what passes now for home-school relationships is little more than surface dressing ... And the open welcome, although entirely genuine, is there as part of the overt purpose of the institution - perhaps even mentioned in the school booklet as an attribute, with the capacious sports hall".

Torkington's (1986) analysis of current initiatives pinpoint 3 approaches to parental involvement:-

1) Child Centred, which occurs mainly through the curriculum and where parents are seen as helping teachers to develop the mainly cognitive skills of pupils. Examples of this approach are parents' reading programmes, maths workshops
and "ready for school groups". In this approach the teacher is the expert in control and who monitors progress. This sort of approach has brought about dramatic increases in pupils' reading age.

ii) School Centred, where parents are seen to help the school to carry out its broader educational goals. Demonstrations of this approach can be seen in the workings of PTA's, organising and helping at fund raising fetes, parents accompanying pupils on school trips.

iii) Parent Centred, where there is a partnership between the home and school based on the assumption that, "... parents' knowledge of their individual children is far greater than that of a teacher and that the teachers' knowledge and skills about children and learning in general should merely complement and build on to the specific knowledge that parents hold". (Torkington, 1986)

She goes on to point out that the school centred approach was popular in the 1960s and 1970s, but presently the child centred approach has taken over with teachers spending a good deal of time explaining to parents what is going on in various aspects of the curriculum (e.g. Macleod, 1985). She argues that these two approaches can be employed by teachers "without them ever accepting the fundamental principles which underpin good home/school relationships", and that the parent centred approach needs to be far more widely adopted in order to build a partnership between home and school. "Children and parents are not empty vessels waiting to be filled from the bank of teachers' knowledge, they know, they have experienced and they have felt a lot and the best education will be built on that basis."

A similar view is reported by Wolfendale (1983) who states that "By and large, mainstream schools do not have an articulated policy of parental involvement that exemplifies in practice all the principles of a clearly formulated philosophy along the lines of the Plowden and Warnock reports" (p. 2). She points out that parents are traditionally viewed as "clients" and only in a few cases as "partners" in the education process. She associates various characteristics with the "client" concept:
i) Parents are dependent on experts' opinions

ii) Parents are passive in the receipt of services

iii) Parents are apparently in need of redirection

iv) Parents are peripheral to decision making

v) Parents are perceived as inadequate, deficient

In contrast the concept of parents as partners incorporates the following characteristics:

i) Parents are active and central in decision making and its implementation

ii) Parents are perceived as having equal strengths and equivalent expertise

iii) Parents are able to contribute as well as to receive services (Reciprocity)

iv) Parents share responsibilities, thus, they and the professionals are mutually accountable

Where parents are treated as "clients" and schools seek to intervene in order to promote educational outcomes, there is a danger that it could be seen as "social engineering", where intervention becomes intrusion. Raven (1981) in his review of the Lothian region Pre-School Educational Home Visiting Scheme, postulates the argument that child centred intervention schemes "should, at least in some ways, be construed as unjustified interference in the lives of those concerned interference which is likely to bring in its turn serious disbenefits for the participants themselves and for the society in which they live". (Raven, 1981, p. 120) These disbenefits include increase in family stress, undue pressure placed on parents, paradoxes regarding true parental participation, the illusion of fate control and the risk of promoting an incompetent parent image. The undemocratic nature of such schemes is brought about by the failure of "the educational system to gear itself to the values of their clients instead of encouraging their clients to gear themselves to an educational system linked to the values of the paymasters". (Raven, 1981, p. 128)
3.2.3 Reasons for lack of parental involvement.

Thus, although much has been written on the subject of parental involvement in schools, little progress seems to have been made towards developing an egalitarian relationship between schools and parents, where the latter are regarded as partners rather than clients. The reasons for this failure are varied and fall into 4 main categories - teachers' attitudes, parents' attitudes, problems in communication and financial constraints.

**Financial Constraints**

Any new educational initiative tends to be expensive to fund and in the present economic climate, money is not readily available for resources necessary. When schools are having problems finding the necessary funds to resource existing courses, then the possibility of implementing initiatives in the home/school area is severely reduced, although it could be argued that teachers' attitudes are responsible for this prioritising of expenditures. It appears that teachers and other educationalists are loathe to spend money on something that they feel might or might not be valuable. For example, one council education committee chairman is quoted as saying of the now compulsory annual parents' meetings "... I have always held that these meetings would be a waste of time ... This has cost us both money and manpower which could have been put to better educational use". (Sharman, 1987) The implication here seems to be that if the meetings had not been legally imposed, they would not have taken place.

**Teachers' Attitudes**

Another major underlying factor in the slow development of home/school relationships is that of teachers' attitudes. Various pieces of research (e.g. Tizard et al, 1981; Johnson and Ransom, 1983) have highlighted that teachers do not always have positive attitudes to involving parents in their work. Jameson (1987) has stated that "Too many in education, teachers and administrators alike, treat parents as an alien force, at best to be humoured, at worst kept at bay". Teachers may have a number of reservations about involving parents which stem from a concern about encroachment on their professional
role. For example, it may be felt that as professionals or experts, teachers know what is best and any involvement of parents in the teaching/learning process would be chancing detrimental interference. This is stated at national level by Tough (1987) when, speaking of parents assisting in the classroom, she says, "... bringing unpaid, untrained help into schools has its problems, and we would not want to give children experiences that were not appropriate and valuable". Professional bodies like the N.U.T. also reinforce this view that education should be left to the professionals in "Parents in Schools" (1979), which is quite negative in its expressed attitude to involving parents in activities which teachers regard as requiring professional educative skills.

At a more fundamental level, teachers may be even less enthusiastic about involving parents in the planning and decision making processes of education, once again stemming from a belief in professionalism. Johnson and Ransom (1983) in their study of parents of secondary school pupils found that teachers generally wanted to encourage parents to be more supportive to schools, but did not want involvement to reach the stage where parents would want to intervene in the "professional concerns" of the school. Teachers saw their role as to "educate parents about school aims and practice rather than to understand parents' values and priorities. (Johnson and Ransom, 1983, p. 53) There may be a fear that parents might "take over" or become too powerful. Mortimore (1984, p. iii) points out that "The spectre of powerful American parents' groups, able to hire and fire teachers or ban textbooks, feeds such a fear. This fear is also demonstrated in the recent publicity about parents' annual meetings. Fears that the meetings are seen by parents as opportunities for "teacher bashing" have been expressed in the media. (Dunford, 1987; Miekle, 1987) Some teachers may also be concerned that more articulate parents will be able to manipulate opportunities for involvement in a way which will prevail against the interests of the majority. (O.U., 1981a) An Open University survey found that some headteachers feared that parental organisations were not representative of parents as a whole and succeeded in alienating many of the parents. (1981a)
Many teachers may also hold stereotyped views about parental interest in education, which colours their attitude to parental involvement. Wolfendale (1983, p. 8) states that: "Teachers do have predetermined suppositions that there is a proportion of parents who are not interested in their children's schooling and educational progress and that this is linked in their minds with home factors". The Plowden Report implied a positively correlated relationship between parental interest and attitudes towards education and academic attainment of pupils, and furthermore assumed that good parental attitudes causes academic success of children. This led to a general feeling that many parents (particularly from the working classes) have little interest and set little value on education, and therefore display a negative attitude towards getting involved in schools and contributing to their children's education. "The opinion held by researchers and educationalists of at least a hardcore of working class parents was very low". (Johnson and Ransom, 1983) Parents were described as "hostile", "passive-nonconformists" (Blyth, 1967) and "feckless" (Davis, 1950). However, although various studies completed in the 1960s (e.g. Wiseman, 1964; Douglas, 1964 and Mays, 1962) all reached the conclusion that parental interest was crucial in the educational progress of the child. Their studies tended to be based on the assumption that parental interest could be equated with physical attendance at school events. Johnson and Ransom (1983, p. 21) found that many teachers still make this assumption but make the point that "there are many other forms of interest in the child which must be taken into account before dismissing parents as apathetic or unconcerned with their child's education ... interest could be communicated to children without parents actually attending the school ...

More recent studies have shown that contrary to the evidence tabled in the 1960s, which seems to have had a great influence on present teacher attitudes, the vast majority of parents, regardless of social class, are interested in and want to support their children in education, but may be unclear about how best to do so. (Newson et al, 1977; Johnson and Ransom, 1983; Mortimore et al, 1981) A recently published H.M.I. report on homework,
based on a study of 250 schools, stated that "the desire of parents to take a constructive interest in their children's work is far more widespread than schools generally acknowledge". It would appear that many teachers may hold attitudes about parents' desires to be involved which act to prevent development being made in the area of parental involvement.

A final aspect of teacher attitudes which may have a bearing on this area is one which is obvious, but often ignored. Many teachers may admit that parental involvement will benefit the child and the parents, but they do not always appreciate that they too might reap benefits. (Mortimore, 1984) There is a danger that teachers see involving parents as a one way channel of effort and reward going from the teacher to the pupils and parents, and this is not likely to act as an incentive to teachers to find the time and energy in an already busy and pressurised working life. "Although there are good reasons to suggest there are considerable benefits to be reaped, teachers may be unconvinced, particularly if they have not experienced them". (Mortimore, 1984, p. iii) If teachers were more convinced of the advantages they might encounter for themselves, they may be more positive in their approach. Wolfendale points out that teachers could "gain in knowledge and understanding of children's homes, families, interests and out of school activities, and gain parental interest and support and backing for schools' goals and activities".

Parents' Attitudes

There is also evidence to suggest that the attitudes and perceptions of parents may act to prevent the development of their involvement in education. Just as many teachers feel that education should be left to the professionals then so do many parents. "Many parents whose children have just started school feel that they no longer have a role to play in their child's education, everything should now be left with the school". (Curtis, 1986) Tizard et al (1983, p. 107 & 108) found that a belief in professionalism prevented many parents from supporting parental involvement taking the view that "what goes on in school is the business of the teacher and should be left to them, and that they themselves
lack the training to assist in the school or offer suggestions or opinions". They found that even when parents did not like what teachers did in school, they did nothing about it because they considered that schooling was a matter for trained teachers, and not their concern.

Some parents who feel that they would like to become involved sometimes do not because they are not sure how to. For example, the Newsom Study (1977) found that 81% of parents tried to help children to read but many were unclear about the best way to help. Tizard et al (1984) report that many parents involved in helping in nursery schools complained of feeling uncertain about what they should do. Parents may therefore lack confidence and this may be exacerbated by the rapidly changing nature of schools. Haigh (1987) has pointed out that in the past, "you just searched your memory and whatever happened to you all of those years ago was still happening to your sons and daughters, in the same classrooms, often with the same ageless teachers". The situation today however is rather different, with schools becoming distanced from the community and "run by strangers who live, no one knows where; who stay awhile and then move on, and whose loyalties are to profession and career rather to school and community". Schools are not, apparently, very good at explaining themselves to parents, leaving mothers and fathers feeling helpless and frustrated, and convinced that teachers do not want parents to become more involved. (Green & Sharp, 1975; Wilson and Herbert, 1978; Cyster et al, 1979; Johnson & Ransom, 1981)

Research also shows that where parents do express an interest in developing home-school relationships, they are interested in the welfare and progress of their own child and not in more general matters of policy. The Open University Sussex Survey of middle schools showed that generally parents did not want more power in curricula matters, but did want more information on the curriculum. (O.U., 1983) Johnson and Ransom's study of secondary school parents found that they generally welcomed opportunities to discuss their child's progress with teachers in school, but did not see attendance at school plays, fund
raising and social events as supporting their child's education and generally only did attend if their child was participating. Thus parents' perceptions of involvement tend to revolve around their own child and not around educational philosophies or issues. Thus, parents may not leap at the chance to become involved in activities which they do not see as being directly relevant to the progress of their child. The poor attendance of the newly instituted annual parents' meeting may be an indication of this tendency. (Reported in T.E.S., 5/6/87)

Parents and teachers may have generally differing perceptions of education and schools. (Cohen and Cohen, 1970; Tizard et al, 1983) In the latter of these studies, it was found that teachers and parents had very different ideas about the purposes of the nursery school, the former holding more academically oriented perceptions than the latter.

Parents' views of social mobility are often linked to their views on the role of education, and much literature links this concept to social class. Bott (1957) explained the differences in class mobility ideologies by saying that the middle classes regard society as hierarchical layers to be climbed, whereas the working classes break society into "us and them". Lane (1972) takes this further and links differences in perception of society to perceptions of education, "White collar workers tend to be secure and progressive and encourage broader views of society incorporating these features. Blue collar careers ... are uncertain and fluctuating, resulting in perceptions of society as an unstable and unpredictable place where investing effort in education in the hope of reaping long term rewards appears scarcely rational". This may however be a very simplistic means of explaining different perceptions of education, and Roberts has stated "Manual workers in Britain who identify with working class are just as likely as middle class adults to seek upward mobility for their children. Furthermore, they are equally aware of the role that education plays as a channel for ascent". (Roberts, 1980, p. 48) He maintains that class inequalities in education are a result of middle class interests rather than working class culture. The various
arguments about such class and education values are many and beyond the scope of this dissertation but it must not be forgotten that parents and teachers may have differing perceptions of the purpose of education and schools, and this may affect the development of school-home relationships.

Communication Difficulties

Communication, or lack of it, between schools and parents is a major area which may have some bearing on parental involvement. It has already been stated that many parents may not feel it appropriate for them to become involved in schools because they feel uncomfortable or because they feel that teachers do not want them to be involved. Perceptions and attitudes may vary greatly between parents and teachers, and teachers may feel that it is up to them to effect change in the attitudes of the parents. This gulf which exists has in some areas been blamed on a lack of adequate communication between schools and homes, in terms of a one way flow of inappropriate information. For example, Wilby (1979) states, "Whether it is corporal punishment or exam results, or school records, the assumption is that information must be withheld from the general populace because we are too stupid or too ignorant or too wicked to be entrusted with it". It may be seen as preserving the professionality of the teachers' role. Where schools do make an attempt to communicate to parents, they apparently do not make the information relevant to parents who are interested in what happens to their children in the classroom. According to Haigh (1987) headteachers are "all too likely to speak not so much about what their school is like but about her/his absolutely honest vision of what he or she believes it to be". "Educational evenings" may be just as uninformative when in the form of a lecture "delivered by an adviser or visiting expert whose knowledge of his subject is as extensive as his knowledge of the school and its children is minimal.

Not only is the content of communications inappropriate, but the style of communication is also highly relevant, particularly in the case of written documents, "A study of even the most mundane communication ... can tell you a great deal about the
type of relationships schools have with their parents". (O.U., 1983b) Bastiani (1978) studied the written communications that schools distributed to parents, and contrasted 4 models:

a) Basic Information Model - restricted to minimum of details about the school consistent with its efficient running. "In this model, the role of the parent in the educational process is very limited and peripheral. Parents should enable the school to do its job efficiently, in its own way and on its own terms".

b) Public Relations Model - tries to convey a positive image of the school and to persuade parents to value supporting the school.

c) Development Model - communications are concerned with the impact on children of entering the school, suggesting ways that any transition stress can be alleviated.

d) Parental Involvement Model - style implies open relationship with parents. Much more emphasis is given to educational matters, the schools' aims and methods, and parents are guided about how to help their children learn.

These various models imply varying types of relationships with parents which are reinforced by both the content and the style of the communications. In some ways communication between home and school "serve as much to reinforce distance between parents and teachers as they do to unite them in educational enterprise". (O.U., 1981a)

Apparently little store is set by the reciprocal nature of school-home communications. Schools seem to concentrate on information flowing from the school to the home in an attempt to bring about congruence in values and perceptions and give little scope to consulting parents with a view to changing themselves. Some authors feel that schools should be more responsive to the needs of the families, and not rely so heavily on trying to get pupils to respond to the expectations of the school. (Roberts, 1980; Ransom, 1981) "Good relationships with parents are established and maintained where teachers are good adult educationers undertaking a facilitative role rather than needing to be seen to hold all the knowledge and
expertise", (Torkington, 1986) in an attempt to avoid the "crushing" effect that professional expertise has often had, albeit unwittingly, on many parents' views of their own capabilities". (Pugh, 1984)

3.2.4 This section has outlined the present situation in schools regarding parental involvement in education. There appears to be a time lag between what is postulated in the literature as being good practice and what actually occurs in schools, and a number of underlying factors have been shown to have a bearing on this. Teacher attitudes to parents, which are greatly affected by apparently out of date research, and their protection of their professional role are very effective, as are parents beliefs that education is best left to the experts in maintaining the status quo in parental involvement. A true partnership in education between teacher and parent is still far from any normal practice in schools and a great deal of investment in terms of time and resources needs to be made before progress in this direction can be made. Teachers need to assess their own attitudes to parents, and parents need to be made to feel that they have a contribution to make to the educational process at all levels. This is obviously a gradual process and will take a great many years. The whole area is summed up by Wolfendale when she says:-

"Whether or not the fullest expression of partnership in education is realistic or feasible cannot, I feel, be actually determined at the present time. But the portents look promising for a dialogue between and amongst those who have a central responsibility that is founded on goodwill and that is rewarding for all involved." (Wolfendale, 1984)

3.3 PARENTAL INVOLVEMENT IN HEALTH EDUCATION

3.3.1 It is generally accepted that parental involvement in education can be beneficial, although differences in view on what form the involvement should take are apparent. However, in the sphere of Health Education there seems general agreement that
parental involvement is not only beneficial but vital. Tambini and Slavin go so far as to say that "without parental involvement, Health Education in schools is meaningless". (1986) Thomas (1987) also asks the question, "Is there any point in doling out health messages at school unless they are supported there (at home)?"

This situation has arisen because of the development of medical services and in the rising standard of living which means that responsibility now rests on an individual for his own health. Whereas in the past an individual may have had little control over the conditions in which he lived, and therefore over his own health, the Court Report on Child Health Services (1976, p. 152) states that, "Education for health has become of greater significance because individual behaviour has a greater effect on individual health than was apparent a generation ago. It is now within the power of an individual to improve his own life prospects and those of his children by his behaviour". The Court Report points out the importance of LIFESTYLE on individual health now, and confirms that the goal of health education must be to strengthen individual health behaviour from as early an age as possible.

In the past the "Medical Model" for Health Education (Fig. 3) was adopted in which it was felt that simply by providing accurate information on health topics the subjects would adopt more prudent health behaviour.

Fig. 3. Medical Model for Health Education Teaching

INFORMATION

KNOWLEDGE

ATTITUDES

BEHAVIOUR

BETTER HEALTH
This model assumes a direct cause and effect relationship between the various elements in the model, i.e. by supplying information, subjects will develop knowledge which will in turn influence their attitudes and these changes in attitude will cause modifications in their behaviour. The resulting modifications in behaviour will cause the subject to become healthier. This approach has been shown to be far too simplistic and in the majority of cases largely ineffective. (Levin, 1973) Guy (1976) has said that "where information regarding health is in conflict with attitudes, the chances are that the information will be ignored unless young people are given the opportunity to discuss and understand their attitude, "Many studies have shown that simply being aware of facts does not lead to healthy behaviour. (Graham, 1976) for example, found that "while many smokers accepted the link between smoking and ill health they did so only in abstract terms and did not integrate it into their personal conceptions of health and illness".

A more widely accepted model for Health Education is that of Becker and Maiman (1974) - the Health Belief Model (See Fig. 4)

This model implies that for an individual to take preventative health action the individual must:-

i) Perceive the illness as serious
ii) See himself as susceptible
iii) Feel that the benefits of a health action outweigh the disadvantages of taking that action

The importance of attitudes and values in health behaviour is therefore much more clearly stated and appears to be the necessary focal point if health education is to succeed. Research by Guy (1976), Silman (1979) and Cook (1983) has shown that amongst schoolchildren, there was strong evidence of a relationship between attitudes and behaviour and little evidence of a relationship between knowledge and behaviour in a number of health topics. James (1984) also found that knowledge by itself is a poor predictor of either positive or negative health behaviour.
Fig. 4. Health Belief Model, (Becker et al, 1977)

**DEMOGRAPHIC VARIABLES**
(age, sex, race, ethnicity, etc.)

**SOCIO-PSYCHOLOGICAL VARIABLES**
(Personality, social class, peer and reference group pressure, etc.)

| Perceived susceptibility to disease x | Perceived seriousness of disease x | Likelihood of taking recommended preventative health action |

Cues to action
e.g. Mass Media Campaign, advice from others;
reminder - postcard from physician or dentist; illness of family or friend; newspaper or magazine

3.3.2 Since attitudes of pupils are of primary importance in health education, the importance of the role of parents becomes apparent. Cook (1987, p. 122) states that attitudes "develop from the moment a child is born, (and) ... they develop initially from parents and relations and often reflect the attitudes of the community of which they are part". The attitudes of parents can have both a direct and indirect effect on the health of their children. When the Court Report (1976) stated that "Future improvements in the health of children will depend as much on the beliefs and behaviours of parents as on the services provided" it may have been referring to the direct effect in terms of use of health services, care provided and so on. However, indirect effects may occur through the transmission of various attitudes and beliefs in the socialisation process. Early "health education" for parents was concerned primarily with the direct effects parents had on their children, but currently, the indirect effects are becoming important and this is coinciding with a change in approach to parental involvement.
There are still, however, many ways in which parents can have a direct effect on children's health and this can never be ignored completely. Provision of food, clothing and maintenance of general living conditions are obvious examples and smoking mothers could be said to have a direct effect on the health of their children from conception, since mothers who smoke during pregnancy tend to give birth to smaller babies than non-smoking mothers. Charles and Kerr (1984) in their study of 200 young mothers with pre-school children in a northern town found that not only was the women's nutritional knowledge very hazy, but also that the food the women provided for their families depended not on health but on other factors like the desire to please the husband, and social pressures to make children conform, as in the giving of sweets as treats. A similar study by Graham (1985) showed that "what the family liked" was more important than health in provision of food. Since in those areas the child's health is being directly affected by the behaviour of the parents, health education can be seen still to have a role to play here in educating both pupils and parents. Bensley has said "... parents need to be educated so that they can reinforce at home what is taught in schools". (Bensley, 1984, p. 3)

However, the general attitudes and values held by parents, which surround the child from birth necessarily provide a focus for health education. Some research has shown that expressed attitudes of parents may be even more important than role behaviour in affecting the attitudes of children to health topics. (Nolte et al, 1983a; Nolte et al, 1983b) In the former of these studies 75% of smoking youths had smoking parents, and 47% of non-smoking youths had smoking parents, but nonsmoking youths were twice as likely to have parents who disapproved of their smoking than smoking youths, even if their parents smoked. Thus the "Don't do as I do, do as I tell you" approach is fundamentally important in any project which aims at improving health of pupils, as it implies that it is not strictly necessary to affect the behaviour of parents in order to bring about a supportive environment in the home.
A very general set of attitudes and values which some parents may hold, which will have a distinct effect on pupils and the possible effectiveness of health education is known as "Focus of control", or the amount of control an individual believes he or she has over his/her own health. This may be one aspect of a wider view of society in general. Cullen has stated that many people, especially those in the working classes, see that they have little choice in their own lives. This factor was recognised by the Court Report (1977) and it states that many parents "... assume that their child's life will be governed by innate ability and maturation, as though mental, physical and emotional development were things that simply happened up to a predetermined level by an automatic process" (p. 23).

A study by Pill and Stott (1982) of working class mothers showed that about 50% of the sample held fatalistic views on the aetiology of illness. They point out that "Theories of aetiology which regard the causes of illness as external to the individual do not encourage feelings of responsibility for illness..." (Pill and Stott, 1982, p. 45) Ironically, Helman (1982) connects the "introduction of free medical care to the entire population with the increased popularity of the germ theory of disease among lay people and the decline in acceptance of personal responsibility for illness", as results of studies in the United States where health care is not free contrast sharply, indicating a far greater moral responsibility for health held by individuals.

The effects that this focus of control can have on health behaviour are varied. Murray and Jarret (1985, p. 120) found that young people with an external focus of control were more likely to smoke and less likely to engage in preventative health activities. Although James (1984) found no definite relationship between Health Focus of control and health attitudes. It is evident, however, that parents who possess an external focus of control, are likely to affect the health of their children both directly and indirectly through the socialisation process. In Pill and Stott's survey, even those parents who exhibited the greatest awareness of the relevance of lifestyle still said that they stressed the germ theory when explaining illness to their children.
Thus from an early age, children may develop the same fatalistic attitude to health exhibited by their parents, thus reducing the effective possibilities of health education. Murray and Jarret (1985) point out that health education may therefore need to begin by overcoming feelings of resignation about health, and not merely concentrate on giving warnings.

The situation is therefore a highly complicated one. Pupils cannot be treated in isolation because of both the direct and indirect effects their parents have on them. Health education is unlikely to be greatly effective if it is transmitting a message about lifestyles which is at odds with the one surrounding the child at home. As Thomas (1987) points out "Unless you get parents involved, work on lifestyles and family relationships is ineffective". If schools want to be effective in helping pupils to adopt healthy lifestyles, then strategies must be found to involve parents. The level at which this participation occurs is a subject for discussion.

3.3.3 At a workshop on parental involvement in schools held at the Health Education Council - 1986, leaders of health education projects suggested that parental involvement should be seen on a continuum (Fig. 5).

Fig. 5. Continuum of Parent-Teacher Relationships

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It can again be seen that implicit in this continuum is the variation of the role of parents as client/receiver or partner/contributor. In some instances it may be deemed necessary to treat parents as receivers, providing them with necessary information on which to make informed decisions. An example of this is the practice of distributing information packs on cardio-vascular diseases to parent governors as part of the Heartbeat Wales project. (Smith, 1987) Many authors have written of the need to keep parents informed of what is happening in health education in schools. Bensley (1984) for example states that "if parents are informed about what is taught in health education they can assist their children in practising what they learn in schools". However, the dangers of assuming that providing information will cause changes in attitude have been pointed out, and so greater involvement is obviously necessary in the form of consultation and participation. (H.E.C., 1986) It may be the case that parents need the opportunity to examine their own attitudes to health through discussion and reflection in the same way that pupils need to, and that schools may gain greater insights into family life by allowing parents to do so. Graham (1985) has stated that health educators can only begin to understand the reasons for health changes within a family when they realise "... the importance of examining family life as it feels to those who live in families and not as it looks to those on the outside". (p. 218) However, despite this, according to Gibson (1987) "The notion of parents as active participants in school programmes of health education has not been generally recognised except perhaps in terms of the more diffuse role as agents in primary socialisation". Taken to its extreme, the situation is reached whereby parents are consulted, and on their decision teachers act. An example of this is reported by Kirkman (1987). Parents on a curriculum committee complained about a film on glue sniffing which was used in the school and it was consequently dropped. It can be seen that a two way flow of information and ideas between teachers and parents is therefore possible, which can affect both attitudes and content of curriculum.
Another area where schools can affect parents is via the pupil as an intermediary to reach the parents and possibly have some effect on their attitude. This phenomenon is reported more frequently on surveys on smoking behaviour which have shown that pupils' role in schools can have a "knock" on effect at home. Andrews and Hearn (1984) surveyed pupils in the 3rd grade, some of whom had taken part in an experimental school health programme and some of whom had not. They found that 62% of the parents of the group who had participated in the health programme stopped smoking, decreased the amount or ceased smoking in front of their child compared with only 47% of the control group. More significantly perhaps 77% of the experimental group parents attributed their change directly or in part to information their child had brought home from school. Caramania et al (1974) also contend that as a pupils' attitudes against smoking increased, they tended to have a positive influence on those around them, including parents, to either reduce or cease smoking. More general influences have also been found. Baronowski (1978) examined the role of the adolescent on adult decision making and found that they had reasonable influence on parents' routine, use of leisure time, choice of t.v. shows and meal planning. Wilcox et al (1981) in their evaluation of the "My Body" project in Sheffield, found an interaction between children's participation in the project and parent behaviour. Hearne and Andrews (1985) found that "... while school and home interaction can be a significant factor in changes in the child, the school and child interaction can be a significant factor in changes in family health practices". Nader et al (1982) broadens the concept to involve attitudes too. They say, "In considering the adolescent as a family change agent or gatekeeper for health information, the reciprocal influences of the child on the parents' behaviour and attitudes is crucial". This reciprocity of effect may be of vital importance in health education programmes.

The area of involving parents in health education is therefore a complex one with many facets. There is a triangular relationship between school, pupil and parent, with a 2 way flow of information, attitudes, beliefs and so on between each of the subjects.
Fig. 6. Triangular Relationship of Pupils, Parents and School

The school can have direct and indirect effects on both pupil and parent, and in theory parents and pupils can affect what goes on in school through consultation. This triangular interaction can, at best, have a mutually reinforcing effect.

3.4 PARENTS AND HEALTH BASED PHYSICAL EDUCATION

3.4.1 In a previous chapter, it was shown that health based physical education is concerned with encouraging pupils to adopt active and healthy lifestyles. Lifestyle education of this sort must, if it is to be fully effective, involve parents. Armstrong (1987, p. 23) states that "Health and fitness programmes designed to change the lifestyles of children, their parents and their teachers must be initiated. Ideally such a project should involve collaboration with ... parents". Attitudes to physical activity and exercise is one aspect of the total attitudes to health in which parents can have a crucial role to play, in acting in models of behaviour, and also in the development of their children's attitudes.

In "School, Sport and Leisure", Hardy (p. 126) has stated that, "In a general sense the influence of the family can range from the function of movements in the process of socialisation into physical activity to the more specific induction of children into particular activities by interested family members".
Orlick (1972) in his analysis of early sports participation found that "parents of children who elected to participate in sport were found to provide both a model of participation and positive reinforcement for sports behaviour". (Hardy, 1978, p. 125) He also found that any "average child" placed in a very positive family sports environment will almost surely be an early participant in sports, regardless of other factors. Whether they continue to participate will depend on a variety of factors however, including the amount of positive/negative reinforcement from the sports environment.

In a very broad sense, parents can be seen to affect pupil participation through social class. Emmett (1971) found that only ¼ of children in the lower socio-economic classes had a keen interest in sports compared with nearly ½ of those in high social classes and similar results have been found with adults. Hardy and Simpson (1978) in their study of regular users of a sports and community centre, found that 2 separate groups existed, one which used the centre for sport, and one which used the centre for community reasons. The "sports" group were more likely to have non-manual occupations and included many professionals, however community members were more likely to have manual occupations. The study showed that the two groups had different attitudes to the centre and what they expected to get out of it. The sports members used the centre to take part in activities they enjoyed and were willing to pay a lot of money and travel long distances to use the facilities. The community members looked upon the centre as a place for meeting and talking with friends in a comfortable, cheap and convenient manner. Further evidence can be found in the Sports Council Survey of Indoor Sports Centres. When users of the Sports centres were classified into socio-economic groups by occupation, it was found that 68% had nonmanual occupations, 27% were skilled manual workers, and only 5% were from semi or unskilled groups. These studies did not establish a direct cause-effect relationship between social class and attitudes towards the use of the facilities. It is evident that other factors such as cost and income may be important. However, the evidence would suggest that children from middle class
homes may be exposed to different attitudes towards physical activity and use of facilities to those from working class homes and this will no doubt have an effect on their responses to attempts to promote activity at school.

It would seem appropriate to assume that attitudes towards participation in physical activity may be seen as one aspect of attitudes towards health behaviour in general. There is however evidence to show that sport and physical activities are essentially regarded as social activities, that the main attraction for many people is the friendship and companionship in them. (Sports Council, 1968) Research of women's exercise classes in the United States show that women exhibited multiple motives for participation, an interest in physical fitness and health being only one facet. (Kenen, 1987) A concern with self image, sexual attractiveness and belonging to a group were found to be important motives for participation and so it would seem inappropriate to assume that parents who do encourage their children to take part in physical activities do so for physical health reasons. Parents may have very different reasons for encouraging participation which may not automatically reinforce any attempts to promote active lifestyles at school.

3.4.2 Despite the apparent importance of involving parents in health based physical education programmes, there is a dearth of literature on the subject, perhaps due to its recent rise to prominence. Although those who promote a health focus are agreed that involving parents is an important aspect, the area is one which requires investigation and evaluation and a major change of approach in schools. Traditionally, parental involvement in physical education has been confined to a mainly "school centred" approach (Torkington, 1986) - helping in extra curricular areas, transporting teams, spectating or perhaps refereeing. The parents of the majority of children who do not participate in after school activities may have little or no involvement beyond parents' evenings (where P.E. staff may be the last on the priority list of teachers to be seen in a very short time), or writing excuse notes. Lack of adequate communication may even have lead to the situation where parents have little idea about
what their children's P.E. lessons are all about - they may assume that they are the same as when they were at school and have very different perceptions of the purpose of physical education to teachers. This situation was clearly demonstrated by the Panorama programme recently screened (B.B.C., 1987), where teachers and parents had very different ideas about the purposes of extra-curricular activities and the role of competitive sports in particular. The programme demonstrated clearly how lack of adequate communication had ultimately lead to very negative relationships between parents and teachers, although both bodies thought they had the best interests of the children at heart.

It is clear then, that if the focus of physical education is to change and if parents are to be encouraged to assume a supportive role, then communication must occur which allows parents and teachers to share or at least be aware of each others' perspectives. Teachers adopting a Health Based Physical Education Programme must therefore be prepared to explain clearly their motives in terms of proposed benefits to each individual child, to parents if they wish to gain the cooperation of those parents. As the literature shows, they must also be prepared to take into account the attitudes of those parents, through consultation, and consider carefully the need to accomodate those attitudes in planning. The need to involve parents in physical education has never been more crucial than presently, and although much can be learnt from teachers' experiences in other areas of the curriculum, Physical Education itself requires investigation. Chapter Five outlines an attempt to involve parents in a Health Based Physical Education Project designed to provide active and healthy lifestyles and to investigate its effectiveness.
CHAPTER FOUR

THE USE OF ACTION RESEARCH IN EDUCATION

4.1 INTRODUCTION
Research in education has been widely criticised over the years, particularly by teachers who often find data provided by traditional research methods irrelevant and inappropriate to their day to day functions. In recent years an alternative method of researching in education has been proposed by various sources which allows participants to research their own teaching and this is known generally as "Action Research".

The following chapter outlines the historical development of Action Research in education and attempts to show why it is frequently regarded as an acceptable alternative to traditional research. It also describes the various forms of action research as they now exist in education and pinpoints some of the problems that teachers who engage in it may encounter.

4.2 WHAT IS ACTION RESEARCH?
4.2.1 Since the 1940s, a form of research has grown in stature and usage called ACTION RESEARCH. This type of research has been applied in education, although it may have been referred to as Classroom Research (Hopkins, 1985; Nixon, 1981), Practitioner Research (Bell), Research by Self Monitoring Teachers (Hull et al, 1985), Classroom Enquiry (Rowland, 1984); The Teacher as Researcher (Stenhouse, 1975) or Research Based Teaching (Almond, 1985).

Although research exists in these various forms, they are dialects of the same language of action research, all based on the same fundamental principles. Stenhouse has stated that "the purpose of any curriculum change, any curriculum research or curriculum development is the enhancement of the aim of teaching, of understanding espoused as performance". (Stenhouse, 1975) Hopkins' definition of "classroom research" follows similar lines. He says it is "an act undertaken by teachers either to improve their own or a colleague's teaching or to test the assumptions of educational theory in practice". (Hopkins, 1985, p. 1)
Hopkins' definition would not satisfy many other proponents of action research as it lacks the ingredients of discipline and reflection. Kemmis adds more detail to the definition when he says that action research is ... "a form of self reflective enquiry undertaken by participants in social (including educational) situations in order to improve the rationality and justice of:

1) Their own social or educational practices
2) Their understanding of these practices, and
3) The situations in which they are carried out"
(Kemmis, 1983)

Elliott (1981) also sees action research as a means of improving teacher pupil discourse.

Ebbut introduces discipline into the description. He states that action research in education is ... "about the systematic study of attempts to improve educational practice by groups of participants by means of their own practical action and by means of their own reflection on the effects of these actions". (Elliott, 1983) He also points out that if it is to be considered valid, the research must be set down on paper and made available for critique and discussion by colleagues.

Many teachers would rightly say that they are constantly involved in action research, as they are continually reflecting upon their own practice and adapting their actions to fit circumstances and to improve that practice. However, a more detailed definition is required for the purposes of this study and so throughout, action research in education is used to describe a systematic enquiry made by practitioners in education, which aims to improve their own or colleagues practice, by taking a reflective stance towards their own actions. This systematic enquiry must be well documented in a form which is available to colleagues and open to discussion and debate.
4.2.2 The Roots of Action Research in Education

The term action research first became prominent after the Second World War when a number of social problems which became apparent during and after the War became the subject of attention of social scientists. Problems like prejudice, authoritarianism, democracy, minority groups were seen by social scientists not merely as topics to study and understand, but as subjects requiring action. Karl Lewin was a social scientist who was particularly involved in the plight of minority groups, especially the Jews and Black population of the U.S. In 1944 he used the words action research to describe research which would:

... "Marry the experimental approach of social science with programmes of social action in response to major social problems of the day". (Kemmis, 1983, p. 13)

At this early stage, the spiral nature of action research was evident. As Lewin stated in 1946, action research ...

... "consisted in analysis, fact finding, conceptualisation, planning, execution, more fact finding or evaluation, and then a repitition of this whole circle of activities". (Lewin, 1946)

Also evident was the characteristic of the high degree of participation of the subjects of research in the process of research. In "Group Decision and Social Change", Lewin (1982) argues how important it is for subjects to be involved in discussion and interaction when trying to change social behaviour, and this underlines one of the major principles of action research.

Education almost immediately took on board action research especially in the U.S., where concern was being expressed about how little effect traditional educational research was having on the practice of teachers. Corey, in 1949, wrote in favour of action research in education.

"Reading fundamental research studies conducted by someone else and describing boys and girls in general undoubtedly
has some influence upon the practices of teachers. Much greater influence will be exercised however, by those data a teacher himself brings together and interprets in connection with his attempts to solve an instructional problem about which he is seriously concerned." (Corey, 1949, p. 55)

Corey continued to promote the use of action research for the Horace Mann Lincoln Institute in the U.S., but during the late 1950s, its use in education declined.

It re-emerged in the 1960s/1970s in Great Britain, most notably through the work of Lawrence Stenhouse and his associates on the Humanities Curriculum Project. Stenhouse's belief in the teacher as an "extended professional" (Hoyle, quoted by Stenhouse, 1975, p. 143) and his philosophical approach to the nature of knowledge (Stenhouse, 1979), led him to set great store by "research based teaching". Stenhouse was director of the Humanities Curriculum Project which took place from 1968-1972. It was an action research project designed to improve the practice of helping less able adolescents "to develop an understanding of social situations and human acts and of the controversial value issues which they raise". (H.C.P., 1970)

Teachers who used the project in the classroom were central in the evaluation process, as were the pupils involved, thus reflecting Lewin's principles. Teachers were expected to study themselves in the classroom by means of audio and video tape, and to reflect on their actions in an attempt to improve practice. The project utilised a teaching strategy "designed to emancipate the individual pupil from the control of authoritative knowledge" (Hopkins, p. 3) by placing the teacher in a neutral role. Stenhouse believed that teachers needed to be similarly emancipated from the role of "consumer" of research in education undertaken by outsiders.

Throughout the 1970s and early 1980s Stenhouse continued to argue for teachers as researchers and his cause was further taken up by his coworkers on the Humanities Curriculum Project.
John Elliot and Dave Ebbut have, since Stenhouse's death, continued to work on similar lines, most notably on the "Ford Teaching Project" (1973-75) and the Teacher Pupil Interaction and Quality of Learning Project (T.I.Q.L., 1981). On both of these projects the teacher and researcher work together in an effort to improve practice, however in the latter project there was a move from "thinking about my classroom to thinking, with others, about my classroom within the institutional context of the school". (Hustler et al, 1986, p. 4) In other words, the unit of research moved away from the individual teacher or classroom to the institution of the school.

Although action research has not become as widely adopted as Stenhouse might have liked a growing amount of literature is available which strongly outlines the case for teachers to act at researchers.

4.3 WHY THE "TEACHER AS RESEARCHER"?

4.3.1 There are two main issues in this section. Firstly the growth of research in education generally, and secondly, the necessity for teachers to do research as opposed to "outsiders".

Since the 1960s there has been a growing market for educational research and this can be associated with a number of factors, both from within education and from outside. During the 1960s and 1970s those within education became much more accountable to those outside. (James and McCormick, 1983) Three major developments were responsible for this:

i) Massive increases in public spending on education which needed justifying
ii) Loss of public confidence in education for failing to respond to the needs of the economy quickly enough
iii) Supposed decline in educational standards as published in the "Black Papers". (Cox and Dyson, 1969, 1970)

The "Great Debate" followed James Callaghan's speech which informed teachers that their autonomy was under threat. He
said that teachers must be able to "satisfy parents and industry that what (they) are doing meets their requirements and the needs of their children". (Caltaghan, 1976) The debate that followed brought about a subtle change in attitudes to education. The curriculum was no longer to be totally in the control of teachers but would be exposed to external forces and be expected to serve the needs of the economic society. Thus teachers and educational practices became accountable to outsiders, who would demand evidence for their justification. Thus the growth of accountability led to greater needs for evaluative techniques in the form of educational research.

The need for research in education was therefore clear. The need for teachers to do research themselves has become more pressing during the 1970s and 1980s, largely as the result of the discovery of a number of problems associated with traditional or fundamental research, and these are outlined below.

4.3.2 Problems with Fundamental or Traditional Research in Education

Traditionally, teachers have been seen as the "consumers" of educational research and not the producers. (Boyall, 1983; Nixon, 1981a) It has usually been the case that external researchers produce scientific knowledge of educational principles which teachers/practitioners must then apply to their own situations in order to achieve good practice. This process of outsiders researching teaching situations embodies many problems and leads to what Ebbut describes as a "performance gap" between "espoused theory and theory in action". (Ebbut, 1982) These shortcomings of traditional research methods are outlined below and may be responsible for the failure of traditional research to seriously affect education.

Inappropriateness of psycho-statistical paradigms

Much scientific research into education has been based on the psychostatistical paradigm, with its heavy emphasis on random sampling procedures, statistical analysis and the formulation of generalisations which are applicable beyond the sample group. (Fienberg, 1977) A number of writers have criticised this model of research in education, most notably Carey (1949),
Stenhouse (1980), Hopkins (1985). Problems of the application of this model can be broadly defined as follows:

a) This type of research is based on careful random sampling procedures which are difficult to replicate in schools, because for example, a random sample of schools, pupils and teachers would have to be drawn separately. (Hopkins, 1985, p. 28)

b) Generalisations drawn from results of psycho-statistical research are thought to be applicable to situations beyond the limits of those particularly studied. In other words, teachers are seen as knowledge appliers, based on the assumption that "generalisations, typically derived from the study of groups ... can be formulated as general rules which prescribe good practice". (Ebbut and Elliot, 1985, p. 1) A good teacher is seen as one who applies general rules skilfully. The problem with this assumption has been clearly stated by Stenhouse (1980, p. 6) who points out that a good teacher does not act on generalisations, but works "like a gardener ... differentialising the treatment of each subject and each learner as the gardener does each flower bed and each plant". This knowledge applying mode of teaching makes no allowance for teachers to make professional judgements based on experience or intuition, "substituting for it inferior and dubious generalisations". (Skillbeck, 1983, p. 14)

c) Stenhouse also raises objections to the use of "control" groups in teaching. He feels that they are totally inappropriate in teaching situations. It would be impossible to divide a class into two and teach one group in one way and the other group in a different way to provide a control situation.

d) Rigorous research procedures involved in this approach mean that it is concerned mainly with that which is easily measurable. It is therefore preoccupied with the use of behavioural objectives, which can be inappropriate in situations where educational outcomes are dependent on "meaningful action" rather than skill acquisition or role learning. (Hopkins, 1985, p. 28-29) It would be difficult to apply this model of research to many areas of Personal and Social Education, including Health Education, where pupils are encouraged to make personal choices based on their own interpretation and assimilation of material.
Loss of Teacher Independence
The traditional mode of education research breeds dependence of teachers on external researchers. (Almond, 1987a) Researchers are seen as the experts, and therefore have an active role, while teachers receive the knowledge from these experts, thus fulfilling a passive role. This dependence is interwoven with problems in the interpretation of "knowledge".

The Philosophy of Knowledge
If practitioners are dependent upon external scientists to provide them with knowledge, then according to Stenhouse they are subscribing to a false view of knowledge. (Stenhouse, 1979) Stenhouse sees knowledge as a dynamic entity and maintains that to present knowledge as authoritative is to teach "an unacceptable proposition about the nature of knowledge: that its warrant is to be found in the appeal to the expertise of persons rather than in the appeal to rational justification in the light of evidence" (p. 5). He believes that since knowledge is achieved through research, "knowledge of the kind we have to offer is falsified when it is presented as the results of research detached from any understanding of the research process which is a warrant for those results" (p. 5). Thus Stenhouse believes that teachers must be emancipated from their dependence on external "experts" if they are to be able to act professionally. They must be liberated from their passive side by adopting a research stance in their teaching. He regards teaching as an "art" rather than merely the mastery of techniques and according to Ebbut and Elliot (1985, p. 8) liberation ... "gives teachers greater influence over what is to count as valid educational knowledge".

Selection of Problems for Research
Teachers often criticise external research because they feel that problems selected for study are inappropriate or irrelevant. (Bolster, 1983) This may be due to the difference in perceptions teachers and researchers employ when viewing the teaching process. According to Hopkins (1985, p. 26) "Most researchers when they enter classrooms, bring with them perspectives derived
from academic disciplines ... The teacher derives his or her knowledge of teaching from continual participation in situational decision making and the classroom culture in which they and their pupils live out their daily lives". Again, therefore, the need for teacher involvement in research is indicated.

The Language of Traditional Research
The take up of outsiders research by teachers is poor (Bolster, 1983) and a contributing factor is the language, concepts and methodologies used in research reports. Boyall (1983) reports that these reports are often full of jargon, statistics and written in a fashion which is not accessible to teachers. Teachers are therefore alienated from material which is supposed to help to improve their practice. Stenhouse recognises this problem and argues that teachers and researchers must have a shared vocabulary. (Stenhouse, 1979, p. 21)

Lack of Teacher Involvement
Another reason for lack of take up in research is the lack of teacher involvement and commitment in the research. Corey's work is appropriate in this area. Those who argue for an alternative to traditional research give teacher motivation as an important factor to be considered. Similar problems have been experienced in the area of curriculum development. Maclure and Becker (1974) have pointed out the problems of lack of teacher involvement in curriculum development in the U.S.A. and Stenhouse (1975) has pinpointed the work of the schools council as being vital in involving teachers in the process (p. 201).

An Alternative Approach: Teacher as Researcher
It is apparent that an alternative approach to traditional research in education is required and over the last twenty years the case for teacher research has evolved. Some exponents of teacher research see it as overcoming many of the problems posed by traditional research in education, while in some cases it is seen as part of the normal professional duties of a good teacher to adopt a research stance to their teaching. (Ebbut and Elliot, 1985; Stenhouse, 1975, 1979)
It is obvious that if a teacher is responsible for research in education, then he/she is likely to look at areas which are meaningful to him/her, to use language, concepts and methodologies which are easily understood by teachers and be more highly motivated to participate fully and utilise research findings, (Corey, 1949; Lewin, 1946; Hopkins, 1985) thus overcoming the problems which may be seen as those caused by research being carried out by "outsiders". Drawbacks brought about by the mode of research can be overcome by teachers adopting a research stance, and utilising action research techniques.

The Teacher as an Extended Professional

Stenhouse argues that teachers are central in education, and development in education must come through teacher development. (Stenhouse, 1975) He sees this development occurring through teachers adopting the role of the "extended professional". (Hoyle, 1972) He sees the primary characteristics of the extended professional to be:

i) Commitment to systematic questioning of one's own teaching as a basis for development

ii) The commitment and the skills to study one's own teaching

iii) The concern to question and to test theory in practice by the use of those skills

iv) A readiness to allow other teachers to observe one's work, and to discuss it with them in an open and honest basis.

"In short, the outstanding characteristics of the extended professional is a capacity for autonomous professional self development through systematic self study, through the study of the work of other teachers and through the testing of ideas by classroom research procedures". (Stenhouse, 1975, p. 144)

By adopting this role, problems of dependence on "experts" and misrepresentation of "knowledge" can be overcome, since teachers are "generating" rather than applying knowledge. (Ebbut and Elliot, 1985, p. 7) Stenhouse therefore encouraged teachers to regard teaching as an art, rather than the mastery of skills, which needed constantly developing, for ... "the claim to mastery merely signals the abandoning of aspiration". (Stenhouse, 1979, p. 17) Education is to be regarded as a subject
for research by teachers who use action research to constantly develop their professional insights and judgements. This notion of the extended professional teacher was central in the Humanities Project and later the Ford Teaching Project, both of which could be described as action research projects where teacher and researcher work together as partners.

**The use of Action Research techniques in overcoming problems of Teachers**

The objections stated earlier to the psycho-statistical paradigm have to a large extent been overcome by using action research techniques. Action research deals with "cases" rather than samples and leads to reflective thinking about specific situations rather than generalisations which are to be applied widely.

4.4.1 **THE DIALECTS OF EDUCATIONAL ACTION RESEARCH LANGUAGE**

Educational action research exists under many guises, although in its varied forms, it is generally aiming to help teachers understand the teaching and learning processes, and to improve their own practice.

The following section outlined some of the more commonly found types of action research.

**The Teacher as Researcher**

The "Teacher as Researcher" movement stems from the works of Stenhouse in the 1960s and 1970s. Stenhouse's objections to the "Objectives Model" of curriculum development led him to develop an alternative "Research Model", which was based on the idea that the curriculum be seen as "... a particular form or specification about the practice of teaching and not as a package of materials or a syllabus of ground to be covered. ... It invites critical testing rather than acceptance". (Stenhouse, 1975, p. 142) He goes on to say that the curriculum should be viewed as a means of "studying the problems and effects of implementing any defined line of teaching". (op. cit.) In order to implement this model, it is vital that we see the role of "teacher as Researcher", testing out curricular proposals
in the classroom, and assessing them accordingly. The central role of the teacher is obvious in Stenhouse's Research Model, when he says, "... all well founded curriculum research and development ... is based on the study of classrooms. It thus rests on the work of teachers". (op. cit.) Stenhouse believed that the only way to bring about improvement in teaching, and to evaluate curricular proposals was for teachers to become researchers in their own classrooms.

Research Based Teaching
The idea of teachers as researchers was taken up in many areas, and one of the concepts to emerge was "Research Based Teaching". Almond (1983) has used this term to refer to the process of submitting a curricular idea to critical testing through teaching. He states that through research based teaching, "the teacher is progressively deepening his understanding of his own work and helping to form practical judgements". (op. cit.) It would appear that "teacher as researcher" and "research based teaching" can be used interchangeably. It would appear however that Stenhouse expresses an "ideal" in that he urges all teachers to become researchers, as his Research Model can only exist on that condition. Almond, however, sees research based teaching in a less ethereal way, as something which teachers may only be able to do over short periods each year because of the "containable time" element. (Almond, 1982)

Self Monitoring Teacher
Whereas Stenhouse and Almond both place a high level of importance on teachers exposing their documented research findings to critique from colleagues, Hopkins sees self monitoring by teachers as "an investigation of one's own practice in private". (Hopkins, 1985) Hull et al apparently see the concept of self monitoring by teachers as a means of overcoming the problem of teachers being "put off" by strict research methodological procedures. They state that in self monitoring:-
"a teacher uses some of the data gathering techniques developed by researchers to record instances of their own practice as a basis for reflection. The self monitoring teacher makes no claims to be methodologically reflexive...
Self monitoring is essentially a privatised encounter between a practitioner and practice". (Hull et al, 1983)

They see self monitoring as neither necessarily systematic nor open to critique. The problem with this view is that because of its apparent looseness, it may lose its validity. Hopkins states that:

"... Criteria such as validity, reliability and generalisability are necessary if teacher-researchers are to escape the sentimental anecdote that often replaces statistical research designs in education and gives teacher research such a bad name." (Hopkins, 1985, p. 120)

The lack of rigour which is sometimes associated with self monitoring may create some doubt about whether it can actually be regarded as a form of "research" which is recognised outside the classroom in which it is done. However, it is a form of enquiry which teachers undertake in an attempt to enhance their own understanding and therefore deserves inclusion here. There is no doubt that it can be approached systematically and reflectively.

Classroom Research

Hopkins uses the term "classroom research" to define "... an act undertaken by teachers either to improve their own or a colleague's teaching or to test the assumptions of educational theory in practice". (Hopkins, 1985, p. 11) It is also a term favoured by Jon Nixon (1980, 1981) and appears to cover any research which is carried out in the classroom. Nixon states that no single model for classroom research exists, but the approach used would depend on:

a) The origins of the research, i.e. from the teacher or an external body
b) The skills and inclinations of the teacher
c) The possibility of collaboration
   (Nixon, 1980)

Nixon places great importance on the role of outside researchers in helping teachers to embark on classroom research. He feels that while teachers need to go on learning throughout their
careers, and must be given the chance to define their own problems and explore them at their own pace...

... "alone the teaching profession can provide the will, but only with the help of others can it hope to provide the wherewithall for radical change." (Nixon, 1981b, p. 12)

He urges the research community to see itself as a servicing agency, working alongside teachers in the classroom. He, like Stenhouse sees classroom research as part of a teacher's professional duty ... "for it makes explicit the teaching acts: it informs them and enables the practitioner to understand the context within which they are embedded". (op. cit., p. 11)

Classroom research seems then to be a fairly loose term, like self monitoring, to cover a wide range of approaches to research in the classroom without a rigorously defined model which demands adherence.

**Classroom Enquiry**

Classroom enquiry is another term which is used by some authors to denote an approach which is not based on rigid research procedures. Armstrong uses the term as an alternative to "research", which he feels is often inappropriate in education because "it has acquired too narrow a connotation especially in regard to criteria for rigour, evidence and validity". (Armstrong, 1982) He prefers "enquiry" which is "grounded in the experience of teaching and in particular in that practice of sustained observation which is inseparable from good teaching". A similar approach is adopted by Stephen Rowland who has worked and written at length on "Classroom Enquiry". (See for example Rowland, 1984a) He too uses "enquiry" as an alternative term to research "because it differs from normal academic research in several fundamental respects". (Rowland, 1984a, p. 52-58)

Rowland's concept of Classroom Enquiry differs from many of the other terms described here, because it focuses on children's learning processes rather than the teaching process. He says, "children's work is worth taking seriously, not merely as
reflecting the fits and starts towards some ultimate goal of adulthood, but as a significant expression and contribution to understanding in its own right". (1984b) Rowland feels that observation and interpretation of children's behaviour is essentially subjective, in that different teachers may perceive the same action differently, and place different interpretations on it. He therefore feels that "research" is an unsuitable term to use, as it implies the use of objective research procedures. He prefers the validity of teachers enquiry to be found in sharing reflective analysis with others, inviting "... the expression of contrary viewpoints in an atmosphere that is secure enough for individuals to reason with and reject each others ideas". (Rowland, 1984a, p. 54)

It can be seen then that these terms are used to describe similar processes. They differ in small areas, generally relating to the amount of academically defined research rigour which is implicit in them, although Rowland's Classroom Enquiry has a different point of focus. Self monitoring implies a private study, "Classroom Enquiry" necessitates reflection and collaboration with other teachers and a high degree of emphasis is placed on this in Research Based Teaching.

The question must be posed as to whether all of these processes can be accepted as "research". The problem would appear to be one of a) relevance and b) attractiveness. If the terms are embroiled in highly complex and time consuming research procedures, then they are likely to be unattractive to teachers whose time is already at a premium. Certainly, if research is to become an integral part of teaching, it is unlikely that time will be available for such work. Some authors appear to see many educational research procedures as irrelevant to the focus of their study. Rowlands, describing the use of objective research instruments says, "such attempts to gain understanding again reflect a view that knowledge about the world - over knowledge about the children as well as their knowledge - can be mechanically broken down, or reduced, into bits without regard to the subjective experience of the observer or the observed". (Rowlands, 1984a, p. 53)
It is difficult to see where to draw the line between non-research/research and to decide who has to be satisfied about the reliability and validity of any work done. It is tempting to state that any investigative work carried out by a teacher in a classroom which helps him/her to understand better the teaching/learning processes and to improve his/her practice must be valuable. However, 2 major factors emerge as being crucial here. The first is whether teachers should work alone, with colleagues, with a collaborator or as part of a project team in order to best improve practice. Secondly and probably linked to the first issue, is the question of how "strong" or "weak" the action research undertaken is.

In dealing with the first issue, it is important to ask of the individual teacher working in isolation, "Who is going to decide whether or not his/her practices have improved?" It would be very easy for that teacher to bring to his/her reflections prejudices or a value framework which unwittingly affects his/her judgements. For this reason, the opening up of practices, findings and interpretations to members of a group would seem vital. In describing both "internal" and "external" validity, Ebbut and Elliot (1985) gave a list of criteria which it would appear, can only be achieved by presenting the whole research process to others for perusal. For example, who can judge if the researcher attempts ... "to test his/her own preconceptions and emerging conceptions of the situation against the insights others have developed in similar circumstances ..." other than an outsider reading the research report? (Ebbut and Elliot, 1985, p. 11) Self monitoring which does not involve anyone outside the classroom would appear to lack validity outside that teacher's mind. A teacher can work as part of a group where all have equal status, e.g. a group of teachers working on the same lines, with an outside collaborator who may be an expert but not a teacher, or as part of a larger unit, like a national project. All may in themselves prove to be problematic. For example, a teacher who is part of a national project may feel "removed from the hub of things" and not a part of the dynamic force. Working with a collaborator may throw up problems of unequal status leading to poor working relationships. However, it
would appear crucial that outsiders are involved in some way to provide validity to the research.

The second issue relates to the depth of understanding involved in the research. Some action research projects could be described as "weak" in that they deal with issues at a very superficial level, perhaps at the level of pupil teacher interaction, while others are concerned with more fundamental underlying principles and so could be described as "strong". For instance, a P.E. teacher may embark on an action research project which attempts to assess the effectiveness of various activities in a short specific course of "Health Related Fitness", because he/she feels it should be a part of the physical education programme. He/she, as a result of his/her reflections, may adapt the content of the lessons and her teaching style to ensure that all pupils in the class learned through experience the various aspects of fitness, learned how to monitor their pulse rates while exercising, experienced aerobic activity for at least 20 minutes each session and so on. If at the end of the course, the teacher judged that the pupils' understood the concepts involved and had raised their level of fitness over the duration of the course, he/she may assess the course as being successful. This would be a "weak" action research project, as the teacher would not necessarily have increased his/her understanding of the fundamental principles involved in the teaching of health based work, and expressed these principles in her/his teaching. To do so, the teacher would need to take into account pupil perceptions of the lessons, to assess whether the experiences had been enjoyable for the pupils, whether pupils felt that they had been able to succeed and that their opinions were valid and so on.

No doubt, "weak" action research projects are of value, especially in getting teachers to think about their practices and perhaps act as stepping stones on the way to "stronger" work. Once again, the contribution of others in helping the researcher to broaden their outlook and deepen their understanding is crucial.
It would appear then that as Hopkins (1985, p. 120) says, "Research, enquiry, and self monitoring are all aspects of a similar activity because they ALL REQUIRE SYSTEMATIC, SELF CONSCIOUS AND RIGOROUS REFLECTION TO BE OF ANY VALUE" (My capitals). Added to this is the need that they all be opened up for critique by colleagues and outsiders, in order to enhance validity and strength.

4.5 MODELS OF ACTION RESEARCH

Over the years, the underlying theory to action research has developed from comparatively loose descriptions of how teachers carry out research, to very elaborate prescriptions of how teachers should carry out research. For example, in 1957, Taba and Noel wrote:

"When teachers start with classroom problems as they see them, these steps are roughly as follows:--
1. Identifying problems
2. Analysing problems and determining some pertinent causal factors
3. Formulating tentative ideas about the crucial factors
4. Gathering and interpreting data to sharpen these ideas and to develop action hypotheses
5. Formulating action
6. Evaluating the results of action."
(Taba and Noel, 1957)

Compare this with Kemmis' diagrammatic model for action research (Fig. 7). Kemmis' model is based on the Lewinian principle of action research, which is based on a spiral process. Elliot, in developing his "Framework for Self Evaluation" for teachers taking part in the T.I.Q.L. project (Elliot, 1981) adapted this model as he felt that the "General Idea" should be allowed to shift, rather than be fixed in advance, and that "Reconnaissance should involve analysis as well as fact finding and should constantly recur at the spiral of activities rather than occur only at the beginning". He also felt that "implementation" appeared in the model to be straightforward, and that "one should not proceed to evaluate the effects of an action until one has monitored the extent to which it has been implemented".
What is happening now
General Idea
Reconnaissance

FIELD
OF
ACTION

GENERAL PLAN

Discussing
Negotiating
Exploring opportunities
Assessing possibilities
Examining constraints

How can I monitor the effects of my action?

FIRST ACTION
STEP

MONITORING

EVALUATION

REVISED GENERAL PLAN

SECOND ACTION
STEP

MONITORING

EVALUATION

Fig. 7
Kemmis's Action Research Spiral
(Kemmis, 1982)
Although Elliot may be wrong in the 2nd of these criticisms (Elliot, 1983), he adapted the model to that shown in Fig. 8.

Ebbut (1983) has criticised both of these models and put forward an alternative (see Fig. 9). He sees two major problems with Kemmis' and Elliot's framework. The first being that there is no inherent dynamic within education action research to keep the spiral process going. He feels that Lewin's spiral may be appropriate to use in psycho-social situations where depth of feeling caused by, for instance, the hardships and prejudice experienced by minority groups was sufficient to drive the process but, "it seems ... that no qualitatively comparable dynamic for educational change exists within the teaching profession in U.K. schools". (1983, p. 12) On the T.I.Q.L. project, an external driving force was implemented in terms of school coordinators, but individual or small groups of teachers may not have such a dynamic. The impression gained from the models is that action research is a continually rolling process, but Almond's analyses of teachers taking part in research seems to contradict this. He found that teachers could engage in research for short contained periods, at the end of which it was almost forgotten, until more time became available, perhaps the following year. (Almond, 1982)

The second criticism of the models is based on Ebbut's experience of discussions and negotiations with teachers on the T.I.Q.L. project. He found that Elliot's model led to mystification of teachers rather than illumination. The model caused teachers to ask themselves two questions:-

i) Am I capable of understanding correctly how they say this project is meant to work?

ii) Am I capable of making it work correctly in my own classroom?

This describes a situation where action research becomes an imposition by outsiders rather than a form of emancipation. Ebbut designed his own model (see Fig. 9) in order to overcome this problem. He sees the process as:-
<table>
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<tr>
<th>CYCLE 1</th>
<th>CYCLE 2</th>
<th>CYCLE 3</th>
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**Identifying initial idea**

'Reconnaissance' (Fact finding and Analysis)

<table>
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<tr>
<th>General Plan</th>
<th>Revise General Idea</th>
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<tbody>
<tr>
<td>Action Steps 1</td>
<td>Amended Plan</td>
</tr>
<tr>
<td>Action Steps 2</td>
<td>Action Steps 1</td>
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<tr>
<td>Action Steps 3</td>
<td>Action Steps 2</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Monitor Implementation and Effects</th>
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'Reconnaissance' (Explain any failure to implement, and effects).

<table>
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<tr>
<th>Implement Action Steps 1</th>
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</thead>
</table>

Fig. 8. Elliott's Action Research Model (Elliott 1981)

<table>
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<tr>
<th>Implement next Action Steps</th>
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</table>

Monitor Implementation and Effects

'Reconnaissance' (Explain any failure to implement, and effects).
IDEALISED REPRESENTATION OF THE PROCESS OF ACTION RESEARCH

GENERAL IDEA

AMENDED GENERAL IDEA

RECONNAISSANCE

RECONNAISSANCE

REVISED OVERALL PLAN

OVERALL PLAN

NEW OVERALL PLAN

ACTION 1

REVISE OVERALL PLAN

ACTION 2 ETC.

MONITORING & RECONNAISSANCE

either

ACTION 2 ETC.

Fig. 9. Ebbutts Model for Action Research (Ebbutt 1983)
"... a series of successive cycles, each incorporating the possibility for the feedback of information within and between cycles. Such a process is not nearly so neat as viewing the process as a spiral, neither does it lend itself quite so tidily to diagramatic representation" (Ebbut, 1983)

These three models provide an overall view of the action research process.

4.6 PROBLEMS ENCOUNTERED BY TEACHERS ENGAGED IN RESEARCH

A number of supporters of the "teacher as researcher" movement see research as part of the teachers' professional duty, and not as something extra. (Stenhouse, 1975; Nixon, 1981b; Rowland, 1984b) This view appears a little optimistic as reports of teachers engaged in research are often littered with accounts of problems encountered. The vast majority of teachers are not used to doing research in their teaching and so they encounter various situations which they are not used to dealing with thus they become obstacles or problems. These problems fall into various categories, and are outlined below.

Practical Difficulties

A wide variety of obstacles which may be encountered by teachers doing research may be termed "practical difficulties". These could involve timetabling difficulties, availability of suitable equipment (e.g. tape or video recording equipment), cost and so on. In his interviews with teachers engaged in research Boyall found that apparently minor obstacles like having "no spare socket for the tape recorder!" were seen as problems by teachers. (Boyall, 1983) These practical difficulties may appear trivial to outsiders, but as Boyall points out:-

"These problems are inconvenient though not insurmountable but for teachers inexperienced in self evaluation they created constraints that hindered their work and involved them in additional time, effort and worry." (Boyall, 1983, p. 97)
Lack of Research Skills

Another problem identified by Boyall in his work with teachers was that "getting started" in research was put off because teachers felt they lacked the necessary "knowledge" to be able to work as a teacher/researcher. Teachers embarking on research may not have read any research projects and therefore be unprepared for what to expect. They may experience difficulties in collecting data due to lack of familiarity with the research techniques of observation, evaluation, and the writing of field notes. Almond (1983) found that P.E. teachers involved in an action research project encountered difficulties in using monitoring techniques, writing field notes, conducting interviews with students and isolating relevant data in analysis. (p. 193) Although most of these problems may be overcome with experience - Almond found that teachers did find research easier at the second attempt - they may be instrumental in preventing teachers from getting started in research.

Lack of Time

"With a full teaching commitment, pastoral and tutorial duties and associated administrative tasks, when can a teacher find time to conduct research?" (Peek, 198?, p. 24) There is no doubt that taking on any sort of research project does require a great deal of time, not only for planning and implementing but also for thinking, reflecting and discussion with others. Teachers may perceive that they do not have the time available and not embark on research, but others who do "press the button" (Boyall, 1983) may encounter time difficulties during the project. The Open University Register of School Initiated Self-Evaluation Activities in the U.K. found that 2 common problems with school initiated research were that a) teachers attempted too much too soon and b) pressure of work led to abandonment of the research. Almond (1982) investigated commitments teachers had over the school year and concluded that there were only short periods of time during the academic year when teachers are able to devote time to thinking about their own practices and the curriculum in general. He proposes that before embarking on research, teachers should identify the slack times in their year, and attempt to incorporate short commitments with definite end points within their normal pattern of working during those times.
Role Conflict
Teachers may experience problems brought about by conflict between the 2 aspects of their dual role of teacher and researcher. In adopting the role of researcher, teachers may be prone to what Peek describes as "affinity" difficulties. (Peek, 1984) He/she may find it difficult to distance him/herself from the objects of research, leading to problems of objectivity. "Teaching requires involvement and manipulation of policy and resources, but research necessitates detachment and objectivity". Reconciliation of these two may prove too problematic. Linked to this is the need for teachers to retain their credibility with colleagues when undertaking research. Holly has described the feelings of isolation experienced by a small group of teachers involved in the T.I.Q.L. project within a large school. (Holly, ) They felt hostility and scepticism from their colleagues in their research role, as they were seen as a threat. The teacher as researcher may be seen by colleagues as abnormal, working outside the recognised demarcations of a teacher and be treated as an "outsider". This sort of role conflict can lead to feelings of discomfort and even alienation and can therefore be seen as a major barrier for teachers in research.

Ethical Considerations
Linked to role conflict are ethical considerations. When teachers adopt a research role, they may be doing so at a cost to their teaching role "It is ironic that a concern for the quality of education may motivate a teacher to involve him/herself in research, but can also be detrimental to a teacher's own work in the classroom". (Peek, 1984) It is evident that teachers may find it difficult to utilise research methods which do not interfere with normal teaching commitments.

Support
Many of the above mentioned problems can be alleviated if teachers are given support in their research. Lack of an adequate support structure may be the crucial factor which underpins a variety of perceived barriers to teachers in
research. An individual teacher using self-monitoring techniques may have no access to any form of support. Research projects which have involved large numbers of teachers and which have been initiated by outside agencies often have support structures in the form of experts in research, equipment, coordinators and so on. (e.g. The Ford Teaching Project) Advice, equipment, information, opportunities to share ideas and problems with others in research, camaraderie - all are resources which can greatly facilitate the research role of the teacher and be instrumental in overcoming some of the other problems involved.

These are the general problems experienced by teachers in research. There are also a number of problems associated with "Action Research" which will be outlined below.

4.7 PROBLEMS WITH ACTION RESEARCH

There appear to be two major problems with modern educational action research, which are closely interrelated and which stem from the efforts of many writers to formulate an intellectual basis for such research. The first is that the theory of action research has become too academic for teachers to easily assimilate, and the second is that it has become very elitist, excluding the vast majority of practising teachers from its processes.

The Intellectual Basis of Action Research

Over the last few years authors have spent a great deal of time on developing a critical theory for action research. (Kemmis, 1982; Elliot, 1981; Ebbut, 1983). Perhaps in response to criticism from traditional researchers about the lack of scientific structure and objectivity in much teacher research, models have been developed which have become increasingly complicated and prescriptive. In attempting to give teacher action research some academic credibility, it is possible that these writers have succeeded in alienating the supposed beneficiaries of their actions by over intellectualising their models. Teachers looking to the writings of these authors for guidance in their research could easily be "blinded by the science of action research", and feel that the process
is beyond them. Ebbut has written about the possible mystification of teachers by Elliot's Framework for Action Research (Ebbut, 1983) because he pitches the argument as "a detailed elaboration of how educational action research ought to proceed". (p. 14) Those teachers who are not "put off", may enter into action research projects following very prescriptive procedures as laid down in published models. This is of course contrary to the "emancipatory" reasons for teachers embarking on their own research. Instead of being inhibited by the specifications of outside researchers, teachers would now be constrained by rules of their own research, thus surrendering their independence yet again. Elaborate models therefore present problems for teachers in research. As Hopkins states:- "... at best, they provide a starting point, an initial guide to action. At worst, they trap the practitioners within a set of assumptions that bear little relationship to their reality and, consequently, constrain their freedom of action". (Hopkins, 1985, p. 40)

Elitism in action research
Action research has been seen as a means of putting educational research into the hands of the practitioners, but in reality it has not become adopted by teachers to the point where it may be considered an integral part of the professional duties of teachers. Teachers undertaking research are still widely regarded as taking on something "extra". Gibson compares the action research movement to the Salvation Army:- "... the tambourines of action research have stirrringly reinforced the hymns of negotiation, triangulation and ... bottoms up". (Gibson, 1983, p. 59) It is not difficult to see the similarities between a teacher engaging in research and members of the Salvation Army singing hymns and collecting money on a seafront in summer - both are aiming to do good in a way which is regarded at best as a little peculiar and at worst, threatening, by onlookers. This failure of the teaching profession to take action research into its heart is probably due to the problems listed previously, as well as failure of teacher training institutions to equip their students with the necessary skills to enable them to integrate research into their teaching. It has led to a situation where the majority of action research
projects are embarked upon by teachers taking higher degrees. Many of the problems experienced by teachers in research can be easily overcome by higher degree students who have access to equipment, advice, resources and support structures as well as the time which is denied practising teachers. This, together with the highly academic models in print, make action research in education a very elitist concept. Gibson has criticised Kemmis' action research model for being "an elitist text, masquerading as an egalitarian one". (Gibson, 1983)

4.8 CONCLUSIONS

4.8.1 It would appear then that "Action Research" in its various forms can be regarded as a useful method for teachers to utilise in attempting to systematically study their own practice and to improve it. However, literature available to teachers which attempts to clarify the processes and principles may in fact only succeed in confusing or alienating them.

However, for the teacher who has the time to overcome the obvious difficulties that she/he may encounter, "Action Research" provides a framework for investigation of the teaching/learning situation which allows adaptation to individual circumstances and improvement of practice in an ongoing and progressive fashion.
CHAPTER FIVE

THE RESEARCH PROJECT

5.1 Introduction
The author's experience as a teacher endeavouring to equip pupils with the means of adopting healthy lifestyles had led her to conclude that parents had a crucial part to play in Health Based Physical Education. The review of the literature has shown that Health Based Physical Education must be regarded as a long term process of lifestyle education and that involving parents in education is a complex undertaking which is affected by the perceptions of all of those involved. There seems to be little evidence of other work in this area and so any project directed towards parental involvement in Health Based Physical Education needed to be speculative and investigative in nature.

A research project was therefore designed which utilised the action research process. Initial reconnaissance threw up a number of problems which needed to be tackled during the process. These problems were analysed and re-stated in the form of questions to be answered during the course of the project and formed the basis for selection of objectives for the project. Some groundwork needed to be completed in the school before research instruments could be prepared and teaching materials, including those for parent use, devised.

The following chapter initially describes the problems to be investigated, and also gives some background information about the school itself. The process of preparation for the project is then described in detail, followed by outlines of planned methods of evaluating the effectiveness of the project.

5.2 The Problem under Investigation
After reflecting on the effectiveness of a short specific cause on Health and Fitness to lower secondary girls during 198586, the author was forced to conclude that the work could be effective in a limited way. It became apparent that it would be naive to assume that the school could deal with pupils in
isolation from their home backgrounds and achieve any great success in the attainment of long term aims involving attitude change.

Discussions with pupils during these lessons provided evidence of the validity of these conclusions. After a section of work on appropriate diet, pupils made comments like:

"... but we have chips every day for tea ...";
"... my mum says I need sugar for energy ...";
"... my mum says that if I don't eat properly I'll get AIDS".

The thought occurred that parents here could have a direct effect on lifestyles through the chosen provision of food, and also be effective in promoting attitudes to food/eating which could be detrimental to health. The same could be seen to be true of exercise habits - parents could have either a positive or negative effect on attitudes to activity which could significantly support or hamper any efforts made at school to promote healthy, active lifestyles. Analyses of literature seems to support the statement that in health education in its various forms, the attitudes of parents can play a vital role. (p. )

It became evident that parents too needed to develop a sound knowledge base and the school could be effective in providing parents with information on work being covered by their children, an idea which is supported in the literature. (p. )

It also became apparent that just as parents could learn a great deal from school, the teachers could gain an insight into parents' knowledge, views and attitudes which could benefit their teaching. (p. ) A two way flow of information needed to be provided to make full use of any parent-school interaction.

The main problem which needed to be investigated was how to achieve a situation whereby pupils experience non-conflicting values at home and school, so that they are surrounded by positive and mutually supportive agencies. In order to achieve this situation in relation to healthy exercise patterns, the
point needs to be reached where parents realise the benefits of regular exercise and encourage their children to adopt lifestyles which demonstrate a regard for the role of exercise in health. The school can easily have access to pupils and devise methods of encouraging healthy habits in them, but the means of reaching parents is far less obvious.

The research project therefore aimed to investigate the area of involving parents in health based physical education in a way which would lead to promotion of healthy lifestyles within the family. Since, if measures taken are to improve teaching, they must be readily repeatable in a normal teaching situation, and so it was necessary to impose limits on the type of project undertaken. Containing the project within an area of practical replicability would also serve to maintain credibility with colleagues. One of the most common criticisms of traditional educational research is that is is removed from the realities of teaching as perceived by teachers and it is therefore regarded by many practitioners as irrelevant. (see page ) The contents of the project needed to remain as close as possible to that which is attainable by a practising teacher.

Action research was therefore thought to be an appropriate research style to adopt and groundwork for the project began in early September.

5.3 The Project School

5.3.1 Background Information
The project school is situated in the London Borough of Enfield, approximately 10 miles from the City of London. It is a mixed comprehensive school formed in 1967 by the amalgamation of a County Grammar School and a Secondary Modern. It is housed on two sites half a mile apart, years 1-3 being accommodated in the old Secondary Modern building and years 4-6 in the old Grammar School building. Pupils are drawn from a catchment area which encompasses parts of Enfield, Winchmore Hill and Edmonton so there is a social mix in the school. Winchmore Hill is an expensive residential area, largely middle class,
whereas Edmonton is a much less "affluent" area, with cheaper houses, high rise blocks of flats, council accommodation, industrial areas and so on.

As well as a varied social mix, a wide variety of races are represented in the school population. Many parents are of Greek, Cypriot, Italian, Asian, Turkish or West Indian origin. Over 30% of the pupils in the 1st year had parents of non U.K. origin.

In recent years, the school has reduced from an 8 form entry to a six form entry and there are currently 1250 on roll. Pupils are organised into forms which are broadly banded by ability. In the current 1st year there are 3 top band classes, 2 middle band and 1 compensatory class. There are 80 girls in the first year, 47 are in top band classes, 27 in middle band and 6 in the compensatory class.

The school has what is described in the school brochure issued to parents as "a traditional ethos". This is most obviously apparent in the strict uniform code for pupils and in the retention of an annual "Speech Day", where staff are encouraged to wear academic dress.

The school's aims are outlined in the school brochure:-

"We believe that, when they leave us: whether it be for employment or further education, our students should have an understanding of the beliefs and conventions of society, including its manner of government and its technology based economy. They should know their democratic rights and obligations and appreciate the virtues of integrity, toleration and concern for others. While collecting as many good examination results as possible, they will have learned to think and act for themselves and to distinguish between truth and falsehood". Some reference is made to development of physical skills later:-
"In addition to providing pupils with some basic knowledge considered essential to an educated person, as well as a prerequisite to examination success, every teaching department is concerned to develop oral, written and practical skills, and techniques of independent study. By the age of sixteen, most pupils, though at different levels of competence, should be able to express themselves clearly in writing and conversation; to absorb information presented diagrammatically as well as in writing, to be competent in arithmetic and to understand money and measurement; to have developed creative leisure skills through physical dexterity and the training of eye and ear; and to be able to tackle a problem scientifically, and have some capacity for reasoning and judgement." These aims would seem to reflect the "traditional ethos" of the school.

It is not readily apparent here where a concern for health is covered, although it is stated that Health Education is part of the curriculum throughout the school, "both as a separate component in some years, and as an implicit part of many subject areas in all". All pupils have one lesson per week of Personal and Social Education, part of which is Health Education.

5.3.2 Parents and the School
The school brochure states that "We aim to serve the community by maintaining a partnership between home and school that will ensure that every child reaches his or her full academic and social potential. The form of this partnership is again of a traditional nature. Apart from the statutory parent governors, a number of other parents become involved in certain aspects of school life through the School Association, which embraces parents, staff and friends of the school. This is essentially a fund-raising body, organising jumble sales, fetes, bazaars and other social events. Some "Educational Evenings" for parents are held each year which are not generally well attended.

The school brochure's section on contact between parents and school again reflects a rather formal approach:-
"So begins what we hope will become a close association between
home and school. Meetings are held annually for the parents of each year group to discuss their children's progress. Reports are issued twice yearly to parents.

However, the school may contact individual parents at other times and they are encouraged to get in touch with us if they have any cause for concern. This may be by letter addressed to the Headmaster or an appropriate colleague. We suggest initially the Year Tutor may be approached, or parents may prefer to telephone, perhaps to make an appointment to discuss the matter."

In practice, although parents are not deliberately discouraged from involving themselves in school matters, the school does not seem to have a very high profile approach to parental participation, except at the level of fund raising.

5.3.3 Physical Education within the School

P.E. is compulsory in years 1-5 for boys and girls. Every pupil has 2 x 55 minute lessons per week, which is 8% of the total timetable. The boys and girls P.E. departments are separate entities, although some mixed teaching takes place in years 4, 5 and 6. As the departments work separately, the project was attempted with girls only for purely organisational reasons.

The girls generally follow an essentially activity based programme, where teaching is organised into "blocks" of 4-8 weeks, depending on length of terms. This programme is outlined overleaf. (Fig. 10) It can be seen that the programme is a mixture of the traditional and the new, with games occupying a large chunk of available time particularly in upper years. Although all girls in the 1st, 2nd and 3rd year follow the same P.E. programme, 4th and 5th years do not, as those who are willing to pay the 80p per session fee are able to visit the local leisure centre during lesson time and make use of the extensive facilities. Those who choose the leisure centre programme are able to pursue a variety of individual activities
**Fig. 10. Diagram to show P.E. Programme for Girls at Edmonton School**

<table>
<thead>
<tr>
<th></th>
<th>AUTUMN</th>
<th>SPRING</th>
<th>SUMMER</th>
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<tr>
<td>YEAR</td>
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</tr>
<tr>
<td>1</td>
<td>HEALTH GYMNASTICS DANCE</td>
<td>GYMNASICS</td>
<td>ATHLETICS</td>
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<td>AND Fitness</td>
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<td>2</td>
<td>UNDER- HOCHER STANDING</td>
<td>NETBALL NETBALL/HOCKEY</td>
<td>PLAYGROUND SHORT STOOLBALL</td>
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<td>2</td>
<td>NETBALL HOCKEY GAMES</td>
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like weight training, swimming, roller skating, as well as squash, badminton and table tennis. Those who opt to remain on school premises are far more likely to participate in team games, as staffing and facilities make these practical and accommodating. The visits to the leisure centre were initially
5.3.4 Parents and Physical Education

The girls' P.E. Department has not, in the past, done a great deal to try to involve parents in curricular matters. Communication with parents, until 1985-1986, tended to be only on matters of kit (particularly lack of it), non-attendance, non-participation, organisation of visits to the leisure centre and pleas for help with transport to matches. Parents are welcome to spectate at matches and to attend Sports Day, but involvement of parents in general was at a low level. Apart from a very general statement in the school brochure and 4th year option booklet, little had been communicated to parents about the role of P.E. in the school. During 1985-1986, a series of articles were published in the school newsletter which gave a general background to the aims of the department, and covered aspects of diet and exercise which were being highlighted with girls in their health and fitness course. No response was made by parents to these articles.

The department had little idea of how parents, or for that matter, pupils viewed its purpose. After the annual influx of notes from parents of 5th year girls during the summer term, saying that their daughters did not attend P.E. lessons because they were revising, departmental staff often complained to each other about the low status afforded to their subject. They did not, however, do a great deal to inform parents of their function. There existed a gap between parents and teachers which needed to be bridged.

5.4 THE OBJECTIVES OF THE PROJECT

In overcoming these problems, there were several objectives which needed to be attained, and several questions needed to be answered:-
1. What do parents know about various aspects of health and fitness, especially related to diet and activity? Are there any obvious gaps in knowledge?
2. How active are parents generally?
3. Do they encourage their children to lead active lifestyles?
4. Do parents actively participate in activities with their children?
5. How do they regard health and fitness?
6. How do they feel about the school intervening in lifestyle matters?

Once these questions had been answered, then steps could be taken to:-

a) Supply information to pupils and parents which would enhance the knowledge base on which they built their lifestyle.

b) Encourage thought and discussion within families about lifestyles, healthy or otherwise.

c) Raise general awareness of many of the problems associated with inactive lifestyles.

d) Provide opportunities for activity which would be FUN experiences.

c) Encourage activity within the family, and the development of family responsibility for active lifestyles.

Having provided these opportunities, there was a need to evaluate their effectiveness. A new set of questions would require answering, i.e.:-

1. Have parents improved their knowledge base?
2. Have parents' activity levels changed?
3. Have other aspects of lifestyle changed?
4. Do parents participate more often with their children?
5. Have their perceptions of health and fitness been affected?
6. How do they react to "interference" from the school in these matters?

From these, information could lead to assessment of the effectiveness of the project, as well as a basis from which
to make changes. It was also necessary to gain information on how pupils perceived the work in which they were participating. In this way, a triangulation of perspectives would be gained from pupils, parents and teachers.

5.5 THE HEALTHY LIFESTYLES PROJECT

5.5.1 Preparing the ground

Having decided to embark on the project, a decision was made to undertake it in the author's own school, as this would minimise problems with lack of familiarity. However, other problems arose as a result of this decision, and these will be discussed in more detail later.

Letters were sent to the Director of Education for the Borough, the Headmaster of the School and the Chairman of the School Association in order to gain permission, (see Appendix 1), and informal talks were held with the acting Head of Girls' P.E. and Head of the 1st Year to prepare the ground. These people were initially supportive, although no reply was received from the Chairman of the School Association. At this stage, early in the autumn term, the Acting Head of Department and Head of 1st Year were very positive in their reception of the idea and their cooperation was assured.

5.5.2 Structure of the Project

The proposed structure of the project initially was as follows:

1. Evaluation of Parents' Knowledge and Behaviour

2. 5 week programme of work with 1st year girls at 1 lesson per week + literature sent home to parents. Pupil/Parent Activities. (Throughout January and February)

3. Health and Fitness Week - at the beginning of March - whole school project. A week during which a number of interested staff would provide activities during lunchtime and after school which would raise awareness of health and fitness concepts. This was to involve a Health and Fitness evening, when parents were invited in to school to take part in a variety of activities.
4. Re-evaluation of parents' knowledge and behaviour Feedback from pupils and parents on the course.

5. Adaptation of course for future use.

However, this structure eventually proved to be problematic for two reasons.

1) 5 lessons was felt to be too short a period in which to establish a good working relationship with pupils and to provide the necessary experiences to demonstrate the desired concepts. After negotiation with the Acting H.O.D. the teaching time was extended to 7 lessons.

2) The Health and Fitness Week eventually presented a number of difficulties.
   i. The acting H.O.D. was keen to adopt sole responsibility for the week and apparently felt that her position was being threatened by any attempts to contribute to its organisation by the author.
   ii. Although a number of members of staff had expressed interest in the week and were keen to contribute, it proved exceptionally difficult to find time in the increasingly busy weeks to have meetings for discussion and organisation.
   iii. The interested staff eventually found time to meet in November and decided to delay the Health and Fitness Week to the latter part of the Summer Term, when they would have more time to devote to thought and organisation.

It was therefore decided to remove the proposed Health Week from the project structure, as it would no longer enhance its continuity and doing so may have placed the author in a less threatening, more cooperative position with the acting Head of Department. In its place it was decided to have a Healthy Lifestyles Evening at the end of the teaching block, where parents would be invited into school to take part in activities and discussions.

Initial discussion with the Head of Year were encouraging, and arrangements to meet to discuss the possibility of supporting the work in Personal and Social Education lessons were made. However, the Head of Year failed to turn up to the meeting
and made no attempt to rearrange it. It was felt diplomatic to drop the idea to avoid further relationship problems.

STAGE I: Evaluation of Parents' Knowledge and Lifestyles
It was felt that the most appropriate method of evaluating parents' knowledge and lifestyles was by self administered questionnaire. Thus in the months leading up to the start of the project, a questionnaire was designed which would hopefully provide the information required.

5.6 Design of Research Instruments
The design of the questionnaire proved to be a lengthy and complicated process. The book "Asking Questions" by Sudman proved to be an informative and valuable tool in this area. Basically his 14 point framework for "Questionnaires from Start to Finish" was followed.

1. DECIDE WHAT INFORMATION IS NEEDED
At this stage, it was decided that information was desired about:-

a) What parents know about health and fitness.

b) What they think health and fitness mean.

c) Are parents active?

d) Do parents take any steps to promote the health and fitness of their children?

e) Do parents regard maintenance of health or fitness as important?

f) Who do parents feel should be responsible for health and fitness?

g) Are parents interested in receiving information about health and fitness?

h) What areas, if any, are they specifically interested in?

2. CONDUCT A SEARCH IN DATA ARCHIVES FOR EXISTING QUESTIONS
AND SCALES ON TOPICS OF INTEREST

3. DRAFT NEW QUESTIONS AND/OR REVISE EXISTING QUESTIONS

4. PUT QUESTIONS IN SEQUENCE
5. **FORMAT THE QUESTIONNAIRE**

6. **PRECOLUMN AND PRECODE**

7. **GET PEER EVALUATION OF DRAFT QUESTIONNAIRE IN GROUP SESSIONS AND/OR INDIVIDUALLY**

8. **REVISE DRAFT AND TEST REVISED QUESTIONNAIRE ON SELF, RELATIVES, ETC.**

9. **PREPARE SIMPLE INSTRUCTIONS FOR PILOT TEST**

10. **PILOT TEST ON SMALL NO. OF RESPONDENTS SIMILAR TO THE SORT FROM WHICH YOU ARE SAMPLING**

11. **OBTAIN COMMENTS FROM RESPONDENTS**

12. **ELIMINATE QUESTIONS THAT DO NOT DISCRIMINATE BETWEEN RESPONDENTS OR THAT DO NOT APPEAR TO PROMOTE THE KIND OF INFORMATION REQUIRED**

13. **REVISE QUESTIONS THAT CAUSE DIFFICULTY**

14. **PILOT TEST AGAIN**

After deciding what information was required a number of questions were formed which were discussed with teaching colleagues and other research students. Revised questions were then put into questionnaire form and sequenced and formatted. This was distributed to fellow research students, colleagues and research supervisors for evaluation.

PILOT Q1 (see Appendix 2a) was then formulated and administered to a small group of parents (18) selected at random at two 3rd Year Parents' Evenings held in the project school. After a brief explanation of who I was and what my purpose was, I gave them the questionnaire and asked them to return it to me when they had finished. When they returned the questionnaires I went through it with them, and asked them to tell me of any
part they found difficult to understand or to follow.

Pilot Q1 was also shown to John Balding at Exeter University who has spent many years devising questionaires and his comments were noted, as were those of Colin Hardy, research tutor at Loughborough University.

As a result of information gained from the pilot test, and from suggestions made by tutors a number of changes were made.

i) Some statements in question 1 were made shorter, as it was felt that respondents may get bored with long, wordy statements.

ii) Some negatives were removed from the statements in Question 1 as it was felt that respondents reading through them hurriedly may mis-read, i.e. "Overweight people are not more likely to suffer from heart disease than those of correct weight" was changed to "Overweight people are more likely ... etc."

iii) The "sleeper" statement "The chances of a person having a heart attack can be reduced by increasing the number of vitamins he eats" was omitted as there may be some doubt about its validity.

iv) Large numbers of parents in the pilot group had failed to give any answer to questions 2 and 3, and it was felt that the wording did little to encourage answering of an open ended and therefore difficult question. The wording was therefore changed to make it more answerable.

v) It was decided to omit questions 6, 7, 8 and 10 from the questionnaire because the first 3 did not dissimilate between respondents (all of the parents in the pilot survey had answered quite important or extremely important to all 3 questions) and the last was found difficult to answer by some parents and was felt to provide little information or use.

vi) It was decided to omit question 13 as it was felt that it would be tactless to send information home to parents if they had answered NO to this question. Answers to Question 14 would be able to reflect parental interest in various areas.
After making these changes, the questionnaire was again pilot tested on a small number of parents. It was pointed out at this stage that answers to question 1 may be a reflection of attitude as much as of knowledge. For instance smokers would tend to give different answers to some of the items from nonsmokers because their attitudes to smoking may differ. It was therefore decided to add a question on smoking to the questionnaire, so that this effect would be assessed.

PARENT QUESTIONNAIRE 1
The questionnaire was printed off in this form and is shown in Appendix 2b, together with a copy of the covering letter which was sent with it to the parents.

The Knowledge Test
It was felt that the best way to assess parents' knowledge of various aspects of health and fitness was by a knowledge test. However, some parents may have found a "test" a threatening activity and so parents were asked to express their opinion on whether a statement was true, not true or to say if they were not sure. The opening statement in the question was designed to remove threat from the question by pointing out that it is difficult to know whether to believe many claims made in the media. Thus "not sure" was made fully acceptable as an answer. If parents are "not sure" then this indicates a gap in knowledge as much as an incorrect answer.

Statements for use in Question 1 were designed to test parents' knowledge of the basic aspects of diet and exercise related to health. "Myths" about exercise were included to test parents' reaction and a "sleeper" question was included to control overstatement of knowledge, although on reflection this sleeper may have been useless. This will be discussed in more detail later. It was felt that the majority of the information on which the statements were based was readily available to members of the public through media coverage, Health Education Council publications, product advertisements and so on.
Perspectives of Health and Fitness

Although there was still some problem with nil-responses to Questions 2 and 3, it was felt that an open ended question would reveal more about parents' general thoughts than a closed question with categories for ticking.

Activity Patterns

It was decided to monitor the activity patterns of parents over the period of 7 days by asking them how many times, if at all, they had participated in various forms of physical activity during the week prior to the administration of the questionnaire. One week was selected as an appropriate time to avoid problems with recall, but it was acknowledged that the relatively short period of time may have lead to overreporting.

The categories were selected to cover as many different types of activity which were generally available in the area.

Question 5 was included to get some idea of whether parents generally took part in physical activities with their daughters, and if so which activities.

Encouragement of Daughters to participate in Physical Activities

In order to find out whether parents actually encouraged their daughters to take part in activities outside school, Question 6 was included. "In the last year" made the question appropriate to recent behaviour, rather than that in the distant past. 6b was included to gain further information on what sort of activities girls were encouraged to participate in, and also acted as a check on Question 6.

Dietary Habits

Questions 7, 8a and 8b were designed to glean information on whether parents actually monitored the food the family ate for health reasons, and whether the great deal of publicity given to "healthy eating" since the publication of the NACNE report had in fact had an impact on parents.
Smoking Behaviour

In order to see whether smoking behaviour had any effect on "knowledge" in Question 1, Question 9 was included. The question is the same as that used in the Health Related Behaviour questionnaire designed by the Health Education Unit at Exeter University and was thought to be appropriate to this study.

Interest in Areas of Health and Fitness

Question 10 provided information on whether parents were interested in becoming more knowledgeable in various areas of health and fitness, and also in which particular areas they showed an interest.

Feedback

Ample space was allowed for parents to comment on any aspect of the questionnaire they wished, so that there was the possibility of some sort of feedback which might provide an insight into their feelings about the project.

Administration of the Questionnaire

The questionnaire was printed during the Christmas vacation, copies being printed in yellow, and also blue to facilitate identification. The questionnaires were given to pupils during the 1st lesson of the teaching block with a covering letter attached, and asked to return to their form tutors, who had previously agreed to collect them in, within a week. It was made clear to pupils that there was no compulsion to fill them in, so pupils did not need to fill them in, in lieu of their parents, should the latter be unwilling. However, pupils were asked to approach their parents in a polite and informative way to promote cooperation.

A reminder was sent out to parents on the final day, for returning questionnaires to improve return rate, which until then had been poor.
5.7 STAGE 2: THE TEACHING UNIT

5.7.1 Organisational Details
The teaching unit consisted of 7 x 55 minute lessons with each class, half term falling after the 5th lesson. The teaching area was a classroom for the first lesson (examinations had taken over the normal teaching area), the assembly hall for the next 4 weeks and the gymnasium for the final 2 sessions.

Composition of Groups and Time of Lessons

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Size of Group</th>
<th>Band Composition</th>
<th>Lesson Time</th>
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<tbody>
<tr>
<td>1</td>
<td>30</td>
<td>All top band</td>
<td>MONDAY, PERIOD 1</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>Top + Middle 17 + 13</td>
<td>THURSDAY, PERIOD 1</td>
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<tr>
<td>3</td>
<td>20</td>
<td>Middle + compensatory 14 + 6</td>
<td>FRIDAY, PERIOD 4</td>
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5.7.2 The Programme of Work

An outline of the programme of work is shown in Appendix 3, together with stated aims and objectives. When the work was being planned, a number of criteria were born in mind.

1. Majority of work must be of a PRACTICAL nature.
2. Work must be ENJOYABLE to pupils, but also MEANINGFUL.
3. Practical work must be suitable for pupils of all abilities and success should not be dependent on a high level of skill.
4. Emphasis must be on INDIVIDUAL experience of activities but encouragement of mutual support can take place.
5. Pupils must be given opportunities to reflect on their experiences and to verbalise how they feel as a result of their experiences.
6. Pupils must be encouraged to interact with parents in a number of ways, in order to raise family awareness.
7. Opportunities for feedback from pupils to teacher must be available.

8. Although the 4 aspects of fitness need to be outlined, the emphasis on cardio-vascular fitness and its importance in health need to be stressed in developing healthy active lifestyles.

9. A great deal of emphasis needs to be placed on activities which take place out of lesson time.

Development of Teaching Materials
A series of teaching materials were devised to fulfil a number of purposes:

1. To provide INFORMATION for parent and pupils
2. To encourage PUPIL/PARENT interaction
3. To encourage both parents and pupils to think about and assess parts of their lifestyle
4. To encourage discussion

While some materials were available from various sources (the Health Education Council, "Flora", ...) it was thought that in order to make materials totally appropriate, "made to measure" materials would be more beneficial than those "off the peg".

During the Autumn term, therefore, a number of resources were developed for use during the teaching block. These are shown in Appendix 4.

Parent Information Sheets
A series of 4 activities designed mainly for parents by the author were, therefore, used. They were formulated around the main concepts which I was trying to communicate to parents.

Physical Education at Edmonton School: Physical Jerks or Education for Life (Appendix 4a)

This article outlined the main purpose of physical education for girls at the school, as I felt that many parents may be out of touch with modern philosophies about physical education. As a head of department, I had done very little to keep parents
up to date and so I felt that a general outline would provide a sound basis on which to build.

The article also pointed out problems associated with lack of activity and provided food for thought on responsibilities for health within the family. Questions were posed which could start parents analysing their own, and their family's lifestyle.

**What is Health?** (Appendix 4b)
The second in the series, "What is Health?" was designed to follow up the M.O.T. test for parents. The article tried to promote a positive view of health, pointing out the many benefits of leading an active lifestyle. It is also outlined how activity levels can be raised by increasing habitual activity in day to day lives.

**Coronary Heart Disease: Is your Child at Risk?** (Appendix 4c)
The third article was prepared to explain the problems of coronary heart disease, as it is a major hypokinetic disease which is responsible for more deaths in this country than any other single cause. "Heart education" was felt to be a major building block in promoting healthy lifestyles because of the potential of its impact. It was also felt that parents should be made aware of the paediatric nature of the problem.

**Fitness - What is it?** (Appendix 4d)
It was felt that parents needed an overview of fitness for health, but also some ideas on how to improve cardio-vascular fitness, so important in combating coronary heart disease. The article was meant to provide basic advice on beginning and developing a fitness programme for cardiovascular health.

In designing all of these resources a number of factors had to be considered:-

a) **Presentation**
The articles had to be attractive to parents to encourage them to read them. Facilities for coloured or glossy presentation
were not available and so the use of cartoons acquired from various sources was important, as well as breaking down the material into brief paragraphs under headings designed to stir the curiosity.

b) Language
The language used had to be simple and easily understood by parents. Day to day language was used whenever possible, and any specialist terms explained simply.

c) Tone
The tone of the articles needed to be monitored carefully. They were meant to be informative and thought provoking, but could potentially be critical and patronising.

In order to check these details, the articles were shown to a number of friends, peers, relatives and colleagues, from varying backgrounds, before use to gain feedback and a number of changes in wording made.

"Off the Peg" Materials
Towards the end of the teaching block and at the Healthy Lifestyles evening, a number of ready made materials were distributed to pupils to take home to parents.

All pupils were given a copy of the Health Education Booklet "Exercise - Why Bother", and the Flora Project for Heart Disease Prevention leaflets on Exercise, Food Choices, Stress, Blood Pressure and Weight. These provided an overview of the work covered in the course, and provided a more professional and perhaps attractive alternative for parents to read. It was felt that they might act to reinforce the information which had been previously distributed.

The M.O.T. Test for Parents (See Appendix 5)
The purposes of the M.O.T. Test were as follows:-

a) To provide opportunities for pupil/parent interaction on health and fitness matters
b) To provoke thought about levels of fitness for health
c) To provide very general information on the different aspects of fitness

As the test had to be done by pupils it had to be very simple and easy to conduct, using a minimum of apparatus.

The test was initially based on the 4 main components of fitness, and so simple tests were needed to indicate to parents whether they were in fact maintaining minimal levels of fitness in these areas.

Problems

A number of problems soon became apparent which needed to be overcome in the design of these tests.

1) Tests needed to be simple to administer for unskilled testers using a minimum of equipment, yet still retain validity as an instrument of measurement.

2) The test had to be quick to undertake to encourage parents to participate.

3) In order to avoid putting parents off doing the activities, it needed to avoid apparently rigorous characteristics which they may associate with "Fitness Testing", e.g. timed runs, "how many press ups can you do?". Generally, it needed to appear not too painful to attempt.

4) As a number of parents may have had very low levels of fitness, over exertion which could lead to discomfort or injury had to be avoided.

5) Allowances for sex differences.

In overcoming these problems, a number of compromises had to be made. In order to maximise participation the test was based indoors as it was felt that many parents may be "put off" by being asked to go out and walk or run anywhere. It was made clear in the covering letter that participation in the test was purely voluntary and that it was based on minimum levels of fitness for health, to avoid any association with military style compulsory fitness tests. Those suffering from injury or illness were asked not to attempt the activities. The problem
remained of how to design test items which were valid, yet easy to administer and attractive to undertake.

After discussion with exercise physiologists and colleagues, a number of tests items were put together to cover the 4 main aspects of fitness, and also to give an insight into parents' lifestyle.

**Cardio-vascular fitness**

A number of possibilities were considered for this aspect. Walking or running was discarded because it meant going outdoors. Bench stepping tests where pulse rate was monitored were decided against because of difficulties with uniformity of height of steps and also with the possibility of inaccurate pulse taking.

Eventually, a jogging on the spot exercise was included as it was felt that this was practical, easy to administer and not too rigorous for parents to attempt. Over exertion was guarded against by keeping the duration relatively short (3 minutes) and by stipulating that subjects must jog at a pace where they can hold a conversation throughout. The use of the word "jogging" was felt to be sufficient to impose a minimum level of working.

The most difficult aspect of the test for the testers was probably judging the condition of the subject at the end. Whether the subject could "easily" hold a conversation at the end was imposed as the criteria for judgement, although it was realised that the word "easily" was open to variation in interpretation by pupils.

A further indication of cardio-vascular fitness was given in answers to Question 2 - "Does running for the bus or other short distances leave you gasping for breath?"

**Flexibility**

The sit and reach test was decided upon for this aspect as it is used in a number of fitness test batteries to provide information on flexibility of the hamstrings and lower back,
and in a modified form is fairly easy to administer.

To avoid complicated measurement instructions, it was decided to adopt a very simple form where it was immediately apparent whether the minimum level had been reached i.e. can you get your fingers flat on the wall. This was found to be approximate to the levels recommended as being desirable for health.

The danger of over exertion leading to muscle injury in this test had to be overcome by 1) placing it after the other active items which acted as a warm up, 2) including a specific flexibility warm up before the item and 3) emphasising the need for gentle stretching in the instructions.

Question 3 was included as a further indicator of general flexibility.

Muscle Fitness: Strength and Endurance

Individual differences (especially between sexes) and difficulties in administration made tests of pure muscular strength inappropriate. The "sit up" was used as it is often used in test batteries, as an indication of muscular endurance in the abdominals, although in some individuals with poor muscle fitness, it may in fact be a test of muscle strength.

There are a number of variations on the basic sit up which could have been adopted, which act to vary degree of difficulty and muscle groups used. After trials on various members of the general public and discussion with exercise physiologists, it was decided to use the "low profile sit up". These are less difficult than the traditional hands to ears sit up and are less likely to lead to injury. They would also be more likely to be a test of endurance rather than strength.

Ten was selected as the pass/fail criteria, as it was felt that it would indicate a minimal level of muscular endurance.
Questions 1 and 4 also gave a general indication of muscle fitness.

Body Composition
Body composition is a potentially threatening topic and so care was needed in this item. Skinfold calipers are not readily available and so it was decided to adopt a well known but simple test - the "Pinch an Inch" test. This is used frequently in advertisements in the media and so it was felt that the familiarity may reduce its possible threat.

Lifestyle Questions
It is well known that performance in fitness tests may not be a valid reflection of lifestyle. It was therefore decided to include questions which, as well as providing opportunities for pupil/parent interaction, would look at aspects of lifestyle which may have a bearing on health. Questions 1-7 were taken from the BBC "Go For It" publication because they were deemed appropriate to this area.

Avoiding physical exertion, feeling physically worn out and feeling stressful often were all included to give a broader scope to the test rather than just physical performance and question 12 was a clear indicator of whether parents were actually fulfilling the minimum recommended activity level for health.

Pupil Instructions
Although pupils would be given time in lessons to try out the test on a partner, it was felt necessary to devise a set of pupil instructions which would not only aid the testers, but also provide information for parents on what they should be doing.

It was recognised that many pupils may have difficulties in following written instructions, and so parents were encouraged to read them too, in order to facilitate administration of the test.
I was concerned that the instructions may not be simple enough for pupils to follow and so a colleague from a different school tried them out with a group of 2nd year pupils, who reported little difficulty in following them. Shortage of time towards the end of the Autumn term made formal evaluation or feedback from this pilot test impossible, and so verbal responses had to be relied upon.

Covering Letter
A letter was sent home to parents with the M.O.T. test to explain its purpose and to advise on non-participation for those who had medical problems.

The overall tone of the letter was meant to make the test sound reasonably attractive and easy to complete as I was well aware of the problem of parents not wanting to participate in anything which they would find difficult.

The letter also encouraged parents to read through the instructions of the test. They were then given the opportunity to ask for further advice on the results by means of a return slip.

Validity of the Test
It has already been stated that in order to facilitate the administration of the test and to encourage participation, rigorous scientific procedures for physical fitness testing were deemed generally inappropriate. The information gained from the test could not, therefore, be considered to be totally scientifically valid.

However, the main purpose of the test was not to provide scientific data, but to provoke interaction, thought and responses from pupils and parents, and to generate a general interest. The test provided parents with a very general idea of minimum levels of fitness, and provided very general feedback on areas of fitness to the author.
The Pupil Booklet: "My Health and Fitness File" (See Appendix 6)

I felt the pupils needed a personal record of the course and so the pupils' Health and Fitness file was designed to fulfil a number of objectives:

1. To provide written information on concepts covered in the course and a record of work undertaken, so that lesson time was not wasted in getting pupils to copy information down.

2. The file itself provided another stimulus for discussion / interaction with parents, and could also contain suggestions for activities to be done at home by pupils / parents.

3. The file also constituted a means of providing feedback from pupils and parents on work or activities being done, as I was able to collect the files in for perusal.

Like the materials for parents a "made to measure" file was felt to be appropriate. Commercially available publications were expensive and not totally relevant to this course and so the Pupils' Health and Fitness Booklet was designed.

Information

The file needed to include factual information on health and fitness including the components of fitness. Each component was covered under the WHAT: WHY: HOW: pattern, i.e. WHAT is it, WHY is it important, and HOW can we affect it. The file contained information on various fitness principles which were to be covered in the course, such as the "FIT" principles, specificity and so on, as well as some simple anatomical and physiological background.

A balance needed to be found in providing enough information, but keeping it concise and simple enough for it to be easily understood.
Suggested Activities
The file included a number of suggested activities for pupils to carry out at home. For instance, some questions to ask Mum and Dad about what sort of physical activities they did when they were younger, a family activity diary to fill in over a week followed by discussion, questions for the family on activity levels, and so on. Other activities were designed to encourage pupils to think about the effects of exercise on the body, and how it made them feel. A dictionary of fitness words which pupils needed to fill in for themselves was included.

Feedback
There were various parts of the booklet where pupils could provide a written record of activities done at home which would provide information for the author. In particular, a section at the end for pupils to give their thoughts, and those of their parents, on the "Healthy Lifestyles Project, which would provide useful feedback on its effectiveness.

The attractiveness of the booklet was again an important factor for consideration in its design, while financial constraints also provided unavoidable limitations. Endless pages of typewritten information were to be avoided and cartoons used to break up the words and provide a light-hearted stimulus. It was decided to have the booklet printed from a word processor printout, which gave the information a "professional" look. Variety of print types were used to make the booklet more attractive and diagrams and cartoons (designed by senior pupils) included.

5.8 STAGE 3. THE HEALTHY LIFESTYLES EVENING

The Healthy Lifestyles Evening was planned to take place during the week following the completion of the teaching block. Its purposes were as follows:

i) To provide opportunities for parents to express opinions or ask questions in a face to face situation.

ii) To provide an opportunity for practical experience of some sort of fitness activity
iii) To provide an opportunity for pupils and parents to experience together important fitness principles

iv) To provide further information on opportunities for activity in the local environment

v) To make parents feel welcome and part of the physical education experience in the school

Initially a number of other teachers on the staff expressed an interest in becoming involved in the evening, but pressure of work in other areas overcame the initial enthusiasm. It is relevant to note here, however, that the acting head of girls' physical education stated from the outset that she wanted no involvement in the evening at all. She evidently still saw the author as an "outsider" in this context, despite the fact that they had worked together for a number of years.

When it became clear that other staff involvement was not possible, it was decided to keep the evening a fairly low key affair with only parents of the pupils involved in the project invited, instead of parents from all years as was originally planned. Staff would be invited to attend as participants.

Contact was made with the mother of two 6th form girls who is very active in the school association and who also happens to be a physiotherapist. She agreed to attend the evening to act as a consultant to any parents with worries about injuries and so forth.

The local authority was contacted and they provided information packs on "Recreation and Leisure" in Enfield, which contained a great deal of information on Local Authority run physical activities. Similar packs of information were supplied by Picketts Lock Leisure Centre, the major facility for physical activity in the area.

Further materials on various aspects of health and fitness were supplied by the local Health Education Authority and a number of individual sheets on exercise programmes, back care and nutritional balance were copied from the Canadian "Participation" material.
Other information was supplied to parents by means of a short illustrated talk entitled "Why Bother?", given by the author, in which the importance of lifestyle and the maintenance of health was emphasised. Copies of the Overhead Projector slides used are shown in Appendix 7 to give an indication of the content of the talk.

Activity was provided by means of an hour long "Exercise to Music" session which was taken by a qualified YMCA teacher. Exercise to music was selected as it was thought to provide activity which embraced all of the components of fitness, did not require a high level of skill or previous experience, could cater for different ages and levels of fitness and in the author's experience is found to be enjoyable by the vast majority of participants.

"M.O.T." retests were also available, conducted by pupils who had been part of the project.

Time was allowed at the end of the evening for parents to ask questions, watch fitness videos, consult the physiotherapist and generally communicate with each other.

5.9 EVALUATION

5.9.1 Design of follow up questionnaire
It was felt that a follow up questionnaire administered during the few days immediately after the healthy lifestyles evening was a good means of evaluating how much influence the project may have had on parents' knowledge and behaviour.

The following information need to be gleaned:

i) Has there been a change in the parents' knowledge of various health and fitness items?

ii) Has there been any change in parents' overall activity levels and patterns? If so, is this a result of the project?
iii) Have there been changes in other areas of behaviour, e.g. food provision?

iv) What other sources of information have parents been exposed to since the beginning of the project which may have affected their behaviour and knowledge?

v) What are the parents' views on the project? Are they generally positive or negative? Could they suggest improvements to be made.

vi) How effective was all of the literature sent home?

vii) Have parents' perceptions of health and fitness changed?

viii) Have parents entered into discussions with their children about the work covered?

During the course of the project Questionnaire 2 (Appendix 2c) was designed as a means of procuring this information. A number of factors had to be considered when creating this research instruments.

i) In order to maintain consistency of data a number of questions on questionnaire 2 needed to be carefully worded so as to purvey the same meaning to respondents as in Questionnaire 1. This was especially the case with the knowledge test, where changes in wording might have had an effect on parent response which had nothing to do with changes in knowledge.

ii) Related to i) should the questions be simply repetitions of those on questionnaire 1 to ensure consistency, at the risk of disaffecting respondents with what would appear to be covering the same ground again? With a self administered questionnaire it would not be easy to explain in detail why questions were being repeated.

iii) Parents had been bombarded with written material from the project during the previous 2 months and there was a distinct possibility that some parents were reaching saturation point and would fail to respond to yet another time consuming questionnaire.
After discussion with tutors, it was decided to keep the original wording of many questions and risk parental boredom. A covering letter could attempt to explain briefly why questions were being repeated. Thus questions 1, 2, 3, 4, 5a, 5b, were exactly the same as on questionnaire 1. 6a, 6b, and 8 were given number changes to cover the correct period of time, i.e., since the beginning of the Healthy Lifestyles Project, that is since January 12th ..." instead of "in the last two years ..."

In order to assess the effectiveness of the literature sent home, question 9 was designed as the most straightforward means of finding out if parents had received and read the information and if they had found it useful. Whether parents discussed health and fitness with their daughters was the crux of question 10 and other sources of information that parents had come across since the beginning of the project were asked for in question 11. Parents' opinions of the project were sought in questions 12 and 13.

Only the new questions needed pretesting and this in itself created a problem since they could only be answered by parents who had been subjects of the project. Since there was no pilot group and the size of the project group was already small the questions were given to colleagues and tutors for comments, and given to friends for comprehension checks.

A covering letter was attached to the questionnaire which thanked parents for their time and cooperation and explained the purposes of the second questionnaire. Assurance was given that this would be the last questionnaire they were asked to complete for the project.

The questionnaire was issued to all of the pupils who had participated in the project during a P.S.E. lesson on Tuesday 17th March, and parents were asked to return them to form tutors within a week. Form tutors had again agreed to collect in questionnaires and to give reminders to pupils. A reminder letter was issued after 6 days to encourage parents to return completed questionnaires.
5.9.2 Other sources of data for evaluation

While the questionnaire was a formal means of evaluation, various of the methods were used to assess the effectiveness and effects of the project:-

i) Verbal responses of pupils in lessons to various questions provided an informal source of information

ii) Written information in pupil files

iii) Observations of behaviour in lesson time could be illuminative. A written record of observations was kept of each lesson.

iv) Written responses of parents on M.O.T. tests

v) Behaviour of parents and pupils at Healthy Lifestyles Evening

These latter sources provided a means of formative assessment whereas the questionnaire could be seen as a summative assessment. The data provided by these various means provide an overall view of the effectiveness of the project and are outlined in the chapters which follow.
6.0 CHAPTER SIX

RESULTS

6.1 INTRODUCTION

A great deal of data was provided from responses parents gave to questionnaires 1 and 2, their replies to the M.O.T. test and from the walking survey. Results collated from these research instruments provide a useful background to degree of parental involvement in the project in its various forms and how these vary with the academic band of the pupil. There is also a great deal of information about parents perceptions of health and fitness, their knowledge of various aspects of these areas and how these may have changed over the period of the project. Parents exercise behaviour is also covered in some detail and evidence is provided to show that some changes in behaviour patterns occurred as a result of the project. Data is presented which provides an insight into parents attitudes to their daughters' participation in physical activities and whether they actively take part in any exercise with their children. Parents attitudes and behaviour to another area of health, that is diet, was investigated and responses are outlined here together with evidence of changes which occurred over the duration of the research project. Finally, how parents viewed the project and their attitudes towards it are outlined.

6.2.0 PARENTAL PARTICIPATION IN THE PROJECT

6.2.1 The degree of parental participation in the project is indicated to some extent by the proportion of parents completing the various questionnaires and activities presented to them by their daughters.

Table 1 shows the proportion of parents, in the whole sample, and also by band, who completed and returned questionnaires 1 and 2.
TABLE 1: Proportion of parents, as percentage of total sample and also as percentage of band groups, who completed and returned questionnaires 1 and 2.

<table>
<thead>
<tr>
<th></th>
<th>TOTAL SAMPLE</th>
<th>TOP BAND</th>
<th>MIDDLE BAND</th>
<th>BOTTOM BAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>123</td>
<td>81</td>
<td>35</td>
<td>7</td>
</tr>
<tr>
<td>%</td>
<td>77.8</td>
<td>86.1</td>
<td>64.8</td>
<td>58.3</td>
</tr>
</tbody>
</table>

This table shows a much more positive level of response to questionnaire 1 than to questionnaire 2 and a steady decline in proportions from top to low band classes. The exception to this latter trend being the very low level of response by middle band pupils to questionnaire 2. (This is however probably partly due to the fact that one of the two middle band classes had a form teacher who was absent from school during the week immediately after distribution of questionnaire 2 and so was unable to give the constant reminders necessary to ensure a good level of return. If this class is omitted from the survey, the other middle band group had a return rate of 60.9% which was higher than one might have expected. The very low returns from that one class also had a depressing effect on the overall result of returns). The very low number of pupils in the low band sample must also be considered.

Participation in the M.O.T. test also gives an indication of how involved parents became in the activity. Table 2 shows the proportion of parents completing and returing the M.O.T. test results to school and Table 3 shows the proportion of FAMILIES where at least one parent returned a completed form.

TABLE 2: Population of parents returning completed M.O.T. test results, as percentage of whole sample and by band (Sample size in brackets).

<table>
<thead>
<tr>
<th></th>
<th>TOP BAND (85)</th>
<th>MIDDLE BAND (40)</th>
<th>BOTTOM BAND (11)</th>
<th>TOTAL (145)</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>57.6</td>
<td>34.7</td>
<td>45</td>
<td>46.9</td>
</tr>
</tbody>
</table>
TABLE 3: Proportion of FAMILIES where at least one parent completed the M.O.T. test and returned the results, as percentage of total sample and by band.

<table>
<thead>
<tr>
<th>TOP BAND (46)</th>
<th>MIDDLE BAND (27)</th>
<th>BOTTOM BAND (6)</th>
<th>TOTAL (79)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.2</td>
<td>33.3</td>
<td>50</td>
<td>53.2</td>
</tr>
</tbody>
</table>

These show a similar trend to the previous results with parents of top band pupils more likely to take part in the activities than those of middle or low band. Tables 4 and 5 gives an indication of the proportion of families where at least one parent asked for further advice on their M.O.T. results.

TABLE 4: Proportion of families in sample where at least one parent asked for further advise on their M.O.T. results as a percentage of total sample and by band.

<table>
<thead>
<tr>
<th>TOP BAND (46)</th>
<th>MIDDLE BAND (27)</th>
<th>BOTTOM BAND (6)</th>
<th>TOTAL (79)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19.6</td>
<td>11.1</td>
<td>16.7</td>
<td>16.5</td>
</tr>
</tbody>
</table>

TABLE 5: Proportion of those families where at least one parent returned completed M.O.T. test, who asked for further advice on results.

<table>
<thead>
<tr>
<th>TOP BAND (30)</th>
<th>MIDDLE BAND (9)</th>
<th>BOTTOM BAND (3)</th>
<th>TOTAL (42)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>33.3</td>
<td>33.3</td>
<td>31</td>
</tr>
</tbody>
</table>

From these tables it can again be seen that parents of children in the top band appear to be more likely to become involved in the activities, although there appears little difference in the likelihood of those returning results asking for further advise. The relatively small bottom band sample size must be considered here as having an effect on the results.
The Healthy Lifestyles evening was another opportunity for parents to become actively involved in the project. The proportion of parents in the sample who attended the evening is shown in Table 6 and Table 7 shows the proportion of families represented by at least one parent. (Only 3 pupils in the sample had both parents attend). The now familiar trend of decline of involvement with band is repeated here, especially if one takes the figures for the family unit, where 17.4% of top band families were represented, 7.4% of middle band families and 0% of bottom band families.

TABLE 6: Proportion of parents in sample who attended Healthy Lifestyles evening, as percentage of total and by band

<table>
<thead>
<tr>
<th>Band</th>
<th>Sample Size</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Band</td>
<td>35</td>
<td>10.6%</td>
</tr>
<tr>
<td>Middle Band</td>
<td>49</td>
<td>6.1%</td>
</tr>
<tr>
<td>Bottom Band</td>
<td>11</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>145</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

TABLE 7: Proportion of families in sample represented by at least one parent at Lifestyles evening, as percentage of total and by band

<table>
<thead>
<tr>
<th>Band</th>
<th>Sample Size</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Band</td>
<td>46</td>
<td>17.4%</td>
</tr>
<tr>
<td>Middle Band</td>
<td>27</td>
<td>7.4%</td>
</tr>
<tr>
<td>Bottom Band</td>
<td>6</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>12.7%</td>
</tr>
</tbody>
</table>

An even more marked trend is seen if one compares the proportion of pupils from each band who attended the evening (Table 8).

TABLE 8: Proportion of pupils who attended Healthy Lifestyles evening, as percentage of total sample and by band.

<table>
<thead>
<tr>
<th>Band</th>
<th>Sample Size</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Band</td>
<td>46</td>
<td>37.0%</td>
</tr>
<tr>
<td>Middle Band</td>
<td>27</td>
<td>11.1%</td>
</tr>
<tr>
<td>Bottom Band</td>
<td>6</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>25.3%</td>
</tr>
</tbody>
</table>

These figures show that top band pupils were three times more likely to attend the evening than middle band pupils. No bottom band pupils attended at all. Table 9 shows the comments made by parents in questionnaire 2 about the Healthy Lifestyles evening.
| **MOTHERS** |
| "I would have liked to attend but I had a prior engagement. I think a keep fit class for children and parents is a great idea" |
| "Would be interested in the future but due to earlier commitments both my husband and I were unable to attend. My daughter did and enjoyed it" |
| "Unable to attend rather than not interested" |
| "Did not attend because I have a back weakness (disc)"

| **FATHERS** |
| "Unable to attend due to work commitments" |
| "Unable to attend rather than not interested" |
| "I work evenings"

"I was very sorry to have been unable to attend the "Family Fitness" evening held at the school on the 12th March - my husband and daughter found it an excellent way of enjoying fitness activities together. We all hope this may be repeated".

"We enjoyed the whole evening, thank you".
These results overall show an apparently greater level of participation by parents of top band pupils, than parents of middle and bottom band pupils. Parents of bottom band pupils were more likely than middle band pupils to complete practical activities rather than written activities in the home, and less likely to attend the Healthy Lifestyles evening on school premises.

Initially response levels were high, but as the project progressed, a decline was noticeable, although no doubt this is partly due to nature of activities.

The degree of involvement of parents in the project would be related to the attitude and behaviour of the pupils, especially in passing on information distributed to their parents. The Pupil Data Questionnaire distributed during week 4 of the project provided some information on whether pupils were passing on material to their parents. From Table 10 it can be seen that 23.5% of the pupils who completed the questionnaire failed to give the Health and Fitness leaflets distributed in the previous lesson to their parents. Middle band pupils were the worst offenders here, with 30.4% failing to pass on information. 22% of top band pupils were guilty, but the small group of bottom band pupils all said they had passed on the materials. Further evidence of this area is supplied by data from questionnaire 2 when parents were asked to state whether they remembered receiving various items of information. Table 11 shows that 70.1% - 77.9% of parents remembered receiving the various pieces of material each week.
TABLE 10: Self reported behaviour of 1st year girls on what they did with their "Health and Fitness" leaflets after distribution in class as percentage of sample.

<table>
<thead>
<tr>
<th>Reported Behaviour</th>
<th>Top Band (%)</th>
<th>Middle Band (%)</th>
<th>Bottom Band (%)</th>
<th>TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost it/Did nothing with it</td>
<td>12.2</td>
<td>8.7</td>
<td>-</td>
<td>10.3</td>
</tr>
<tr>
<td>Read it, but did not give it to parents</td>
<td>9.8</td>
<td>21.7</td>
<td>-</td>
<td>13.2</td>
</tr>
<tr>
<td>Read it, and gave it to parents</td>
<td>34.1</td>
<td>26.1</td>
<td>-</td>
<td>29.4</td>
</tr>
<tr>
<td>Gave it straight to parents</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>without reading it</td>
<td>24.4</td>
<td>17.4</td>
<td>75</td>
<td>25</td>
</tr>
<tr>
<td>Read it to parents</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td>Read it after parents</td>
<td>4.9</td>
<td>4.3</td>
<td>-</td>
<td>4.4</td>
</tr>
<tr>
<td>Other</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>1.5</td>
</tr>
</tbody>
</table>

TABLE 11: % of parents who completed questionnaire 2 who remembered receiving articles on Health and Fitness.

<table>
<thead>
<tr>
<th>Name of Article</th>
<th>% of parents who remembered receiving it</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. at Edmonton School</td>
<td>76.6</td>
</tr>
<tr>
<td>Health! What is it?</td>
<td>77.9</td>
</tr>
<tr>
<td>What is Fitness?</td>
<td>77.9</td>
</tr>
<tr>
<td>Coronary Heart Disease</td>
<td></td>
</tr>
<tr>
<td>Is your child at risk?</td>
<td>75.3</td>
</tr>
<tr>
<td>Exercise! Why Bother?</td>
<td>70.1</td>
</tr>
<tr>
<td>Stress</td>
<td>75.3</td>
</tr>
<tr>
<td>Weight</td>
<td>75.3</td>
</tr>
<tr>
<td>Exercise</td>
<td>75.3</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>75.3</td>
</tr>
</tbody>
</table>

It appears that between 20-30% of parents may be excluded from participation because their daughters fail to inform them of the possibilities.
6.2.2 Another element of parent participation is the amount of discussion which took place between pupils and parents about information sent home and work covered in lessons. Two sources of data are available for this area, one from pupils and one from parents. Pupil responses to the question on the Pupil Data Questionnaires which asked about whether they had discussed the "What is Health" article with their parents are shown in Table 12.

<table>
<thead>
<tr>
<th>Answer</th>
<th>Top Band (41)</th>
<th>Middle Band (22)</th>
<th>Bottom Band (4)</th>
<th>Total (67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No discussion</td>
<td>51.2</td>
<td>59.1</td>
<td>100</td>
<td>56.8</td>
</tr>
<tr>
<td>Some discussion</td>
<td>41.5</td>
<td>31.9</td>
<td>-</td>
<td>35.8</td>
</tr>
<tr>
<td>Discussion about how information affected family</td>
<td>7.3</td>
<td>4.5</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>4.5</td>
<td>-</td>
<td>1.5</td>
</tr>
</tbody>
</table>

This shows that approximately 42% of the pupils had taken part in some sort of discussion with their parents about the article, although only 6% had discussed how the information affected their family. Quite obvious band differences are to be seen again here with discussion not apparent at all in the families of bottom band pupils, but reported by 48.8% of top band and 36.4% of middle band pupils.

A more general picture of discussion throughout the project is given by parent responses to question 10 on questionnaire 2. Table 13 shows the proportion of fathers and mothers who said that they had discussed the work covered with their daughters, and Table 14 give the frequency of these discussions. Responses to these questions showed that only 15.7% of pupils in the sample had not participated in discussion with either parent about work covered during the project.
TABLE 13: Proportion of parents who said that they had taken part in discussion of work covered in the project, with their daughters as percentage of sample.

<table>
<thead>
<tr>
<th>MOTHERS</th>
<th>FATHERS</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>80.5</td>
<td>77.1</td>
<td>78.9</td>
</tr>
</tbody>
</table>

TABLE 14: Frequency of discussion reported by parents, as proportion of total number of parents who completed 2nd questionnaire.

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>% OF PARENTS IN SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>21.1</td>
</tr>
<tr>
<td>Once or twice during duration of project</td>
<td>40.8</td>
</tr>
<tr>
<td>Several times during duration of project</td>
<td>35.5</td>
</tr>
<tr>
<td>Every week during project</td>
<td>2.6</td>
</tr>
</tbody>
</table>

From Table 14 it can be seen that a very high proportion of parents said that they had taken part in discussion at some stage during the project, (78.9%) with mothers being slightly more likely than fathers to have done so. A small proportion of parents (2.6%) had taken part in discussion every week, but 35.5% said that discussion had occurred "several times" during the project. 40.8% had talked about the work with their children once or twice.

Discussion of articles was thought to be likely to occur if parents actually read these articles. However, the relationship was not as straightforward as one might expect. Table 16 shows the proportion of pupils who thought that their parents had read the article they had taken home (from Pupil Data Questionnaire).
TABLE 16: Pupil responses to "Do you think one or other of your parents read the leaflet?".

<table>
<thead>
<tr>
<th>Answer</th>
<th>Top Band (41)</th>
<th>Middle Band (22)</th>
<th>Bottom Band (4)</th>
<th>Total (67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>51.2</td>
<td>13.6</td>
<td>-</td>
<td>35.8</td>
</tr>
<tr>
<td>No</td>
<td>9.8</td>
<td>18.2</td>
<td>-</td>
<td>11.9</td>
</tr>
<tr>
<td>Don't Know</td>
<td>39</td>
<td>68.2</td>
<td>100</td>
<td>52.2</td>
</tr>
</tbody>
</table>

Over half the pupils did not know whether their parents had read the leaflet, 11.9% said that they did not think either of their parents had read it and 35.8% said they thought one or other had. Band differences are again apparent with a top band pupil being four times more likely than middle to state that one or other of their parents had read the article, and middle band pupils almost twice as likely as top band pupils to say that their parents had not read it. The proportion of pupils not knowing increases steadily from top band to middle band to bottom band (39% : 68% : 100%) and this may reflect the degree of communication between pupils and parents.

Information from parents on this topic indicates a higher proportion of parents reading the articles. Table 17 shows the responses of parents to question 9 on questionnaire 2 on whether they had read the articles sent home.
TABLE 17: Percentage of parents who completed questionnaire 2 who said that they had read various articles on Health and Fitness.

<table>
<thead>
<tr>
<th>Article</th>
<th>% of parents who said they had read it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. at Edmonton School</td>
<td>61</td>
</tr>
<tr>
<td>Health! What is it?</td>
<td>58.4</td>
</tr>
<tr>
<td>What is Fitness?</td>
<td>51.9</td>
</tr>
<tr>
<td>C.H.D - Is your child at risk?</td>
<td>58.4</td>
</tr>
<tr>
<td>Exercise! Why bother?</td>
<td>51.9</td>
</tr>
<tr>
<td>Stress</td>
<td>55.8</td>
</tr>
<tr>
<td>Weight</td>
<td>53.2</td>
</tr>
<tr>
<td>Exercise</td>
<td>54.5</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>51.9</td>
</tr>
</tbody>
</table>

These figures show that 51-61% of respondents said that they had read the articles sent home, each week, although an overall decline in numbers with time is evident. Further analysis of figures showed that the likelihood of parents to read various articles was related to the band of their child. From Table 18 the responses of parents to question 9 can be seen, by band of their child.

TABLE 18: Proportion of parents of pupils in each band stating various degrees of reading articles sent home.

<table>
<thead>
<tr>
<th></th>
<th>Top Band</th>
<th>Middle Band</th>
<th>Bottom Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read all of the articles</td>
<td>54.7</td>
<td>27.8</td>
<td>16.7</td>
</tr>
<tr>
<td>Read some of the articles</td>
<td>24.5</td>
<td>33.3</td>
<td>33.5</td>
</tr>
<tr>
<td>Read none of the articles</td>
<td>20.8</td>
<td>38.9</td>
<td>50</td>
</tr>
</tbody>
</table>

Perhaps the most crucial point to emerge from these figures is the steady increase in population of parents who read none of the articles as one progresses down through the bands i.e. from 20.8% in the top band to 50% in the bottom band. Similarly, more than 54% of top band parents claimed to have read all of the articles, while half that proportion of middle band parents and less than one third of that proportion of bottom band parents made the same claim.
6.3.0 PARENTS KNOWLEDGE AND PERCEPTIONS OF HEALTH AND FITNESS

6.3.1 Parents answers to questions 2 and 3 gave some indication of parents perceptions of Health and Fitness. Answers given to the open question were analysed and items mentioned placed in various categories as shown in Tables 19-21. The first shows the percentage of parents who completed questionnaire 1 who mentioned the various items in their answer to "How would you describe a healthy/fit person?" (See over). It can be seen that a much larger number of criteria were involved in the descriptions of 'healthy' than of 'fit'. Over a quarter of the parents in the sample associated health with freedom from physical sickness and over one third mentioned diet in their answers. Not smoking was frequently associated and body shape/weight. Women were far more likely to place importance on body weight/shape than men (21% of women and 13.1% of men mentioned it in their answers). Women also were more likely to mention exercise as a factor of health - 25.8% of women mentioned it, compared to 13.1% of men. Only 5.7% of the sample associated "fitness" with health.

When describing a fit person, over a third of the sample mentioned exercise or activity. In this area men were slightly more likely to mention it. Body shape and diet were quite commonly stated (13.8% and 11.4% respectively) and stamina featured largely among answers given (14.6%). The ability to exercise without ill effects was given by 10.6% of parents as a criteria for a fit person.

It was noted that a reasonably high proportion of parents failed to give answers to question 2 and 3, possibly for a variety of reasons. The proportion of respondents who gave no answer to question 2 and 3 on both questionnaires 1 and 2 are shown in Table 20.
**TABLE 19:** Proportion of parents mentioning various items in their answers to "How would you describe a healthy person" and "How would you describe a fit person". From questionnaire 1 (%)

<table>
<thead>
<tr>
<th>Item</th>
<th>Healthy Male</th>
<th>Healthy Female</th>
<th>Healthy Both</th>
<th>Fit Male</th>
<th>Fit Female</th>
<th>Fit Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom from physical sickness</td>
<td>26</td>
<td>29</td>
<td>27.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Freedom from mental sickness</td>
<td>4.9</td>
<td>8.1</td>
<td>6.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diet</td>
<td>32.8</td>
<td>37.1</td>
<td>35.0</td>
<td>14.8</td>
<td>8.1</td>
<td>11.4</td>
</tr>
<tr>
<td>Exercise</td>
<td>13.1</td>
<td>25.8</td>
<td>19.5</td>
<td>37.7</td>
<td>35.5</td>
<td>36.6</td>
</tr>
<tr>
<td>Not smoking</td>
<td>21.3</td>
<td>19.4</td>
<td>20.3</td>
<td>8.2</td>
<td>-</td>
<td>4.1</td>
</tr>
<tr>
<td>Avoidance of excessess</td>
<td>4.9</td>
<td>1.6</td>
<td>3.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Full of energy</td>
<td>1.6</td>
<td>9.7</td>
<td>5.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Complexion/Appearance</td>
<td>4.9</td>
<td>16.1</td>
<td>10.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mentally active/alert</td>
<td>3.2</td>
<td>1.6</td>
<td>2.4</td>
<td>1.6</td>
<td>-</td>
<td>.8</td>
</tr>
<tr>
<td>Happy</td>
<td>4.9</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Body shape/weight</td>
<td>13.1</td>
<td>21</td>
<td>17.1</td>
<td>11.5</td>
<td>16.1</td>
<td>13.8</td>
</tr>
<tr>
<td>Freedom from stress</td>
<td>6.6</td>
<td>4.8</td>
<td>5.7</td>
<td>1.6</td>
<td>-</td>
<td>.86</td>
</tr>
<tr>
<td>Rest/sleep</td>
<td>3.2</td>
<td>4.8</td>
<td>4.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Able to complete everyday tasks</td>
<td>4.9</td>
<td>-</td>
<td>2.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Enhanced body functioning</td>
<td>1.6</td>
<td>3.2</td>
<td>2.4</td>
<td>1.6</td>
<td>3.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Enhanced mental functioning</td>
<td>-</td>
<td>3.2</td>
<td>1.6</td>
<td>-</td>
<td>3.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Fit</td>
<td>3.2</td>
<td>8.1</td>
<td>5.7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sensible alcohol consumption</td>
<td>13.1</td>
<td>8.1</td>
<td>10.6</td>
<td>3.2</td>
<td>-</td>
<td>1.6</td>
</tr>
<tr>
<td>Non-use of drugs</td>
<td>3.2</td>
<td>-</td>
<td>1.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feeling good</td>
<td>3.2</td>
<td>3.2</td>
<td>3.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Healthy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.8</td>
<td>14.8</td>
<td>9.8</td>
</tr>
<tr>
<td>Stamina</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>16.4</td>
<td>12.9</td>
<td>14.6</td>
</tr>
<tr>
<td>Able to exercise without ill effects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11.5</td>
<td>9.7</td>
<td>10.6</td>
</tr>
<tr>
<td>Other</td>
<td>8.8</td>
<td>-</td>
<td>8.8</td>
<td>-</td>
<td>6.4</td>
<td>3.2</td>
</tr>
</tbody>
</table>
TABLE 20: Proportion of parents who failed to give any responses to questions 2 and 3 on both questionnaires, as percentage of total.

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>MALE</th>
<th>FEMALE</th>
<th>BOTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q2</td>
<td>Q3</td>
<td>Q2</td>
</tr>
<tr>
<td>Questionnaire 1</td>
<td>27.9</td>
<td>27.9</td>
<td>29</td>
</tr>
<tr>
<td>Questionnaire 2</td>
<td>41.2</td>
<td>41.2</td>
<td>34.9</td>
</tr>
</tbody>
</table>

The much larger number of non respondents on questionnaires 2 and 1 would obviously affect any apparent changes in perception over the cause of the project and so Table 21 shows responses to questions 2 and 3 as a proportion of those who gave answers to the questions (see over).

Parents were asked the same questions at the end of the project on questionnaire 2 and Tables 22 and 23 give details of their responses.
TABLE 21: Proportion of parents who gave answers to questions 2 and 3 mentioning various items in their answers from questionnaire 1.

<table>
<thead>
<tr>
<th>Item</th>
<th>HEALTHY</th>
<th></th>
<th>FIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
<td>Both</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Freedom from physical sickness</td>
<td>36.4</td>
<td>40.0</td>
<td>38.6</td>
<td>-</td>
</tr>
<tr>
<td>Freedom from mental sickness</td>
<td>6.8</td>
<td>11.4</td>
<td>9.1</td>
<td>-</td>
</tr>
<tr>
<td>Diet</td>
<td>45.5</td>
<td>52.3</td>
<td>48.9</td>
<td>20.5</td>
</tr>
<tr>
<td>Exercise</td>
<td>18.2</td>
<td>36.4</td>
<td>27.3</td>
<td>52.3</td>
</tr>
<tr>
<td>Not smoking</td>
<td>29.5</td>
<td>27.3</td>
<td>28.4</td>
<td>11.4</td>
</tr>
<tr>
<td>Avoidance of excessess</td>
<td>9.1</td>
<td>2.3</td>
<td>5.7</td>
<td>-</td>
</tr>
<tr>
<td>Full of energy</td>
<td>2.2</td>
<td>13.6</td>
<td>8.0</td>
<td>-</td>
</tr>
<tr>
<td>Complexion/Appearance</td>
<td>6.8</td>
<td>22.7</td>
<td>14.8</td>
<td>-</td>
</tr>
<tr>
<td>Mentally active/alert</td>
<td>4.5</td>
<td>2.3</td>
<td>3.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Happy</td>
<td>6.8</td>
<td>-</td>
<td>3.4</td>
<td>-</td>
</tr>
<tr>
<td>Body shape/weight</td>
<td>18.2</td>
<td>29.5</td>
<td>23.9</td>
<td>15.9</td>
</tr>
<tr>
<td>Freedom from stress</td>
<td>9.1</td>
<td>6.8</td>
<td>8.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Rest/sleep</td>
<td>4.5</td>
<td>6.8</td>
<td>5.7</td>
<td>-</td>
</tr>
<tr>
<td>Able to complete everyday tasks</td>
<td>6.8</td>
<td>-</td>
<td>3.4</td>
<td>-</td>
</tr>
<tr>
<td>Enhanced body functioning</td>
<td>2.3</td>
<td>4.5</td>
<td>3.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Enhanced mental functioning</td>
<td>-</td>
<td>4.5</td>
<td>2.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Fit</td>
<td>4.5</td>
<td>11.4</td>
<td>8.0</td>
<td>-</td>
</tr>
<tr>
<td>Sensible alcohol consumption</td>
<td>13.2</td>
<td>11.4</td>
<td>14.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Non-use of drugs</td>
<td>4.5</td>
<td>-</td>
<td>2.3</td>
<td>-</td>
</tr>
<tr>
<td>Feeling good</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
<td>-</td>
</tr>
<tr>
<td>Healthy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.8</td>
</tr>
<tr>
<td>Stamina</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20.9</td>
</tr>
<tr>
<td>Able to exercise without ill effects</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15.9</td>
</tr>
<tr>
<td>Other</td>
<td>11.4</td>
<td>13.6</td>
<td>12.5</td>
<td>-</td>
</tr>
</tbody>
</table>
TABLE 22: Proportion of parents mentioning various items in their answers to Questions "How would you describe a healthy person?" and "How would you describe a fit person?" as percentage of total sample from questionnaire 2.

<table>
<thead>
<tr>
<th>Item</th>
<th>HEALTHY</th>
<th></th>
<th>FIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Both</td>
<td>Male</td>
</tr>
<tr>
<td>Freedom from physical sickness</td>
<td>14.7</td>
<td>16.3</td>
<td>15.6</td>
<td>-</td>
</tr>
<tr>
<td>Freedom from mental sickness</td>
<td>5.9</td>
<td>4.7</td>
<td>5.2</td>
<td>-</td>
</tr>
<tr>
<td>Diet</td>
<td>17.6</td>
<td>37.2</td>
<td>28.6</td>
<td>11.8</td>
</tr>
<tr>
<td>Exercise</td>
<td>17.6</td>
<td>34.9</td>
<td>27.3</td>
<td>26.5</td>
</tr>
<tr>
<td>Not smoking</td>
<td>8.8</td>
<td>16.3</td>
<td>10.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Avoidance of excesses</td>
<td>-</td>
<td>2.3</td>
<td>1.3</td>
<td>5.9</td>
</tr>
<tr>
<td>Full of energy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Complexion/Appearance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mentally active/alert</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Happy</td>
<td>2.9</td>
<td>2.3</td>
<td>2.6</td>
<td>-</td>
</tr>
<tr>
<td>Body shape/weight</td>
<td>11.8</td>
<td>11.6</td>
<td>11.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Freedom from stress</td>
<td>-</td>
<td>4.7</td>
<td>2.6</td>
<td>-</td>
</tr>
<tr>
<td>Rest/sleep</td>
<td>2.9</td>
<td>2.3</td>
<td>2.6</td>
<td>-</td>
</tr>
<tr>
<td>Able to complete everyday tasks</td>
<td>-</td>
<td>2.3</td>
<td>1.3</td>
<td>-</td>
</tr>
<tr>
<td>Enhanced body functioning</td>
<td>-</td>
<td>2.3</td>
<td>1.3</td>
<td>-</td>
</tr>
<tr>
<td>Enhanced mental functioning</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fit</td>
<td>5.9</td>
<td>11.6</td>
<td>9.1</td>
<td>-</td>
</tr>
<tr>
<td>Sensible alcohol consumption</td>
<td>5.9</td>
<td>7.0</td>
<td>6.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Non-use of drugs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feeling good</td>
<td>5.9</td>
<td>2.3</td>
<td>3.9</td>
<td>-</td>
</tr>
<tr>
<td>Looking good</td>
<td>2.9</td>
<td>2.3</td>
<td>2.6</td>
<td>-</td>
</tr>
<tr>
<td>Healthy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stamina</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11.8</td>
</tr>
<tr>
<td>Able to exercise without</td>
<td>-</td>
<td>2.3</td>
<td>1.3</td>
<td>5.9</td>
</tr>
<tr>
<td>Feel ill effects</td>
<td>-</td>
<td>2.3</td>
<td>1.3</td>
<td>5.9</td>
</tr>
<tr>
<td>Other</td>
<td>2.9</td>
<td>9.3</td>
<td>6.5</td>
<td>8.8</td>
</tr>
</tbody>
</table>
TABLE 23: Proportion of parents who gave answers to questions 2 and 3 mentioning various items in their answers from questionnaire 2.

<table>
<thead>
<tr>
<th>Item</th>
<th>Male</th>
<th>Female</th>
<th>Both</th>
<th>Male</th>
<th>Female</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom from physical sickness</td>
<td>30</td>
<td>25</td>
<td>27.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Freedom from mental sickness</td>
<td>10</td>
<td>7.1</td>
<td>8.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Diet</td>
<td>30</td>
<td>66.7</td>
<td>45.8</td>
<td>20</td>
<td>34.6</td>
<td>28.3</td>
</tr>
<tr>
<td>Exercise/Regular activity</td>
<td>40</td>
<td>69.5</td>
<td>52.2</td>
<td>35</td>
<td>42.3</td>
<td>39.1</td>
</tr>
<tr>
<td>Not smoking</td>
<td>15</td>
<td>25</td>
<td>20.8</td>
<td>5</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Avoidance of excesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full of energy</td>
<td></td>
<td>3.6</td>
<td>2.1</td>
<td>10</td>
<td>19.2</td>
<td>15.2</td>
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<tr>
<td>Complexion/ Appearance</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mentally active/alert</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Happy</td>
<td>5</td>
<td>3.6</td>
<td>4.2</td>
<td>-</td>
<td>-</td>
<td>2.2</td>
</tr>
<tr>
<td>Body shape/weight</td>
<td>20</td>
<td>17.6</td>
<td>18.8</td>
<td>15</td>
<td>7.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Freedom from stress</td>
<td></td>
<td>7.1</td>
<td>4.2</td>
<td>-</td>
<td>3.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Rest/sleep</td>
<td>5</td>
<td>3.6</td>
<td>4.2</td>
<td>-</td>
<td>3.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Able to complete everyday tasks</td>
<td></td>
<td>3.6</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Enhanced body functioning</td>
<td></td>
<td>3.6</td>
<td>2.1</td>
<td>-</td>
<td>7.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Enhanced mental functioning</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fit</td>
<td>10</td>
<td>17.9</td>
<td>14.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sensible alcohol consumption</td>
<td>10</td>
<td>10.7</td>
<td>10.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-use of drugs</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feeling good</td>
<td>10</td>
<td>3.6</td>
<td>6.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Looking good</td>
<td>5</td>
<td>3.6</td>
<td>4.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Healthy</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Stamina</td>
<td></td>
<td>-</td>
<td>-</td>
<td>15</td>
<td>7.7</td>
<td>10.9</td>
</tr>
<tr>
<td>ill effects</td>
<td></td>
<td>2.3</td>
<td>1.3</td>
<td>10</td>
<td>7.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>14.3</td>
<td>10.4</td>
<td>15</td>
<td>11.5</td>
<td>13</td>
</tr>
</tbody>
</table>
If figures from tables 21 and 23 are compared, then some obvious changes can be seen, which may indicate a general change in perception. As would be hoped, almost double the proportion of parents mentioned exercise as being associated with health, with 52.2% giving it in their answer on questionnaire 2 and only 27.3% from questionnaire 1. Diet is mentioned by similar proportions in both questionnaires, but freedom from physical sickness is mentioned by fewer on questionnaire 2 (27.1% compared to 38.6%). This may reflect a move to a more positive view of health, although analysis of the criteria does little to support this possibility. A significant increase in the proportion of answers involving "fitness" can be seen, but generally changes are of small degrees and in the form of reductions.

Apparent changes in perceptions of fitness can also be seen. Diet becomes a much more generally stated criteria for fitness at the end of the project, the proportion mentioning it increasing from 16.1% to 28.3% but surprisingly exercise shows a corresponding drop in popularity - 51.7% to 39.1%. The term "regular exercise" did however become more frequently cited. "Energy" was cited by over 15% of those who answered the question on questionnaire 2, but had not been mentioned in relation to fitness at all on questionnaire 1. Body shape/weight and stamina both show significant drops in the proportion of respondents mentioning them, both dropping from 19.5% to 10.9%.

6.4.0 CHANGES IN KNOWLEDGE

6.4.1 Parents' answers to question 1 on both questionnaires reveal a general trend in the areas of lack of knowledge and also give an indication of the general level of knowledge of parents. Table 24 shows the proportion of parents who gave an incorrect or "unsure" answer to each of the statements. The only exception to this was the item relating to exercise to claustrophobia. On reflection, this seemed a poor sleeper question to have inserted, as parents may have associated claustrophobia and anxiety and therefore made a positive connection. For this item only those parents who said they were "unsure" were included.
with those giving the "not true" answer. Data from this question is of doubtful validity however, and so will not be involved in discussion.
TABLE 24: Table to show percentage of parents who had a lack of accurate knowledge in variety of areas of health and fitness at times of questionnaire 2.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>% of Parents showing lack of knowledge at Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking part in physical activities can improve a person's fitness.</td>
<td>3.2</td>
</tr>
<tr>
<td>Jogging can strengthen a person's heart.</td>
<td>52</td>
</tr>
<tr>
<td>To keep fit, a person must take part in physical activity at least 3 times a week.</td>
<td>44.7</td>
</tr>
<tr>
<td>By watching what they eat, a person can cut down the likelihood of him/her having a heart attack.</td>
<td>13</td>
</tr>
<tr>
<td>It is better for a person to eat plenty of red meat rather than carbohydrates like potatoes and pasta.</td>
<td>43</td>
</tr>
<tr>
<td>People who frequently take part in very vigorous physical activity which makes the heart beat very hard and very fast are more likely to suffer from a sudden heart attack than those who do not.</td>
<td>44.7</td>
</tr>
<tr>
<td>Overweight people are more likely to suffer from heart disease than people of the correct weight.</td>
<td>7.3</td>
</tr>
<tr>
<td>Non-smokers are less likely to suffer from heart disease than smokers.</td>
<td>18.7</td>
</tr>
<tr>
<td>Heavy smokers who give up after several years of smoking reduce their chances of suffering from heart disease.</td>
<td>33.3</td>
</tr>
<tr>
<td>Children do not need to be concerned about heart disease as it is only what they do when they get older that affects their chances of having a heart attack.</td>
<td>19.5</td>
</tr>
<tr>
<td>Exercise programmes are used to treat some people suffering from depression.</td>
<td>50.4</td>
</tr>
<tr>
<td>Exercise can help people who suffer from moderately high blood pressure.</td>
<td>61</td>
</tr>
<tr>
<td>Exercise is often used to cure people suffering from fear of closed spaces, or &quot;claustrophobia&quot;</td>
<td>23.6</td>
</tr>
<tr>
<td>Regular physical activity can help people suffering from stress and anxiety</td>
<td>32.5</td>
</tr>
<tr>
<td>A lot of backaches are caused because people don't have strong enough muscles in their stomach's</td>
<td>70.8</td>
</tr>
<tr>
<td>Taking part in vigorous exercise releases chemicals into the blood which can make you feel &quot;high&quot;</td>
<td>41.5</td>
</tr>
<tr>
<td>Sugar is an unnecessary part of our diet</td>
<td>48.8</td>
</tr>
<tr>
<td>For some people too much salt in their diet can increase the risk of suffering from a stroke or heart disease</td>
<td>13.8</td>
</tr>
</tbody>
</table>
Perusal of these results brings out some interesting points. On the whole, parents seemed more knowledgeable about the relationship between diet and health than that between exercise and health. Only 13% appeared unaware that by watching what they eat, a person can reduce their chances of having a heart attack, however nearly half the sample (48.8%) were not aware that sugar is an unnecessary part of our diet. The relationship between too much salt and coronary disorders was well known, with only 13.8% indicating lack of knowledge. Links between obesity and coronary heart disease and smoking and coronary heart disease were generally well known with 7.3% and 18.7% failing to give the correct answer. The benefits of giving up smoking after several years were less well known however with 33.3% revealing a lack of knowledge.

Although the great majority of parents knew that taking part in physical activities could lead to improved fitness, a surprisingly high number denied or were not sure if jogging would strengthen a person's heart (52%). Parents' knowledge of exercise related to the heart and circulatory system seems poor generally. 44.7% did not deny that people who take part in vigorous activities were more likely to suffer from a heart attack than those who do not and 61% did not realise that exercise could help moderate hypertensives. Knowledge of other positive benefits of exercise seemed generally vague. Over 70% were unaware of the relationship between stomach muscle fitness and low back pains, over half didn't realise that depression can be alleviated by regular vigorous exercise and more than 41% were not aware of the action of endorphines. A smaller proportion (32.5%) failed to confirm the relationship between exercise and the treatment of anxiety.

Encouragingly, less than 20% of the parents in the sample thought that children did not need to be concerned about heart disease, or were not sure of this fact.

44.7% failed to confirm that 3 activity sessions per week is the minimum required for fitness.
TABLE 25: Table to show percentage of parents who had a lack of knowledge in a variety of areas of health and fitness at time of questionnaire 2 and changes from 1.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>% of Parents who answered incorrectly or weren't sure</th>
<th>Difference in % from Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking part in physical activities can improve a person's fitness</td>
<td>1.3</td>
<td>-1.9</td>
</tr>
<tr>
<td>Jogging can strengthen a person's heart</td>
<td>20.8</td>
<td>-31.2</td>
</tr>
<tr>
<td>To keep fit, a person must take part in physical activity at least 3 times a week</td>
<td>35.1</td>
<td>-9.6</td>
</tr>
<tr>
<td>By watching what they eat, a person can cut down the likelihood of him/her having a heart attack</td>
<td>3.9</td>
<td>-9.1</td>
</tr>
<tr>
<td>It is better for a person to eat plenty of red meat, rather than carbohydrates like potatoes and pasta</td>
<td>37.7</td>
<td>-5.3</td>
</tr>
<tr>
<td>People who frequently take part in vigorous physical activity which makes the heart beat very hard and very fast are more likely to suffer from a sudden heart attack than those who do not</td>
<td>35.1</td>
<td>-9.6</td>
</tr>
<tr>
<td>Overweight people are more likely to suffer from heart disease than people of the correct weight</td>
<td>10.4</td>
<td>+3.1</td>
</tr>
<tr>
<td>Non-smokers who give up after several years of smoking reduce their chances of suffering from heart disease</td>
<td>28.6</td>
<td>-4.7</td>
</tr>
<tr>
<td>Children do not need to be concerned about heart disease, as it is only what they do when they get older that affects their chances of having a heart attack</td>
<td>9.1</td>
<td>-10.4</td>
</tr>
<tr>
<td>Exercise programmes are used to treat some people suffering from depression</td>
<td>24.7</td>
<td>-25.7</td>
</tr>
</tbody>
</table>
Table 25 continued/......

| Exercise can help people who suffer from moderately high blood pressure | 42.9 | -18.1 |
| Exercise is often used to cure people suffering from fear of closed spaces, or "claustrophobia" | 40.3 | +16.7 |
| Regular physical activity can help people suffering from stress and anxiety | 18.2 | -14.3 |
| A lot of backaches are caused because people don't have strong enough muscles in their stomach's | 37.7 | -33.1 |
| Taking part in vigorous exercise releases chemicals into the blood which can make you feel "high" | 33.8 | -7.7 |
| Sugar is an unnecessary part of our diet | 35.1 | -13.7 |
| For some people too much salt in their diet can increase the risk of suffering from a stroke or heart disease | 7.8 | -6 |

After providing pupils with various pieces of relevant material to pass on to parents during the project, and attempting to raise awareness through a variety of activities, parents were asked to complete exactly the same questions on questionnaire 2. It was hoped that parents would be more knowledgable in these various areas as a result of the project. Table 25 shows the percentage of parents who completed questionnaire 2 who were not sure or gave incorrect responses, together with any change in score from questionnaire 1. It can be seen from this table that all but 3 items show a decrease in score, indicating an increase in parental knowledge. It is difficult to account for the slight increase in scores of the items relating overweight to heart disease and smoking and heart disease. An indication of the confusion caused by the 'sleeper'
question about claustro-phobia is given by the significant increase in parents saying that the statement was true.

All other statements show a decrease in the number of incorrect or "not sure" answers, although some are more significant than others. Greatest changes in scores are seen in items relating to the positive effects of exercise. As one would hope, a great improvement in the score for the statement claiming that jogging can strengthen a person's heart (-31.2%) and also in that relating to stomach muscles and backache (-33.1%). The positive effects of exercise on depression (-25.7%) hypertension (-18.1%), and stress (-14.3%) seemed to be much more widely acknowledged. Less pronounced improvements are shown in the items covered with the required frequency of exercise (-9.6%) the likelihood of vigorous exercises suffering a heart attack (-9.6%) and the release of endorphines into the blood during exercise (-7.7%).

Improvements in scores on items to do with diet are also obvious. The general statement linking diet and heart disease was more frequently confirmed with a change of score of -9.1% as were the items on Salt (-6%), sugar (-13.7%) and red meat versus carbohydrates (-5.3%). More parents also denied the idea that children did not need to be concerned about heart disease, showing a change in score of -10.4%.

Individual scores on the knowledge test also showed an improvement. For the purposes of these figures the item about claustrophobia was omitted because of its doubtful validity. The average number of correct answers given to the knowledge questions on questionnaire 1 by parents, are given in Table 26 by band of children. These results show a steady decline in scores from parents of top band pupils to those of middle band pupils to those of bottom band pupils (11.580 : 10.2 : 9.714). At this stage there was very little difference between scores of males and females. Corresponding information from questionnaire 2 is shown on Table 27 and it can be seen that overall improvements in scores are obvious in all categories;
and Table 28 shows the average amount of improvement in scores by sex and band of pupil. It can be seen clearly that parents of top band pupils improved their scores on average, by a greater amount than parents of middle band pupils, who in turn improved more than parents of bottom band pupils. In general, females improved their scores by a greater margin than males. It is possible that the differences in average score could, to some extent, be accounted for by the change in population of respondents in questionnaire 2 ie: those parents who scored highly on questionnaire 1 were more likely to complete questionnaire 2 than those who scored badly, because they were more committed to the project. Table 29 therefore shows the proportion of pupils who increased their individual scores on the knowledge tests for questionnaire 1 to questionnaire 2. It can be seen that over two thirds of the parent sample (68%) increased their knowledge score 6% scored the same in both tests but 24% actually had a poorer score on questionnaire 2. Closer analysis reveals that parents of pupils in the top band were more likely to show an improved score than those with daughters in the middle or bottom bands. Generally females were more likely to show an increased score than males and males more likely to show a decreased score.
TABLE 26: Average number of correct answers given to knowledge questions on questionnaire 1 by parents, by sex and band. (Maximum possible score = 17)

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
<th>WHOLE SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sample</strong></td>
<td>11.145</td>
<td>11.116</td>
<td>11.081</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>62</td>
<td>61</td>
<td>123</td>
</tr>
<tr>
<td><strong>Top Band</strong></td>
<td>11.537</td>
<td>11.625</td>
<td>11.58</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>41</td>
<td>40</td>
<td>81</td>
</tr>
<tr>
<td><strong>Middle Band</strong></td>
<td>10.118</td>
<td>10.278</td>
<td>10.2</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>17</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td><strong>Bottom Band</strong></td>
<td>9.667</td>
<td>9.75</td>
<td>9.714</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

TABLE 27: Average number of correct answers given to knowledge questions on questionnaire 2 by parents by sex and band. (Maximum possible score 17)

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
<th>WHOLE SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sample</strong></td>
<td>12.647</td>
<td>13.140</td>
<td>12.922</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>34</td>
<td>43</td>
<td>77</td>
</tr>
<tr>
<td><strong>Top Band</strong></td>
<td>13.48</td>
<td>13.862</td>
<td>13.685</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>25</td>
<td>29</td>
<td>54</td>
</tr>
<tr>
<td><strong>Middle Band</strong></td>
<td>10.429</td>
<td>11.9</td>
<td>11.299</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>7</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td><strong>Bottom Band</strong></td>
<td>10</td>
<td>11</td>
<td>10.667</td>
</tr>
<tr>
<td><strong>Sample size</strong></td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
TABLE 28: Average improvements in knowledge score between questionnaire 1 and questionnaire 2 by band and sex

<table>
<thead>
<tr>
<th></th>
<th>MALES</th>
<th>FEMALES</th>
<th>WHOLE SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample</td>
<td>1.502</td>
<td>2.024</td>
<td>1.841</td>
</tr>
<tr>
<td>Top Band</td>
<td>1.943</td>
<td>2.237</td>
<td>2.105</td>
</tr>
<tr>
<td>Middle Band</td>
<td>0.311</td>
<td>1.622</td>
<td>1.099</td>
</tr>
<tr>
<td>Bottom Band</td>
<td>0.333</td>
<td>1.25</td>
<td>0.953</td>
</tr>
</tbody>
</table>

TABLE 29: Proportion of parents showing increase or decrease in knowledge score by sex and band as percentage of total

<table>
<thead>
<tr>
<th></th>
<th>INCREASED SCORE</th>
<th>DECREASED SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Whole Sample</td>
<td>Whole Sample</td>
</tr>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>Total Sample</td>
<td>61.76</td>
<td>73.17</td>
</tr>
<tr>
<td>Top Band</td>
<td>68</td>
<td>78.6</td>
</tr>
<tr>
<td>Middle Band</td>
<td>42.86</td>
<td>60</td>
</tr>
<tr>
<td>Bottom Band</td>
<td>50</td>
<td>67</td>
</tr>
</tbody>
</table>

Although one might expect the knowledge scores to be affected by the information distributed during the duration of the project, it is also possible that parents were exposed to materials from other sources which may have affected their knowledge, attitudes and behaviour. Parents were therefore asked whether they had come across any other sources of information during the course of the project (questionnaire 2, question 11) and Table 30 shows their responses.
TABLE 30: Answers of parents to question 11 on questionnaire 2 "Have you since the Healthy Lifestyles Project began, come across any information about health and fitness from sources other than the project"?

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32.1</td>
<td>48.8</td>
<td>42.3</td>
</tr>
<tr>
<td>No</td>
<td>53.6</td>
<td>46.5</td>
<td>49.3</td>
</tr>
<tr>
<td>Don't Know</td>
<td>14.3</td>
<td>4.7</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Females were more likely than males to be aware of exposure to other materials with almost half of the mothers giving a positive response. It can be seem that generally a high proportion of parents had come across other sources of information (42.3%). Various sources of information were mentioned by parents and Table 31 shows those most frequently mentioned.

TABLE 31: Proportion of those parents who had come across other materials mentioning various scores.

<table>
<thead>
<tr>
<th>Source</th>
<th>Males</th>
<th>Females</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Television</td>
<td>44</td>
<td>62</td>
<td>57</td>
</tr>
<tr>
<td>Radio</td>
<td>19</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Magazines</td>
<td>33</td>
<td>62</td>
<td>53</td>
</tr>
<tr>
<td>Newspapers</td>
<td>11</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Books</td>
<td>11</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Weight Watchers</td>
<td>0</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Tesco's Booklet*</td>
<td>0</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Dentist</td>
<td>0</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Chatting to Friends</td>
<td>0</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

The larger proportion of women giving positive answers is reflected in the greater frequency of responses shown in Table 31. The mass media were the most frequently mentioned sources of information especially T.V. and Magazines (57% and 53% respectively) and Radio and Newspapers cited less often. How much effect the outside sources of material had on parents scores is impossible to assess without the aid of a control
group. However, further analysis of questionnaire response shows that 45% of those who had increased test scores had come across outside information and 55% had not. 39% of those who had decreased test score said that they had had access to other materials and 61% had not. only 17% of those with unchanged scores had come across other information during the project. Those who had access to other sources and had improved their scores did so by 3 marks on average, whereas those who had improved their scores without use of other materials did so by 2.9 marks on average. Those who had a decreased test score have an average decrease of 2.1 marks if they had come across outside information, and 2.5 if they had not.

6.5.0 PARENTS EXERCISE BEHAVIOUR

6.5.1 The knowledge scores may show that the project had some effect on parents levels of knowledge about health and fitness, but it is necessary to investigate whether their behaviour has been affected in anyway. A great deal of data was accumulated on parents activities levels at the start and at the end of the project. The number of activity sessions reported by parents during the week prior to questionnaire 1 are shown in Table 32.

| TABLE 32: Number of exercise sessions in week prior to questionnaire 1 reported by parents, including WALKING |
|-----------------------------------|-----------------------------------|-----------------------------------|
| Male (61)                        | Female (62)                       | Both (123)                        |
| No                               | %                                 | No                               | %                                 | No | %                               |
| None                             | 19                                | 31                               | 12                                | 19.4 | 31                             | 25.2 |
| One                              | 6                                 | 9.8                              | 10                                | 16.1 | 16                             | 13    |
| Two/Three                        | 11                                | 18                               | 15                                | 24.2 | 26                             | 21.8 |
| Four or more                     | 10                                | 16.4                             | 8                                 | 12.9 | 18                             | 14.6 |
| Daily                            | 15                                | 24.6                             | 11                                | 17    | 26                             | 21.1 |

40.8% Men )
35.5% Women ) Exercised less than two times per week
38.2% Both )
It can be seen from this table that men (31%) were more likely than women (19.4%) to take no exercise at all during the week and also more likely to have less than two exercise sessions per week (40.8% compared to 35.2%). However men were more likely to exercise at least 4 times per week - 41% compared to 30.3%.

Over a quarter of the total sample reported no exercise at all during the week before questionnaire 1 but 35.7% reported at least 4 exercise sessions during that time.

Table 33 shows equivalent data for questionnaire 2 and some interesting differences can be seen.

**TABLE 33: Number of exercise sessions in week prior to second questionnaire reported by parents including WALKING**

<table>
<thead>
<tr>
<th>Male (34)</th>
<th></th>
<th>Female (43)</th>
<th></th>
<th>Both (77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Z</td>
<td>No</td>
<td>Z</td>
<td>No</td>
</tr>
<tr>
<td>None</td>
<td>6</td>
<td>17.6</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td>One</td>
<td>2</td>
<td>5.9</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Two/Three</td>
<td>9</td>
<td>26.5</td>
<td>14</td>
<td>32.6</td>
</tr>
<tr>
<td>Four or more</td>
<td>10</td>
<td>29.4</td>
<td>13</td>
<td>30.2</td>
</tr>
<tr>
<td>Daily</td>
<td>6</td>
<td>17.6</td>
<td>9</td>
<td>20.9</td>
</tr>
</tbody>
</table>

23.5% Men )
18.7% Women ) Exercised less than two times per week
20.8% Both )

There is an overall drop in the proportion of parents who took no exercise at all during the preceding week, of almost 15%, and a larger drop (17.4%) in the proportion who took part in less than two exercise sessions during the week. There are corresponding increases in the 2/3 and 4 or more categories, but a slight drop in the "daily" category, caused by a reduction in the number of males taking exercise daily. The proportion of women doing so shows a slight increase.
These figures tell us little about what sort of activities parents are taking part in for exercise. The activities which parents stated they had participated in during the week leading up to questionnaire 1 are shown in Table 34. It can be seen from this that the only activities in which the vast majority of parents participated was Walking (2 miles or more) which was given by over 60% of the sample. Exercise to Music was the next most popular, (22.8%) although the majority of those mentioning it were women, Jogging/Running was mentioned by 13% of the sample, individual sports by 12.2%, team games by 10.6% and swimming by 9.8%.

Table 35 shows corresponding data derived from questionnaire 2 and given the overall increase in activity levels included from Tables 32 and 33, one would expect to see increases in proportion of parents taking part in various activities. The greatest increase is seen in "walking" where 13.9% more parents said they had walked 2 miles or more on at least one occasion during the previous week. An increase in the number of women swimming led to an overall increase in the proportion of swimmers. A large increase in the proportion taking part in exercise to music is also obvious (9.8%) and a small increase in participants in individual sports can be seen, accounted for by men. All the other categories actually show a decrease in proportion of participants, the greatest decline coming in jogging/running (5.2%) and team games (4.1%).

It would appear then that the stated increases in activity levels are to a large extent due to increases in walking. When walking is excluded from the activities parents have participated in, very little change is seen in overall frequency of exercise from questionnaire 1 to questionnaire 2, except in the "no activity" and "one" categories where the decrease in the former is matched almost exactly by the increase in the latter (See tables 36 and 37).

Walking therefore is an important aspect of activity patterns of parents with a large proportion (over 30%) giving it as their only form of exercise, in both questionnaires. Further
information was obtained about this walking behaviour by distributing a walking survey to those parents who stated on questionnaire 1 that they walked a distance of at least 2 miles daily during the previous week. 46% of the questionnaires were returned, and the information from these is shown in tables 38. Table 38 breaks down the walking behaviour of respondents and gives miles walked during various periods of the day and also shows whether the respondent was accurate with the estimates of distances. The table shows that during the 24 hours investigated in the survey, just over half walked a distance of 2 miles continuously. Although all but one of the parents had covered a total mileage of 2 miles or more, for many it was a sum of much smaller distances. The estimates of distances shows a tendency to overestimate distances walked. Of the estimates, 45% were correct, 12% were underestimated and 43% were overestimated.

Data seems to indicate some raising of activity levels over the period of the project. Parents perception of their own activity levels reveal a similar trend. Table 39 shows the results of question 7a from questionnaire 2 on whether parents felt that their levels of activity had changed at all since the start of the project.

<table>
<thead>
<tr>
<th></th>
<th>Fathers (32)</th>
<th>Mothers (42)</th>
<th>Both (74)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Much less active</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Little less active</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Same amount of activity</td>
<td>23</td>
<td>71.9</td>
<td>25</td>
</tr>
<tr>
<td>Little more activity</td>
<td>9</td>
<td>28.1</td>
<td>16</td>
</tr>
<tr>
<td>Much more activity</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
TABLE 34: Percentage of sample who said that they had participated in given activities during week prior to questionnaire 1.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>MEN</th>
<th>WOMEN</th>
<th>BOTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>59</td>
<td>62.9</td>
<td>60.1</td>
</tr>
<tr>
<td>Jogging/Running</td>
<td>14.8</td>
<td>11.3</td>
<td>13</td>
</tr>
<tr>
<td>Cycling</td>
<td>4.9</td>
<td>1.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Swimming</td>
<td>11.5</td>
<td>8.1</td>
<td>9.8</td>
</tr>
<tr>
<td>Circuit Training</td>
<td>4.9</td>
<td>3.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Exercise to music</td>
<td>9.8</td>
<td>35.5</td>
<td>22.8</td>
</tr>
<tr>
<td>Team Games</td>
<td>13.1</td>
<td>8.1</td>
<td>10.6</td>
</tr>
<tr>
<td>Individual Sports</td>
<td>9.3</td>
<td>14.5</td>
<td>12.2</td>
</tr>
<tr>
<td>Yoga</td>
<td>1.6</td>
<td>3.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Martial Arts</td>
<td>4.9</td>
<td>-</td>
<td>2.4</td>
</tr>
<tr>
<td>Weight Training</td>
<td>3.2</td>
<td>8.1</td>
<td>8.1</td>
</tr>
<tr>
<td>Other</td>
<td>4.9</td>
<td>6.5</td>
<td>7.3</td>
</tr>
<tr>
<td>No Activity</td>
<td>31</td>
<td>19.4</td>
<td>25.2</td>
</tr>
</tbody>
</table>

TABLE 35: Percentage of sample who said that they had participated in given activities during week prior to questionnaire 2.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>MALE</th>
<th>FEMALE</th>
<th>BOTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>70.6</td>
<td>76.7</td>
<td>74</td>
</tr>
<tr>
<td>Jogging/Running</td>
<td>11.8</td>
<td>4.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Cycling</td>
<td>2.0</td>
<td>4.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Swimming</td>
<td>11.8</td>
<td>14.0</td>
<td>13</td>
</tr>
<tr>
<td>Circuit Training</td>
<td>2.9</td>
<td>-</td>
<td>1.3</td>
</tr>
<tr>
<td>Exercise to music</td>
<td>11.8</td>
<td>48.8</td>
<td>32.5</td>
</tr>
<tr>
<td>Team Games</td>
<td>8.8</td>
<td>4.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Individual Sports</td>
<td>20.6</td>
<td>9.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Yoga</td>
<td>2.9</td>
<td>-</td>
<td>1.3</td>
</tr>
<tr>
<td>Martial Arts</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Weight Training</td>
<td>8.8</td>
<td>2.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No Activity</td>
<td>17.6</td>
<td>4.7</td>
<td>10.4</td>
</tr>
</tbody>
</table>
TABLE 36: Number of exercise sessions in week prior to questionnaire 1 reported by parents, excluding walking.

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th></th>
<th>FEMALE</th>
<th></th>
<th>BOTH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>NONE</td>
<td>36</td>
<td>59</td>
<td>32</td>
<td>51.6</td>
<td>68</td>
<td>55.3</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>9.8</td>
<td>8</td>
<td>12.9</td>
<td>14</td>
<td>11.4</td>
</tr>
<tr>
<td>2/3</td>
<td>9</td>
<td>14.8</td>
<td>9</td>
<td>14.5</td>
<td>18</td>
<td>14.6</td>
</tr>
<tr>
<td>4 or more</td>
<td>9</td>
<td>14.8</td>
<td>8</td>
<td>12.9</td>
<td>17</td>
<td>13.8</td>
</tr>
<tr>
<td>DAILY</td>
<td>1</td>
<td>1.6</td>
<td>5</td>
<td>8.1</td>
<td>6</td>
<td>4.9</td>
</tr>
</tbody>
</table>

When walking was excluded

68.8% Men
64.5% Women
66.7% Both

Exercised less than two times per week

TABLE 37: No of exercise sessions in week prior to questionnaire 2 reported by parents, excluding walking.

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
<th></th>
<th>FEMALE</th>
<th></th>
<th>BOTH</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>NONE</td>
<td>18</td>
<td>52.9</td>
<td>16</td>
<td>37.2</td>
<td>34</td>
<td>44.2</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>17.6</td>
<td>11</td>
<td>25.6</td>
<td>17</td>
<td>22.1</td>
</tr>
<tr>
<td>2/3</td>
<td>2</td>
<td>5.9</td>
<td>8</td>
<td>18.6</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>4 or more</td>
<td>5</td>
<td>14.7</td>
<td>4</td>
<td>9.3</td>
<td>9</td>
<td>11.7</td>
</tr>
<tr>
<td>DAILY</td>
<td>1</td>
<td>2.9</td>
<td>3</td>
<td>7.0</td>
<td>4</td>
<td>5.2</td>
</tr>
</tbody>
</table>

When walking was excluded

70.5% men
62.8% women
66.3% both

exercised less than two times per week
### TABLE 38: Table to show walking behaviour of respondents to walking survey i.e. in 24 hours (* = Female respondent)

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Evening</th>
<th>Before Breakfast</th>
<th>To/From Work</th>
<th>Lunch Break</th>
<th>As part of work</th>
<th>To/from work</th>
<th>Pleasure</th>
<th>Other</th>
<th>Walks of 2 miles +</th>
<th>Mileage Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td></td>
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<td></td>
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<tr>
<td>8</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
While no parents said that they had become less active, almost 35.2% of them said that they had become more active. Most of these fell into the "little more active" category, with only one respondent saying that she had become much more active. Generally, women were much more likely to have raised their activity levels than men with over 40% of the women respondents saying they were more active, and 28% of men.

Those parents who had become more active were asked to say whether they felt that their raised activity levels were a result of the Healthy Lifestyles project and their responses to this question are shown in Table 40. The results are encouraging.

<table>
<thead>
<tr>
<th></th>
<th>Fathers (9)</th>
<th>Mothers (17)</th>
<th>Both (26)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Was a result of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>project</td>
<td>6</td>
<td>66.7</td>
<td>12</td>
</tr>
<tr>
<td>Was not a result</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of project</td>
<td>1</td>
<td>11.1</td>
<td>5</td>
</tr>
<tr>
<td>Don't know</td>
<td>2</td>
<td>22.2</td>
<td>-</td>
</tr>
</tbody>
</table>

It can be seen from here that over two thirds of those parents who had become more active said they had done so because of the project.

6.6.0 PARENTS ATTITUDES TO THEIR DAUGHTERS ACTIVITY LEVELS

6.6.1 Other areas where the project may have affected parents attitudes and behaviour include their attitude to their daughters activity levels. Parents were asked in questionnaire 1 whether they had, in the past year, encouraged their daughters to take part
in physical activities outside school. Table 41 tabulates parents' responses to this question. 65.1% of parents said that they had encouraged their daughters to participate in physical activities, but Table 41 looks at the data in terms of family units and shows that 26.5% of pupils whose parents returned the questionnaire had had no encouragement from either parent in the previous year to take part in physical activities outside school. In 44.1% of responding families, both parents gave encouragement while in 14.7%, mother only encouraged and in 14.7% father only did so.

**TABLE 41:** Parents who answered positively to questions 6a on questionnaire 1 as proportion of families involved in sample. "In the last year, have you encouraged your daughter to take part in any physical activity outside school?"

<table>
<thead>
<tr>
<th>Neither Parent</th>
<th>Parent</th>
<th>Mother Only</th>
<th>Father Only</th>
<th>Both Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>18</td>
<td>26.5</td>
<td>10</td>
<td>14.7</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 42 shows the activities in which parents encouraged their daughters to participate.

**TABLE 42:** Proportion of parents mentioning activities when asked to name activities they encouraged their daughters to take up from questionnaire 1.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>As % of total parent sample (123)</th>
<th>As % of total who encouraged (30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming</td>
<td>28.5</td>
<td>48.8</td>
</tr>
<tr>
<td>Roller Skating</td>
<td>6.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Walking</td>
<td>7.3</td>
<td>11.3</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>4.1</td>
<td>6.3</td>
</tr>
<tr>
<td>Athletics</td>
<td>1.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Aerobics</td>
<td>4.9</td>
<td>7.5</td>
</tr>
<tr>
<td>Team Games (Netball, Basketball Hockey, Rounders)</td>
<td>11.4</td>
<td>17.5</td>
</tr>
<tr>
<td>Judo/Karate</td>
<td>3.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Yoga</td>
<td>0.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Individual Games</td>
<td>3.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Dancing</td>
<td>8.9</td>
<td>13.8</td>
</tr>
<tr>
<td>Keep Fit</td>
<td>0.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Cycling</td>
<td>3.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Jogging</td>
<td>2.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Girl Guide Games</td>
<td>0.8</td>
<td>1.3</td>
</tr>
</tbody>
</table>

By far the most popular activity was swimming, mentioned by 45.8% of those parents who encouraged their daughters, followed by a variety of team games (17.5%) Dancing (13.8%) and walking (11.3%).
Parents were asked a similar question at the end of the project, but the question asked if they had encouraged their daughters to participate in any physical activities since the beginning of the project, 63.6% of parents said they had done so and table 43 shows the family unit breakdown.

**TABLE 43a:** Parents who answered positively to question (6a). "Since the beginning of the Healthy Lifestyles Project, have you encouraged your daughter to participate in physical activity outside school?" as percentage of families involved in sample from questionnaire 2.

<table>
<thead>
<tr>
<th>Neither</th>
<th>Parent</th>
<th>Mother Only</th>
<th>Father Only</th>
<th>Both Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>18</td>
<td>35.3</td>
<td>16</td>
<td>31.4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.8</td>
<td>12</td>
<td>23.5</td>
</tr>
</tbody>
</table>

It can be seen that a greater proportion of pupils had neither parent encourage them and a smaller proportion had both parents encourage them. However more pupils had their mothers only encourage them. Table 44 shows the activities mentioned by the encouraging parents. Generally, fewer activities were mentioned with walking (14%) and swimming (11.6%) being the most popular.

Whether parents actually encouraged their daughters to participate as a result of the project is difficult to ascertain. However, further analysis of questionnaires shows that of those parents who said that they had encouraged their daughters during the project only 6 (15%) had answered the same question negatively on questionnaire 1. Four pupils were encouraged by 1 or 2 of their parents during the project who had not been in the previous years. 20 parents (50%) (from 15 families) indicated in their answers on questionnaire 2 that they had given further encouragement to participate more or in different, usually aerobic activities. Parents in this category were more likely to encourage walking.
TABLE 43b: Activities mentioned by parents when asked in what they encouraged their daughters to take part.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>As % of total parent sample</th>
<th>As % of parents who encouraged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>7.8</td>
<td>14</td>
</tr>
<tr>
<td>Gymnastics</td>
<td>1.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Aerobics/Exercise to music</td>
<td>2.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Exercises</td>
<td>2.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Judo/Karate</td>
<td>1.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Ice/Roller Skating</td>
<td>2.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Horse Riding</td>
<td>2.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Swimming</td>
<td>5.2</td>
<td>11.6</td>
</tr>
<tr>
<td>Dancing</td>
<td>3.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Cycling</td>
<td>1.3</td>
<td>2.3</td>
</tr>
<tr>
<td>Jogging</td>
<td>3.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Housework</td>
<td>1.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Some indication of parents' commitment to encouraging their children to participate in activities is given by data on parents who took part in physical activities with their daughters, and Tables 43 to 46 show information relating to this area. The responses of parents from questionnaire 1 about whether they had participated in a physical activity during the previous week are shown in Table 43 and Table 44 shows the activities mentioned by parents responding positively. 23.6% of parents in the sample said that they had taken part in some form of physical activity with their daughter during the previous week, walking being by far the most popular activity, mentioned by almost half of the positive respondents. Swimming and exercise to music were other more frequently mentioned activities of the pupils in the sample. Only 30% had taken part in an activity with one or both parents. Only 11.8% had participated with both parents and mothers were more likely to be exercise companions, than fathers were to these girls.
TABLE 43c: Percentage of parents who said that they **had** participated in some form of physical activities with their daughters in week leading up to questionnaire 1 as percentage of families in sample.

<table>
<thead>
<tr>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>No.</td>
</tr>
<tr>
<td>Z</td>
</tr>
<tr>
<td>No.</td>
</tr>
<tr>
<td>%</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>47</td>
</tr>
<tr>
<td>69.1</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>14.7</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4.4</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>11.8</td>
</tr>
</tbody>
</table>

TABLE 44: Popularity of activities mentioned as being participated in by parents with their daughters.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of parents in sample (123)</th>
<th>% of parents who undertook activity with daughter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jogging</td>
<td>.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Exercises</td>
<td>1.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Swimming</td>
<td>4.9</td>
<td>20.1</td>
</tr>
<tr>
<td>Tap Dancing</td>
<td>.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Exercise to Music</td>
<td>2.4</td>
<td>10.3</td>
</tr>
<tr>
<td>Cycling</td>
<td>.8</td>
<td>3.4</td>
</tr>
<tr>
<td>Walking</td>
<td>10.6</td>
<td>44.8</td>
</tr>
</tbody>
</table>

% of parents who completed who said they participated with daughters = 23.6%.

TABLE 45: Parents who answered positively to question 5a on questionnaire 2 as proportion of families involved in sample (51). "In the past week have you taken part in any of the activities named above with your daughter?"

<table>
<thead>
<tr>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>No.</td>
</tr>
<tr>
<td>Z</td>
</tr>
<tr>
<td>No.</td>
</tr>
<tr>
<td>%</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>26</td>
</tr>
<tr>
<td>39.2</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>19.6</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>7.8</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>9.8</td>
</tr>
</tbody>
</table>
TABLE 46: Popularity of activities mentioned as being participated in by parents, with their daughters.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of parents in sample (77)</th>
<th>% of parents who participated with daughter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jogging</td>
<td>2.5</td>
<td>6.7</td>
</tr>
<tr>
<td>Exercise to Music</td>
<td>18.1</td>
<td>46.7</td>
</tr>
<tr>
<td>Swimming</td>
<td>6.5</td>
<td>16.7</td>
</tr>
<tr>
<td>Walking</td>
<td>7.8</td>
<td>20</td>
</tr>
<tr>
<td>Weight Training</td>
<td>1.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Team Games</td>
<td>1.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Guide Games</td>
<td>1.3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

% of parents who completed questionnaire who said they participated with daughters = 39%.

Answers to the same question at the end of the project show some encouraging changes (see tables 45 and 46). The proportion of parents who had participated in an activity with their daughter shows an increase of over 15% to 39%. However, actual numbers show a far smaller increase from 29 to 30. The number of pupils who had one or both parents as exercise companies did show a larger increase, from 21 to 25 or a 19% rise. The proportion of pupils who had neither parent participate with them decreased to 39.2%. Once again, mothers were more likely to exercise with their daughters than fathers.

Close analysis of questionnaires reveals that 52% of those parents who answered positively to the question on questionnaire 2 had not done so on questionnaire 1 and that 57% of the pupils whose parent(s) took part in activities with them during the week at the end of the project, had not experienced the same during the week before the commencement of the project.

The popularity of various activities also show changes. Exercise to music was by now the most popular activity, mentioned by nearly half of the positive respondents, with walking coming next (20%). Jogging became more popular showing an increase
both in the proportion of positive respondents mentioning it, and in the target population as a whole. Although swimming showed a relative decrease in popularity among positive respondents, it was mentioned by a greater proportion of the survey sample in the latter questionnaire than the former.

6.7.0. **PARENTS ATTITUDE TO DIET**

6.7.1 Another aspect of health behaviour which this survey can illuminate is diet or food intake of families. Questions 8 and 8b on questionnaire 1 elicited information of whether parents kept an eye on their families food intake for health reasons, and what changes they had made in the previous two years. Table 47 shows the proportion of parents who said that they did monitor food intake of the family for health reasons. Only 13.2% of the families involved had neither parent keeping an eye on food intake. In almost half the families both parents did so. Mothers were, as one might expect, twice more likely to be the only parent mentioning diet than fathers.

**TABLE 47:** Proportion of families where at least one parent "keeps and eye on family's food intake for health reasons" as a percentage of sample.

<table>
<thead>
<tr>
<th>Mother only</th>
<th>Father only</th>
<th>Both</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td>26.4</td>
<td>13.2</td>
<td>47</td>
<td>13.2</td>
</tr>
</tbody>
</table>

Parents were then asked if they had made any changes in the sort of food they gave their families, for health reasons, in the previous two years. It can be seen from table 48 that in just over a third of families, no changes had been made. In a further 36.8%, both parents stated that changes had been made. In the remaining families, mothers were 4 times more likely to have made changes than fathers.
TABLE 48: Parents responses to question on questionnaire 1 about changes to type of foods given to family for health reasons.

<table>
<thead>
<tr>
<th></th>
<th>Mother only</th>
<th>Father only</th>
<th>Both</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23.5</td>
<td>5.9</td>
<td>36.8</td>
<td>33.8</td>
</tr>
</tbody>
</table>

TABLE 49: % of parents who had made changes mentioning various dietary factors implemented in two years prior to questionnaire 1.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>% of parents mentioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced fats</td>
<td>51.5</td>
</tr>
<tr>
<td>Reduced salt</td>
<td>13.2</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>29.4</td>
</tr>
<tr>
<td>Increased fibre</td>
<td>50</td>
</tr>
<tr>
<td>Reduced additives</td>
<td>19.1</td>
</tr>
</tbody>
</table>

TABLE 50: % of families who had made changes

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>% of Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced fats</td>
<td>74.5</td>
</tr>
<tr>
<td>Reduced salt</td>
<td>19.1</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>40.4</td>
</tr>
<tr>
<td>Increased fibre</td>
<td>72.3</td>
</tr>
<tr>
<td>Reduced additives</td>
<td>29.7</td>
</tr>
</tbody>
</table>

Tables 49 and 50 give further information on the sorts of changes made in diet. Table 49 is concerned with individual parents, and table 50 deals with the family unit. Reduced fat and increased fibre were the changes most frequently mentioned with reduced sugar, salt and additives being less popular.

On questionnaire 2 parents were asked if they had made changes to their families food habits during the course of the project and their responses are shown in tables 51 and 52.
TABLE 51: Proportion of parents who said they had made dietary changes during the course of the project from questionnaire 2.

<table>
<thead>
<tr>
<th></th>
<th>Fathers</th>
<th>Mothers</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>7</td>
<td>21.9</td>
<td>14</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
<td>28.4</td>
</tr>
</tbody>
</table>

TABLE 52: Proportion of families where at least one parent has made dietary changes during the course of the project (from questionnaire 2)

<table>
<thead>
<tr>
<th></th>
<th>Mother only</th>
<th>Father only</th>
<th>Both</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25.5</td>
<td>8.5</td>
<td>6.4</td>
<td>59.0</td>
</tr>
</tbody>
</table>

It can be seen that 28.4% said they had made changes during the project, with a greater proportion of mothers answering positively than fathers. A closer examination of responses from questionnaires 1 and 2 shows that of the 21 parents who said they had made changes, only 2 had not also answered positively on questionnaire 1. 8 parents (from 7 families) gave answers on questionnaire 2 which suggested they made further changes to their diet. The remaining 11 parents gave no indication whether they had made further changes or were simply restating previous ones. Table 53 shows the changes made by those answering positively.

TABLE 53: Dietary changes made as a % of families who had made changes (1a)

<table>
<thead>
<tr>
<th>CHANGE</th>
<th>% of those making changes giving it as an example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced fat</td>
<td>31.6</td>
</tr>
<tr>
<td>Reduced salt</td>
<td>10.5</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>26.3</td>
</tr>
<tr>
<td>Increased fibre</td>
<td>36.8</td>
</tr>
</tbody>
</table>
These results reflect a much lower proportion of families who had made changes mentioning them. A number of parents on questionnaire 2 failed to give examples of changes and so this affects the results. Once again, reduced fat and increased fibre are most frequently mentioned, although they change rank positions.

### 6.8.0 PARENTS PERCEPTIONS OF THE PROJECT

### 6.8.1

Parents feelings about the project and the usefulness of the materials used were surveyed by questions on questionnaire 2. Table 54 draws together all of the information and usefulness of the various materials sent home.

**TABLE 54:** From questionnaire 2, whether parents had received various written articles on health and fitness, and whether they read and found them useful.

<table>
<thead>
<tr>
<th>% of parents who received</th>
<th>% of parents who read it</th>
<th>% of parents who found it useful</th>
<th>% of parents who read it and found them useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E. at Edmonton School:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical jerks or P.E. for life.</td>
<td>76.6</td>
<td>61</td>
<td>45.5</td>
</tr>
<tr>
<td>Health: What is it?</td>
<td>77.9</td>
<td>58.4</td>
<td>49.4</td>
</tr>
<tr>
<td>What is fitness?</td>
<td>77.9</td>
<td>51.9</td>
<td>39</td>
</tr>
<tr>
<td>Coronary Heart Disease</td>
<td>75.3</td>
<td>58.4</td>
<td>48.1</td>
</tr>
<tr>
<td>&quot;Exercise - Why Bother?&quot;</td>
<td>70.1</td>
<td>51.9</td>
<td>42.9</td>
</tr>
<tr>
<td>Flora leaflets on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>75.3</td>
<td>55.8</td>
<td>48.1</td>
</tr>
<tr>
<td>Weight</td>
<td>75.3</td>
<td>53.2</td>
<td>46.8</td>
</tr>
<tr>
<td>Exercise</td>
<td>75.3</td>
<td>54.5</td>
<td>46.8</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>75.3</td>
<td>51.9</td>
<td>48.1</td>
</tr>
</tbody>
</table>

It can be seen that in general, 40-50% of parents who return the questionnaires said that they found the various leaflets useful with "What is Fitness?" having the lowest use score of 39%. The figures in the fourth column which gave the proportion of parents who read the article who found it useful are probably more informative, since
parents who did not receive the article or did not read it, were not in a good position to judge its usefulness. These figures show that generally parents found the glossy "off the peg" materials more useful than those especially prepared. Of the made to measure articles, the one explaining Coronary Heart Disease was found most useful by parents.

The proportion of parents who completed questionnaire 2 who said that they thought that the Healthy Lifestyles Project was a good way of making families more aware of health and fitness are shown in Table 55. Less than 10% felt that the project was not a good way. 6.9% felt it needed some changes, but over 80% felt it was good as it was. Those who thought changes were appropriate were asked to suggest what changes could be made and these are shown in Table 56. A number of parents supported their views with further comments at the end of the questionnaire and these are shown in Table 57. Mothers were more likely to comment than fathers and generally, comments were of a positive nature.

TABLE 55: Percentage of parents who thought that "Healthy Lifestyles Project" was a good way of making families more aware of health and fitness.

% of parents in each category

<table>
<thead>
<tr>
<th></th>
<th>% of parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>The project was not a good way</td>
<td>9.7%</td>
</tr>
<tr>
<td>of improving family awareness</td>
<td></td>
</tr>
<tr>
<td>It is a good way</td>
<td>83.3%</td>
</tr>
<tr>
<td>Needs some changes</td>
<td>6.9%</td>
</tr>
</tbody>
</table>
TABLE 56: Suggested changes to project made by parents

FATHERS

"To get the child's attention and awareness instead of a good laugh to get Mum and Dad on the exercise mat."

"If specific diet sheets were available."

"There should be less strenuous exercises for the less fit and healthy and those suffering from various diseases e.g. asthma in my case."

"A Food Diary."

MOTHERS

"More information on what foods are good and what are not and how just on few simple exercises could help the body."

"A food diary"

TABLE 57: Parents written comments from questionnaire 2 on the Project.

Mothers

"I think it is very good that the children and us really know how important it is".

"Good idea - will perhaps motivate the kids and parents as well to cut down on unhealthy junk food diets".

"It is nice to see the school taking an interest".

"It is good to teach the children about healthy eating and exercise at an early age".

Fathers

"I think it is a very useful project".

"I think it is an excellent way to make families more aware. We are investing in an exercise bike".

"It has been a good way of informing people of a healthy way of living, whether they take any notice or not is another matter, those that do do must surely benefit".
Mothers

"It did not make much difference to myself but it is useful to some people in the community".

"The project has been very useful and informative. Carol and Sarah enjoyed the activities as "alternatives" to traditional P.E. lessons and it was beneficial to family involvement to have them M.O.T. us! The health and fitness evening was a very enjoyable occasion and we would welcome other such evenings. It would also be helpful to have a follow-up questionnaire say in 6 months time to see if families have reverted to old habits. Thank you for all your efforts and hard work!".

"A very interesting project and useful information".

"It has been very useful as it has made one think more about healthy exercise and our eating habits. It's made me aware of how little exercise we do compared to when our children were small. But one of the chief reasons to this is I now work at a job where I am on my feet all day and consequently I really am too tired to do very much".

Fathers

"Too much literature can be counter-productive. There may be a tendency to disregard it if it becomes "the same old story".

"To create a more positive attitude in the children if they are the means of selling the project to the parents".

"Stop sending forms home!"
**Mothers**

"I think all schools should do a healthy lifestyles project from an early age (infant)."

"Try and give the children healthy school dinners."

"While I think it is a good thing to make families aware of how they can improve their health and fitness, I would like to suggest that the boys are also made aware of "Health and Fitness" programme as although I realise boys are slightly more active than girls at school, from my experience it seems more men are prone to heart disease than women. Also boys should be aware of the sort of diet that is beneficial to their health instead of relying on their mothers to provide this."

"I would just like to say that I have been aware of what I give my family to eat for quite a while now as there is heart disease in my husbands family, but I must say I am concerned about school dinners at the school as I call it a lot of junk food."

**Fathers**

"I don't think all schools should do a healthy lifestyles project from an early age (infant)."

"Try and give the children healthy school dinners."

"While I think it is a good thing to make families aware of how they can improve their health and fitness, I would like to suggest that the boys are also made aware of "Health and Fitness" programme as although I realise boys are slightly more active than girls at school, from my experience it seems more men are prone to heart disease than women. Also boys should be aware of the sort of diet that is beneficial to their health instead of relying on their mothers to provide this."

"I would just like to say that I have been aware of what I give my family to eat for quite a while now as there is heart disease in my husbands family, but I must say I am concerned about school dinners at the school as I call it a lot of junk food."
CHAPTER SEVEN

OBSERVATIONS AND REFLECTIONS

7.1 INTRODUCTION

Although a great deal of data was gained from the questionnaires, other sources of data of a less formal nature were gathered during the teaching block. These included verbal feedback from pupils and other staff, written feedback from pupils and parents in the Health and Fitness files, my own observations and evaluations of lessons. These sources of information were documented from week to week and formed the basis of reflections which took place at regular intervals throughout the teaching block.

The material which was planned for the lessons is shown in Appendix. At the end of each lesson taught, immediate observations were made into a dictaphone and later transcribed, together with any further thoughts on how the lesson had been received by pupils. Before planning the next lesson, these observations were re-read and reflected upon in order to provide criteria to be considered when preparing material. These reflections were made at 3 levels:

i) Reflections on effects generally throughout the year group.

ii) Any special needs of particular groups.

iii) Any individuals particular needs.

It became clear that the first two levels were much easier to fulfill than the latter, as I had got into the habit of thinking of my teaching unit of being the group rather than number of individuals.

Thus reflection took place at the end of each lesson, at the end of each week and finally at the end of the teaching block when judgement would be made on the relative effectiveness of various parts of the course. The following chapter gives a summary of observations and reflections which took place at various times during the teaching block.
7.2.0 WEEKLY REFLECTIONS

7.2.1 REFLECTION ON WEEK 1

The lesson which took place during the first week of the block were peculiar for a number of reasons. From the organisational aspect, they had to be held in a classroom because the hall was being used for examinations, so a "theory" lesson was planned. The second peculiarity was that as I had not been in school during the first term of the academic year, the pupils and myself were strangers to each other. This was likely to have an effect on the pupils responses and attitudes to me as well as mine to them. Before the lessons, and particularly during the first lesson I was aware of a peculiar sense of nervousness about teaching which I had not experienced with a first year group for many years. The fact that I had not been in the school teaching situation for 6 months and that the work I was doing was a crucial part of my study contributed to a loss of confidence that was likely to affect my teaching during the initial stages at least.

I was very aware during my first lesson with group 1 of the groups reticence towards myself which was not alleviated by my own nervous approach. Although my confidence returned very quickly, I did feel that the relationship which I developed with group 1 was not quite so productive and open as that with groups 2 and 3 and this may partly have been to the initially strained atmosphere of the class. Groups 2 and 3 were also "obviously bemused by their new teacher" (quote from observation) but my more confident approach was able to overcome this much more effectively.

I was struck by all of the groups unwillingness to volunteer information or opinions in a whole class situation. On reflection, this could have been due to the newness of the situation and of teacher, work being studied and so on. It is also possible that the pupils were not used to having their views asked for. The girls were much more willing to talk freely and openly to a partner about how they would describe a fit/healthy person, than they were to express their views
in front of the rest of the class. From talking to individuals in the class, the pupils seemed to associate health with diet/food and fitness with exercise/jogging. These assumptions are borne out by Tables 58 and 59 which show the written responses of pupils to the same questions, although there are some noticeable differences in group response. Pupils were very quick to mention "healthy eating" as a description of a healthy person, but few were able to mention specific foods which should/should not be eaten. When I questioned individuals it transpired that they had recently been covering "healthy" foods in home economics and this would account for their preoccupation with it. I was surprised to see the high scores for exercise and fitness from top band pupils in their descriptions of a healthy person.

The concept of responsibility for health and ideas on who can affect an individuals health proved quite difficult for the pupils to understand. When asked to think about "who can affect your health" commonly given answers were sweet and tobacco manufacturers and fast food industries again reflecting their preoccupation with food and smoking which is evident in Table 56. After many cues, pupils eventually hit upon the idea that an individual and her parents (amongst others) can affect their own health by what they do. They did not seem to have an idea of individual CHOICE or responsibility for health. The concept of LIFESTYLE was obviously far too complex for the majority of them to grasp.

The role their parents played in affecting their health was another idea which led to bemusement. The suggestions from pupils about how parents might affect their health included "by smoking" or "drinking". The idea that parents usually provided their food or encouraged them to exercise did not readily occur.

Differences between the groups were already becoming apparent. Group 1 were a typical top band class, quiet, attentive, well behaved. Group 2 were far livelier with one or two individuals who indulged in attention seeking behaviour. Group 3 were generally more babyish, but very well behaved. They needed a great deal of prompting to volunteer information and didn't
TABLE 58:  Pupils conceptions of 'Health' - Group of 1st year girls responses to the request to complete the statement:— "I think a healthy person is........"

% of group mentioning the following attributes in their answers:

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>Group One</th>
<th>Group Two</th>
<th>Group Three</th>
<th>Whole Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size: 30</td>
<td>Size: 23</td>
<td>Size: 17</td>
<td>Size: 70</td>
</tr>
<tr>
<td></td>
<td>Top Band</td>
<td>Top/Middle Band</td>
<td>Middle/</td>
<td>Bottom Band</td>
</tr>
<tr>
<td>Good eating habits</td>
<td>93</td>
<td>91</td>
<td>59</td>
<td>84</td>
</tr>
<tr>
<td>Non smoker</td>
<td>40</td>
<td>60</td>
<td>47</td>
<td>49</td>
</tr>
<tr>
<td>Regular exercise/activity/sport</td>
<td>53</td>
<td>17</td>
<td>12</td>
<td>31</td>
</tr>
<tr>
<td>Physically fit</td>
<td>50</td>
<td>4</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Avoidance of alcohol</td>
<td>20</td>
<td>22</td>
<td>36</td>
<td>24</td>
</tr>
<tr>
<td>Non abuse of drugs</td>
<td>0</td>
<td>17</td>
<td>41</td>
<td>17</td>
</tr>
<tr>
<td>Good body shape</td>
<td>17</td>
<td>4</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Self pride/concern</td>
<td>14</td>
<td>0</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Free from illness</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Good complexion</td>
<td>7</td>
<td>0</td>
<td>6</td>
<td>4</td>
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<td>Good teeth</td>
<td>3</td>
<td>0</td>
<td>0</td>
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<td>Personal cleanliness</td>
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</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
TABLE 59: Pupils conceptions of fitness - Group of 1st year girls responses to the request to complete the statement: "I think a fit person is.......

% of group mentioning the following attributes in their answers.

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>Group One</th>
<th>Group Two</th>
<th>Group Three</th>
<th>Whole Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular activity/exercise</td>
<td>81</td>
<td>82</td>
<td>82</td>
<td>83</td>
</tr>
<tr>
<td>Good eating habits</td>
<td>33</td>
<td>30</td>
<td>18</td>
<td>29</td>
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<tr>
<td>Good body shape</td>
<td>40</td>
<td>16</td>
<td>12</td>
<td>26</td>
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<tr>
<td>Strong/good muscles</td>
<td>47</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Stamina</td>
<td>10</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Healthy</td>
<td>7</td>
<td>0</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Good at sport</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Non smoker</td>
<td>3</td>
<td>13</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Personal cleanliness</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Taking care of self</td>
<td>0</td>
<td>0</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Flexibility</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Rich</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Free from illness</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Good</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
seem to form mental links between concepts very quickly. They were very concerned as a group that the lessons would not always be in classroom, as they wanted to take part in activity.

Group 1 pupils did not envisage any problems with the administration of questionnaire 1, but two pupils from group 2 said that their parents did not read/write English, one said that her mum wouldn't want to fill it in, and the rest were generally a little less enthusiastic. Group 3 made no comments.

The video shown also received mixed responses. Group 3 obviously enjoyed watching it, found it humorous and responded well. Group 1 watched in silence and became bored towards the end. Group 2 were lively at first but settled to watch quietly. All three groups seemed to have a general idea about the aspects of fitness the video was outlining, but a little confusion was apparent with terms that were new like endurance. Also, the use of the lion to illustrate to cardio-vascular endurance some found confusing as they normally associated the lion with strength.

At the end of week 1, a number of observations became important:

i) The need for activity, as I sensed a restlessness amongst the pupils that their P.E. lesson was inactive.

ii) The need to develop a relationship with the pupils which is more conducive to the exchange of ideas, opinions and information.

iii) The need to make clearer to pupils the idea that they and their parents have a great deal of responsibility for each others health.

iv) The need to get the idea across that being active is an important part of HEALTH

REFLECTION ON WEEK 2

The second week's lessons were therefore planned to include plenty of activity, as I did not want the pupils to be given the impression that learning about health was just another classroom subject. However, practical difficulties immediately became apparent. Groups 1 and 2 had their lesson first thing
in the morning immediately after full school assembly which over ran into what should have been lesson time. Their lessons were therefore reduced during this week, and often in latter weeks too, from 55 to 35-40 minutes. This meant that once Health and Fitness files had been distributed and named and explained and a brief recap of fitness and health terms had been run through, there was very little time left for much activity. The only activity groups 1 and 2 had was that involved in the M.O.T. test, which they practised on a partner. They approached this activity with great enthusiasm as if they were grateful to be doing something themselves.

I was aware of the growing possibilities of boredom with talking about concepts and so with group 3 who fortunately had a longer lesson, I began the lesson with a 10 minute exercise to music session, hoping to gain their attention through activity. This proved a successful move as they all worked with great enthusiasm and were actually smiling while working. At the end of the exercise session, when asked how they felt, answers included "alive", "fresh", and "tired". One girl said she felt "dreadful" because she was "hot and sweaty". After some reflection, she decided that perhaps it wasn't so awful to be hot and sweaty after all. Another girl described how part of the way through the aerobic activity she had felt like giving up, but had carried on and "felt much better after". The positive responses from the pupils were very encouraging, and I was pleased that this group at least were now more willing to contribute to discussions and offer information and feelings. One girl, who had trouble keeping time said that she was "useless" at this, implying that she didn't like activity in general. She appeared surprised when I told her that I was sure we could find some form of activity which she would enjoy.

The pupil responses to the M.O.T. test were fairly similar for all groups. They seemed to understand the purpose of the test and were very keen to try it out on each other, although I wasn't aware of any competitive aspects to this. After some initial instructions, they were generally able to follow the written instructions easily. When I asked the groups whether
they thought their parents would like to do the test, a large number of pupils said that they thought their parents were unfit and so wouldn't want to do the test. I encouraged a kind, sympathetic approach to testing by pupils, with the emphasis on the ease of the test. It occurred to me at this point that a great deal depended on the attitude and approach of the pupils at home, a factor over which I had very little control.

One girl approached me at the end of the lesson, slightly worried that her mother would say that she didn't have time to take part in the M.O.T. test because she had 7 children to look after and was therefore too busy. After explaining to the pupil that if her mother was too busy that it would not be a reflection on the pupil as far as I was concerned, I also tried to explain that it is important for the busiest of people to make time to keep themselves fit and healthy, in order that they could cope with the demands placed on them more easily. However, it did become apparent that many parents would find the activities I was asking them to take part in irrelevant and a waste of their time.

The amount that pupils actually talked to their parents was becoming an issue that I wondered about. I asked each group about their parents reactions to reviewing the questionnaire and pupils were quite unresponsive. When pressed for answers about what their parents had said, most said nothing. Apparently, most parents had just read it, filled it in and returned it without having any discussion about it. One girl from the whole year said that her parents had asked what it was for, and she had replied "Only for P.E."! At this stage it appears that parent awareness was not very high.

Some consideration of these observations led to the following comments at the end of the 2nd week.

i) Both the pupils and myself were much happier when the activity level was raised. Could this be a reflection of my expectation as a P.E. teacher that P.E. lessons
should consist of nothing but activity with no time to think about what we're doing? Were the experiences of Groups 1 and 2 as conducive to developing positive attitudes to exercise as those of group 3, who had obviously greatly enjoyed the exercise to music session, and spent less time on the M.O.T. test? I felt that giving pupils plenty of time to enjoy physical activity was vital over the next few weeks, but they must also be allowed time to consider how it affected them, how it made them feel and so on.

ii) I had experienced the feeling of rushing through work, trying to cover as much ground as possible in the time allowed. The problem was exacerbated by the reduction in lesson time for groups 1 and 2. I did not want pupils to associate physical activity with being rushed and under pressure and so it may be necessary to reduce the content of lessons, in order to improve the pupils' experience.

iii) I was struck by obvious enjoyment that pupils were showing for the actual physical activity they took part in. It acted to motivate me in my teaching as well as, hopefully, them in their exercising.

iv) Are pupils talking to parents about the work they are doing? Apparently not. How can I find out? How can I encourage them to do so.

v) I began to experience a feeling of unease at the teacher dependent style of my lessons. I have generally taught in a formal way, but began to feel that this method was inappropriate in this sort of work. If I want these girls to develop into responsible, autonomous exercisers then I must not always tell them what to do.

**REFLECTION ON WEEK 3**

As a result of these reflections, lesson 3 was planned to include much less material, to try to find out more about whether pupils discussed the work with their parents, to place higher emphasis
on learning by doing. As the concepts involved in aerobic activity and its effects on the body were being covered, it seemed appropriate at this stage to try to involve pupils in activity experiments which would allow them to experience personally the varying effects of different intensity of activity.

The effect of these lessons was encouraging. Every child appeared to work keenly and enthusiastically and although a few had difficulty with finding their pulse, they generally responded very well. The general appearance was one of genuine interest in the effects the exercise was having on their bodies. The question/answer sessions at the end of the experiment were more lively with pupils being more willing to answer questions and give views. This question answer session allowed the theory underlying the experiment to be covered in a less formal way.

Some of the pupils, at the end of the exercise session, seemed very tired from a small amount of activity and this may have been an indication of poor levels of fitness.

Pupil feedback on parents reactions to M.O.T. test was again not as forthcoming as I would have hoped. About 50% of pupils said their parents had completed the test. Reasons why the other 50% had not done so involved "didn't want to", "injury or illness", "too busy" or "too lazy". Pupils were unwilling to provide any further information on their parents reactions which again made me wonder "at what level is pupil/parent interaction and discussion taking place?". I had made it clear that I was quite happy to hear negative comments as well as positive ones, so I was not convinced that fear of teacher reprisal was responsible for the lack of feedback. I became more concerned that pupils and parents were having little valuable interaction, which would greatly negate the purposes of the project.
At the end of the third week, the following thoughts occurred:

i) The pupils, and the teacher, are "having a good time" in P.E. lessons (or so it appears!) The activities are worthwhile and the pupils experience of them appears to be a good one. It occurred to me that I had rarely seen all class members able to work so hard to complete a set task in a lesson, with no fear of failure or loss of confidence, and at the same time experience activities which would enhance their understanding of their own physical selves.

Pupils were leaving the lesson glowing and eager to do more and so was I. This latter statement is relevant, since after 9 years of teaching rarely experienced the feelings of achievement and satisfaction which were apparent after these lessons.

ii) The pupil/parent interaction question is becoming crucial. Some attempt must be made to a) find out whether pupils are talking to their parents about the work and b) attempt to encourage pupils to involve parents in their work.

iii) The lower band pupils do not seem to have such a clear understanding of the concepts underlying the practical work covered. Will this be a problem in long term aims? or can we rely on pupils "good experience" to motivate them to carry on participation?

iv) The less crammed lessons were more successful in that I felt more relaxed, and was able to develop more personal relationships with pupils, being less concerned with covering huge quantities of material.

The problem of whether pupils were actually talking to their parents and discussing the work needed to be tackled. On inspection of their files, very few of the pupils seemed to have completed the activity on page 6, on discussing why health and fitness has become important in recent years (less than 10%). This had not been set as a specific piece of homework,
but a suggestion had been made to the girls that they complete it during the early stages of the course. It had also been suggested that pupils take home materials distributed in lessons and read and discuss them with parents. The Pupil Data questionnaire (see appendix xxx) administered during the 4th week showed that large numbers of pupils were having little interaction with parents and those who were may not have been discussing how the information related to them as a family. (Tables 10 and 12). About one quarter of the pupils were not even passing on the information distributed. Once again, the dependence upon the pupils to reach parents became a crucial factor in the project. I decided over the next few weeks to place greater emphasis on pupils/parents interaction, by stressing the importance, in lessons, of passing on material given and encouraging greater discussion of the work. The "Family Activity Diary" (see Pupil Booklet, pages 9, 10 and 11) was also included to promote interaction at home. Pupils were asked to complete this diary for themselves and at least one parent between lessons 4 and 5.

REFLECTION ON WEEK 4

Lesson 4 involved plenty of activity in the form of stretching, jogging, sprinting and sit-ups. Stretching was introduced with the concept of flexibility as part of the warm up. The stretching was not done well by the majority of pupils because they had difficulty holding a static stretch without fidgetting or bouncing. However, this did improve gradually and the sit and reach test results, which produced great changes between the beginning and the end of the exercise session produced looks of wonderment, particularly from lower band pupils. This was a good way of getting across the point that everybody can improve their own flexibility. The use of music here was a motive to work I feel, and generally the pupil response was good.

During the brief explanation of the training effect in cardiovascular fitness, I got the impression from the glazed looks on pupils faces that although they said they understood, they may well not have done. The experimental activities involving aerobic and anaerobic work, hopefully therefore
demonstrated the concepts involved in a practical and easily understood way. Certainly at the end of the activity, all of the groups were able to point out that they would be able to jog for 20 minutes but they could never sprint nor do sit-ups for 20 minutes. They were also able to name various other activities which they believed to be aerobic and which would contribute to cardio-vascular fitness training.

A number of other important points became apparent during this lesson. I wanted to continue with the high level of apparent enjoyment which pupils had experienced so far. The five minute jog therefore became a challenge to everyone, just to keep going. The added challenge to encourage a partner round seemed to add another dimension to the activity - having fun by running with a friend. Out of the whole year group only 3 failed to complete the five minute jog - one was overweight, and one asthmatic - but all continued to walk around. Again, pupils were smiling, laughing and chatting to each other quite happily, apparently enjoying a potentially boring activity, especially as about 40% had previously stated that they did not like "running".

The standard of fitness of the pupils was brought into question during the sit-ups. Some could not do one full sit and so low profile sit-ups were introduced as an alternative. Poor muscular strength/endurance in the abdominals is indicated here. Pulse rates after the five minute jog varied between 23 and 32. This tells me little except that all were working at a training level. The amount of time the pupils were able to continue the pairs sprint relay also varied considerably, from approximately 40 seconds to approximately 100 seconds. Again, factors other than fitness may have been responsible e.g. motivation, and so conclusions should not be drawn.

I was again pleased to see pupils becoming more confident in class discussions and question answer sessions. This may be due to their increased knowledge, their increased familiarity
with me or greater interest in the subject. I would propose a mixture of all three.

Thoughts at the end of week 4.

i) Will me putting greater pressure on pupils to talk to parents, pass on information and complete activities actually have any effect on their behaviour? How can I find out?

(ii) Are the pupils sitting and listening too much? They are having lots of activity and experimental learning situations, and time to tell me and each other how all this activity makes them feel, so am I expecting them to be able to do too much on their own. They are used to teacher dependent teaching methods, so a gradual weaning process may take a considerable amount of time. Some instruction is still needed in these initial stages. I use pupil centred approaches when appropriate - or do I?

(iii) How can I begin to assess the effectiveness of the course, without spending a lot of time testing pupils? How can I tell if they really do understand? Is the process they are going through more important than testing their knowledge gains? Long term behaviour patterns are really what matter, and I can't measure those. Perhaps feedback at the end of the course will provide answers to the questions.

REFLECTION ON WEEK 5

Week 5 was the week before half term, and I wanted to encourage pupils during the lesson to use the mid term break as an opportunity to try out some extra activity, preferably with a parent or failing that with a friend. The pupils came to the lesson with the results of their family activity diaries. Inspection of their files showed that around 70% had actually completed the diaries for themselves and usually at least one parent. The results seemed to indicate that both parents and pupils felt that they were already getting plenty of exercise
of one sort or another. "Walking" appeared very commonly usually "to and from school", "to and from work", "to and from the shops" or "with the dog". Rarely was walking expressed as a leisure pursuit. "Working" or "housework" was also given by many parents as a form of exercise. The totalling up of activity sessions per person had been done very inaccurately in most cases to give very inflated estimates of activity levels. Activities which were unlikely to make subjects sweaty or breathless, were usually included, and quite often amounts of time had been added together to give inflated scores. It appeared that pupils (and possibly parents?) were justifying their activity levels.

In class, about half the pupils said that they felt that their families were active enough already. I encouraged them to think again about this in the light of what they knew about intensity and duration, and frequency of activities required to provide cardio-vascular fitness. I also encouraged all pupils to complete the activity diaries, and to try to get some members of their family to take part in an extra physical activity during the half term break. The response to this was very positive, with many pupils saying they were going to try to become more active themselves. However, this may have been to gain my favour.

The second video film on how to keep fit was shown to the pupils and again they listened attentively. I watched the pupils as they watched the video and many seemed to have totally glazed looks on their faces and showed very little reaction to any part of the film. This was especially so with the top band group and I had serious doubts that they were attending to the content of the video at an appropriate level. Judging by the follow up discussion, the video had had very little effect on their understanding. This may have been because of the nature of the film itself, but I feel was more likely because of an instinctive reaction to watching the t.v. screen.

Once again, the activity in the lesson was undertaken with enthusiasm and vigour. The exercise to music warm up activity seemed to get the group into a positive state of mind, and
jogging round the field or playground several times (c¾ mile) with a partner was also done willingly and happily. I emphasised the need to encourage each other round, to talk constantly, and to only run at a pace which felt comfortable. I explained that it was not a race, and everyone was capable of fulfilling the task set. All but 2 pupils completed the activity without stopping, and after a warming down period to music, a brief discussion on how the pupils felt took place. Only one girl said she had found the 20 minute activity session unpleasant and a large majority said they had actively enjoyed it. Most were willing to continue working well in the warm down and again the positive and happy approach to the activities was refreshing.

OBSERVATIONS AT THE END OF THE WEEK:

i) The use of music has done a great deal to promote a positive approach to the exercise. I feel it provides an alternative focus of attention to how uncomfortable vigorous exercise can make one feel. Similarly, working with a partner, having some responsibility for her success in completing the task can act in the same way. Alternative stimuli act to promote enjoyment of physical activity and are therefore valuable.

ii) Pupils did at least complete the activity diaries on themselves and usually, a parent, but this is no guarantee that they continually discussed it with their parents. A follow up survey may be needed to see if discussion is occurring and at what level.

(iii) Will the apparent enthusiasm in lessons continue outside lesson time? Is it genuine enthusiasm or is it mainly to gain teacher approval?
REFLECTIONS ON WEEK 6

Lesson 6 occurred after the half term break and pupils arrived with information on what activities they had been doing over half term. There were differences in groups in their responses to the task set. The top band group were very reluctant to discuss openly in a group situation what had taken place over the holiday. This surprising setback in relationships may have been caused by the time of the lesson (1st lesson on the Monday after half term), by their reluctance to admit that they had not fulfilled the set task, not wanting to answer in front of peers and so on. I therefore, asked this group to write their answers down on pieces of paper which were then collected in and analysed. Those written answers showed that 79% said that they were discussing the work with their mums and dads (a marked improvement on the figures in Table 12), but only 36% had actually talked about whether they should become more active as a family. Of this group, 63% had discussed what they should do to become more active (5 pupils from a group of 28). 55% of the pupils in this group said they had made an effort to become more active since starting their health and fitness course. Of those who had not, over half said that they hadn't had time, 17% said they couldn't be bothered and 25% said that they didn't need to. Only one girl (9%) said she didn't have enough money to.

The other two groups did not have the same reservations about discussing openly their activities. Apparently, one third of group 2 and one half of group 3 said that they had done something active over half term that they would not normally have done. Walking and jogging were most frequently mentioned, particularly the former, and seemed to often be walking somewhere that would normally have been reached by bus. The "non exercisers" in these two groups most frequently gave being "too lazy" or "can't be bothered" as their reasons why not, and "not having time" didn't seem to be an important reason.

Activity with parents did not figure largely. Only 10% of those in groups 2 and 3 and no-one in group 1 said that they had taken part in an activity with their parents over half
term. This is a little disappointing since "doing something with mum/dad" was the main task set for the week. However, increased activity from pupils is encouraging.

As an alternative cardio-vascular activity and also as a means of introducing the concept of muscular strength/endurance, an exercise circuit was organised for this lesson. Again, 20 minutes of activity was planned, with an exercise to music warm up and cool down, and a circuit training session, also done to music. I had expected the circuit training to be less popular, but was surprised to see the enthusiasm and vigour with which all of the girls approached the activity. There was no competitive element involved and no scores kept to be beaten. I simply asked the girls to keep going for two full circuits, and all but two did so. These two were working together and seemed to lack the determination to keep going, but also seemed to have poor levels of muscle fitness too.

Many girls found the trunk curls, reverse dips and press-ups difficult, indicating poor muscle fitness in the triceps and abdominals.

When questioned after, pupils generally said that they had enjoyed the activity and were very keen to do it again. Only 2 girls said that they had not enjoyed the circuit training.

Observations from week 6 are as follows:

i) It becomes more and more apparent that while as a teacher I have great control over the experiences the pupil has during lesson time, I have very little control over what use she makes of those experiences outside school. So far I would say that the lessons have been successful in helping pupils to discover that they can enjoy fitness activities, but whether they have any long term effect is debatable.

ii) Using the pupils as an intermediary to reach the parents may/may not be a viable way of involving parents in the work. The answers from group 1 do show an improvement in discussion levels, but how constructive and effective
are these discussions, given the low level of pupil/parent joint activity. Pupils seem more willing to improve their own activity levels. Are parents being supportive, but not active themselves?

(iii) Are top band pupils really too busy to take on extra activity? Do academic pressures use up that much of their free time, or is it an excuse? Are they active enough already? Do these pupils need to be made aware of the need to make time?

REFLECTIONS ON WEEK 7
Lesson 7 was the final lesson, and I planned to finish the course with a full length exercise to music session, as an example of how the various aspects of fitness can all be covered in an enjoyable way, and stressing the importance of adequate warm up and cool down periods.

The response of pupils was again good, although a number of pupils expressed disappointment that they were not doing the circuit training activity again. The top band group were again less enthusiastically responsive than the 2 other groups. Only 2 had trouble keeping in time to the music, and 4 others from the year did not work to a good level for their own reasons, although they appeared to be just lazy. I should have tried to find out why, but in the rush of the lesson did not. Apart from these few individuals, there was a general level of good work and happy enthusiasm from the groups, although they did tend to want to sit down between routines.

The aerobic section of the class was done well, the stretching also had improved with practice, but the muscle strength/endurance activities were not done very well. The newness of the exercises, together with my lack of knowledge of their level of muscular fitness in various areas probably accounted for the difficulty encountered by the pupils here.

7.3.0 PUPILS VIEWS ON THE COURSE
7.3.1 All of the pupils were asked for their comments and feelings about the work covered over the course of the project and responses were generally positive, "enjoyable" being a common
view, although a commonly held view was that "stretching" was "boring", and not very popular. The girls of group one were again loathe to give their views and so I asked all groups to give me their written views on the course in the back of their files and to answer the following questions:

1) What did you like best about the work?
2) What did you like least?
3) What have you learnt from the work you've done?
4) Was it different to your normal P.E. lessons? If it was, how was it different?

At the same time, pupils were asked to interview their parents and give their thoughts and views on the course.

The comments from both pupils and parents were very illuminating and provided a great deal of information about what effects the course had had, and how the subjects felt about it. The fact that the majority of pupils had enjoyed the course became apparent from the following comments:

"I have enjoyed it very much"
"I didn't know what to expect at first when she said 'Health and fitness', but I enjoyed it"
"I did not like anything the least, I enjoyed it all"
"I thought it would be boring and horrible but it was really good"
"I enjoyed the course"
"I thought that this course was great.....just ACE"
"I thought that it would be really boring but it wasn't"
"Thank you for doing this lesson with us. I've enjoyed it so much"
"I think the work we have been doing is excellent"
"I wish P.E. was like that always"
"I think the course is a good idea and should be done on all classes......I thoroughly enjoyed it"

In response to the question "What did you like best about the work a number of factors were mentioned and the relative popularity of these factors is shown below.
TABLE 60  Factors that pupils liked best about the course, mentioned as proportion of sample.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobics</td>
<td>48</td>
</tr>
<tr>
<td>Music</td>
<td>25</td>
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<tr>
<td>Circuit Training</td>
<td>12</td>
</tr>
<tr>
<td>Exercise</td>
<td>9</td>
</tr>
<tr>
<td>All of it</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>15</td>
</tr>
</tbody>
</table>

Other comments made indicate other attractive factors, especially in comparison to their previous experience in P.E. lessons.

"I like doing fitness and health better because it's more exciting and more educational"

"......(usually)... P.E. lessons are boring"

"......it was exciting and better"

"......it got my body moving"

"......it was more interesting than the work we usually do in P.E."

"It is better than normal P.E. because you play music while we are working"

"We did much more interesting things and we did aerobics which we don't normally do in P.E."

"......its so exciting and different and we enjoyed it a lot"

These comments seem to indicate that "excitement" and "interest" were of primary importance to the pupils as criteria for enjoyment.

Not all the comments were of such a positive nature however. For example:

"I don't feel any different"

"I don't really feel any difference because I usually do exercises anyway"
"I didn't really like the stretching exercises. Some of it went on for a bit long as we did the same things every week"
"I didn't like jogging......because I think jogging does nothing for you"
"We could have used more music"
"I don't feel any different about health and fitness as I have always known that they were important"
"I did not like the health and fitness project - it was very boring. Some exercises were good and the start was brilliant but I hated the rest. In normal lessons we do gymnastics which makes us healthy and is more enjoyable than exercises"
"I didn't like the written work"
"I feel alright but at the end I felt tired"
"I don't feel any healthier or fitter than I did before"
"I don't like exercise, it sort of embarrasses me"
"I didn't like the things we did on Monday 2 because I pulled a muscle in my leg"

Table 61 shows the factors mentioned as being liked the least by pupils.

**TABLE 61: Factors which pupils liked the least.**

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jogging</td>
<td>23</td>
</tr>
<tr>
<td>Stretching</td>
<td>22</td>
</tr>
<tr>
<td>Nothing</td>
<td>13</td>
</tr>
<tr>
<td>Writing/Homework</td>
<td>9</td>
</tr>
<tr>
<td>Aerobics</td>
<td>5</td>
</tr>
<tr>
<td>Stomach work</td>
<td>3</td>
</tr>
<tr>
<td>Exercises</td>
<td>3</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
</tr>
</tbody>
</table>
Jogging and stretching were generally the most unpopular. Pupils often said they disliked the jogging because it had meant going outside in the wet and cold and onto the muddy field. The stretching was unpopular because it was "boring". These results must be seen in the perspective of comments made immediately after the lessons, when very few pupils said that they had actually disliked the jogging sessions. It may simply be that jogging was the least popular of all of the activities. Stretching being "boring" is obviously a problem which must be overcome if pupils are to be encouraged to improve their own flexibility.

The way the course affected pupils' feelings and behaviour is indicated by the following comments:

"I feel a bit more healthier and fitter"
"I do feel very different now"
"I do feel different. I feel healthier and fitter"
"When I started I was very stiff and achey, now I feel loose and it feels easier to move"
"I think I now feel more active and fit than I did when I started"
"I do feel different about my health... that I am not very healthy"
"I do feel different because I know things about health and fitness that I never knew before"
"I feel I have done much more exercise in doing this course"
"I felt much better for my exercise I have changed and now do a few exercises each day and go out riding more often"
"I feel different now because I feel relaxed and more comfortable and have become more active. I do a lot of aerobics"
"... I am going to join in more activities and watch my weight"
"I changed a lot and started doing activities with my parents and family"
"I feel that I should exercise more to keep fit. There is more than exercising once a week to keep fit"
"I have taken up more activities"
"The course has made me think more about my health and fitness"
"I think I have become more active"
"You feel much better after a few days and it gets you to do more activities"
"......I feel more energetic and wanting to do more exercise"
"When I used to run, in a minute I used to be worn out, now I don't"
"I do more exercise than I did before the course. Also I eat more healthy food"

The majority of these comments point to pupils actively feeling the benefits of a more active lifestyle after a very short time. Although some pupils may just be saying they feel healthier and fitter because they feel it is expected of them, a number comments actually pinpoint how they feel better, e.g. I feel looser", "more relaxed and comfortable", "more energetic" which may show actual experience rather than "what teacher wants to hear". The large number of comments which state that pupils have become more active is encouraging, although again the reliability of the statements is in doubt.

Some less positive comments emerged but were far fewer in number, i.e. "I have not felt any different, but I know more about it".
"I don't feel any fitter because I go dancing once a week and go to drill class once a week".

This latter comment may indicate that only those pupils who were very inactive at the start of the course will perceive obvious changes in how they feel physically as a result of the course.

Responses to the questions, "What did you learn from the course?" provide some interesting insights.
"I have learnt that you need to do more exercises to your muscles and not sitting around and doing nothing like a slob".
"I think it has made me see how important it is to keep fit".
"I think I am not a very fit or healthy person and I think that this work that we have done is very good and has helped me a lot".
"I have found out that it is important to keep fit and there are more easier ways to keep fit"
"I learnt a lot from the leaflets that were sent home"
"I think the course explained a lot about health and fitness and showed that my family and I need to do more exercise"
"The course made me more aware of how unfit I am"
"I think that the course has showed me that I need to be more fit and more active"
"I didn't learn anything really because I do loads of exercise - the only thing I didn't know about was the human body"

The general nature of the responses seems to indicate that the course was successful in getting across general principles. Analysis of the answers shows that the most commonly mentioned learning activities were:

1) How to keep fit and healthy
2) A person has got to keep fit and healthy
3) It is good to stay fit and healthy
4) Exercise

"How to look after myself", "It is enjoyable to keep fit", "How to exercise properly", "How to strengthen the back and muscles", "body parts", "You'll live longer if you're healthy", "The parts of fitness" were all mentioned by individuals. More specific comments included, "Muscles and where the blood goes", "Food problems", "What flexibility means", "How to stretch the muscles".

7.4.0 PARENTS VIEWS ON THE COURSE

Pupils were also asked to interview their parents to gain their views on the course. Some pupils wrote down their parents thoughts, but in most cases, the parents themselves wrote comments in the files. Generally supportive and positive comments included the following:

"Anything to encourage the fitness and health of the children I agree with, so I think this has done Dawn very well"
"I think the work done has been extremely valuable"
"Good but tiring"
"I think my daughter has done very well in your class. She looks very pleased with it. Thank you"
"Very interesting! Relating to both diet and exercise is a sensible way to teach the children (and adults)"
"My mum and dad think the work is good as well"
"My parents think it is a good idea"
"My mum thought this was a good idea. On the whole my family thought the idea was good"
"Interesting......but too much"
"My parents thought the course was a good thing for myself"
"My parents thought the course was very interesting and quite good"
"My dad thinks it is a good idea to teach the children to realise how important it is to keep fit and healthy"
"My mum thinks it is a good idea to teach the children to realise how important it is to keep fit and healthy"
"My mum thinks it is a good idea to help children be more active and for parents too"
"The course was a good idea especially if it has made us more aware of health and fitness"
"Its very interesting and glad to know that my daughter is keeping fit and healthy"
"My mum and dad think that the work we've been doing has been good because I've learned what it means"
"I thought it was a good idea to get Clare and us fitter"
"I think this subject is very beneficial to the children and also us adults"

One or two comments were more reserved.
"My mum thought it was a good idea, but in the end she got fed up with sheets"
"It was a good idea, but there were rather a lot of forms to fill in"

Some expressed a negative response to the project.
"I didn't think it was a good idea"
"My mum and dad got pretty fed up with all the leaflets"
"It doesn't matter to them (parents)"

The large amount of material sent home therefore caused a problem to some parents.

A number of comments from parents gave some idea of how the project had affected pupils and in some cases, families.
"It has made her aware to look after herself"
"I think Emma has been more active and I have myself. I have been watching the foods I give my family. The only thing is Emma is always doing aerobics and has her stereo on full volume!"
"It has been useful and informative and has lead to changes in the home"
"Me and my mum usually do some of the exercises and they have helped us a lot"
"It seems to have provoked a lot of thought regarding fitness within our family, what will hopefully encourage us to take more physical exercise"
".....they got useful information out of the booklets and information that was sent home to them and has made them look at us more thoroughly"
"Although I was aware of my lack of exercise before, Victoria undertook this course, I now realise how important exercise really is and am making a real effort to walk a lot more and not to drive everywhere"
"My parents think that the family should be more active and eat more healthy foods"
"It has been very informative and also made us aware of what we all can do to try to be fit and healthy"
"My mum is on a diet and my dad is exercising every night to lose weight"
"Louise has enjoyed doing the project, while we have given her some encouragement we are both too lazy and unfit to show the same commitment"
"I consider myself and my husband not the fittest of people and I am glad Clare is being kept fit and healthy at school as well as at home"

These comments indicate that generally parents who commented have positive attitudes to the project and in some cases admit to actual or proposed changes in behaviour to member of its family other than the pupil. Generally a raising of awareness is indicated amongst those parents who made comments. However, it must be remembered that large numbers of parents made no comment, and this may indicate a more negative response.
Another data source which provided 'food for thought' in the project was the Healthy Lifestyles evening. During the final few weeks of the teaching block, a large majority of the pupils had said that they would be keen to come to an evening at school where they could gain information and, more importantly to them, do a full session of exercise to music. Invitations were sent home during week 6 of the teaching block (see Appendix 7b) and a reminder issued during week 7 (see Appendix 7c).

By the end of week 7, I had received reply slips from the parents of 31 pupils (39%), 15 saying they would like to attend, 13 saying they would not and 3 saying they were unable to attend. Several pupils had asked if they were allowed to attend without their parents. Several members of staff had also expressed an interest and said that they would come along.

On the evening, 12 parents (from 10 families) arrived - 8 mothers and 4 fathers. 20 pupils attended, 10 with one or both of their parents and ten without. One pupil brought a younger sister with her.

After a brief introductory talk, time was allowed for any questions. Parents seemed generally content to listen and accept what was being said, although one parent (father) did ask "Don't you think that pupils of this age are active enough already?" I was surprised that someone who was sufficiently motivated to attend the evening should ask this question, as I had assumed that those attending would be doing so because they saw the need for enhanced activity levels generally.

As there were not further questions, the exercise class began, and everyone who attended took part in it. Although two of the males had problems keeping in time, the parents seemed to join in with as much enthusiasm as the pupils and seemed to be enjoying themselves throughout. Although the class was
pitched at a fairly low fitness level, at least one mother had difficulty in sustaining her efforts throughout the aerobics section. There was a relaxation section included towards the end and some of the pupils had great difficulty in remaining still during this section, although the parents seemed to have no difficulty. It was noticeable that the behaviour of some of the unaccompanied pupils was far less contained than in a class situation, with constant chat and giggling from one or two, which led them to exercise incorrectly on a number of occasions.

At the end of the class, enthusiasm was obvious and spontaneous applause broke out for the teacher from the YMCA who had conducted the class in a lively but sympathetic way and with an enthusiasm which was infectious. The personality of the teacher was extremely important in this case, although she later admitted that she had regarded the session as quite a challenge with such varied ages and fitness levels the aerobics section of the class had been reduced, with greater time spent on muscular strength and endurance, flexibility and relaxation. These aspects tend to be more static and less "exciting" and so this might account for the poorer behaviour of some of the pupils.

At the end of the exercise session, time was allowed for further questions, M.O.T. retests, gathering of written material spread around the room, watching videos, consulting the physiotherapist. Once again there were no questions for myself, one parent consulted the physiotherapist, a few watched the video. Most parents chatted to each other, gathered further information and drifted off home fairly quickly. 3 parents did express an interest in making the exercise session a regular occurrence and said they would willingly attend regularly. One father thought that regular sessions would cause a snowball effect among parents, with more and more becoming aware and attending.
8.0 CHAPTER EIGHT

SPECULATIONS AND CONCLUSIONS

8.1 INTRODUCTION
The research project provided a great deal of information about the attitudes and behaviour of parents who became involved in it. A great deal of data was obtained which showed how the attitudes, perceptions, knowledge and activity patterns were changed or unchanged during the course of the fieldwork. Data was also available on pupils attitudes and perceptions of the work they were engaged in. When this data was considered and reflected upon, a number of implications for further work became apparent.

Problems which were experienced during the course of the research also became apparent and possible ways of overcoming these problems are considered.

Experiences which occurred during the research project form the basis of speculations about possible improvements in both the structure of the "Healthy Lifestyles Project" and in the research methods used.

Some ways are suggested in this chapter of how the material in this survey maybe of use to other teachers.

Finally, the whole project is summed up with a number of final conclusions which may be drawn.

8.2 PARENTAL PARTICIPATION
8.2.1 The project contained three main aspects of parental involvement:
   i) Responding to questionnaires 1 and 2
   ii) Participating in discussions and activities with pupils at home and reading literature
   iii) Attendance at the Healthy Lifestyles evening.
The amount of involvement in the 1st and 3rd aspect is easy to assess, but it is difficult to monitor the 2nd and great reliance is placed on information reported by pupils and parents about interaction at home. Responses to the M.O.T. test did provide concrete information on numbers of participants in a specific home activity. A number of pertinent factors emerge from analysis of data in this area which may be significant.

8.2.2 The most obvious pattern to emerge was that of level of participation and band of child. Throughout the project parents of top band children seemed far more likely to participate in activities than those of the middle and bottom band pupils (Tables 1,2,3,6,7,12,18). One area where there was no significant difference is parents reports of how often they discussed the work with their children during the project (Table 15).

It must be noted that parents ability to participate in given activities relies very much on their daughters supplying them with information and Table 10 shows that middle band pupils were less likely to have passed on information to their parents than either top or bottom band pupils. This therefore, is likely to be partially responsible for the trend. Pupil interest in the work being covered is also likely to affect their motivation to involve parents, but here impressions of the teacher conflict with other data. Middle and bottom band groups appeared to have a much more positive approach in lesson time to the activities being covered which one might have expected them to carry home, but this is not reflected in formal data.

It is difficult to pinpoint other reasons why the levels of response differ so much. Presumably, the role of the pupil as instigator of activities is effective, but it may be necessary to look further to fully account for differences. Data on the social class of the parents in the sample is not available so no conclusions may be drawn in that direction and indeed, recent evidence has indicated that social class may not be a true determining factor in parental interest in education (Johnson and Ransom 1983, Tizard et al 1983, Roberts 1980).
However, there is evidence to suggest that attitudes to Health may be affected by social class (Pill and Stott 1982) and since much evidence has shown over the years that children from working class homes tend to lower ability groups in schools there may be a connection (Hewson 1963). Such speculation can neither be confirmed or denied in this research however, and other areas needs to be looked at.

The way the material is presented may be partly responsible for differences. Whether the written materials presented to parents were designed in a way which appealed more to parents of upper band children is again a possibility beyond the scope of this study. However, it must be noted as a possibility. Table 18, which shows that parents of top band pupils were more likely to read all other articles supplies than middle band parents, and even more likely than bottom band parents, may provide some evidence here. A reverse of this relationship is also shown when one considers the parents who read none of the articles ranging from half of the bottom band parents to just over one eighth of top band parents. Written material may therefore be a poor way of trying to reach parents of lower band pupils in general and alternatives need to be considered. One might have expected participation in practical activities like the M.O.T. test and Healthy Lifestyles evening to show a more even spread of parents across the bands, but it can be seem from Tables 3 and 7 that this was not necessarily the case. Parents of top band pupils were still far more likely to participate, although parents of bottom band pupils did make a higher showing in the M.O.T. test than might have been expected. It must be noted however, that these practical activities were presented through written communications and so this may still account for differences.

It seems likely that a number of contributing factors are responsible for band differences in levels of parent involvement. Social class differences, variabilities in attitude of different groups of children, parents attitudes to education, schools and health, modes of communication used may all be significant factors to be considered and speculated upon. However, this
research did show that there were differences in response levels indicating that for whatever reasons, the project was far more effective in reaching parents of top band children than those of middle or bottom band children. If the effectiveness of such a project is to be improved therefore, there must be efforts made to improve methods of communicating with parents of less able children, and research in this area is required.

8.2.3 A second point of discussion must be the decline of apparent interest over the period of the project. The 29.1% drop in questionnaire returns at the end of the project could be seem as an indication that many parents interests wavered over the 7 weeks. There were other more practical reasons which may also contribute to this drop - for instance, the continued absence of one form teacher at the time of distribution of the 2nd questionnaire, the high pupil absence rate during the same period because of an outbreak of influenza, the tendency for teachers to be under more pressure towards the latter end of the term with report writing and parents evening in the offering may have resulted in a less effective collection procedure than at the beginning of the term. However, it must also be considered that a number of parents who initially completed a questionnaire were not still sufficiently motivated at the end of the project to do so again.

This has obvious implications for the design of such projects and is the basis of a number of further questions which need answering, e.g. did the project have a certain novelty value which wore off fairly quickly? Were the lack of responses to the 2nd questionnaire due to lack of interest or failure to see the relevance of the work/questionnaire? Were some parents "fed up" with receiving so much written information over a short period of time? Further study is required to provide answers to these various questions, but it has become apparent that care must be taken to ensure that materials and activities designed to promote interest and awareness in parents are not having a totally opposite effect on alienating parents from the work being covered.
Participation in the healthy lifestyle evening was lower than for any other of the activities (Table 7) and this is to be expected since it requires an evening commitment which may not be possible for many parents, if younger children have to be looked after, or evening work done and so on. A number of parents indicated that they would have liked to have come to the evening (page 160) but were unable to due to prior commitments and this indicates that absence does not always mean a lack of interest. The review of literature showed the dangers of assuming that non attendance at school functions was totally due to lack of interest by parents (Wolferdale 1983). Other factors such as those practical ones mentioned earlier, as well as the other more personal factors, which may involve a lack of confidence in attending such school functions, a feeling of alienation and so on are relevant here. It is obvious that although such opportunities for direct contact with parents may have terrific potential in health promotion within the family, it may be extremely difficult to encourage a large number of parents to attend. While it may be possible to overcome practical difficulties by making the evenings a regular occurrence and perhaps changing the times of them, it may prove far more difficult to overcome problems related to parents perception of their role in education or attitudes to attending school role in education or attitudes to attending school, functions. This is obviously an idea which requires a "whole school" approach and which an individual teacher working alone can do little to alleviate.

8.2.4 Discussion and interaction between pupils and parents at home was one of the crucial areas of parental involvement which it is very difficult to assess. How much discussion occurred was particularly difficult to evaluate, since reliance was made on reports by pupils and parents, and their perceptions of what constituted "discussion" may have varied tremendously. Feedback brought by pupils to lessons led the researcher to believe that little discussion was taking place at home. However, it is possible that a false impression was being given by pupils who were reluctant to discuss openly in front of their peers (page 189). The pupil data questionnaire provides
more concrete information which suggests that at this stage of the project at least, large numbers of parents were having little or no interaction with their daughters (Table 12). The reasonably high proportion of parents in the "some discussion" category maybe a cause for optimism, but no further evidence is available about what form the discussion took, and what was discussed. Detailed discussion about how the information in the article affected their family occurred in few cases. More encouraging evidence is provided by Table 14 which shows a far smaller proportion of parents (21.1%) saying that they had not discussed health and fitness at all during the project. However, this decrease may to some extent be due to the nature of respondents to the second questionnaire. It is possible that those parents who responded to questionnaire 2 were more likely to have a generally positive attitude to the project as a whole, and themselves be more likely to participate in discussions than those who did not. It cannot therefore be assumed that discussion levels increased throughout the project. Neither can it be assumed that those parents who did discuss health and fitness with their daughters during the duration of the project, did so as a result of the project, since no information is available on how often these same parents did so prior to the survey. However, comments made by parents at the end of the survey indicate that in at least some cases, information supplied by the school did succeed in promoting awareness, interest and discussion which may not otherwise have occurred (page 207). It appears then, that although it is difficult to assess what proportion of parents actually were engaged in discussion, with their daughters about the work they covered, the project was able to reach some parents and motivate them to have some interaction with pupils in the health and fitness area.

8.3.0 PARENTS PERCEPTIONS OF HEALTH AND FITNESS

8.3.1 Parents answers to questionnaires 2 and 3 on the pre and post project questionnaires give some indication of how parents perceive health and fitness (Tables 19-23). Before looking at changes which occurred over the duration of the survey, it is necessary to look first at the large numbers of respondents who gave no answers to these questions at all.
Table 20 shows that over a quarter of parents gave no answer to either question on the questionnaire and the proportion had increased to two fifths in the second questionnaire. There may be a number of reason for this. The open nature of the questions may be responsible for lack of response from some parents (Sudmann 1986). Its position on the back of a page where some parents may have missed it could too be a factor. The increase in proportion of parents failing to give an answer in questionnaire 2 could be a result of parents not wanting to repeat answers given on questionnaire 1 or not really seeing the relevance of answering the question again. However, failure to respond may be an indication of confusion, or lack of clear or easily explainable perceptions of the terms. If this is the case, then an increase in non-response could indicate an increase in confusion as a result of the project, and this is an area which clearly requires further investigation.

Responses gained from parents who did give answers to the questions show some interesting patterns. At the start of the project there was a tendency for large numbers of parents to associate diet with health and exercise with fitness (Table 21). Other factors commonly describing a healthy person were freedom from physical sickness and not smoking, which may indicate a negative view of health. Exercise was associated with health by twice as many women as men, and fitness was mentioned by a relatively small proportion when describing a healthy person. At the end of the project some interesting changes in trend could be seen. As one would hope parents placed a far greater emphasis on the role of exercise in health with "regular exercise" or "regular activity" now being frequently mentioned. However, there was a reduction in proportion of those who mentioned exercise in relation to fitness and an increase in those who related diet to fitness. Freedom from physical sickness now figured less frequently in answers.

The reasons for these changes need speculation. One of the major purposes of the project was to increase parental awareness of the importance of regular exercise in the maintenance of
health and so it might be reasonable to assume that this change is due, at least partly to the project itself. Comments made by parents in pupils Health and Fitness Files would seem to support this assumption (page 304). The literature sent home also sought to promote a more positive view of health and so reductions in freedom from physical sickness may have been expected. However, it is difficult to account for the reduction in proportion of parents who seemed to associate exercise with fitness. It maybe that the project has effectively caused a merging of concepts by the parents - fitness now becomes more similar to health than previously. Certainly, the increase in proportion of parents relating diet to fitness and mentioning fitness as an aspect of health may support this possibility. It would seem likely that parents perceptions of health and fitness were beginning to change as a result of the various materials many of them had read, (Table 17) and concepts may not yet have become clearly defined in their own minds, with a resulting changing of ideas. However, further research is obviously required in this area to confirm speculation.

It must also be considered that changes in perception may be a result of the change in survey population i.e. those parents who had particular perceptions on health/fitness may be more likely to have completed both questionnaires. Further statistical analysis shows that actual numbers of parents mentioning exercise in relation to health increased by only one and this would seem to support that consideration. However, closer inspection of individual questionnaires showed that large numbers of individuals did in fact change their answers from the 1st to 2nd the questionnaire to include exercise when it had not been previously mentioned and in a number of other cases to increase the importance of exercise in their statements e.g. changes from "moderate amount of exercise" to "as much exercise as possible", and "some exercise" to "regular exercise". This would seem to indicated that changes in perceptions did therefore occur.
It would appear then that the project was successful in promoting the importance of exercise in the maintenance of health and in some cases, caused parents to incorporate this into their perception of a healthy person. This may have been due, at least in part to changes in knowledge which occurred as a result of the project.

8.4 PARENTS KNOWLEDGE OF HEALTH AND FITNESS

8.4.1 It is difficult to consider knowledge about such topics as health and fitness totally in isolation from attitudes. Parents answers to the knowledge test may have been largely affected by their attitudes to health in general or to individual aspects, such as exercise or smoking (Anderson 1983). However, it is possible to discuss parents apparent knowledge in various areas, and to assess whether changes in expressed knowledge have occurred.

As one might expect, parents knowledge of the relationship between diet and coronary heart disease was fairly good (Table 24). The large amount of publicity given in the media to this relationship and the power of advertising would be likely to raise public awareness in this area. However, it appears that generally, parents were not as clear on particular aspects of the relationship between diet and health. Although 87% of parents agreed that a person can affect the likelihood of them having a heart attack by watching what they eat, far smaller proportions confirmed that sugar was an unnecessary part of our diet and to deny that plenty of red meat was more beneficial to health than carbohydrates. (50-60%).

There are indications that many parents knowledge of the relationship between exercise and the heart was very unclear. Only 48% were able to confirm that jogging can strengthen a persons heart although 96.8% had thought it true that taking part in physical activities could improve fitness. These figures would appear to indicate that a large proportion of parents did not have a clear understanding of how exercise affected the heart or the function of the heart in fitness. It is possible that some parents may have felt that vigorous exercise
was in fact bad for the heart and this is reflected in the high proportion of parents who were unable to deny that those who frequently participate in vigorous exercise are now likely to suffer a sudden heart attack than those who do not. It appears that at best, many parents knowledge about the link between exercise and heart health was unclear. Some parent may have had very inaccurate conceptions about caring for the heart, feeling that it should be protected rather than exercised. However, this area needs further investigation and is beyond the scope of this study. It did become clear though that the school could profitably aim to improve the knowledge of many parents in this area.

Many parents too seemed unaware of the many other positive benefits of regular exercise. High numbers apparently were not aware that exercise can be used to alleviate depression, to treat moderate hypertension, and to reduce the effects of stress. Over 40% were unaware of the affects of endorphines produced during exercise and more significantly over 70% could not confirm the link between back pain and stomach muscle fitness. The need for frequent exercise was also an area in which many parents showed a lack of knowledge.

Generally, parents seemed far more aware of the links between smoking and heart disease and obesity and heart disease although a third of the group were not able to confirm that heavy smokers who gave up after many years of smoking could reduce their chances of suffering from heart disease.

The data from these knowledge tests seemed to confirm that suspicions that areas which had been given great publicity over a prolonged period of time, such as the effects of smoking and obesity or heart health, had been well assimilated by the majority of parents. Recent publicity given to diet seemed to have reached parents too, although many were unclear on the specific details. However, a large gap in knowledge/awareness was shown in the sphere of exercise and health which had implications for any project aiming to promote active lifestyles within the family. If many parents were
unaware of the positive benefits to health that regular exercise could produce, then the task would be that much more difficult, since behaviour, attitudes and knowledge are closely linked.

8.5.0 LINKS BETWEEN KNOWLEDGE AND BEHAVIOUR

8.5.1 Although attitudes are probably far more important in the direction of behaviour than knowledge alone (Cook 1987), it would be interesting to see how much knowledge of parents in various aspects of health is reflected in their behaviour. One might expect their smoking and eating behaviour to reflect a more extensive and sound level of knowledge than their exercise behaviour. Data from the first questionnaire showed that 76% of those who answered did not smoke, 20% smoked and wanted to give up and 4% smoked and didn't want to give up. It is recognised that smoking or not smoking may depend on other factors apart from health, for example, cost - 74% of parents did, however, say that they kept an eye of their families food intake for health reasons, and 70% said they had made changes in their diet in the last two years for health reasons. These figures indicate that the high level of awareness of the importance of diet and health is reflected in their behaviour. As the awareness of links between exercise and health seemed far less clear, it would be logical to expect that participation in regular exercise would be far less widespread although once again, participation may occur for a variety of reasons other than health, such as social or emotional. Data from the initial questionnaire shows that 35% of parents exercised not at all or only once during the week prior to the questionnaire (Table 32) and responses to the M.O.T. test showed that 74% of women and 81% of men did not exercise vigorously at least 3 times a week (Appendix 5) a level which is thought to be the minimum for promotion of cardio vascular health.

It would appear then that the behaviour of these parents did at least reflect the levels of knowledge in various areas of health. However it is dangerous to assume a direct cause effect relationship between knowledge and behaviour and it must be noted that many other factors may play a significant part.
8.6.0 CHANGES IN KNOWLEDGE SCORES

8.6.1 Although behaviour changes will not necessarily occur purely with gain in knowledge, it is necessary to ensure a sound knowledge base from which individuals may build positive attitude (James 1984). The project therefore provided information for parents which was designed to increase knowledge of the benefits that exercise has on an individual's health.

Table 25 seems to show that generally an increase in knowledge did occur at the end of the project, as indicated by a decrease in the number of inaccurate responses from parents on the test on questionnaire 2. Table 28 shows that this was a result, at least partly of improvements in individual scores rather than changes in the survey population, although Table 29 shows that almost a quarter of the parents in the survey actually had decreased scores in the test.

This latter point is worth immediate discussion. Closer inspection of Table 29 shows that the likelihood of decreased scores increases as the band of the child lowers, and parents of top band children are more likely to have an increase of score than parents of middle or bottom band pupils. Women were also more likely than men to have an increased score, and generally less likely to have a decreased score, except in the case of middle band parents. Table 28 also indicates that the project had a more positive effect on women that men, and that greater increases in knowledge were made by parents of higher band pupils. This indicates that not only does the project seem to attract greater participation from parents of higher band pupils, but that it has greater effect in improving knowledge in this section of parents also.

Since the focus of the Healthy Lifestyle pupil was on exercise and health, it might be expected that its effectiveness would be greatest in this area of parents knowledge and Table 25 seems to confirm this.
The smaller gains made in other areas are accounted for by the more peripheral attention given to the areas on the project, and also the fact that generally knowledge was better here to start with. The project was obviously not totally effective, because there was still a fairly high evidence of inaccurate answers, but it is encouraging that improvements have been made, and it becomes clear that the school based project can achieve gains in parents knowledge which can benefit health promotion within the family.

The effect that other sources of information had on parents knowledge cannot be ignored. Just under half of the sample were aware of exposure to other sources of information and it is likely that these will have had an effect on their levels of knowledge (Tables 30 and 31). However, the large numbers of parents who were not aware of other materials who still improved their scores, and the very small difference in score made by those who did have access to other information and those who did not would seem to suggest that the effect may have been very small. It is also possible that the project initially made parents more aware of other sources of information, but since no data is available for awareness before the research began, it is impossible to confirm or deny this premise.

It is interesting to note that women stated more often that they had come across information from other sources than men, with particular emphasis on T.V. and magazines. This may have been one reason why women generally improved their test scores by greater amounts than men and may reflect a generally greater concern with health than their husbands. Certainly magazines designed for women tend to have a great concern with "Health and Beauty" and this is bound to affect women's perceptions of the area. Further perusal of Table 21 shows that women did initially seem to place greater emphasis on features of appearance such as complexion and body shape in their views on health, although this trend had disappeared by the end of the project (Table 23). This is perhaps an indication of how perceptions of individuals can be changed by access to different sources of material.
It is perhaps a little worrying that such a large proportion of parents actually had decreased test scores at the end of the project, and that the lower the band of the child, the more likely the parents were to have a decreased score. It would appear that although the project was successful in improving the knowledge of the large number of parents, a significant reverse effect was made on an important section of the survey population. This means that far from promoting health, the project may for some parents be having a detrimental effect on knowledge, attitudes and behaviour. It appears likely that some parents find this method of communicating information unhelpful and confusing and implications are that they may need more practical help in assimilating the information to create an accurate knowledge base. These parents are more likely to be found with children in lower band classes, again raising the issue that the project's design favoured parents of high band pupils.

One of the objectives of the project was to increase activity levels amongst parents and comparison of tables 32 and 33 shows a definite decrease in the proportion of parents in the survey exercising less than twice a week. However, it must be pointed out that activity levels during the week prior to Questionnaire 1 may have been affected by the poor weather conditions prevailing at the time (extreme cold and snow). Also, the change in survey population might be a contributory factor to apparent improvements. However, over one third of parents in the second questionnaire sample did state that they had become more active since the beginning of the project (Table 39) and the majority of these people said that they had done so as a result of the project. This would seem to confirm that the project was effective in promoting higher activity levels in some parents (just over 23% of those who completed questionnaire 2).
The major role that walking plays in the activity patterns of parents is worthy of some comment here. It was the only activity participated in by the majority of parents (Tables 32 and 33) and for a high proportion of the parents was the only form of exercise taken during the week prior to the questionnaires (Tables 36 and 37). It appears that increases in activity levels are accounted for largely by increases in participation in walking by parents (Tables 34 and 35) although obviously the exercise to music class provided at the Healthy Lifestyles evening would also be effective here. Although walking can be beneficial to cardio vascular health (Dodson) the data gained from the walking survey brings into question whether parents perceptions of their own walking behaviour are actually accurate. Table 38 shows that not only were distances of 2 miles frequently not walked continously, but that there was a tendency to misjudge distances walked and that these were more than three times as likely to be overestimated than underestimated and almost as likely to be overstated as correct. This would seem to indicate many parents are in fact holding inaccurate perceptions of their own activity levels, implying a greater need for education in this area. No data is available for the speed or intensity of the walking in which parents participated, in order to judge whether parents walking behaviour is in fact promoting health. However, this data does seem to show that walking is a potentially beneficially activity to be provided for parents and could form the basis of a suggested exercise programme which could be easily accomodated into everyday life.

The project aimed to increase activity patterns within the family and some of the activities were aimed at encouraging parents and daughters to participate in physical activities together. At the start of the project over two thirds of the pupils had neither parent as an exercise companion in the week prior to filling in the questionnaire, but by the end of the project only just over one third of pupils fell into the same category (Tables 43 and 45). These statistics would seem very encouraging and although the actual number of parents who had participated in activity with their daughter had increased
by only 1, close analysis of questionnaires revealed that over 50% of those girls whose parents stated in questionnaire 2 that they had taken part in activity with their daughter, had not fallen into that group in questionnaire 1. Thus changes in individual families had occurred. However, those who attended the exercise to music session more than accounted for differences in numbers, and it is impossible to say that had this session not occurred, those parents who attended would have participated in an alternative activity. However, it is fair to say that the project had succeeded in getting a number of parents to participate in a physical activity with their daughter which they may not normally have attempted. No judgement can be made on whether the motivation to do so will last for a longer period, or if it will be transferred to other activities. However, comments made by parents verbally at the evening and written in questionnaires and pupils files indicate that a number of parents would like the activity to become a regular occurrence and this may be seen as evidence of motivation for future participation. It also indicates that there is scope for regular school based activity for families.

It would seem from Tables 43 and 45 that mothers were far more likely to participate with their daughters than fathers and this trend was more pronounced at the end of the project than the beginning. This is accounted for by 2 major factors. Firstly, women were generally more likely to take some sort of exercise than men at the beginning and even more so at the end of the project, (Tables 32 and 33) and so it is more likely that they will be able to participate with their children secondly, the project was done with girls only and this could be likely to produce a bias towards mothers because of sex differences in activity patterns. For example, exercise to music classes are predominantly attended by women and many men may have felt that the activity was inappropriate. The tendency of the bias towards women is more obvious from data gained at the end of the project and this is again an indication of how women were more likely to respond and become involved than men. It becomes evident that the design of the project therefore tends to neglect the needs of fathers as a group.
and is therefore not successful in reaching the family as a unit. It may be necessary therefore to use a much more democratic approach, involving boys in the project in the hope that in this way, fathers too will be reached and involved.

8.8.0 PARENTS ENCOURAGEMENT OF CHILDREN'S PARTICIPATION IN ACTIVITY

8.8.1 Since research has shown that parents attitudes rather than behaviour maybe important in influencing the health behaviours of children (James 1984), whether or not parents encourage their children to participate in physical activity may be a more poigant factor than whether they actually exercise with them, in the promotion of active lifestyles. Data available from questionnaires gives a general impression of whether parents encourage their children to take part in activity and what sort of activities they promote, but does not give much insight into how or why they do so.

From questionnaire 1, over one quarter of the pupils in the survey received no encouragement from either parent to participate in physical activities outside school in the year prior to the project. These parents may have felt that physical activities outside school was not important, but there is some evidence to suggest that some parents felt that pupils were naturally active and did not need encouragement in the area. The comment from one father given at the end of the questionnaire 1 seems to sum up the feelings of some parents. "It is not necessary to encourage one's children to participate in exercise and sport as all children willingly participate in all sports"

The project aimed to raise parents awareness of the need for children to develop more active lifestyles outside school, and therefore its effectiveness could be judged by looking at levels of encouragement at the end of the project. It is difficult to draw firm conclusions from the data available because of the relatively short period of time which forms the basis of question 6a on questionnaire 2, and the change in survey population. However, initial impressions from Tables 41 and 43 are that the project has failed in that a smaller
proportion of the pupils now have received encouragement from either parents. It is possible that parents who had previously encouraged their daughters to participate did not feel it necessary to make further efforts during the project. This area is illuminated by closer inspection of the questionnaires which showed that 6 parents, from 4 families, who had not admitted encouragement on questionnaire 1 did so on questionnaire 2, while 20 parents from 15 families stated that they had given further encouragement during the project. It appears then that it may be limited in the main to those parents who already tried to motivate their children to take part in activities.

**8.9.0 FAMILY DIETARY HABITS**

**8.9.1** The greater awareness of dietary factors in health was reflected in the proportion of parents who kept an eye on food intake and had made changes in the food they gave their families in the previous 2 years (Table 47 and 48). An awareness of the need to reduce fat and increase fibre, both major recommendations of the NALNE report is especially obvious (Tables 49 and 50). This is to be expected given the large amount of publicity given to this aspect of health in the media and the subsequently enhanced knowledge levels of parents in the area. Although the Healthy Lifestyles Project placed less emphasis on diet than exercise, attention was still paid in it, especially in relation the the effect of fats on cardiac risk factors and so it might be reasonable to expect parents to be more aware in this area. A very small number of parents made initial changes and a larger number made further changes, but it is not possible to assess whether all of these changes occurred as a result of the project, or for other reasons. Evidence exists in parents comments on page 178, to show that some of the parents felt that the changes had occurred as a result of information provided by the school and so the project could again be seen to have had some effect on some parents.

**8.10.0 PARENTS PERCEPTIONS OF THE PROJECT**

**8.10.1** Information from various sources seems to indicate that on the whole, parents who participated in the project felt that it was a good idea and a worthwhile way of teaching children
It is important to remember however, that large numbers of parents did not return the second questionnaire or make comments in pupil files or attend the healthy lifestyles evening and their views are unknown. It is quite likely that those parents who did not feel the project worthwhile would "opt out" of it and therefore not take the opportunities available to make their views known. Thus, those who were supportive are more likely to return information to school and make comments.

Nonetheless, the large numbers of supportive comments which were returned did show that a substantial group of the parents held positive views and had been beneficially affected by the project. These comments were also important in that they acted as a positive motivational source for the researcher, providing incentives for further work in the area, which may be adapted to try to reach a greater proportion of the survey population.

The information from parents on their perceptions of the project also are useful in providing details of particular areas of concern and ideas for changes. "School dinners" appear to be a worry for some parents, particularly the types of food available to children and a desire for more information on diets and food was expressed a number of times. This may be a result of the projects pre-occupation with exercise. The parents therefore obviously do not see nutrition as an area which is relatively well covered in other sources of information as does the researcher, and therefore may see the emphasis on activity as a misplaced priority.

The small number of parents who suggested changes to the project seemed to concentrate mainly on very specific areas like provision of diet sheets and examples of specific exercises. It is difficult to account for the one more general suggestion about promoting a more positive attitude in the pupils (pages178 and 179). Apparently, the factors experienced of his daughters attitude was not a good one and may suggest a need to look very closely at the area of using the pupils to promote the objectives of the project at home. In hindsight, it appears
that little attention was given to this nonetheless crucial aspect of the project and more time may need to be spent on the quality of pupil/parent interactions, as it is unlikely that a very great increase in frequency of teacher/parent interactions will occur.

8.11.0 PUPILS PERCEPTIONS

8.11.1 Since, if the long term aims of Health based physical education are to be attained, pupils must regard their participation in physical activities as a "good experience" (Almond 1986), their perceptions of the work from the crucial 3rd point of the triangulation of perspectives of the 3 participating groups in the project (Teacher, parents, pupils). It is not practical to deal with parents' perceptions in isolation from those of the children as both parties have important contributions to make to the evaluation process of any health based programme.

Insight into pupils views of the project were gained by the teacher from both formal and informal sources. Impressions were gained during lesson time of how pupils approached the work, their degree of commitment, how much they enjoyed it and so on. Although verbal comments from pupils were not as forthcoming as one might have hoped, a great deal is learnt from the other comments made by pupils in their health and fitness files at the end of the course. It needs to be recognised that two important factors may have a bearing on reports of pupil perceptions. Researcher impression may of course be subjective in nature and affected by personal biases and hopes. However, whenever possible further evidence for those impressions is sought from other sources. The second influencing factor is the underlying motivation behind pupils statements of views. There must be a danger that pupils gave answers that they felt the teacher wanted, rather than those which would have accurately summed up their feelings. Although it was made very clear to pupils that their views were sought to assess the effectiveness of the course and not to test them, it is difficult to judge the degree of teacher apesement contained in answers. This must be borne in mind when considering this area of assessment.
The general impression gained by the researcher during the lessons was that the vast majority of pupils enjoyed all aspects of the practical work undertaken and this was confirmed by pupils verbally expressed opinions at the end of each activity undertaken. Most pupils said that they had enjoyed all of the activities when questioned immediately afterwards (page ) but this is not confirmed by their written statements at the end of their files (page 202). The enthusiasm with which they approached the work, their facial expressions and reaction after the activities were interpreted by the teacher/researcher as a positive indication of enjoyment and very few individuals denied this when given the opportunity. How then can the contradictory indications shown in Table 61 be accounted for i.e. 23% expressing dislike of running? There are several possible explanations of this:

i) Pupils did not like to openly express dissatisfaction with activities in a class situation, face to face with the teacher but were more critical in the less threatening situation of the written comment.

ii) The question to which they gave answers in their health and fitness files asked which aspect of the course they like "the least" and so relative rather than absolute dislikes are stated.

iii) Views expressed after the activities were immediate and perhaps not prejudiced by other factors. However, views expressed at the end of the course may have been more general in nature e.g. "I don't like running" and not an accurate reflection of what was felt about the activity isolated within the lesson.

How influential each of these possible factors was is a subject for further investigation, but it does become apparent that pupils may need to be encouraged to:

a) Not feel threatened by the expression of their own views.

b) Reflect more on their own feelings about activities undertaken and discuss them with others (Cook 1987) so that they may learn to become more in touch with their own immediate feelings and not be continually directed
by long standing attitudes which may be based on out of date experiences.

Another factor which becomes apparent about this "dislike" of running is the influence of environmental conditions. A number of pupils qualified their expressed conditions. This confirms the findings of other research (Cockerill 1987), that generally many pupils find outside activities in winter conditions off putting. The implication here is to consider very seriously the environment in which we are allowing pupils to experience the various activities we provide, as the external factors may have a more telling effect on the pupils perceptions than the activity itself.

Having outlined the least popular aspects of the course, it must be noted that generally most of the activities were very well reviewed by pupils and pupil comments indicate that there was a high degree of enjoyment of activities (page 207). Pupils liked activities because they were "exciting" and "interesting" and the use of music was frequently stated as being a motivational influence. The frequent use of the word "interesting" suggests that some pupils found the theory underlying the activities an attractive element as well as the experience of the activities themselves, although 9% of pupils stated that they did not like the writing/homework involved. The use of experimental learning techniques is therefore shown to be effective in retaining the enthusiasm and interest of pupils.

It has become evident that pupils of this age have a desire for excitement in their physical education lessons and if they are to be attracted to participation in activities for the sake of their health, then these activities must be presented as an "exciting" prospect. How much the excitement was derived from the activities themselves and how much from the use of music is difficult to assess, but in attempting to develop positive attitudes to exercise, the use of music may be a very beneficial influence, particularly as "Exercise to Music" is now becoming a popular activity for men and women of all ages (Hulbert 1987).
Generally, it appears then that most pupils did perceive most of the activities in the course as a "good experience" and pupil comments in their health and fitness files indicate that some of them found the work sufficiently motivating to develop more active lifestyles (page 166). There were of course, a very few pupils who said that they did not like the course as a whole and would have preferred to do other activities. These pupils obviously need to be considered and consulted and the need for greater scope for individual programmes of work is clearly indicated. However, the general conclusion to be drawn from this area is that worthwhile and relevant work which provides a sound knowledge base can be presented in a way what is perceived by most pupils as a "good experience" and is therefore likely to contribute to the promotion of active and healthy lifestyles.

8.12.0 PROBLEMS ENCOUNTERED IN RESEARCH

8.12.1 During the process of the research project, a number of problems were encountered which fall into three main categories "Practical"; "Relationships" and "Researcher Focussed". The degree to which these types of problems had a bearing on the effectiveness of the research varies with the researcher's perception of the importance of these problems.

8.12.2 Boyall (1983) found that teachers engaged in research most often mentioned practical problems when questioned about problems encountered. When their research is seen in the context of the already busy and pressurised day to day life of the teacher in full time work it is understandable that such difficulties would take a great importance. However, a seconded teacher in the privileged position of full time researcher would not be under such pressure and therefore be more able to cope with the author. A number of unexpected factors occurred like rooms not being available at the last minute and the video recorder breaking down ten minutes before the lesson, but these were not perceived as major difficulties at the time. Other unforeseen circumstances which arose included the overrunning of assembly on several occasions which severely limited the time available...
in lessons and the prolonged absence of a form tutor which seriously impeded collection of questionnaires. Again these are problems which could be experienced by any teacher attempting such a project and little can be done to overcome them and need to be regarded philosophically. They do however, detract from the "ideal" situation and can be the source of disappointment, especially to a teacher whose time is at a premium already and who sees the possible effectiveness of their labours evaporating through no fault of their own.

8.12.3 Relationship problems are again a common source of difficulties for the teacher researcher (Holly 1983) and this project was no exception. The researcher perceived difficulties with relationships with colleagues, pupils and parents, although the former of these was probably the most effective.

Relationships with colleagues were found to undergo changes as the researcher took on a new albeit temporary role which was different to the usual Head of Department, to whom the presence of the researcher in the school was apparently a threat and whose attitude to the research project was therefore severely affected. The consequent decision of the researcher to keep a low profile in the school led to almost complete isolation with little or no interaction with other members of staff so that their loyalties and co-operation would not be channelled away from teachers "in situ". The project therefore did not take on the broader character which was initially intended, although it is impossible to say whether this had any derogatory effect on its effectiveness. However, these problems may not have occurred if the researcher had been in full time employment as a teacher, carrying out research as a part of her "extended professional" duties (Hoyle 1972). There appears to be a conflict of possibilities here - teachers attempting to carry out research in their normal day to day work are likely to experience difficulties with lack of time for preparation and reflection (Almond 1982), but when given the luxury of time outside the teaching environment may become an "outsider" who experiences difficulties in gaining credibility and co-operation from colleagues until such time as research is regarded by
the majority of teachers as an integral part of their professional responsibilities, and time allowed for the practice of these extended professional duties, it is likely that this conflict will persist.

The isolated nature of the research project also created problems of relationships with pupils. As the pupils were new to the school, they had no previous contact with the researcher as a teacher and this affected the quality of the relationship between pupils and researcher (page 182). Once again, this problem would be overcome by the teacher in school embarking on the research project in the normal school situation.

Relationships with parents also created a problem in that they were almost non-existent. The project school did not have a tradition of a high degree of parental involvement in curricular aspects and so isolation featured here also. The lack of direct contact with parents made communication difficult in that the researcher was trying to reach an unknown mass of individuals about whom little was known. Generally, the only form of contact with parents was through the pupils and this in itself sometimes created barriers to communication (i.e. not passing on information from school to home and vice versa). The overall difficulty encountered was that the researcher was trying to influence the attitudes and behaviour of a group of individuals with whom she had little direct contact which made both the implementation and formative assessment of efforts to attain objectives very difficult during the course of the projects.

8.12.4 Problems which focussed on the researcher herself were related to those mentioned above and consist mainly of experiences of emotions which affected the objectivity of the subject. These problems which related to relationships with colleagues and feelings of isolation within the school were particularly relevant to a loss of confidence on the part of the researcher in her adopted role. For a period, a limbo existence was experienced between the roles of teacher and researcher, feeling excluded from the former by peer attitudes and from the latter
by lack of experience. The source of exclusion by colleagues disappeared once the fieldwork section was over, but a residue of insecurity on the validity of the work was left. This insecurity was further complicated by the researchers desire for the project to be successful. A great deal of time and effort had been invested in the work covered with pupils and parents and so the researcher was aware of a change of subjectivity of evaluation and this too led to a lack of confidence in assessment of work. "Are the pupils really enjoying the work or am I seeing what I want to see" was a constantly nagging doubt which could not be dispelled. These personal problems which were experienced are a symptom of the researcher working in isolation without a readily available sounding board or source of support and reflect the findings of Boyall (1983) who found that teachers in research need an adequate support structure.

8.13.0 HOW CAN THE PROJECT BE IMPROVED?

8.13.1 On reflection, various possible changes become apparent which may lead to the project being more successful in achieving its intended aims and in overcoming some of the problems encountered. These changes could be built into the initial plan of action, to form a new overall plan which marks the beginning of the second cycle in the action research process. These changes are outlined below.

8.13.2 One of the major aims of the project was to develop ways of involving parents in the programme in a way which would lead to better health promotion in the family through active lifestyles. While the project in its existing form no doubt did contribute towards the move towards the ideal, by improving parents background knowledge (see Tables 25 and 28) and encouraging discussion of activities in the family, (see tables 10 and 12) it would appear that there is greater scope for parental involvement than has been fully exploited (page ). However, before greater involvement can occur, it may be necessary to see the project as merely a small segment of a long term, ongoing programme of health based physical education with the school (see page ). The amount which can be achieved
in such a short period of time, in a course which does not necessarily bear the characteristics of the p.e. programme in general, is limited. The most obvious and far reaching change therefore is to see "parental involvement" not as a block of work isolated from the rest of the p.e. programme, but as a continuous policy within a whole department which practices the principals of health based physical education throughout its programme. There is a distinct danger that once a specific block of work ends, then so do opportunities for parents to be involved and for interest to wain so although it may act as a starting point, in which teachers can "feel their way", there are definite implications for the p.e. programme as a whole.

If parents are encouraged to be involved in the p.e. programme in a variety of ways, throughout their child's school career, then a number of advantages may be reaped. A long term ongoing process will allow the evolution of parent school relationships from those which are basically "child centred" to those which are more "parent centred" (Torkington 1986). The Healthy Lifestyles project was very child centred, built around a flow of information from school to home, although parents were given opportunities to comment on it. Hopefully, over a prolonged period of time, parents would become used to being consulted and develop confidence in contributing further to the courses, though the expression of attitudes, ideas and values in particularly those which may appear to be the ones being transmitted from the schools. If relationships between parents and the teacher are to be developed to the point where they can really be regarded as partners in promoting the health of youngsters, then it has to be developed over a long period of time, and in a more direct way.

A long term programme of parental involvement will allow for a greater flow of information to parents about the underlying aims of the p.e. programme, the purpose of the various activities and so on - in other words to enhance the understanding of parents. To complement this, the understanding of teacher may be enhanced if they take note of information
gained from parents when given opportunities to express their views, perception and attitudes. It will also allow schools to respond in ways which are readily perceived by parents, so that they feel confident that they are in some way contributing to the physical education process. When parents can have such a profound effect on their children's health, there is no doubt that they must be regarded as important contributors in a health based p.e. programme.

8.13.3 In more specific ways the project could be improved to bring about more effective parental involvement. There is apparently a need for greater incidence of face to face contact between parents and teachers. It is difficult to build good working relationships with parents you never see or have a chance to talk to. It may therefore be good practice to have more opportunities for parents to participate in events at school, like a weekly fitness club or workshop where there are opportunities to talk to other parents and the teachers as well as to participate. This is assuming that parents are willing to come into school. It may be more appropriate in some areas to hold the workshop on "neutral ground", although financial consideration need to be weighed up here.

A regular opportunity to participate in activities may be the solution to another apparent problem. Initial responses of parents to questionnaire 1 showed a high level of interest which, on reflection, was not exploited quickly enough. The "Healthy Lifestyle Evening" may have been held too late to cash in on the initial wave of interest, and so the opportunity to take part in a potentially enjoyable fitness activity was missed by those parents whose interest had wavered by the end of the project. Parents who attended the evening expressed a wish for it to become a regular occurrence (page 210) and so future plans may involve holding an initial evening early in the project and making it a regular activity thereafter - probably weekly. An earlier inclusion may also be perceived by parents as the school responding to their interests and therefore enhance relationships between school and parents.
This research has showed that parents of pupils from top band classes generally were more responsive in terms of returning questionnaires and attending Healthy Lifestyles evening (Tables 1, 3, 9). Although there may be a variety of reasons for this it must be considered that the project is failing to reach many parents of middle and bottom band pupils because of characteristics in its design or implementation. In particular the methods of communication - by various pieces of written material may have been inappropriate especially for those whom English is a second language (O.U. 1981). It is also possible that these parents did not respond to later communications because they are among that group of parents who feel that they have no influence over school matters and therefore replying would have no significant effect (Johnson and Ransom 1983). It is beyond the scope of this study to draw any definite conclusions on this matter, but an alternative approach is obviously needed to reach these parents. Since the vast majority of parents are interested in the progress and work of their children (O.U. 1981:b) parents may be encouraged into the school to see their child perform - say an aerobics routine - and once in the school, then opportunities may be utilised to develop interaction between parents and the teachers. The healthy lifestyles evening may therefore be changed to include a display of children's work, either practical or written, so that parents might be tempted into school when they might otherwise not deem a visit to be relevant. Teachers could also be ready to exploit any other opportunities when parents readily come to school - e.g. open days, parents evenings, and to develop relationships and promote interest. If, as has been proposed, parents do not contribute because they feel the school will not respond to them, then every care must be taken to recognise and if possible act on any responses given by parents, in a way which is relevant and obvious to them.

A major problem which needs to be overcome is that of using pupils as "postman" to deliver information home. The brief questionnaire administered showed that 25% of pupils were not passing the information on to parents (Table 19) thus excluding...
a large group of the target population. Sending all information and asking for returns by normal post is obviously practically and financially not viable. An alternative would be to send an initial letter by post informing parents that their daughter will be bringing home various materials every week, and asking them to check that they receive them regularly. This may still prove excessively expensive, and so an initial letter delivered by the pupil with a reply slip may be more practical. The use of reply slips on all of the materials would be unlikely to be practical in terms of parent goodwill and teacher collection. The problem can never be totally solved, but the more channels of communication that are set up between parents and teachers, then the more likely there is to be an efficient transfer of information between home and school.

Speculation reveals that parental involvement might be enhanced through the inclusion of more practical activities for pupils to do with their parents at home, rather than excessive amounts of literature to read. The M.O.T. test was one example of the sort of activity which could generate greater interaction and involvement, and so a regular programme of such activities may be beneficial.

This may also act to increase activities participated in as a family. At the end of the project, still only a small number of pupils took part in activities with their parents. If one of the aims of the project is to increase exercise levels within the family, and help families to regard exercising as a family activity, like eating, then we must aim for greater participation levels of family members together. The project perhaps laid too much emphasis on the individual and not enough on the potentialities of family activities. However, since fitness is such an individualised concept, it is difficult to avoid this. However, in future, more suggestion could be made of activities which are suitable for individuals of differing fitness levels to participate in together, with opportunity to experience them e.g. exercise to music, circuits, walking
8.13.6 It is felt that the project should be extended to include boys. Apart from the obvious need to provide this form of health education for boys as well as girls, because their activity levels are still a cause for concern (Dickenson 1986), it is also possible that this is one way of encouraging greater participation by fathers in the project.

8.13.7 Another aspect of the project which could be improved was the quality of pupil teacher interaction in lesson time. Once again, difficulties were encountered because of the isolated nature of the project and the lack of familiarity between teacher and pupils. To these 1st year girls in their 2nd term, the researcher was an "outsider", somebody whom they had not met before and to whom they were not used to. The advantages of embarking on this sort of project with pupils with whom the teacher has already developed a sound working relationship are obvious. Once again, the need for this work to be merely an integral part of the balanced total programme becomes apparent.

Just as a long term programme will allow parent-teacher relationships to develop gradually, then pupil/teacher relationships can evolve over a prolonged period. Pupils in this school were not, in general, used to having their views on work sought out by the teacher. Formal teaching methods and formal relationships between pupils and teachers are the norm for the school, and for that matter for the teacher. Over a short period, pupils were not able to adjust quickly to a more open relationship where they were asked to express views and contribute to class discussion. The unfamiliarity of the teacher with more student centred approaches may also have contributed here. Only in an ongoing programme can pupils and teachers develop their skills and confidence in coping with alternative strategies for teaching which are more student centred and which will help to transfer responsibility from teacher to pupil. An ongoing course also allows this transferrance of responsibilities to be a gradual and continuous process and not the "all or nothing" approach which is the alternative.
It becomes apparent here that these alternative teaching strategies should not be used only in modules of health work, but become an integral part of the total programme, so that both teachers and pupils become used to them, and they are not a new and alien concept to be regarded with doubt and even hostility (Facey 1984).

8.13.8 Having agreed the case for a whole programme approach, there are certain changes to the work covered that could usefully be made. Many of these perceived problems with the taught course stem from the fact that far too much material was included for coverage in a short period of time. Again, this is in turn a problem with a short specific course seen in isolation. Although as the project proceeded, the amount of material for coverage in lessons was reduced, it still seemed that pupils had insufficient time to reflect on their experiences, to discuss with each other to contemplate their own feelings and so on. However, it also became apparent that the pupils expected and wanted lots of physical activities within a lesson and expressed concern when there was a lack of it. The answer may be to reduce even further the concepts to be covered in the short period of time available, and to concentrate on very specific aspects. For example, "Caring for the heart" may have been quite enough to concentrate on, with other aspects of fitness being left until later. Within the course, there would still be plenty of scope for activity, while allowing more time for pupils to discuss and reflect, without the teacher feeling undue pressure to cover large quantities of factual material which relate to flexibility, strength, endurance and so on. The less phrenetic atmosphere in the lessons may also be more conducive to the development of better relationships between pupil and teacher with more individual/individual interaction instead of teacher/group interaction.

While this project concentrated on parent reactions, a great deal could be learnt from asking pupils to evaluate the course. Since we want the work to be a "good experience" for the pupils, (Almond 1986) then it is important to gain an insight into
pupils perceptions of the work, and therefore a more structured form of evaluation for pupils than the one used here may be necessary. A simple questionnaire could be administered at the end of the course which would provide valuable feedback and evidence for teacher evaluation.

8.13.9 The pupil files used as a teaching aid could also undergo some changes. If the amount of material to be covered in the lessons is to be reduced, then obviously, the coverage of the booklets will be reduced. The booklets needed more cartoons and pictures to break up the written pages and to make them more attractive. There should have been more suggestions for simple interaction activities at home to raise levels of awareness and pupil parent discourse. Perhaps an ongoing activity which pupils could monitor and record in their booklets would have been advisable e.g. 100 mile club for families.

There was a problem with the existing activities in that quite a large number of pupils did not complete the sections in their files devoted to pupil-parent interaction e.g. asking parents how active they were when they were young. A heavy handed imposition of "homework" was inappropriate because it seemed to be defeating the object of transferring some responsibility for actions to the student and also it was felt that for the activities to have full benefit, the students must want to do them and feel that they had completed them from their own choice. The line taken was that of "suggesting" that those activities would be done by pupils at home to get a better idea of their parents views and background. Although it is still felt that direct imposition of these activities is inappropriate it is obvious that moves must be made to encourage all of the pupils to want to broaden their perceptions by perhaps pointing out in class the effects that parents attitudes and behaviour can have on the pupils and encouraging discussion in class situations (Cook 1987). There may of course always be a small group of pupils and parents who do not wish to take part in the activities and attempts to prompt interaction may be totally ineffective, but this must be accepted. It becomes evident that this is yet another problem which could be overcome
in a long term programme where good relationships have been developed in the pupil-teacher-parent triangle and where communication channels are freely flowing.

8.13.10 To sum up this area of improving the project it has become obvious that the short specific course has value in that it no doubt raises awareness and provides a definite focus for many aspects of the work involved. However, the underlying concepts which must be assimilated by the pupils and parents for the work to be truly successful - acceptance of individual responsibilities for health, adopting exercise as an important part of one's normal routine of life and so on cannot be achieved in a short block. The implications are clear that a focus on health must underpin the whole p.e. programme with the school, be adopted as the norm by all members of the department and be implicit as well as explicit in nature. A gradual evolution of pupil-teacher, parent-teacher and pupil-parent relationships, as well as the gradual development, acceptance of and confidence in more appropriate teaching strategies can be achieved only in a long term programme.

8.14.0 HOW CAN RESEARCH METHODS BE IMPROVED

8.14.1 The research methods used in the project are a major area where changes would be made to try to improve the effectiveness, validity and reliability of the research. Since a good deal of the data was obtained through questionnaires, this is obviously one area where changes could be implemented.

One of the most obvious problems with questionnaires 1 and 2 was the significant decrease in completions between the first (82%) and second (50%). There are a number of factors which may have contributed to this. The first, which has become evident from some comments made by parents on questionnaires 2 is that too much written material was distributed to parents over the period of the project producing an "overkill" effect. By the time the final questionnaire arrived home, many parents may have lost interest in "yet another sheet of paper". Again from parents comments the similarity of the two questionnaires
may have put parents off, as only close inspection would allow
them to disclose differences, although it did point out in
the attached letter to questionnaire 2 that they were different.
Some parents may not have seen the point in returning what
they believed to be the same questionnaire again and therefore
failed to respond. The poor responses to the second
questionnaire may also have been partly due to inability of
teachers to collect them through absence.

Several actions could be taken to try to overcome this problem.
The amount of paperwork delivered to parents in such a short
time could be reduced as the amount of work covered is reduced,
although measures must be taken to maintain parental interest,
perhaps through pupil initiated activities at home. Articles
could be made more concise with more diagrams and cartoons
perhaps, to make them less arduous to read, without losing
any necessary information. The questionnaire itself could
undergo changes to make it more concise with fewer questions,
but this would lead to a severe reduction in data available
for research and therefore be detrimental. Care had already
been taken to minimise the length of the questionnaires and
so few changes could be made here. The appearance of the 2nd
questionnaire could however be changed to make it appear less
similar on initial inspection. New questions could be placed
at the front, and it could be printed in different colours.

Questions which had to remain the same for validity reasons
could be placed at the back, with an explanation of why they
are included again. The collection procedure, which depended
on the reliability of form tutors, may also be open to change.
It may be coincidence that the form whose return rate was poorest
had a form teacher who had a recurrent and prolonged illness
during the term of the project, but it would seem sensible
to speculate that if the regular form teacher is not in
registration to give reminders and take in completed sheets,
returns are likely to be reduced. Alternatives may include
the researcher visiting each class each day to collect and
remind, though this may be impractical in terms of time, and
a central collection point where pupils can return questionnaires
if their teacher is unavailable. An ideal solution would probably consist of a combination of the three methods.

Some change could be made to the questionnaires themselves in order to produce more useful data. The knowledge test did not appear to cause many problems, but the "sleeper" question on claustrophobia may, on reflection, have been very confusing and should be omitted.

The open question on what parents believed described a healthy person and a fit person may also need to be changed to a closed question with categories to be ticked if more parents are to be encouraged to answer. (Sudman 1986). Large numbers of parents failed to answer this question and this could be due to the question itself or the fact that it appeared on the back of a sheet and may simply have been missed. Solutions could be to place the question in a more prominent position in the questionnaire, preferably towards the back so parents have developed confidence in answering questions by the time they reach the more difficult "open" response, or change the nature of the question. The open question was valuable in that it indicated that parents, who did not answer, may not have very clear views on health and fitness, or views which are easily communicated. Those who did answer, provided an insight into exactly what parents perceptions are, because they were not channelled into preset categories. However, having preset categories would probably have been more valuable in identifying changes in attitudes over the course of the project and in future research, categories could be devised.

The activity diary used in question 4 needs some clarification. The distances used in the walking, running and cycling need to be clarified as being "continuous" to get over the problems of respondent adding a number of short distances covered. The frequency categories could also be changed to avoid problems in adding the total number of exercise sessions per week during analysis. Column for 0,1,2,3,4,5,6,7 times would overcome this problem, although it may make the question appear clumsy.
The second questionnaire could also benefit from a number of changes. Question 6b did not generally provide the information required because many parents simply stated what activities they had encouraged, rather than how they had encouraged, and a large group did not answer that part of the question at all, possibly due to its open nature. Possible alternatives would be to place HOW in capitals and underline it to avoid mistakes due to skim reading or to change it to a closed question with categories for ticking. The latter would probably provide more useful information and categories could be devised from pre-test.

Question 8 needs a c) section which asks "Would you say these changes are a result of the "Healthy Lifestyles Project", so that the effectiveness of the project in the area of diet can be assessed.

On reflection, question 9 is a space consuming, clumsy question which provides little discriminating information and could be severely reduced to merely asking parents if they remembered receiving the various articles.

Few parents were able to suggest changes which might benefit the project. (Question 12b). Once again a list of possible changes with basis for confirmation or denial may be more appropriate.

An additional question which would promote information on how much parents felt that the project had changed their attitudes towards health would again be useful in assessing the effectiveness of the project. Changes in knowledge and behaviour are covered, but it is difficult to assess changes in attitude from information already supplied, except through the voluntary comments made by some parents. The actual form the question would take would require a great deal of careful thought and research, but would possibly provide useful data on whether the project has succeeded in changing attitudes in such a short time.
In hindsight, it appears that follow up interviews with some parents may have clarified some of the data received. For example; How do parents encourage their children to be active? How do parents perceive fitness and its role in health? This sort of detailed information can only be gained from personal interviews, but this may of course be impractical and difficult to arrange with parents.

In general, the parent questionnaires would have benefitted from being more concise, with more closed questions to elicit responses from parents who did not have the confidence or inclination to answer open questions, with the second questionnaire placing more emphasis on what changes parents perceived had occurred as a result of the project.

8.14.2 The major problem for the teacher in this sort of project is that she has little or no control over the sort of interaction that takes place between pupils and their parents at home. She can provide activities and discussion documents, but cannot force any beneficial situations to occur. Since the pupils are the "postmen" and in many cases the instigators of activity at home, it would be useful to have an insight into how pupils perceive their role, what reasons they have or participating or not, how they perceive their parents willingness to participate and so on. It is possible that pupils pre-judge their parents attitudes and so their attitudes and behaviour may be based on false assumptions. A brief questionnaire administered during the period of the project could provide a valuable insight into pupils feelings about working with their parents at home which may have a bearing on work covered in lesson time.

8.14.3 A final improvement which could have further enhanced research methods would have been to have regular discussions with colleagues involved in similar work, so that feelings, perceptions, experiences and ideas could be exchanged, and perceptions broadened. The isolated nature of this piece of research has the danger of making the researcher insular and perhaps too subjective. Attempts to discuss work with colleagues
who were not involved were helpful in some ways, but held problems in relationships. The researcher had now become "the expert" and the impression was gained that colleagues were wary of discussing as equals. It would have been very useful to have one or more people with whom the work could be discussed in an atmosphere of equality and constructively critical rapport.

There are therefore, a number of changes which could be made to research methods which may make the research itself more effective, but since these suggested changes are the result of speculation, their effectiveness again needs to be the subject of investigation.

8.15.0 WHAT USE IS THE MATERIAL TO ANYONE ELSE?

8.15.1 In answering this question, it must be remembered that this is an action research project and as such no broad generalisations can be made about the results which are automatically transferable to the population as a whole. Data obtained is specific to the situation of the research and not necessarily applicable to any other given situation. However, other teachers reading this research may be able to identify individual aspects which are familiar to them and may become involved in a critical dialogue which will broaden their own perceptions, as well as contributing to the validity of the research.

While no hard and fast rules can be drawn from the research, many implications arise for Health Based Physical Education and the involvement of parents, which other teachers may wish to consider.

8.15.2 The review of the literature showed that many teachers feel that large numbers of parents are not interested in their children's school work and therefore tend to ignore any role that they might play. (Tizard et al 1981, Johnson and Ranson 1983). However, this research clearly shows that large numbers of parents did exhibit an interest in the work their children were doing at school and did participate in activities suggested by their daughters which contributed to the educational process.
Many parents expressed support for the attitude and behaviour which must be regarded as positively reinforcing (page 178). While the project did apparently fail to have any measurable impact on some parents, a significant number were reached in the short period and so it may be necessary for a rethinking of attitudes to occur. This research has shown that in at least one school, there is a great potential for parents to be involved in health based work and other teachers may wish to consider the possibility.

8.15.3 The second area which has definite implications for other teachers is that of parents knowledge. This research showed that large numbers of parents had very unclear ideas about the relationship between exercise and health, and heart health in particular. (Table 28). Some parents may not identify fitness with the heart at all. While parents in other areas may be more knowledgeable, there is an obvious need for teachers to gain some insight into parents perceptions before embarking on an education programme. Parents need to have a sound knowledge base from which to develop attitudes in the same way as our pupils, (Cook 1987) and so teachers may need to identify areas where knowledge is lacking in order to build a firm platform from which to progress. An initial questionnaire to parents at the start of health based work can serve several useful functions - i) to provide information for teachers on the current "state of play" ii) to provide teachers with an idea of parental interest through levels of response iii) to act as a catalyst in raising awareness and interest in parents.

A second aspect of this area which may need consideration is that of differences in response by different groups of parents. In the case of this research, there were obvious differences in response levels according to the academic band of the pupil. It is therefore obvious that parents are not a single homogenous group and are as varied in character as the children we teach. Differences in individuals and small groups therefore need to be considered, and efforts made to vary approaches to cater for these differences, using practical activities rather than written information being one small example of this.
Another aspect of finding out "where we are now" is in the area of activity patterns. The parents' questionnaires showed that generally pupils in the survey did not take part in physical activities with their parents. The reasons for this could be the subject of another research project but may in part be due to the individual interests and skills of various members of the family. Making exercise part of the family lifestyle is obviously an aim which requires a good deal of work and evaluation, with careful selection of activities if exercise motivation is to remain high (Biddle 1985). One aspect of encouraging activities within the family is to encourage parents and their children to exercise together and so it may be appropriate to encourage activities which allow individuals to participate together, but at their own level - e.g. exercise to music, circuit training, weight training, swimming and so on. Also activities which can be easily incorporated into family life like walking and stretching may hold particular benefit.

Walking as an activity for fitness and health may be of particular significance. It was the only activity which the majority of the parental population participated in regularly and which showed a marked increase in frequency at the end of the project (Tables 34,35). Walking can be used as a fitness promoting activity (Dodson 1981) when done for appropriate lengths of time frequently enough and at the required intensity. In providing healthy activity patterns amongst parents, it may be easier to initially build on existing behaviour rather than try to instill new habits immediately. A follow up programme for parents in this instance might be guidelines and suggestions on "walking for fitness and health". Other groups may have similar existing habits, or they may differ e.g. in rural areas, cycling may be a prominent activity on which good habits can be built. Again, if teachers gain an insight into existing behaviours, appropriate courses of action can be planned.

Generally the research indicated that efforts in physical education can bring about improvements in knowledge of parents...
changes in attitudes and changes in behaviour, even over a relatively short period of time and in a relatively indirect way (Tables 21 and 25). Teachers reading the research may begin to consider what could be achieved in a fully integrated long term course of health based physical education which has parental involvement as one of its main characteristics and perhaps feel more encouraged and optimistic about expending energy in that direction.

8.16.0 FINAL CONCLUSION

8.16.1. A number of final conclusions may be drawn from the results of this research and these are outlined below.

i) A large number of parents are interested in the work their children are doing at school and are willing to participate in activities designed to promote interest and awareness at home. There is therefore a great deal of potential for parents to be involved in health based physical education.

ii) A school based project which is based on using pupils as intermediaries between school and home can have some effect on the knowledge, attitudes and behaviour of some parents and could therefore be a useful tool on health promotion.

iii) The project in its current form was far more effective in reaching parents with children in the upper band classes than those with children in middle or low band classes. This bias needs to be considered in developing other parental involvement strategies.

iv) The perceptions of health and fitness of many parents are based on inaccurate, or lack of, knowledge of the area. These perceptions may therefore be at odds with those being promoted by the school and must be assessed and taken into account when attempting to promote health through physical education. In particular their knowledge of the relationship between physical exercise, the heart and health may need to be assessed and built upon before total support from the home is gained.
v) It is difficult over such a short period of time to develop relationships with both pupils and parents which are conducive to optimum attainment of health objectives. The alternative may be therefore to think in terms of a more long term programme of work which extends over the pupils school career, which would allow time for the gradual evolution of sound relationships and a gradual transference of responsibility from school to pupils and parents.

vi) It is debatable whether this research project fulfils some of the tenents which some authors prescribe to action research. The lack of a critical friend and recognition of the epistemological assumptions were a significant concern. Rather than as a model of action research, the project could be defined as a case study of an innovation which attempted to use action research.
APPENDICES
APPENDIX 1

Letters relating to setting up of study in chosen school.

a) To Headmaster

b) To Chairman of School Association

c) To Director of Education L.E.A.

d) From Director of Education

e) From Headmaster
Dear Mr. Hulley,

As you know I am currently engaged in an M.Phil. degree at Loughborough University and I am researching in the area of parental involvement in Health Based Physical Education.

The project I am designing will involve working with 1st Year girls during their P.E. lessons, sending home materials to parents and asking parents to complete questionnaires as well as inviting parents to a Health and Fitness Evening during the spring term.

I am writing to you therefore to ask permission to set up the project at Edmonton School. I have also written to the Director of Education and the Chairman of the E.S.A. in order to outline the project and to request cooperation.

Yours faithfully,

Louise Hulbert.
Dear Mr. Brown,

As you may know I am usually Head of the Girls Physical Education Department at Edmonton School. This year however, I have been seconded by London Borough of Enfield to study for an M.Phil. degree at Loughborough University.

Part of my study involves a research project which I will be setting up at Edmonton School. The project is designed to try to involve parents in the health and fitness work which pupils will be covering at school in their P.E. lessons. Strategies used will include asking parents to complete questionnaires, sending home information in written form, asking pupils to talk to parents about aspects of work covered at school and inviting parents to an evening in school devoted to health and fitness. All of these measures are designed to try to include parents in this vital part of a pupil's education, since they have a very large part to play.

As you probably realise the success of the project is dependent upon the goodwill of the parents involved and their willingness to give up their valuable time to undertake the activities mentioned above. However I do hope that parents will find the project useful and interesting and regard it as an opportunity to become positively involved in the school curriculum.

Most of the work will be done with 1st Year girls and their parents, but I am happy to receive comments or questions from any parents who are interested.

I would be most grateful if you would pass this information on to the other parent members of your committee. I will be happy to receive your comments.

Yours sincerely,

Louise Hulbert.
Dear Mr. Hutchinson,

As you may know, I am Head of Girls' Physical Education at Edmonton School and have been seconded to study for an M.Phil. degree at Loughborough University.

I am engaged in a research project into parental involvement in Health Based Physical Education which can be set up in a secondary school and which aims to include parents in work covered with pupils.

I have discussed the project Mr. Terry Williamson and with Mr. Hulley with a view to setting up the scheme at Edmonton School during the Spring term, 1987. Both have agreed in principle.

I am therefore writing to ask for your permission to develop and evaluate my research project at Edmonton School.

I will be happy to supply any further information you may require.

Yours sincerely,

Louise Hulbert.
Dear Ms Hulbert,

Thank you for your enquiry concerning your research project, I am happy for you to develop and evaluate your research project at Edmonton School, subject to the approval of the Head Teacher.

May I take this opportunity of wishing you every success with your work.

Yours sincerely,

[Signature]

Assistant Education Officer
Secondary

Ms Louise Hulbert
University of Technology
Loughborough
Leics LE11 3TU

My Ref: AEO/S
When calling ask for: Mr A Larbalestier
Telephone (on this matter): 01-366-6565 exl. 2093
Telex: 893837 LB ENF G
Your Ref:

Date: 10th December 1986

London Borough of Enfield
DIRECTOR OF EDUCATION
G. Hutchinson, B.A.
PO BOX 56 CIVIC CENTRE SILVER STREET ENFIELD MIDDLESEX EN1 3XQ
Miss L. Hulbert,
Department of Physical Education and Sports Science,
University of Technology,
Loughborough,
Leicestershire LEll J7U.

Dear Miss Hulbert,

Thank you for your letter. I am happy to give you permission to set up your research project at Edmonton.

Yours sincerely,

[Signature]
APPENDIX 2
Research Instruments used

a) Pilot initial questionnaire

b) Actual initial questionnaire and explanatory letter

c) Actual final questionnaire with explanatory letter

d) Pupil data questionnaire

e) Parents walking questionnaire

f) Reminder letter for initial questionnaire

g) Reminder letter for final questionnaire
Many claims are frequently made in advertising in the press, on t.v. and so on about various parts of health and fitness. Some of these claims have little evidence to support them and so it is often difficult to know whether to believe them or not.

In your opinion, would you say the following claims were TRUE, NOT TRUE, or are you NOT SURE? (CIRCLE ONE ANSWER PER STATEMENT)

<table>
<thead>
<tr>
<th>Claim</th>
<th>True</th>
<th>Not True</th>
<th>Not Sure</th>
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<tbody>
<tr>
<td>Taking part in physical activities can improve a person's fitness.</td>
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<tr>
<td>Activities like jogging, swimming and cycling can strengthen a person's heart</td>
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<td>In order to keep reasonably fit, a person must take part in physical activity at least three times a week</td>
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<td>By watching what they eat, a person can cut down the likelihood of him/her having a heart attack.</td>
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<td>It is better for a person to eat meals containing lots of red meat, rather than lots of carbohydrates</td>
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<tr>
<td>The chances of a person having a heart attack can be reduced by increasing the number of vitamins he eats</td>
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<td>Eating lots of dairy products, e.g. milk, butter, cheese, can be bad for a person's health</td>
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<td>People who regularly take part in very vigorous physical activity which causes the heart of beat very hard and very fast are more likely to suffer a sudden heart attack than those who do not</td>
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<td>Overweight people are NOT more likely to suffer from heart disease than people who are of the correct weight</td>
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<td>Blood pressure is an important factor in the fitness of the heart</td>
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<td>Non-smokers are less likely to suffer from heart disease than smokers</td>
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<tr>
<td>Heavy smokers who give up after several years of smoking do NOT reduce their chances of suffering from heart disease</td>
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Children do not need to be concerned about heart disease as it is only what they do when they get older that affects their chances of having a heart attack.

Exercise can successfully be used to treat people suffering from depression.

Exercise is good for some people suffering from high blood pressure.

Exercise can help to cure some people suffering from fear of closed spaces or claustrophobia.

A lot of people suffering from stress and anxiety have been helped by taking part in regular physical activity.

A lot of backaches are caused because people don't have strong enough muscles in their stomachs.

Taking part in vigorous exercise can have the same effects on the body as a dose of morphine that is it makes you feel 'high'.

Because sugar has no vitamins, no proteins, no minerals and no fibre in it, it is an unnecessary part of our diet.

For some people too much salt in their diet can increase the risk of suffering a stroke or heart disease.

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<thead>
<tr>
<th>2) What do you understand by the term 'HEALTH'?</th>
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<table>
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<tr>
<th>3) What do you understand by the term 'FITNESS'?</th>
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4) In the last week, that is since TUESDAY 25th OCTOBER, have you taken part in any of the following physical activities?

**PLEASE TICK ONE BOX FOR EACH ACTIVITY**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Not at all</th>
<th>Once</th>
<th>2 or 3 Times</th>
<th>4-6 Times</th>
<th>Daily Times</th>
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<tbody>
<tr>
<td>Walking (2m or more)</td>
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<td>Jogging/Running (1m or more)</td>
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<td>Cycling (5m or more)</td>
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<td>Swimming</td>
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<td>Circuit Training</td>
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<td>Exercise to Music (e.g. Stretch, jazzdance, aerobics, popmobility)</td>
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<td>Team Games (e.g. football, hockey netball etc)</td>
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<td>Individual Sports (e.g. squash, badminton athletics)</td>
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<td>YOGA</td>
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<td>Martial Arts (Judo, Karate, Kendo)</td>
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<td>Weight Training</td>
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<tr>
<td>Other Physical Activity (please specify)</td>
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</table>

...
5) In the last week have you taken part in any of the activities shown on the previous page with your son/daughter?

TICK ONE BOX ONLY

NO (Go to Q.6.)

YES (Go to Q.5b)

DON'T KNOW (Go to Q.6.)

5b) Which activit(ies) have you taken part in with your son/daughter?

6) How important do you think it is for a person to devote some time every week to keeping themselves fit?

TICK ONE BOX ONLY

Totally Unimportant Quite Unimportant No Opinion Quite Important Extremely Important

7) How important do you think it is for a person to do as much as possible to safeguard all parts of their health?

TICK ONE BOX ONLY

Totally Unimportant Quite Unimportant No Opinion Quite Important Extremely Important

8) How important do you think it is for parents to make sure that their son/daughter devotes some time every week to keeping him/her self fit?

TICK ONE BOX ONLY

Totally Unimportant Quite Unimportant No Opinion Quite Important Extremely Important
9) In the last year, have you encouraged your son/daughter to take part in any physical activities outside school?

YES

NO

DON'T KNOW

10) Children learn from various different sources: their families, the school, their friends and so on.

Below is a list of sources that might play a part in teaching children to adopt healthy lifestyles.

How important do you think that each of these sources should be in helping your daughter to adopt a healthy lifestyle?

TICK ONE BOX FOR EACH SOURCE.

<table>
<thead>
<tr>
<th>Totally Unimportant</th>
<th>Quite Unimportant</th>
<th>No Opinion</th>
<th>Quite Important</th>
<th>Very Important</th>
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</table>

Their Friends

The Media
(T.V., Press Magazines)

The Family

The Society

The School

11) Do you keep an eye on your family's food intake for health reasons?

TICK ONE BOX ONLY: NO

YES

DON'T KNOW

12) Have you in the past year made any changes in the sorts of food you give your family for health reasons?

TICK ONE BOX ONLY: NO (Go to Q.13)

YES (Go to Q.12b)

DON'T KNOW (Go to Q.13)
12b) Please give example(s)

13) Would you like to know more about how a family's lifestyle can affect the health and fitness of its members?

TICK ONE BOX ONLY: NO

YES

DON'T KNOW

14) Which, if any, of the following areas would you like to know more about?

TICK AS MANY BOXES AS YOU WISH

How our diet affect our health
Physical Activity and Health
The Body and Exercise
Coping with Stress

15) Are there any other areas of health and fitness that you wish you knew more about?

No (Go to end)

YES (Go to Q.15b)

DON'T KNOW (Go to end)

15b) What are they?

THANK YOU VERY MUCH FOR YOUR HELP
Dear Parents,

You may not know me but I am usually Head of Girls P.E. at Edmonton School. This year I have been seconded to research into the area health and fitness in schools.

Over the next few weeks I will be working with your daughter in her P.E. lessons on a health and fitness project. The project is designed to make pupils and their families more aware of healthy lifestyles.

I am writing to ask for your co-operation in this project as its success depends a great deal on the willingness of parents to take an interest in and participate in the work their daughters are covering at school. In the coming weeks you will be receiving several batches of information on various aspects of healthy lifestyles, and your daughter may be asking you to take part in discussions and small activities. I'm sure you will find these activities and the information interesting and useful.

My first request of you however is to complete the accompanying questionnaire, which covers a number of health areas. The information I will receive from completed questionnaires is crucial to the success of the project and so I would be extremely grateful if you would find the 10-15 minutes required to complete them. The finished questionnaires should be returned to school with your daughter as soon as possible, but by...

If you have any queries about the work or questionnaires, please do not hesitate to contact me by leaving a message with the school office.

Thank you very much for your time and co-operation, and I hope you enjoy taking part in the project.

Yours faithfully,

L. Hulbert
Head of Girls P.E. Department

Edmonton Lower School,
Little Bury Street,
Lower Edmonton,
London.
N9 9HZ

10th January 1987
Many claims are frequently made in the press, on TV, and so on about various parts of health and fitness. Some of these claims have little evidence to support them and so it is often difficult to know whether to believe them or not.

In your opinion, would you say the following claims were TRUE, NOT TRUE, or you are NOT SURE?

**CIRCLE ONE ANSWER PER STATEMENT.**

<table>
<thead>
<tr>
<th>Claim</th>
<th>NOT SURE</th>
<th>TRUE</th>
<th>NOT TRUE</th>
</tr>
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<tr>
<td>Taking part in physical activities can improve a person's fitness.</td>
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<td>To keep fit, a person must take part in physical activity at least 3 times a week</td>
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<td>It is better for a person to eat plenty of red meat, rather than carbohydrates like potatoes and pasta</td>
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</tbody>
</table>
2. How would you describe a “healthy” person?

3. How would you describe a “fit” person?
4. In the last week, that is since ..........................................................., have you taken part in any of the following physical activities?

PLEASE TICK ONE BOX FOR EACH ACTIVITY.

<table>
<thead>
<tr>
<th>Activity</th>
<th>NOT AT ALL</th>
<th>ONCE</th>
<th>2 OR 3 TIMES</th>
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</tbody>
</table>

5a. In the past week, have you taken part in any of the activities shown above with your daughter?

TICK ONE BOX ONLY.

<table>
<thead>
<tr>
<th>Option</th>
<th></th>
<th>(Go to Q6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>□</td>
<td>(Go to Q6)</td>
</tr>
<tr>
<td>YES</td>
<td>□</td>
<td>(Go to Q5b)</td>
</tr>
<tr>
<td>DON'T KNOW</td>
<td>□</td>
<td>(Go to Q6)</td>
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</table>

5b. Which activities have you taken part in with your daughter?

PLEASE STATE ACTIVITIES
6a. In the last year, have you encouraged your daughter to take part in any physical activities outside school?

TICK ONE BOX ONLY.

- NO [ ] (Go to Q7)
- YES [ ] (Go to Q6b)
- DON'T KNOW [ ] (Go to Q7)

6b. What activities have you encouraged your daughter to take part in?

PLEASE STATE ACTIVITIES

7. Do you keep an eye on your family's food intake for health reasons?

TICK ONE BOX ONLY.

- NO [ ]
- YES [ ]
- DON'T KNOW [ ]

8a. Have you, in the past two years, made any changes in the sorts of food you give your family for health reasons?

TICK ONE BOX ONLY.

- NO [ ] (Go to Q9)
- YES [ ] (Go to Q8b)
- DON'T KNOW [ ] (Go to End)

8b. Please give examples of these changes.

THANK YOU VERY MUCH FOR YOUR HELP

PLEASE GIVE THE COMPLETED QUESTIONNAIRE TO YOUR DAUGHTER TO RETURN TO SCHOOL

051799
Which of the following most nearly describes you?

One box only

- I have never smoked a cigarette.................
- I have only ever tried smoking once or twice.
- I used to smoke sometimes but I don't now....
- I smoke and I would like to give up...........
- I do not want to give up smoking.............

Which, if any, of the following areas would you like to know more about?

As many boxes as you wish

- How our diet affects our health..............
- Physical activity and health....................
- Coping with stress............................
- Making your own fitness programme..........  

Are there any other areas of health and fitness that you wish you knew more about?

Yes, what are they?

If you have any comments or queries on this questionnaire, please use the space overleaf to make them.

Thank you very much for your help.
Dear Parents,

I would like to take this opportunity to thank you very much for your time and co-operation over the last few weeks.

Judging by the responses your daughters have brought with them to the lessons, a large number of you have entered into the activities and discussions suggested and have helped to make them both worthwhile and meaningful. I hope that you have found the information and activities in the "Healthy Lifestyles Project" interesting, useful and in some cases inspiring!

My job now is to find out how effective the project has been, and so I must ask for a few minutes of your time once again, to fill in the attached questionnaire. It is vital that I get your views and opinions about the project, so that I can judge whether it is fulfilling its planned purpose, whether it needs to be changed and so on. I hope that this will be the last questionnaire I need to send you!

This questionnaire is very similar to the first one you received, but there are some changes. Again it should take no longer than 10-15 minutes to complete. The finished questionnaires should be returned to your daughters' form teacher as soon as possible, but by

With many thanks in anticipation of your support.

Yours faithfully,

Louise Hulbert

Louise Hulbert  P.P.
Head of Girls PE Dept
1. So that we can see if the "Edmonton School Healthy Lifestyles Project" has in any way affected your opinions, please complete the following:

In your opinion, would you say the following claims were TRUE, NOT TRUE, or you are NOT SURE?

**CIRCLE ONE ANSWER PER STATEMENT.**

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</tbody>
</table>

5a. In the past week, have you taken part in any of the activities shown above with your daughter?

**TICK ONE BOX ONLY.**

- NO [ ] (Go to Q6)
- YES [ ] (Go to Q5b)
- DON'T KNOW [ ] (Go to Q6)

5b. Which activities have you taken part in with your daughter?

**PLEASE STATE ACTIVITIES**
6a. Since the beginning of the “Healthy Lifestyles Project”, that is since the 12th January, 1987 have you tried to encourage your daughter to become more active?

TICK ONE BOX ONLY.

YES [ ] (Go to Q6b)
NO [ ] (Go to Q7)
DON’T KNOW [ ] (Go to Q7)

6b. Please say how you have tried to encourage extra activity.

7a. Since the beginning of the “Healthy Lifestyles Project”, would you say that the amount of physical activity you do has changed at all?

PLEASE TICK THE APPROPRIATE BOX

I have become MUCH LESS active [ ] (Go to Q7b)
I have become a LITTLE LESS active [ ] (Go to Q7b)
I do the same amount of activity [ ] (Go to Q8)
I have become a LITTLE MORE active [ ] (Go to Q7b)
I have become MUCH MORE active [ ] (Go to Q7b)

7b. Would you say that this change is a result of the “Health Lifestyles Project”? 

PLEASE TICK ONE BOX ONLY.

YES [ ]
NO [ ]
DON’T KNOW [ ]

8. Since the beginning of the “Healthy Lifestyles Project”, have you made any changes to the sorts of food you give your family for health reasons?

YES [ ] (Go to Q8a)
NO [ ] (Go to Q9)
DON’T KNOW [ ] (Go to Q9)
8a. Please give examples of these.

9. Over the last few weeks your daughter has been bringing home various articles on health and fitness. I would like to find out how effective this method of distributing information is, as well as the effectiveness of the information itself.

For each named article would you please:

Tick column A if you remember RECEIVING it.

Tick column B if you remember READING it.

Tick column C if you thought it was USEFUL.

For example, if you do not remember receiving an article, then tick NO BOXES.

If you remember receiving it, but did not read it, then tick COLUMN A ONLY.

If you read the article, but did not find it useful, then tick COLUMN A and COLUMN B.

If you read the article and found it useful, then tick COLUMN A and COLUMN B and COLUMN C.

<table>
<thead>
<tr>
<th>NAME OF ARTICLE</th>
<th>COLUMN A</th>
<th>COLUMN B</th>
<th>COLUMN C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(RECEIVED)</td>
<td>(READ)</td>
<td>(USEFUL)</td>
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<td>P.E. at Edmonton School: Physical Jerks or Fitness for Life&quot;</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Health: What is It?</td>
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<td>What is Fitness?</td>
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<td>Coronary &amp; Heart Disease: Is Your Child at Risk?</td>
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<td>Exercise: Why Bother?</td>
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<td>Flora Leaflets on Prevention of Heart Disease: a) Stress b) Weight c) Exercise d) Blood Pressure</td>
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<tr>
<td>Traffic Light Guide to Staying Slim</td>
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</tr>
</tbody>
</table>

10. Since the beginning of the “Healthy Lifestyles Project”, can you remember discussing health and fitness with your daughter?

**TICK ONE BOX ONLY.**

- **NOT AT ALL**
- **ONCE OR TWICE**
- **ON SEVERAL OCCASIONS**
- **EVERY WEEK**
11a. Have you, since the "Healthy Lifestyles Project" began on January 12th, 1987, come across any information about health and fitness from sources other than the project? For example, from the newspapers, television, magazines, radio, and so on?

**TICK ONE BOX ONLY.**

- **YES**
- **NO**
- **DONT KNOW**

Go to 11b.

11b. Please say what the sources were.

12a. Do you think the "Healthy Lifestyles Project" is a good way of getting families to become more aware of health and fitness?

**TICK ONE BOX ONLY.**

- I don't think it is a good way
- I think it would be better with changes
- I think it is a good way as it is

Go to 13

12b. Can you suggest what changes?

13. It would be very useful for me to have your views on the "Edmonton School Healthy Lifestyles Project".

If you have any comments you would like to make about it, please do so in the space below.
14. Did you attend the Healthy Lifestyles Evening held at Edmonton Lower School on Thursday, March 12th 1987?

YES
NO

THANK YOU VERY MUCH FOR YOUR HELP
PLEASE GIVE THE COMPLETED QUESTIONNAIRE TO YOUR DAUGHTER TO RETURN TO SCHOOL.
At the end of your last P.E. lesson you were given some sheets on 'What is Health?'

Please can you tell me what you did with those sheets by circling the box that applies to you.

Circle ONE BOX ONLY IN QUESTION 1 AND ONE BOX IN QUESTION 2

1) After being given the "What is Health?" sheets, did you:

- Lose it/ Do nothing with it .......................................................... [ ]
- Read it yourself and NOT give it to your parents ........................ [ ]
- Read it yourself and then give it to your parents ........................ [ ]
- Give it to your parents without reading it yourself .................... [ ]
- Read it TO your parents .............................................................. [ ]
- Read it WITH your parents ......................................................... [ ]
- Read it after your parents .......................................................... [ ]
- Other........say what .................................................................. [ ]

2) Do you think one or other of your parents read the article?

YES   [1]

NO    [2]

DON'T KNOW [3]

3) Once you/your parents had read the article, did you:

- Not discuss it at all .......................................................................... [1]
- Talk to your parents about the article ........................................... [2]
- Discuss the article and how it affects your family ...................... [3]
- Other ............................................................................................ [4]

Thank you very much.
PARENTS WALKING SURVEY
From the Health and Fitness questionnaire that you kindly returned, it appears that walking is the most common form of physical activity taken by Edmonton parents.

I am very interested in finding out how this activity fits into people’s everyday lives, so I would be most grateful if you could answer the questions outlined below.

The information I gain from this survey will be vital to my project and so I must once again ask for your kind cooperation and time.

Thank you in anticipation.

Yours sincerely,

Louise Hulbert
Head of Girls' P.E. Dept.

This survey covers your WALKING BEHAVIOUR IN THE LAST 24 HOURS ONLY, i.e. from the start of your evening meal yesterday to the start of your evening meal today.

All distances given should be to the nearest half mile, and should only include those walked CONTINUOUSLY, without stopping at all. Please omit any distances of less than half a mile.

PART A: TO BE COMPLETED BY EVERYONE.

1) Yesterday, after your evening meal but before going to bed, did you walk any distance of at least half a mile?

   NO □
   YES □ How far?........................................

2) This morning, BEFORE BREAKFAST, did you walk any distance of at least half a mile?

   NO □
   YES □ How far?........................................

PART B: TO BE COMPLETED ONLY BY THOSE WHO GO OUT TO WORK

3) This morning, did you walk all or part of the way to work?

   NO □
   YES □ How far?........................................

4) Did you walk during your lunch break?

   NO □
   YES □ How far?........................................
Today, did you walk continuously for any distance of at least half a mile AS PART OF YOUR WORK?

NO □
YES □ How far?..............................

This afternoon, did you walk all or part of the way home from work?

NO □
YES □ How far?..............................

After finishing work, but before eating your evening meal, did you walk any distance of at least half a mile?

NO □
YES □ How far?..............................

NOW GO TO PART D

PART C: TO BE COMPLETED ONLY BY THOSE NOT GOING OUT TO WORK

8a) Did you walk to school with your children, and then home again this morning?

NO □
YES □ How far?..............................

8b) Did you walk to school to collect your children, and back again at the START OF THE LUNCH HOUR TODAY?

NO □
YES □ How far?..............................

8c) Did you walk your children to school and then return home again at THE END OF THE LUNCH HOUR TODAY?

NO □
YES □ How far?..............................

8d) Did you walk to school to collect your children and then walk back again at THE END OF AFTERNOON SCHOOL TODAY?

NO □
YES □ How far?..............................

9) Did you walk to the shops/library/friends etc. at any time today, between breakfast and evening meal?

NO □
YES □ How far?..............................
10) Apart from any occasions already stated above, did you go out for a walk for pleasure at any time today between breakfast and evening meal?

NO □

YES □ How far.....................

NOW GO TO PART D

======================================================================

PART D: TO BE COMPLETED BY EVERYONE>

11) Since your evening meal yesterday, have you walked any distance of half a mile or more that has not been included in any of the other sections?

NO □

YES □ How far?.....................

12) To the nearest half mile, how far would you say it was from Edmonton Lower School to the following locations:

a) EDMONTON GREEN ROUNDABOUT.................................

b) ENFIELD TOWN MARKS AND SPENCERS...........................

c) EDMONTON UPPER SCHOOL ....................................

THANKYOU VERY MUCH FOR YOUR HELP
Dear Parent/Guardian,

I note that your daughter has not yet returned the Health and Fitness Questionnaire for Parents that was given out in her last P.E. lesson.

I do realise that the questionnaires take a little time to complete and I do regret any inconvenience that they cause you, but I would be extremely grateful if you would complete and return the forms as soon as possible.

The success of the project I am undertaking depends mainly on the goodwill of parents and their willingness to return the questionnaires. I hope therefore that you will be able to find the time to fill them in and return them to school.

Thank you very much in anticipation for your cooperation.

Yours faithfully,

Head of Girls P.E. Department.
Dear Parents,

I note that your daughter has not yet returned the second Health and Fitness questionnaire which was issued last week.

I appreciate that I have again asked you to spend some time on completing the questionnaire and it may cause you some inconvenience. I would however be most grateful if you could spare the time to answer the questions, as the information I gain is crucial to the effectiveness of my project.

I would like to take this opportunity to thank you for your cooperation over the last few weeks, and hopefully for the return of this last questionnaire. I would be grateful if the completed questionnaires could be returned to your daughter's form teacher as soon as possible.

Yours sincerely,

Louise Hulbert

(Head of Girls' P.E. Department)
APPENDIX 3

SCHEME OF WORK FOR TEACHING BLOCK
To encourage pupils and parents to work together in analysing the attitudes to health and their lifestyles and to encourage them to develop a healthy and active way of life.

In order to achieve these aims the following objectives must be considered:

1) To improve the knowledge of pupils and parents in the areas of health and fitness.
2) To provide a variety of activities which allow both pupils and parents at first hand the feelings and effects of participation in exercise
3) To provide opportunities for pupils and parents to reflect upon these experiences and to discuss them in the light of their knowledge
4) To encourage thought and discussion amongst pupils and parents on responsibility for health and fitness and to encourage individuals to realise individual and group (especially family) responsibilities
5) To provide enjoyable and meaningful experiences for both pupils and parents

Lesson 1

Classroom lesson:

1) INTRODUCTION: Who I am - TEACHER/RESEARCHER
Purpose of project - improving family fitness and health

2) PAIRS DISCUSSION: Tell partner what you think
   a) Fitness
   b) Health

is about.

Suggestion from class.

3) Who affects OUR health and fitness?
Suggestions from class with explanation
   e.g. Ourselves - Lifestyle
       Friends    - Drugs, Sport, Hobbies
       Government - N.H.S., Smoking laws etc.
       Families   - Food, Habits, Lifestyle
       Schools    - Education
Which are most important?
For people of your age? - FAMILY very important

We will be looking at:

PUPILS

PARENTS

SCHOOL

and how we can help each other to lead a healthy lifestyle

i.e.

1) How your family affects your health and fitness
2) How you can affect your family's health and fitness

4. Pupils wrote on a piece of paper:
   a) "I think a healthy person is................."complete
   b) "I think a fit person is................."complete

collect in.

5. Administration of Q1.

   Fill in dates on letter and questionnaire
   Explanation of importance of questionnaire

6. Walt Disney Video

"Fun to be Fit"

Follow up discussion

LESSON 2

1. INTRODUCTION: Brief feedback session on Q1 - any parent reactions?

2. Distribution of "My Health and Fitness File"

   Naming and care of file

3. Health and Fitness - brainstorm terms

   Spider diagrams on board

4. Fitness as an important part of Health?

   Recap of film - 4 aspects of fitness
5. How does fitness affect you/your parents? Are you fit? Are your mum and dad fit? FIT FOR WHAT?
What standard of fitness are we aiming for? Do you feel 'fit'?
How do you feel now? Think of words to describe how you feel now

6. Explanation of M.O.T. test - what is it testing?
Using instructions, but with guidance, give your partner an M.O.T test

7. Explain "Homework" - do M.O.T. test on Parents and bring results back and take home "P.E. at Edmonton School" for reading and discussion with parents.

8. Aerobics session
1. 2½ minute warm up "Sisters"
2. 5 minute aerobics Pulse taking "Jump"
3. 2½ minute cool down "Big Fun"

Routines
SISTERS ARE DOING IT FOR THEMSELVES
INTRO: Walking in Spot
Turn head to right and back, left and back. Repeat.
Drop head to right shoulder and back. Repeat both
Roll right shoulder back x 4
Roll left shoulder back x 4
Shrug shoulders to beginning of chorus (x 4)

CHORUS: Lift right foot x xxx with left hand. Repeat on other side
(Alternate for 16 beats)
Forward lunges alternate sides x 8
Walk to right x 3, kick and clap, repeat to left 8 time altogether
On spot bend knees, and press elbow and back x 4
Repeat, one elbow at time therefore twisting x 4
Run to right x 3 and clap. Repeat to left x 8
Bounce and back alternate legs while swinging arms
Chorus; Knees to elbow throughout
Role shoulders forward x 4, back x 4. Walk xxx feet to end

2) Jump
INTRO; Jogging on spot hands on shoulders
1. While jogging on spot, arms stretched up and back x 8
   arms stretched forward and back x 8
   arms stretched out and back x 8
   alternate up, forward, out x 8
2. 16 knee lifts
3. Small kicks x 4. Turn right x 4 (until back to original position)
4. Run forward x 4
   2 Jumping jacks
   Run back x 4
   Repeat (4)
5. Jog on spot, repeat 1 omitting alternate arms
6. 8 knee lifts
7. Repeat 3
8. Repeat 4
9. Running round hall in circle for 12. Face inward in circle,
   jogging on spot
10. On "Come to me" repeat 6
11. Repeat 3
12. Repeat 4
   Twist on spot to end

BIG FUN
On drums only, wait
1. On breathing, deep breath while raising arms above head, breath
   out while lowering arms. Repeat
2. Chasse steps to right and left, 4 on each side including arms
3. Lift right knee to left elbow x 4
   Repeat other side
   Repeat both sides
4. Run to right x 3 jump and clap
   Repeat to left
   Repeat to right and left
5. Hop and kick other leg and to side x 12 to chorus
6. On chorus, chasse to right and left with arms x 8
   Stretch up and push down bending knees x 8
   Repeat both
7. Repeat 1 x 6
8. Repeat 3
9. Repeat 6
10. Chasse round room to 2nd chorus, return to space, swing arms
    forward and back
11. To third chorus, repeat 6
    Swing to end
LESSON 3


2. Health and Fitness booklets
Discussion - why is fitness so important?
Points to bring out:-
   a) Staying alive
   b) Quality of Life
   c) Feeling good
   d) Looking good
   e) Able to do more

We can affect our own fitness/health - it doesn't just happen
Example: Cardio-vascular fitness
Diagram in booklet, and explanation

3. Activities experiment with pulse rates - results and discussion
i.e. How to take pulse after a) Rest
   b) 1 minute walk
   c) 1 minute jog
   d) 1 minute bench steps
   e) 1 minute jog
   f) 1 minute walk
   g) 1 minute rest
   h) 3 minutes rest

Explanation of WHY?

4. Aerobics - means of improving Cardio-vascular fitness by raising pulse rate and maintaining it for prolonged period (as lesson 2)

Home Activities
1) Fill in booklets pl-5
2) "What is Health" article
LESSON 4

1. Warm up a) Mobilising and pulse raising routine - "Big Fun"
b) Stretching the major muscle groups:
   - Calves
   - Quads (Easy stretch)
   - Hamstrings (to "Shake you Down")
   - Lower back
   - Side Torso (All stretches)
   - Upper Arms (Static/held)
   - Chest
   - Upper Back

   Read FLEXIBILITY section in booklets. Principles of developmental stretching.

2. IMPROVING CARDIO-VESTULAR FITNESS
   
   .......by making heart and lungs more efficient
   HOW?.......by making them work harder and for longer than they are used to
   Training level x Time

   Experiment: What sort of exercise is best for cardio-vascular improvement?
   a) Jog with a partner for 5 minutes (background music). At end - tell partner how you feel
   b) Short SPRINTS, across badminton court and back for as long as possible. How long can you SPRINT for? Tell partner how your feel
   c) Sit ups - how long can you do sit ups for (Demonstration or correct, safe sit-up). Tell partner how you feel

   Which sort of exercise could you keep up for 20 minutes.
   AEROBIC/ANAEROBIC activities

   Aerobic activities e.g. jogging, swimming, cycling, skipping, rowing, cross country skiing, aerobics, circuit training

HOME ACTIVITY
Filling in family activity diary for a week
"What is fitness" article to take home
LESSON 5

1. Video - How of Fitness
   Brief discussion

2. Activity diaries - analysis and discussion
   Does your family do enough to keep fit? (emphasis of cardiovascular fitness)
   If no, what can we do to improve the fitness of our families?
   
   Home Task - discuss activity diary with family/parents, try to get members of family to take part in some sort of extra aerobic activity over the next week: e.g. walking, running, swimming, cycling, aerobics etc.

3. Warm Up: Pulse raises/mobility - to "It's a Kind of Magic". Easy stretch to "I'm gonna shake you down".

   b) Jogging/Running - can we enjoy it? In 2's, jog with partner round school field and playground (¼ mile) talking continuously to partner, encouraging and helping
   AIM: To get yourself and your partner round circuit stopping as few times as possible. NOT A RACE, go off at a gentle pace. On return to hall, warm down by walking round hall for 2-3 minutes (background music) to allow pulse to drop.

   Words to describe how you feel after run.
   Did you enjoy it?
   Did you hate it?
   Could you do it again over half term?
LESSON 6

1. What activities did you do over half term that were extra?
   Write down on paper:
   a) Did you do any physical activity?
   b) Who with?
   c) Did you enjoy it?
   d) How did it make you feel?
   e) What did you like about it?
   f) What didn't you like about it?
   g) Will you do it again?

2. Exercise to music warm up
   1) Pulse rate/mobility to "You can call me Al"
   2) Easy stretch - Shake You Down

3. Explanation of muscle fitness - strength
   Muscle tone
   CIRCUIT FOR MUSCLE FITNESS

   ROOM PLAN

   1) STEP UPS
      BENCH
   2) TRUNK CURLS
      MATS
   3) BURFEEES
   5) ASTRIDE JUMPS
      BENCH
   4) REVERSE DIPS
      BENCH
   6) HANGING
      KNEE LIFTS
      WALL BARS
   7) SHUTTLE SPRINTS
   8) EASY PRESS UPS
Explanation of each exercise, affected muscle groups and safety points. e.g.

1) STEP UPS
   Quadriceps step right up till both legs straight and step down.

2) TRUNK CURLS
   Abdominals. Lie on mat, hands on ears, legs bent. Curl trunk till head and shoulders blades leave floor, relax gently.

3) BURPEES
   Hip flexors, quadriceps, hamstrings. Bottom low, knees and ankles together, jump feet in, straighten up, bend, jump feet out until legs are straight.

4) REVERSE DIPS
   Triceps. Sit with back against bench, hands gripping near edge of bench. Legs flat and straight. Press hands down to lift hips from floor until arms are straight, gently lower.

5) ASTRIDE JUMPS
   Calves, Quadriceps, hamstrings. Stand astride bench, push off toes to land both feet simultaneously on bench, push off toes to land both feet simultaneously on floor. xxx of landing necessary.

6) HANGING KNEE LIFT
   Quadriceps, hip flexors (arms). Hang from wallbars facing centre of room. Keeping legs together, lift knees up to chest by bending them, and relax.

7) SHUTTLES
   Calves, quadriceps, hamstrings. Sprint as fast as possible between two lines.

8) EASY PRESS UPS
   Triceps. Hands and knees box position. Keeping back straight, bend elbows until chin touches floor, straighten arms again.

In groups of 4, 45 seconds per station, 15 seconds between stations, 2 circuits.
Music playing continually (current pop hits).
4) Cool down, walk and talk to music "I knew you were waiting"  
Discussion of circuit. How do your feel? - Possible cardiovascular benefits. Did you enjoy it?

5) Home activities:
   a) Read about muscle fitness in booklet
   b) Take home Healthy Lifestyles Evening information to discuss with parents
   c) "Exercise, Why Bother?"
LESSON 7

Complete "Exercise to Music" session, incorporating the various aspects of fitness.

1) Pulse raise and mobiliser: "Call me Al"
2) Easy Stretch: "On my Own"
3) Moderate Aerobics: "I'm your Man"
4) Hard Aerobics: "Jump"
5) Hard/Moderate Aerobics: "Don't leave me this way"
6) Cool down: "I know you'd be waiting"
7) On mats, muscle fitness work
   Low level sit-ups
   Press Ups
   Trunk Curls
   Side leglifts
   Press Ups
   Relaxation and final mobiliser
   UB 40 - "Red, red wine"

2. Discussion of work. How did it make you feel? Did you enjoy it?
3. In files, read section of body composition
4. Home activities.
   In back of files, write your thoughts on work.
   i.e. a) What you like best?
        b) What you liked least?
        c) What did you learn from it?
        d) Did you think it different from your normal P.E. lessons? If so, how?
Also ask your Parents what they thought about the work.
Reminder of Healthy Lifestyles Evening.

Examples of Routines to Lesson 7

A. Moderate Aerobics: "I'm Your Man"
1) On Introduction jog on spot.
2) On verse:
   - Alternate knee lifts x 8
   - Alternate heel lifts x 8
   - Quick side steps to right x 3 and kick
   - Repeat to left
   - Repeat till total 8 times.
3) On chorus, jog on spot, hands on shoulder. Lift right hand, left hand, lower right hand, left hand. Lift both hands, lower both hands and clap (in time to music) repeat to end of chorus.
   - Repeat 2 and 3
4) 4 small kicks alternate leap, turn right. Repeat until back to original position
5) Run forward for 4 beats
   - Jump back and kick for 4 beats
   - Repeat both
   - Repeat 2
   - Repeat 3
6) Bouncing twist on spot
   - Repeat 3

B. Hard Aerobics: Jump
1) On introduction jog on spot, place hands on shoulders
2) While jogging, raise both hands above head and down to shoulder x 8
   - Repeat forwards x 8
   - Repeat out to side x 8
   - Alternate up, forward, out x 8
3) Alternate knee to opposite elbow lifts x 16
4) 4 small kicks alternate legs, turn right, Repeat x 4
5) 4 running steps forward, 2 jumping jacks, 4 running steps backwards, 2 jumping jacks.
   Repeat
   Jog on spot
   Repeat 2 omitting alternate arms
   Repeat 3 for 8 repetitions
   Repeat 4 and 5

6) To instrumental, hopping on left foot heel toes with right foot x 8. Repeat on other foot
   Repeat x 4. Repeat on other foot
   Repeat x 2. Repeat on other foot
   Repeat x 1. Repeat on other foot
   Repeat x 1. Repeat on other foot
   Jog in circle round room for 2 circuits. Return to space and twist on spot to end.
APPENDIX 4

Materials designed for parents information during teaching block.

a) P.E.: Physical Jerks or Education for Life
b) What is Health?
c) Coronary Heart Disease
d) What is fitness?
EDMONTON SCHOOL: HEALTHY LIFESTYLES PROJECT

Physical Education at Edmonton School
- Physical Jerks or Education for Life?

Over the last few years, Physical Education lessons have been changing all over the country. Here at Edmonton we try to keep up with modern thinking while avoiding the introduction of short lived "gimmicks".

Exercise for Everyone

One of our main aims is to help pupils to understand the importance of health and fitness throughout life. We try to help them develop the skills, knowledge and confidence necessary to allow them to keep themselves fit and healthy outside school. At the same time, we introduce pupils to activities which they can take up in leisure time. Lower school pupils follow a varied course which includes games skills and understanding, gymnastics, dance, athletics, and health related fitness, while older pupils are offered a wider variety of activities and have the chance to use Picketts Lock Centre in lesson time. In this way they become familiar with at least one major facility in the area. We try to offer a balanced diet of activities which cater for all of our pupils with plenty of time given to individual, pair and "lifetime" activities - that is, activities which can be pursued throughout life by anyone, regardless of skill level. Jogging, weight training, aerobics are examples of these.

AEROBICS - A Lifetime Activity

In this way, no girl need feel that she is "no good at Games/P.E.", and so unable to keep herself fit and healthy through activity.
Exercise for Life: Is your family active?

Our aims must be very long term - 2 P.E. lessons per week are not enough to keep anyone fit, as 3 exercise sessions per week is the minimum requirement to maintain the human body to a standard where risk of disease is greatly reduced. We must therefore have as one of our top objectives to encourage pupils to exercise outside school, and to exercise correctly.

It has been shown recently that contrary to popular belief, 11-16 year olds are very inactive. Girls are less likely to be active than boys - 98% of 16 year old girls do less than 30 minutes of vigorous physical activity per week outside their P.E. lessons!

How active will your daughter be at 16? - and at 60?

Many people don't realise that activities and habits developed during the school years will have a very definite effect on health during middle and old age. THE YOUNG INACTIVE PUPILS OF TODAY BECOME THE OLDER, INACTIVE ADULTS OF TOMORROW, and may find that in 20 years time, they've not only missed many opportunities to improve the quality of their lives through activity, but also may have developed many health problems associated with poor activity patterns, e.g. CORONARY HEART DISEASE, BACK PROBLEMS, OBESITY, HYPERTENSION, etc.

ACTIVE LIFESTYLES: A FAMILY AFFAIR?

We must aim to encourage pupils to develop healthy lifestyles throughout life. It is vital then that you are aware of what we are doing. If we are successful, it will extend into pupils' home lives. Obviously the school can have only a limited effect on its pupils. The home and family environment influence pupils' lifestyles greatly and so parents have an enormous part to play.

PARENTS AND SCHOOLS NEED TO WORK TOGETHER TO PROTECT THE HEALTH OF YOUNG PEOPLE.

Most parents accept responsibility for the DENTAL HEALTH of their offspring - didn't you encourage your daughter to clean her teeth and visit the dentist regularly? Shouldn't the health of the rest of the body be a family concern? False teeth are readily available on the N.H.S. for those who need them in later life - the same cannot be said for false hearts! Do families need to look at their priorities?
ARE YOU A HEALTHY FAMILY?

OF COURSE \_WE'RE A \_HEALTHY FAMILY!!

ANSWER THE FOLLOWING QUESTIONS

1. Do the adults in your family have a regular programme of exercise?

   YES/NO

2. If yes, does it meet the minimum requirement of 3 vigorous exercise sessions per week?

   YES/NO

3. Outside their P.E./Games lessons do your children participate in a regular programme of vigorous physical activity?

   YES/NO

4. Do your family take any form of exercise together?

   YES/NO

5. Do you keep a close eye on the type of foods your family consumes?

   YES/NO
6. Do you know that generally in this country we tend to eat:

   TOO MUCH SALT
   TOO MUCH ANIMAL FAT
   TOO MUCH SUGAR
   NOT ENOUGH FIBRE

   - and this directly affects our health?

7. DO YOU CARE ABOUT THE HEALTH AND FITNESS OF YOUR FAMILY?

If you answered NO to any of questions 1 - 6 then it's likely that you could easily improve the health/fitness of your family by some slight changes in lifestyle.

If you answered YES to Q7, then look out for further information coming your way on the "Healthy Lifestyles" Project.
EDMONTON SCHOOL: HEALTHY LIFESTYLES PROJECT

What is Health?

What do you understand by the word health? It is a word frequently used, but in asking "Are you a healthy family?" - what do we mean.

Health - Freedom from disease ........ or more?

You might regard a healthy person as one who is free from disease - "if you're not sick, then you're healthy".

However, there may be more to health than that. The body is a very complicated structure, with many talents and capabilities. BUT many disease free bodies function at a very low level because their talents and possibilities are never fully explored.

Ferrari or M.O.T. Failure?

An easier way to get this idea over may be to compare the human body to a motor car.

If you owned a very expensive performance car like a Porsche or Ferrari, and only used it once a week to go to Sainsbury's and to pick up the kids from school when it rained, then the advantages of having such a sophisticated car would not be realised. The car would soon lose its initial sharp performance because of lack of use. Similarly, many people never extend their bodies to the point where they fully realise what they're capable of, and that body loses its performance edge too. Many cars, although still driveable, fail the M.O.T. because they are not maintained to a high enough standard. How many of our bodies would pass their M.O.T.? Is your body potentially a Porsche?
The Positive Side of Health

Perhaps then, we should look upon health as something much more positive than freedom from disease - concentrating on getting the most out of ourselves. Like expensive cars, bodies need to be used to be kept in tip top condition and so HEALTH must be concerned with ACTIVITY.

Where does FITNESS fit in?

If health is making full use of our bodies, then fitness must be one of the factors contributing to it. A physically fit person is able to do much more than his/her non-fit friend because, his/her body is in a condition which allows him to extend his talents and abilities.

Health, Fitness and Active Lifestyles

Increasing levels of activity in the family can have many benefits. On the negative side, it can help to fend off diseases.

More positively:

1. The body's talents and abilities are fully extended.
2. Your family will LOOK BETTER - fat loss, increased muscle tone, healthy glow.
3. Your family will FEEL BETTER - exercise makes people less depressed, have a more positive approach to life. You can get HIGH on exercise.
4. You will improve the quality of your life - active participation rather than boredom, opportunities for family activities.
5. ACTIVITY IS FUN.

ARE YOU AND YOUR FAMILY MISSING OUT ON LOTS OF OPPORTUNITIES TO MAKE THE MOST OF YOURSELVES AND HAVE FUN AT THE SAME TIME?
SPORTS ARE NOT FOR ME ........ WHAT DO I DO?

Increasing activity patterns doesn't only involve taking up sports and exercise as an end in themselves. By taking a look at our day-to-day activities, we can find ways of becoming more active. We often fail to use our own bodies because of modern conveniences e.g.

Instead of just bending over...  
Walk to the newstand instead.

HOW OFTEN DO YOU/YOUR FAMILY WAIT FOR A LIFT OR ESCALATOR WHEN STAIRS ARE AVAILABLE?

DO YOU GET THE CAR OUT OR TAKE THE BUS FOR JOURNEYS WHICH YOU COULD HAVE WALKED IN 30 MINUTES OR LESS?

WHY NOT GET OFF THE BUS A FEW STOPS EARLY AND WALK A COUPLE OF MILES A DAY?

None of these things require a great deal of effort, but add up to a more active and healthy lifestyle. Yes, they do require TIME, which is often in great shortage, BUT we make time to visit the dentist and to clean our teeth, even to watch East Enders.

SHOULDN'T ENSURING THE LONG AND HEALTHY LIFE OF OUR FAMILIES RATE HIGH ON A LIST OF PRIORITIES FOR MAKING TIME
STOP PRESS

IT HAS BEEN PROVED THAT
ACTIVITY PROLONGS YOUR
LIFE.

INVEST A LITTLE TIME NOW
TO GAIN A GREAT DEAL
LATER!
Coronary Heart Disease
Is Your Child at Risk?
CORONARY HEART DISEASE: IS YOUR CHILD AT RISK?

Heart disease commonly thought to be a problem of the middle aged and older. Few of us have heard of people under 35 suffering from heart attacks, so 40+ is generally thought of as "the dangerous age".

But research has recently shown us that although heart disease strikes in later life, its roots develop in infancy and childhood. So the way your children behave NOW can directly affect their chances of suffering from heart disease later on.

Coronary Heart Disease: What is it?

The heart is a muscular organ which pumps blood through blood vessels (called ARTERIES) around the body. The blood returns to the heart through other blood vessels called VEINS. Throughout life, there is a tendency for fatty streaks to build up the arteries causing a narrowing of the tubes (this effect is called ATHEROSCLEROSIS).

If the narrowing becomes very advanced, then it means that any blood clots, which normally pass freely through clear arteries, stick in the narrow passage way, causing a blockage. Thus, no blood can get through and any tissue beyond the blockage "dies". If an obstruction occurs in an artery in the heart, then a heart attack occurs.
Why is CHD a problem?

180,000 people in Britain die every year from CHD - it is the largest single cause of death in the country. G.B has the worst rate in the world for deaths from CHD.

Death rates from coronary heart disease in different countries (55-64 year olds)

Data from the World Health Organisation

Why is your child at risk?

Fatty streaks in large arteries are evident in children of 5 years old. The numbers increase by the age of 10 and by 20 years most adults have developed a definite build up.

Whether this build up progresses to become CHD depends on whether that individual is subject to "coronary risk factors". These are factors which greatly increase a persons chances of suffering from heart disease.
THE CARDIAC RISK FACTORS

These risk factors have now been identified in large numbers of children.

1 CHILD IN EVERY 4 HAS AN UNSAFE LEVEL OF CHOLESTEROL IN THE BLOOD.

1 CHILD IN EVERY 5 MAY SUFFER FROM HIGH BLOOD PRESSURE

YOUNG CHILDREN IN G.B. ARE VERY INACTIVE - 85% OF 11-16 YEAR OLDS DO LESS THAN 5 MINUTES VIGOROUS PHYSICAL ACTIVITY EACH DAY, OUTSIDE THEIR P.E. LESSONS.

1 IN 4 15 YEAR OLD GIRLS SMOKE - G.B. HAS THE WORST HISTORY OF DEATHS FROM CIGARETTE SMOKING IN THE WORLD. SMOKING IS NOT ON THE DECLINE AMONGST ADOLESCENTS.

ONLY 1 CHILD IN 3 HAS NO CORONARY RISK FACTORS PRESENT.

1 IN 5 HAS 3 FACTORS PRESENT
1 IN 10 HAS 4 FACTORS PRESENT

THE MORE RISK FACTORS PRESENT, THE GREATER THE CHANCE OF SUFFERING FROM C.H.D.
YOUR CHILD COULD BE AT RISK

What can we do?

1. **INCREASE ACTIVITY LEVELS**
   
   ...because increased activity leads to:-
   
   a. Fat reduction, improved body composition. It fights obesity!
   b. Reduction of blood pressure of those suffering from moderately high blood pressure.
   c. Reduction in number of **LOW DENSITY LIPOPROTEINS**, which are the parts of cholesterol which cause the narrowing effect in the arteries.

   **DO YOU ENCOURAGE YOUR CHILDREN TO TAKE PART IN A REGULAR EXERCISE PROGRAMME?**
   **DO YOU SET AN EXAMPLE BY TAKING REGULAR EXERCISE YOURSELF?**

2. **AVOID SMOKING**

   **ARE YOUR CHILDREN LEARNING TO SMOKE FROM YOU?**

3. **KEEP AN EYE ON FOOD INTAKE**

   Some foods are very high in cholesterol and are therefore much more likely to cause narrowing of the arteries e.g. animal fats - contained in red meats, dairy produce, fried food.
Also, food intake is vital in weight control.

DOES YOUR FAMILY EAT CHIPS, CRISPS, BUTTER, FULL FAT MILK, RED MEAT FREQUENTLY?

A change to skimmed milk, low fat spreads, white meat, fish and grilled food will benefit your family's health

By acting now you may be able to prevent your family from suffering from crippling/fatal effects of heart disease later!
EDMONTON SCHOOL HEALTHY LIFESTYLES PROJECT

Fitness - What is it?

Physical fitness has 4 main parts:

- **STAMINA** (Cardio-vascular fitness)
- Muscle Fitness (Strength and endurance)
- Body Composition (amount of fat on body)
- **FLEXIBILITY** (Range of movements in muscles and joints)

All four parts are important and can be affected by our own behaviour. However, cardio-vascular fitness or stamina is probably the most important individual part, as will soon become obvious.

Cardio-vascular Fitness

All this really means is the strength and efficiency of the heart and lungs which are vital in fighting heart disease. If we can increase the strength and efficiency of the heart, then it will be able to cope with the demands placed on it more easily, and so be under less strain.

How Can We Improve Cardio-vascular Fitness?

The only way to improve our heart and lung fitness is to gradually make them work harder than they are used to, so that they become more able to cope with increased effort.

We can check how hard the heart is working by taking our pulse - the faster the pulse the harder the heart is working. We can increase our heart rate by exercising.

**TAKING THE PULSE**

The pulse is usually taken in the side of the neck, or on the wrist. Place the fingers of one hand (NOT THE THUMB) along the wrist of the other arm, in line with the base of the thumb.

You should be able to feel the pulse beating. Count the number of beats in 10 seconds. Multiply by 6 to give you the number of beats in one minute. This gives you your PULSE RATE.

It is sometimes easier to find the pulse in the neck, slightly to one side of the throat, but don't press too hard.
If we check the pulse while exercising we can make sure that we are working at a suitable level - hard enough to improve cardio-vascular fitness, but not so hard that we are overstraining.

Reaching Your Target Heart Rate

Your target heart rate is the ideal exercising heart rate for people in your age group. The chart at right gives a range of heart rates to aim for. As you begin your plan, aim for the low end of the range. Then, as you become more fit, you can try to reach the upper end of the scale. Maintaining this target rate for 20-30 minutes helps you get the most benefit from your aerobic exercise.

This sort of exercise where you raise the heart rate for a prolonged period of time is called AEROBIC activity. Aerobic simply means that you are able to take in all of the oxygen required for the exercise you are doing.

The LEVEL at which you need to work is called "EXERCISE INTENSITY".

The number of times per week you need to exercise is called "FREQUENCY".

This gives us the FIT principle - in order to improve our cardio-vascular fitness we must take part in AEROBIC activity:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>3 times per week minimum.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 times per week maximum.</td>
</tr>
<tr>
<td>Intensity</td>
<td>Exercise to reach target rate.</td>
</tr>
<tr>
<td>Time</td>
<td>20 minutes minimum.</td>
</tr>
<tr>
<td></td>
<td>60 minutes maximum.</td>
</tr>
</tbody>
</table>

As you get fitter, your resting heart rate, taken first thing in the morning, will probably drop, showing that your heart is getting stronger and able to cope with the demands of the body more easily. Also, a regular aerobic exercise programme will reduce the build up of fatty streaks in the arteries, and help reduce fat.

Putting the Theory into Practice

So much for the theory. It is usually putting it into practice and sticking to it which is a problem! What activities are there that can be done by anyone which will raise the heart to the required level?
For those who haven't exercised much for a long time, WALKING briskly may be sufficiently strenuous to achieve the target rate. Those of you in better condition might like to try JOGGING, SWIMMING, CYCLING, EXERCISE TO MUSIC, CIRCUIT TRAINING or SKIPPING.

TRAINING TIPS FOR THE UNENTHUSIASTIC

1. If you haven't exercised regularly for a long time, are very overweight or are suffering from any sort of medical problem, consult your doctor before starting any exercise programme.

2. The 1st 6 MONTHS ARE THE WORST?! People find lots of excuses not to stick to their exercise programmes.

   e.g.

   **Hypokinetic Excuses**

   ![Don't have time.](image1)
   ![Don't like exercise.](image2)
   ![Look ugly in shorts.](image3)
   ![Can't stand pain.](image4)
   ![Hate sweat.](image5)
   ![Do it tomorrow.](image6)

   Hypokinetic simply means lack of activity. Most of these excuses are not difficult to overcome. If you always look at the long term benefits to you and your family i.e. fending off hypokinetic diseases, opportunities for fun and so on, you might feel more motivated to find a way.

3. Don't begin at a level which is too hard and which you find unpleasant. You'll only put yourself off exercise for life! It is much better to start exercising at a low intensity - walking - and gradually increase as you get fitter, than to put yourself through the "pain barrier" and think it is doing you good. You'll probably end up giving up your programme very quickly.

4. Try to exercise with someone else - husband, wife, son, daughter, friend, neighbour, dog! You can provide mutual encouragement and support as well as company.

5. Give yourself plenty of positive encouragement - have a progress chart on obvious view, set realistic targets for yourself that you can achieve, don't be shattered by occasional setbacks in progress - we all have our "off days". Do give yourself rewards if you achieve your target - e.g. "I can watch Eastenders when I've walked/jogged 2 miles".
6. Try to make exercising part of your daily routine - like cleaning your teeth.

7. If jogging, make sure you have a decent pair of running shoes. Running in incorrect shoes can cause injury. Also, choose your environment carefully - a trot with family and friends round Trent Park or Hillyfields is much more enjoyable than a solitary trek down the A10.

8. Cycling is an ideal aerobic activity, and can also be used to suit your transport needs. An exercise cycle means you never have to go out in the rain/cold!

9. If taking part in exercise to music classes or circuit training or weight training, do check that the instructor is well qualified. A great deal of physical damage can be done if any of these are taught badly.

10. Swimming - an ideal aerobic activity, and has the added advantage of not involving the continual pounding on the legs and feet that is obvious in jogging or exercise to music.

FITNESS AND FAMILY HEALTH

It is up to each family to decide how these activities can fit in with their weekly programme. Isn't it worth considering going to an aerobic class with your offspring, or taking the spouse swimming? At first it may be an effort to make time for these activities, but eventually they can become part of the family lifestyle. Perhaps you'll even wonder how you managed without them!

Whatever happens you'll not only be giving your family the best chance of "STAYING ALIVE" you'll also be actually IMPROVING THE QUALITY OF THAT LIFE!
M.O.T. Test for Parents

a) Explanatory letter and reply slip
b) Test checklist and results sheet
c) Pupil instructions
d) Letters sent to parents who asked for further information on their results
e) Table to show items failed on M.O.T. test by parents.
f) Table to show average number of items failed by parents on M.O.T. test by Parents.
Dear Parents,

You might be under the impression that Physical Education is all about playing games and seeing how fast we can run. However, P.E. lessons are very different now to how they were 15 years ago. If you ask your daughter about the work she is doing in P.E. this term you may think it sounds a bit strange.

In P.E. we hope to encourage all pupils to develop habits which will enable them to lead active and healthy lives. The fitness of the body is an important part of health and so we are doing some work on this area. Your daughter has probably been talking to you about the work she has been doing and told you about a brief test called an M.O.T. test for Parents’ which she has. It takes only a few minutes to complete, but I hope it will provide an interesting and enjoyable opportunity to get involved in the work. It should also give you some idea of whether your lifestyle is keeping your body in reasonable condition!

If you agree to do the activities, I suggest you wear loose clothing. If at any time during the activities you feel ill or feel any discomfort then please stop immediately. If you have any of illness or injury which may be affected by the activities (e.g. asthma, heart disease, back injury) then please do not attempt them. Also, be careful if it is a long time since you did any vigorous physical activity. Having said this, the test is not terribly rigorous and should not be a problem for most parents, since it is based on a minimum level of fitness for health.

I hope you will be able to find the time to work with your daughter on this little project. She has all of the written instructions and you may find it useful to read them before starting.

If after completing the test, you have any questions or want any further advice, please indicate on the return slip attached. It will be extremely useful to me if you would return this slip to school via your daughter as soon as possible.

Many thanks for your cooperation and good luck!

Yours sincerely

Head of Girls' P.E. Department
# M.O.T. TEST FOR PARENTS

## CHECKLIST

**PLEASE CIRCLE APPROPRIATE ANSWER FOR EACH QUESTION**

<table>
<thead>
<tr>
<th></th>
<th>MUM A</th>
<th>MUM B</th>
<th>DAD A</th>
<th>DAD B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Does climbing 3 flights of stairs make your legs feel weak?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>2) Does running for a bus or other distance leave you gasping for breath?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>3) Can you bend down to tie your shoe-laces or put on your socks or shoes without difficulty?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>4) Do you find it difficult to get out of a bath or low chair?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>5) Do you avoid physical effort if at all possible?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>6) In the past month, have you felt physically worn out at the end of a normal working day, more than once?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>7) In the past month, have you felt keyed up and unable to relax at the end of the day more than once?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>8) <strong>JOGGING ON THE SPOT</strong> Can you jog on the spot for three minutes and still easily hold a conversation at the end?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>9) <strong>SIT UPS</strong> Can you do 10?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>10) <strong>SIT AND REACH</strong> Can you get your fingers flat on the wall?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>11) <strong>PINCH AN INCH</strong> Can you pinch an inch (2cm) or of fat at the side of the waist?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>12) Do you exercise vigorously at least 3 times a week?</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

**NOW CHECK THE RESULTS SHEET**
M.O.T. RESULTS SHEET

NO ANSWERS IN COLUMN A

Congratulations! You have passed your M.O.T. with flying colours. It appears that your lifestyle keeps your body in a fully roadworthy condition.

1-4 ANSWERS IN COLUMN A

While you are in a reasonable physical condition, your M.O.T. test reveals that certain areas need to be improved. Slight changes in your lifestyle may be necessary if you are to become totally roadworthy.

5 OR MORE ANSWERS IN COLUMN A

Unfortunately, your M.O.T. test reveals that you are badly in need of a major overhaul! Your lifestyle may need to be looked at very closely and some simple but effective changes made if you are to become roadworthy.
NAME OF DAUGHTER

FORM

I have completed the M.O.T. test for Parents, under my daughter's supervision.

Signed...(Mother)
and/or...(Father)

If you would like advice on your M.O.T. results please tick here:

If you have any comments to make on this activity, please do so in the space below.

THANK YOU FOR YOUR HELP
M.O.T. TEST PUPIL INSTRUCTIONS

YOU WILL NEED A WATCH WITH A SECOND HAND AND A RULER OR TAPE MEASURE

1) Make sure your subject has read the letter explaining the test.

2) Make sure they are wearing loose and comfortable clothes.

3) Explain briefly what the test will include. You can show them these instructions if you like.

4) Ask them to sit down and relax. Ask them to answer questions 1-7 on the checklist. Circle the answer given in either column A or column B.

5) JOGGING ON THE SPOT
You will need a watch or clock to time 3 minutes. Ask your subject to start jogging on the spot when you say GO!. Ask them to talk to you continuously while they are jogging - get them to tell you about what they've done since they woke up this morning. At the end of the 3 minutes say STOP! and ask them to tell you exactly what they had to eat at their last meal. ARE THEY TALKING NORMALLY OR ARE THEY FINDING IT DIFFICULT TO CATCH THEIR BREATH?
Complete No. 8 on the checklist.

6) SIT UPS (Not to be done if subject has a back or stomach injury).
   a) Ask subject to lie flat on the floor, with knees bent and hands resting on thighs, i.e.

   b) Ask subject to sit up gently, sliding hands along thighs until they reach the kneecaps. (THE HANDS MUST NOT BE REMOVED FROM THE LEGS AT ALL), then lie back again.
   c) Can he/she do 10 of these?
   d) Complete No.9 on the checklist.

7) SIT AND REACH (Not to be done with back injury)
   Do this test as soon after the sit ups and jogging as possible.
   a) Explain that a brief warm up to loosen up the lower back and leg muscles is necessary.
   b) Ask subject to sit on the floor with legs straight and apart i.e.

   c) Ask him/her to GENTLY ease forward from the hips toward the left foot, until a SLIGHT TENSION is felt in the back of the leg at the top or in the small of the back. Hold that position for 10 seconds and relax. Repeat exercise to right side.
d) Repeat exercise to both sides again.

e) Ask subject to move so legs are straight and together and feet are flat against a wall i.e.

f) Ask him/her to GENTLY reach forward with the arms towards the feet until a SLIGHT TENSION OR PULLING is felt in the backs of the legs, or in the lower back. Hold position for 10 seconds and then relax.

g) Repeat (f)

h) Repeat (f) again. This time check to see if he/she can get his/her fingers comfortably against the wall just above the feet and keep them there for 5 seconds.

i) Complete No. 10 on the checklist.

8) PINCH AND INCH (Ruler or tape measure required)

a) Ask subject to stand up straight and relaxed and to breathe normally.

b) Loosen any clothes around the waist area.

c) Using your thumb and forefinger GENTLY see how much flesh you can pinch at the side of the waist.

d) Roughly measure the amount of flesh pinched between thumb and finger, using the ruler or tape measure.

e) Complete No. 11 on the checklist.

9) Ask Q.12 on the checklist

10) Count the number of answers circled in Column A. Check on the results sheet and read out the description which applies to your subject.
Dear Mr. & Mrs. Adams,

Many thanks for taking part in the M.O.T. with your daughter. I see that you have asked for further advice on your results. I will try to point out possible areas of weakness which are indicated by your results.

You both appear to be in reasonable physical condition but there is definitely room for improvement! As neither of you exercises at least three times per week and in your case Mr. Adams you avoid physical exertion if at all possible, you are not likely to be maintaining a good level of fitness for health, where you are significantly reducing your chances of suffering from diseases like coronary heart disease. You also state that you have felt keyed up and unable to relax recently. This is a sign of stress, which again can be reduced by participation in regular physical activity. When you are put in stressful situations the body releases chemicals into the blood which can be harmful if not used up. Taking part in exercise uses these chemicals up and leads to easier relaxation. Stress is often related now to exercise programmes.

I am enclosing some articles which you may find useful. I hope you continue to take part in the activities with Sharon, and find them worthwhile. Please do not hesitate to contact me via the school office if I can offer any more assistance.

Yours sincerely,

Louise Gilbert
Head of Girls' P.E. Department.
Thank you very much for taking part in the M.O.T. test with Mr. Arif. I see that you have asked for further advice on your tests, so I will try to point out any possible areas of weakness from your results.

Congratulations Mr. Arif! Your results indicate that you are in very good condition with no apparent areas of weakness, and that you already exercise regularly. However, Mrs. Arif, your results show that there may be some potential fitness problems. You say that running a short distance leaves you gasping for breath and that you often feel worn out at the end of a normal working day. This may be linked to the fact that you appear to carry too much body fat (from the "Pinch an Inch" test), and that you do not exercise at least three times per week.

It would appear Mrs. Arif that your health would greatly benefit from trying to include more regular physical activity in your lifestyle. Taking part in exercise has many benefits, including reduction in body fat, being able to cope with the demands of day to day living without tiring and increased stamina, which in turn can help to prevent heart disease.

Alev will continue to bring home information which you may find useful should you decide to take up some form of physical activity. If you would like further advice or information please do not hesitate to contact me via the school office.

Best wishes and Good Luck in any future activities.

Yours sincerely,

Louise Hulbert
Head of Girls P.E.
Dear Mr. Beswick,

Many thanks for taking part in the M.O.T. test with your daughter. I see that you have asked for further advice on your results so I will try to point out possible areas of weakness which are indicated from your results.

You have done fairly well on the test with only two obvious areas of weakness. As you have felt keyed up and unable to relax recently you are possibly exhibiting signs of stress. You also say that you do not exercise at least three times per week. You may be interested to know that stress can successfully be alleviated by taking part in regular physical activity. When placed in a stressful situation the body releases chemicals into the blood which can be harmful if not used up. Vigorous exercise does use these chemicals up and therefore leads to easier relaxation. Thus I would recommend more physical activity!

I am enclosing articles on fitness and stress which you may find useful. If I can be of any further help, please do not hesitate to contact me via the school office.

Yours sincerely,

Louise Hulbert
Head of Girls' P.E. Department.
Dear Mrs. Brooks,

Many thanks for returning the health and fitness questionnaires so promptly and for taking the trouble to add your comments at the end.

I appreciate your confusion and concern about what sort and how much exercise a person should take. Many conflicting stories are published and it is difficult to know what to think.

It is very difficult to make any hard and fast rules about how much and what sort of exercise to take. Certainly if you have a back problem it does complicate matters further. It really depends on the nature of the injury, i.e. whether it is bone, muscle, ligament,ostural etc.I would follow a doctor/physiotherapist's advice on what sort of exercise would be appropriate. He may advise you not to run, in which case swimming or cycling may be recommended. If you can run, then providing you wear a good pair of running shoes and don't run more than 15 miles per week in total, then the risk of further injury is small.

Weight training once a week is probably better than no exercise at all, providing that you do not overstrain in that one session, but really 3 x 20 minute sessions per week is the minimum required to maintain a satisfactory level of fitness.

I am enclosing some articles I have written which you may find useful. They will be distributed to the pupils over the next few weeks and a sneak preview may help you to make up your mind!

Please do not hesitate to contact me via the school office should you wish to come and discuss the matter personally.

Best wishes.

Yours sincerely,

L.Hulbert.
Head of Girls' P.E. Department.
Dear Mr & Mrs Lothridge,

Many thanks for taking part in the M.O.T. test with Claire. I see that you have asked for further advice on your tests, so I will try to point out possible areas of weakness from your results.

1) (Climbing Stairs) Answering yes to this indicates poor muscle fitness, i.e. a lack of strength and endurance.
2) (Running for a bus) Yes here indicates poor heart and lung fitness, i.e. the heart and lungs are not working efficiently in supplying oxygen to the muscles.
3) (Avoiding physical effort) Yes here indicates an 'unhealthy' lifestyle, never exerting the body to the point where fitness is improved.
4) (Feeling tired) If you are unfit you are less able to cope with day to day tasks without getting tired. As you get fitter you can expend more energy without tiring.
5) (Unable to relax) If you feel unable to relax and keyed up you are possibly suffering from stress. When the body is stressed it releases chemicals into the blood which can be harmful if not used up. These chemicals are used up by taking part in exercise. Taking part in exercise programmes often leads to easier relaxation.
6) (Jogging) Again your answer indicates poor fitness of the heart and lungs, as they are unable to cope with fairly light exercise. As you take part in more exercise, your heart and lungs will become more efficient and able to cope with the demands placed on them.
7) (Pinch an Inch) This test reveals that you are carrying too much body fat, placing unnecessary strain on the heart.

The impression I get from your results is that your health would greatly benefit from trying to include more physical activity in your lifestyle. Claire will be bringing home further information over the next few weeks which you may find useful should you decide to adopt a more active lifestyle.

If you would like any further advice please don’t hesitate to contact me via the school office. Best wishes and good luck with any future fitness campaigns!

Yours sincerely,

Louise Hulbert
Head of girls P.E. Department
Thankyou very much for taking part in the M.O.T. test with Amber. I see you have asked for further advice, so I will try to point out possible areas of weakness from your results.

You have done fairly well, but you both seem to tire easily and appear to be carrying too much body fat (as revealed by the Pinch Inch test). Also being unable to complete ten sit ups reveals poor muscle fitness in the stomach. This can put too much strain on the spine and back muscles, leading to back pain and injury. If yo are left gasping for breath after running a short distance, this indicates that your heart and lung fitness is poor. This problem is made worse if you carry too much weight.

All of these problems can be overcome by adopting a more active lifestyle. Taking part in regular physical exercise can help to reduce body fat, make us more able to cope with day to day demands without tiring and specific exercises can improve muscle fitness. Regular aerobic activity, at least three times per week, can improve heart and lung fitness and generally make us feel better.

Stephanie will be bringing home various articles over the next few weeks which you may find helpful in increasing activity levels. Please do not hesitate to contact me via the school office if I can be of further assistance. Best wishes and Good Luck with any future fitness campaigns!

Yours sincerely,

Louise Hulbert
Head of Girls’ P.E.
Dear Mrs. Hawkes,

Many thanks to you and your husband for returning the health and fitness questionnaires. I appreciate your taking the time and trouble to complete them and to comment at the end.

I can see the difficulties you have with Vicki's diet and I understand your concern. The only comfort I can offer you is to tell you that over the next 6 weeks Vicki will be covering a number of health and fitness topics, one being the links between diet, activity and coronary heart disease. She will be bringing home articles every week on these topics and I am trying to encourage the pupils to discuss them with their parents.

My hope is that the articles will stimulate discussion and perhaps action within families. I am enclosing a copy of an article which Vicki will receive in 3 weeks time in case you wish to use it. Perhaps some discussion of the topic might help to change her attitude to eating?

Many thanks once again. Please do not hesitate to contact me at the school office should you wish to discuss the matter further.

Yours sincerely,

L. Hulbert,
Head of Girls' P.E. Department.
Many thanks for taking part in the M.O.T. test with Joanna. I see that you have asked for further advice on your tests, so I will try to point out possible areas of weakness from your results.

1) (Climbing Stairs) Answering yes to this indicates poor muscle fitness, i.e. a lack of strength and endurance.
2) (Running for a bus) Yes here indicates poor heart and lung fitness, i.e. the heart and lungs are not working efficiently in supplying oxygen to the muscles.
3) (Avoiding physical effort) Yes here indicates an "unhealthy" lifestyle, never exerting the body to the point where fitness is improved.
4) (Feeling tired) If you are unfit you are less able to cope with day to day tasks without getting tired. As you get fitter you can expend more energy without tiring.
5) (Kept up and unable to relax) Your answer here indicates that you may be suffering from stress. When put in a stressful situation the body produces chemicals which are released into the blood and can be harmful if not used up. Taking part in physical exercise actually uses these chemicals up and leads to easier relaxation. People who suffer from symptoms of stress are often advised to take up regular physical activity as it can act as a remedy.
6) (Jogging) Again your answer indicates poor fitness of the heart and lungs, as they are unable to cope with fairly light exercise. As you take part in more exercise, your heart and lungs will become more efficient and able to cope with the demands placed on them.
7) (Sit and reach) This test shows a lack of suppleness in the muscles and joints which again can lead to problems in movement and to unnecessary injury.
8) (Pinch an Inch) This test reveals that you are carrying too much body fat, placing unnecessary strain on the heart.
9) Three exercise sessions per week is the minimum recommended for health.

The impression I get from your results is that your health would greatly benefit from trying to include more physical activity in your lifestyle. Joanna will be bringing home further information over the next few weeks which you may find useful should you decide to adopt a more active lifestyle.

If you would like any further advice please don't hesitate to contact me via the school office. Best wishes and good luck with any future fitness campaigns!

Yours sincerely,

Louise Hulbert
Head of girls P.E. Department
Many thanks for taking part in the M.O.T. test with Deepika. I see that you have asked for further advice on your tests, so I will try to point out possible areas of weakness from your results.

(Climbing Stairs) Answering yes to this indicates poor muscle fitness, i.e. a lack of strength and endurance.

(Running for a bus) Yes here indicates poor heart and lung fitness, i.e., the heart and lungs are not working efficiently in supplying oxygen to the muscles.

(Avoiding physical effort) Yes here indicates an 'unhealthy' lifestyle, never exerting the body to the point where fitness is improved.

(Feeling tired) If you are unfit you are less able to cope with day to day tasks without getting tired. As you get fitter you can expend more energy without tiring.

(Jogging) Again your answer indicates poor fitness of the heart and lungs, as they are unable to cope with fairly light exercise. As you take part in more exercise, your heart and lungs will become more efficient and able to cope with the demands placed on them.

(Sit Ups) This test reveals poor muscle strength in the stomach muscles. This can lead to many problems including frequent back ache and poor posture.

(Sit and reach) This test shows a lack of suppleness in the muscles and joints which again can lead to problems in movement and to necessary injury.

(Pinch an Inch) This test reveals that you are carrying too much body fat, placing unnecessary strain on the heart.

3) Three exercise sessions per week is the minimum recommended for health.

The impression I get from your results is that your health could greatly benefit from trying to include more physical activity in our lifestyle. Deepika will be bringing home further information over the next few weeks which you may find useful should you decide to adopt a more active lifestyle.

If you would like any further advice please don't hesitate to contact me via the school office. Best wishes and good luck with any future fitness campaigns.

Yours sincerely,

Louise Hulbert
Head of girls P.E. Department
Dear Mr. and Mrs. Latif,

Thank you very much for taking part in the M.O.T. test with Amber. I see you have asked for further advice, so I will try to point out possible areas of weakness from your results.

You have done fairly well, but you both seem to tire easily and appear to be carrying too much body fat (as revealed by the Pinch an Inch test). Also Mr Latif, being unable to complete ten sit ups reveals poor muscle fitness in the stomach. This can put too much strain on the spine and back muscles, leading to back pain and injury.

All of these problems can be overcome by adopting a more active lifestyle. Taking part in regular physical exercise can help to reduce body fat, make us more able to cope with day to day demands without tiring and specific exercises can improve muscle fitness.

Amber will be bringing home various articles over the next few weeks which you may find helpful in increasing activity levels. Please do not hesitate to contact me via the school office if I can be of further assistance. Best wishes and Good Luck with any future fitness campaigns!

Yours sincerely,

Louise Hulbert
Head of Girls’ P.E.
Dear Mr & Mrs Lytra,

Many thanks for taking part in the M.O.T. test with your daughter. I see you have asked for further advice on your results, so will try to point out possible areas of weakness indicated.

Mr. Lytra your test revealed a number of potential problems. You say that you have felt keyed up and unable to relax recently and this is a sign of stress. When a person is placed in a stressful situation the body releases chemicals into the blood which can be harmful if not used up. Taking part in physical activity uses up these chemicals and leads to easier relaxation. Stress is often treated now by taking part in physical activity. The "sit and reach" test indicates lack of flexibility and suppleness and the "pinch an inch" reveals that you probably carry too much fat on the body. Lack of suppleness may lead to poor movement and unnecessary injury and too much body fat places a strain on the heart.

All aspects of fitness can be improved by taking part in physical activities and the recommended minimum is three times per week. Flexibility is improved by regular stretching exercises. I suggest you read the section on Flexibility in Katina's Health and Fitness File, as you may find it useful.

Fitness is of course relative to age, but minimum levels of fitness should be maintained through regular participation in physical activity at any age. The intensity of the activity may need to be reduced as one gets older—walking briskly may be sufficiently vigorous to maintain the fitness of elderly people—but getting older is not a reason for not keeping fit.

Katina will be bringing home some information over the next few weeks which you may find useful if you decide to try to improve our family's fitness. Please do not hesitate to contact me via the school office if I can be of further help.

Yours sincerely,

Louise Hulbert
Head of Girls' P.E. Department.
Many thanks for taking part in the M.O.T. test with your daughter. I see that you have asked for further advice on your results, so I will try to point out possible areas of weakness which are indicated from your results.

You have done fairly well on the test with only two obvious areas of weakness. As you have felt keyed up and unable to relax recently you are possibly exhibiting signs of stress. You may be interested to know that stress can successfully be alleviated by taking part in regular physical activity. When placed in a stressful situation the body releases chemicals into the blood which can be harmful if not used up. Vigorous exercise does use these chemicals up and therefore leads to easier relaxation. You also say that you have felt physically worn out at the end of a normal working day. Once again taking part in vigorous physical activity can help us to cope with the day to day demands of life much more easily. As we get fitter we feel much more full of energy!

I do note from your returned questionnaires that you already take part in various physical activities a number of times per week so all I can advise is that you concentrate on aerobic activities which should improve your stamina.

Over the next few weeks Phyllis will be bringing home articles on fitness and stress which you may find useful. If I can be of any further help, please do not hesitate to contact me via the school office.

Yours sincerely,

Louise Hulbert
Head of Girls' P.E. Department.
Dear Mr and Mrs. Skinner,

Many thanks for taking part in the M.O.T. test with your daughter. I see you have asked for further advice on your results, so I will try to point out possible areas of weakness indicated.

Your test revealed a number of potential problem areas. If your legs feel weak after climbing a few flights of stairs this shows poor leg strength and endurance. You say that you have felt keyed up and unable to relax recently and this is a sign of stress. When a person is placed in a stressful situation the body releases chemicals into the blood which can be harmful if not used up. Taking part in physical activity uses up these chemicals and leads to easier relaxation. Stress is often treated now by taking part in physical activity. The "sit and reach" test indicates a lack of flexibility and suppleness and the "pinch an inch" reveals that you probably carry too much fat on the body. Lack of suppleness may lead to poor movement and unnecessary injury and too much body fat places a strain on the heart. Being out of breath after the three minute jog shows that your heart and lung fitness is poor, and so the heart finds it difficult to cope with the demands of light exercise.

All aspects of fitness can be improved by taking part in physical activities and the recommended minimum is three times per week. Flexibility is improved by regular stretching exercises. I suggest you read the section on Flexibility in Kelly's Health and Fitness File, as you may find it useful.

Kelly will be bringing home some information over the next few weeks which you may find useful if you decide to try to improve your family's fitness. Please do not hesitate to contact me via the school office if I can be of further help.

Yours sincerely,

Louise Hulbert
Head of Girls' P.E. Department.
Dear Mr. and Mrs. Turner,

Thankyou very much for taking part in the M.O.T. test with Louise. I see that you have asked for further advice, so I will try to point out possible areas of weakness from your results.

You both seem to have done reasonably well, but you both say that you avoid physical effort if at all possible and the "Pinch an Inch" test reveals that you may be carrying too much body fat. These two factors may be contributing to the fact that you both often feel tired at the end of a normal working day.

Neither of you exercises at least three times per week and this is the minimum recommended for improving fitness, and therefore contributing to good health. I would recommend that you try to include more physical activity in your day to day routine as this can help to improve general fitness, help to reduce body fat and make us feel less tired and more energetic generally.

Louise will be bringing home some leaflets on these topics which you may find useful in trying to become more active. Please do not hesitate to contact me via the school office if I can be of further assistance.

Best wishes.

Yours sincerely,

Louise Hulbert.
Head of Girls' P.E.
Please reply to:

Mr. and Mrs. West,

Many thanks for taking part in the M.O.T. test with your daughter. I see that you have asked for further advice on your results. I will try to point out possible areas of weakness which are indicated from your results.

You have done fairly well on the test with a few obvious areas of weakness. As you have felt keyed up and unable to relax recently you are possibly exhibiting signs of stress. You may be interested to know that stress can successfully be alleviated by taking part in regular physical activity. When placed in a stressful situation the body releases chemicals into the blood which can be harmful if not used up. Vigorous exercise does use these chemicals up and therefore leads to easier relaxation. You also say that climbing a few flights of stairs makes your legs feel weak. This indicates that muscle strength and endurance in your legs is very poor. Poor muscle fitness is also revealed in the sit up test. Mr. West, your heart and lung fitness appears very lacking from the jogging on the spot test. This is probably the most important area of fitness as it can have a crucial effect on our susceptibility to diseases such as coronary heart disease. This can be made even worse by carrying around too much body weight, as shown by the "Pinch an Inch" test.

As neither of you exercises vigorously at least three times a week, it might be worth your while to try to include more physical activity in your day to day life. This would no doubt improve your general fitness and lead to a more healthy lifestyle. Over the next few weeks Gillian will be bringing home articles on fitness and stress which you may find useful. If I can be of any further help, please do not hesitate to contact me via the school office.

Yours sincerely,

Louise Hulbert
Head of Girls’ P.E. Department.
APPENDIX 5e

Proportion of parents failing various aspects of M.O.T. test (as % of those who returned forms).

<table>
<thead>
<tr>
<th></th>
<th>Mothers (37)</th>
<th>Fathers (31)</th>
<th>Total (68)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Does climbing 3 flights of stairs make your legs feel weak?</td>
<td>35.1%</td>
<td>16.1%</td>
<td>26.5%</td>
</tr>
<tr>
<td>2) Does running for a bus or other short distance leave you gasping for breath?</td>
<td>29.7%</td>
<td>9.7%</td>
<td>20.6%</td>
</tr>
<tr>
<td>3) Can you bend down to tie your shoe-laces or put on your socks without difficulty?</td>
<td>2.7%</td>
<td>-</td>
<td>1.5%</td>
</tr>
<tr>
<td>4) Do you find it difficult to get out of a bath or a low chair?</td>
<td>2.7%</td>
<td>-</td>
<td>1.5%</td>
</tr>
<tr>
<td>5) Do you avoid physical effort if at all possible?</td>
<td>16.2%</td>
<td>19.4%</td>
<td>17.6%</td>
</tr>
<tr>
<td>6) In the past month, have you felt physically worn out at the end of a normal working day, more than once?</td>
<td>56.8%</td>
<td>51.6%</td>
<td>54.4%</td>
</tr>
<tr>
<td>7) In the past month, have you felt keyed up and unable to relax at the end of the day more than once?</td>
<td>51.4%</td>
<td>54.8%</td>
<td>52.9%</td>
</tr>
<tr>
<td>8) JOGGING ON THE SPOT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you jog on the spot for three minutes and still easily hold a conversation at the end?</td>
<td></td>
<td></td>
<td>18.9% 19.4% 19.1%</td>
</tr>
<tr>
<td>SEE PUPIL INSTRUCTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) SIT UPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you do 10?</td>
<td></td>
<td></td>
<td>32.4% 16.1% 25%</td>
</tr>
<tr>
<td>SEE PUPIL INSTRUCTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) SIT AND REACH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can you get your fingers flat on the wall?</td>
<td></td>
<td></td>
<td>21.6% 25.8% 23.5%</td>
</tr>
<tr>
<td>SEE PUPIL INSTRUCTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 5e cont/...

11) PINCH AN INCH
   Can you pinch an inch (2cm) or more of fat at the side of the waist?
   
   SEE PUPIL INSTRUCTIONS

<table>
<thead>
<tr>
<th></th>
<th>Mothers (37)</th>
<th>Fathers (31)</th>
<th>Total (68)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>70.2%</td>
<td>67.8%</td>
<td>69.1%</td>
</tr>
</tbody>
</table>

12) Do you exercise vigorously at least 3 times a week?

<table>
<thead>
<tr>
<th></th>
<th>Mothers (37)</th>
<th>Fathers (31)</th>
<th>Total (68)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>83.8%</td>
<td>77.4%</td>
<td>80.1%</td>
</tr>
</tbody>
</table>
APPENDIX 5f

Average number of items failed on M.O.T. test by Parent.

<table>
<thead>
<tr>
<th></th>
<th>TOP BAND</th>
<th></th>
<th>MIDDLE BAND</th>
<th></th>
<th>BOTTOM BAND</th>
<th></th>
<th>TOTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MOTHERS</td>
<td>4.04</td>
<td>MOTHERS</td>
<td>4.67</td>
<td>MOTHERS</td>
<td>4.33</td>
<td>MOTHERS</td>
<td>4.21</td>
</tr>
<tr>
<td></td>
<td>FATHERS</td>
<td>3.35</td>
<td>FATHERS</td>
<td>3.38</td>
<td>FATHERS</td>
<td>4.00</td>
<td>FATHERS</td>
<td>3.39</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>3.71</td>
<td>TOTAL</td>
<td>4.06</td>
<td>TOTAL</td>
<td>4.20</td>
<td>TOTAL</td>
<td>3.83</td>
</tr>
</tbody>
</table>
APPENDIX 6

PUPILS HEALTH AND FITNESS FILE
My
Health
And
Fitness
File
What is health?

I think a healthy person is:-

What is fitness?

I think a fit person is:-
A Dictionary of Health and Fitness Words

Over the next few weeks, you'll be coming across various words which may be new to you, but which are important in understanding health and fitness.

As we go along, try to fill in the meanings of the words given below. Draw a picture if it helps you to explain. You can use the space over the page.

<table>
<thead>
<tr>
<th>AEROBIC</th>
<th>CORONARY</th>
<th>PULSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAEROBIC</td>
<td>ENDURANCE</td>
<td>STRENGTH</td>
</tr>
<tr>
<td>ARTERY</td>
<td>FLEXIBILITY</td>
<td>TARGET RATE</td>
</tr>
<tr>
<td>BODY COMPOSITION</td>
<td>FREQUENCY</td>
<td>VEIN</td>
</tr>
<tr>
<td>CARDIO-VASCULAR</td>
<td>INTENSITY</td>
<td></td>
</tr>
<tr>
<td>CHOLESTEROL</td>
<td>OBESITY</td>
<td></td>
</tr>
</tbody>
</table>

Other Useful Words
The Parts of Fitness

MUSCLE FITNESS
STRENGTH AND ENDURANCE

HEART AND LUNGS
CARDIO-VASCULAR
CARDIO-RESPIRATORY
ENDURANCE
STAMINA

FITNESS

FLEXIBILITY
SUPPLENESS
RANGE OF
MOVEMENTS
IN MUSCLES AND
JOINTS

BODY COMPOSITION
NUTRITIONAL BALANCE
AMOUNT OF FAT ON BODY
BODY SHAPE

<table>
<thead>
<tr>
<th>REASONS FOR KEEPING FIT</th>
<th>REASONS FOR NOT KEEPING FIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What do mum and dad think?

Why don't you explain to them about the work we've done today?

Find out what they think about keeping fit and healthy.

Do you agree?

Write down over the page what their views were on keeping fit and healthy; i.e. Do they keep fit? Why/Why not? Do they think it's important? Have they learned anything new from talking to you about your work?
Taking the Pulse

Where?

How?

For how long?

What happens to the pulse during activity?

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PULSE BEATS IN 10 SECONDS</th>
<th>(NO. OF BEATS IN 1 MIN) PULSE RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MIN. REST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN. WALK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN JOG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN. BENCH STEPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN. JOG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN. WALK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MIN. REST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 MIN. REST</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What happened to the pulse as you worked harder?

What happened when you eased off?

What other changes did you notice in your body as you exercised harder?

Do you know why these changes happen?
The Cardio-Respiratory System (Heart and Lungs)

When we work hard physically, what effects can we see or feel happening to our bodies?

1. ..............................................................
2. ..............................................................
3. ..............................................................
4. ..............................................................
Why has health and fitness become so important in recent years?

Talk to your Mum, Dad, Aunts, Uncles, Grandma, Grandad - any older people you know. Was so much publicity given to keeping fit when they were young?

What sort of activities did they do when they were young?

What sort of games did they play?

Do they think they were more or less active than young people these days?

Write down their thoughts below.
Flexibility

What is it?
The range of movements in the muscles and joints.

Why is it important?
We need a certain degree of flexibility to be able to move freely and easily, and to avoid stiffness in the body.

What can we do about it?
We can maintain or increase our flexibility by regularly stretching our muscles further than they are usually stretched.

Stretching for Flexibility
Flexibility exercises only improve the muscles and joints you stretch. You must therefore do a number of different exercises to improve flexibility in different joints. (This is called SPECIFICITY of exercise).

To avoid injury and muscle soreness, the stretched position must be adopted GRADUALLY and GENTLY. Stretch until a SLIGHT TENSION is felt in the muscle. (If any pain is felt the stretch is too hard.)

Hold that position for at least 10 seconds. When the tension releases, then stretch a little further and hold for a few seconds before releasing.

Frequency: 3-7 TIMES PER WEEK
Intensity: MUSCLE MUST BE STRETCHED FURTHER THAN USUAL
Time: STRETCH MUST BE HELD UNTIL TENSION RELAXES
Cardio-Vascular Fitness

What is it?
Endurance or stamina - the efficiency of the heart, lungs and blood vessels in delivering oxygen to the muscles.

Why is it so important?
It is important in keeping the heart fit and healthy and in helping us to meet the demands of life without tiring. It also helps us to **LOOK** and **FEEL GOOD**.

What can we do about it?
We can improve our endurance by regularly making the heart work harder than it is used to for prolonged periods of time. We therefore need to take part in regular **AEROBIC** activity which uses large muscle groups.

AEROBIC activities include: **JOGGING**, **SWIMMING**, **CYCLING**, **CIRCUIT TRAINING**, **EXERCISE TO MUSIC**, **ROWING**

**Frequency:** 3-5 TIMES PER WEEK  
**Intensity:** HARD ENOUGH TO RAISE PULSE TO 26-30 BEATS IN 10 SECONDS  
**Time:** 20-60 MINUTES

IN ORDER TO KEEP THE HEART AND LUNGS FIT WE MUST EXERCISE VIGOROUSLY FOR AT LEAST 3 X 20 MINUTE SESSIONS PER WEEK

**ARE YOU AND YOUR FAMILY KEEPING FIT?**

TRY KEEPING AN ACTIVITY DIARY FOR A WEEK - at the end of each day make a note of any activities you did which made you sweaty or breathless - did they do so for at least 20 minutes?

Ask your mum and dad to do the same. At the end of the week, you'll be able to see if your family is keeping fit.
Filling in Your Activity Diary

Walking (2 miles or more)
Jogging (1 mile or more)
Cycling
Swimming
Circuit Training
Exercise to Music
Team Games
Individual Sports
Yoga
Judo, Karate, etc.
Weight Training
Skipping
Keep Fit
Gymnastics

Did you or other members of your family take part in any of these activities, or other activities?

Fill in the diary over the page for a week. At the end of each day, fill in the diary for yourself and other members of your family.

At the end of the week, you'll get some idea of how active your family is.

Are you/your family doing enough to keep fit?
## Activity Diary

<table>
<thead>
<tr>
<th>Times in a week</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In box, write down the activity and how long was spent on it.

At end of week count the number of sessions for each person which lasted at least 20 minutes.
Family Activity Week

Do we as a family, need to become more active?

Are we, as a family, prepared to do anything about our activity levels?

What activity(ies) shall we do during this week?

When shall we do them?

Who is going to take part?

★★★★★

Did we do the activity(ies) we said?

Did we enjoy the activity(ies)?

Shall we do those activities again?

Shall we try a different activity?

When shall we do the activity again or try another one?
Muscle Fitness

What is it?
2 main parts: (1) STRENGTH and (2) MUSCULAR ENDURANCE
(1) Ability of muscles to exert a single effort.
(2) Ability of muscles to repeat effort over a prolonged time?

Why is it important?
Improved strength and endurance can help us to cope with day to day activities, can prevent us injuring our muscles, can improve posture, can help or prevent back problems and can help us to LOOK BETTER.

What can we do about it?
In order to improve muscle strength and endurance, we need to make the muscles work against a resistance, e.g. weights, body weight.

STRENGTH - HEAVY WEIGHTS, FEW REPETITIONS
ENDURANCE - LIGHT WEIGHTS, MANY REPETITIONS

Strength and endurance will only be improved in muscles actually worked, therefore many different types of exercises are required to improve various parts of the body.

Frequency: 3 TIMES PER WEEK
Intensity: STRENGTH: HEAVY RESISTANCE X 6-8 REPETITIONS
ENDURANCE: LIGHT RESISTANCE X 10-15 REPETITIONS
Time: AS LONG AS IT TAKES TO DO 3 SETS OF REPETITIONS

Some myths about muscle fitness

(1) Strength and endurance exercises will NOT give girls bulging muscles. The female hormone prevents girls from developing bulging muscles. The exercises WILL tone up the muscles and make you LOOK BETTER.

(2) Muscle does NOT turn to fat when you stop exercising, it merely loses tone.
SHAPE-UP EXERCISES

1. BACK ARCH (low back & butt)

2. PUSH-UP (chest, shoulder & arms)

3. ABDOMINAL CURL (stomach)

4. REAR LEG FULL (butt & back of thigh)

5. SEATED TWIST (waist/side)

6. TOE RAISE (calf/ankle)

7. SQUAT (thigh, butt & lower back)

8. SIDE-LEG RAISE (hip & outer thigh)

9. ELBOW-KNEE CURL (stomach & sides)

10. SIDE-LEG LIFT (inner thigh)
Body Composition

What is it?
Body composition is mainly concerned with the amount of FAT on the body. If we have too much fat on our bodies, we cannot really be considered fit.

Why is it so important?
Fatness is very important in health and fitness. If we carry too much fat around on our bodies, it places a strain on the heart. Fat people are more likely to have high blood pressure, heart disease, diabetes, furring of the arteries (which can lead to heart disease).

Also, if we reduce the amount of fat on our bodies, we are likely to FEEL BETTER and LOOK BETTER.

OBESE simply means very over fat. Obese children tend to become obese adults, so it is important to be concerned about body composition from a young age.

What can we do about it?
We can be concerned about our NUTRITIONAL BALANCE.

i.e. We TAKE IN calories by eating and drinking
We USE UP calories by doing physical activities

If we TAKE IN more calories than we use up, they turn to fat on the body.

If we use up more calories than we take in, fat is lost from the body.

If we take in and use up equal numbers of calories, our weight stays the same.
Do you need to be concerned?

If you, or any member of your family needs to lose some fat from the body, you need to do 2 things:

(1) Look at and alter FOOD INTAKE (See "Traffic Light Guide to Staying Slim")

(2) Increase ACTIVITY

The activity is very important, as it not only helps you burn off the calories quicker, but will also help to tone and firm up your muscles - you'll LOOK BETTER

AEROBIC activity is best for burning off calories, so try to include these in your activity programme.

Is your family's nutritional balance good?

Does anyone in your family carry more fat than is necessary?

How, can you suggest, should what you eat be altered?

How can your family become more active?
Some Thoughts about my Health and Fitness

Please write down here any thoughts you have about your own health and fitness after finishing the course. Do you think you feel differently about it now to how you did at the start of the course?

Please ask your parents to tell you their thoughts about the work we have done. Write them down in the space below.

Thank you

L. Hulbert, 1987
APPENDIX 7

Materials used at Healthy Lifestyles Evening.

a) Copies of overhead projector slides
b) Invitation and reminder sent to parents
APPENDIX 7a: Illustrations used in talk at Healthy Lifestyles Evening.

LIFESTYLE
53.1%

HEALTH CARE
9.8%

ENVIRONMENT
20.6%

HUMAN BIOLOGY
16.5%

Figures from the U.S. centre for disease control.
SOME LIFESTYLE FACTORS

**CHRONIC BRONCHITIS**
- SMOKING
  - LUNG CANCER
    - DEATH
  - CORONARY HEART DISEASE

50,000 PEOPLE DIE PREMATURELY IN GREAT BRITAIN THEREFORE OF SMOKING
- 1 OF 6 OF ALL PREMATURE DEATHS

**HEPATITIS**
- ACCIDENTS
  - ALCOHOL
    - CIRRHOSIS
      - DEATH
    - STOMACH DISORDERS
      - DEATH
  - HIGH BLOOD PRESSURE

1 IN 5 MEN ADMITTED TO HOSPITAL ARE THERE WITH AN ALCOHOL RELATED PROBLEM

**HIGH B.P.**
- OBESITY
  - C.H.D
  - DIET
    - Atherosclerosis
      - DEATH
    - DIGESTIVE TRACT DISORDERS

**CORONARY HEART DISEASE**
- OBESITY
  - HIGH B.P.
    - EXERCISE - LIFE
  - HIGH BLOOD CHOLESTEROL

180,000 DEATHS/YEAR IN GREAT BRITAIN DUE TO CORONARY HEART DISEASE
### Exercising for a Healthy Heart

**Maximum Heart Rate**

\[
\text{Maximum Heart Rate} = 220 - \text{Age}
\]

- e.g. 220 - 32 = 188 beats/minute

**Target Rate**

\[
\text{Target Rate} = 65 - 90\% \text{ of Maximum (depending on standard of fitness)}
\]

### Target Rates (beats in 10 seconds)

<table>
<thead>
<tr>
<th>Age</th>
<th>Not Used to Exercising</th>
<th>Doing Some Exercise Already</th>
<th>Already Exercising Regularly</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 15</td>
<td>22-23</td>
<td>26-27</td>
<td>31-32</td>
</tr>
<tr>
<td>15 - 20</td>
<td>21-22</td>
<td>25-26</td>
<td>30-31</td>
</tr>
<tr>
<td>20 - 25</td>
<td>20-21</td>
<td>24-25</td>
<td>29-30</td>
</tr>
<tr>
<td>25 - 30</td>
<td>20-21</td>
<td>24-25</td>
<td>28-29</td>
</tr>
<tr>
<td>30 - 35</td>
<td>20</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>35 - 40</td>
<td>19-20</td>
<td>23-24</td>
<td>27-28</td>
</tr>
<tr>
<td>40 - 45</td>
<td>19</td>
<td>22-23</td>
<td>26-27</td>
</tr>
<tr>
<td>45 - 50</td>
<td>18-19</td>
<td>21-22</td>
<td>25-26</td>
</tr>
<tr>
<td>50 - 55</td>
<td>18</td>
<td>21-22</td>
<td>25-26</td>
</tr>
<tr>
<td>55 - 60</td>
<td>17-18</td>
<td>20-21</td>
<td>24-25</td>
</tr>
<tr>
<td>60 - 65</td>
<td>16-17</td>
<td>19-20</td>
<td>23-24</td>
</tr>
<tr>
<td>65 - 70</td>
<td>16-17</td>
<td>19-20</td>
<td>22-23</td>
</tr>
</tbody>
</table>

**Suitable Activities:** Walking (briskly), Jogging, Cycling, Swimming, Circuit Training, Aerobics, Skipping, Cross Country Skiing etc.
## EXERCISING FOR HEALTH

### CARDIO-VASCULAR HEALTH

<table>
<thead>
<tr>
<th>Frequency</th>
<th>3-5 times per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity</td>
<td>Sufficient to reach target rate</td>
</tr>
<tr>
<td>Time</td>
<td>20-60 minutes</td>
</tr>
</tbody>
</table>

### STRENGTH AND ENDURANCE

<table>
<thead>
<tr>
<th>Frequency</th>
<th>3-5 times per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity</td>
<td>Make muscles work harder than they are used to</td>
</tr>
<tr>
<td>Time</td>
<td>3 sets of ten repetitions on each exercise</td>
</tr>
</tbody>
</table>

### FLEXIBILITY

<table>
<thead>
<tr>
<th>Frequency</th>
<th>3-7 times per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensity</td>
<td>Stretch as far as possible without pain with slow movement</td>
</tr>
<tr>
<td>Time</td>
<td>Hold stretch for minimum of 10 seconds</td>
</tr>
<tr>
<td></td>
<td>POSITIVE EFFECT OF EXERCISE</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>FEELING GOOD  -  MORE ENERGY, STRESS MANAGEMENT, MORE POSITIVE ATTITUDE TO LIFE</td>
</tr>
<tr>
<td>2</td>
<td>LOOKING GOOD  -  WEIGHT CONTROL, MUSCLE TONE, AGILE, BRIGHT AND BREEZY</td>
</tr>
<tr>
<td>3</td>
<td>QUANTITY AND QUALITY OF LIFE</td>
</tr>
<tr>
<td></td>
<td>-  LIVE A LONGER AND BETTER LIFE</td>
</tr>
<tr>
<td>4</td>
<td>PROMOTES PHYSICAL AND MENTAL HEALTH</td>
</tr>
</tbody>
</table>
Want to know how getting Fit for Life can be FUN?
Edmonton School "Healthy Lifestyles Project"
is proud to present:-

A "Healthy Lifestyles Evening" at
Edmonton Lower School, on Thurs, March 12th,
7 - 9 p.m.

Come and
Join in! A
Qualified Y.M.C.A. Exercise
Instructor will take a
Session in the Gym for Men
and Women of All Ages. Being
Comfortable Clothes and Sport
Shoes
Available.

Mums and Dads,
Why not come along with
your daughter? You can get
individual advice on getting
fit, ask a qualified physio
about any injury problems,
and find out about opportunities
and facilities in the area. Have an M.O.T. re-test to
see if there's any improvement.
Join in the exercise session
if you feel like it - it
will be enjoyable!
If you think your
family's health and fitness
are important, then why not
bring them along? It could
be the start of a longer and
happier life for you all.
DON'T FORGET

Pupils and Parents welcome at

"Healthy Lifestyles Evening", 7-9pm

on Thurs. 12th March, at Edmonton
Lower School.

VIDEOS "EXERCISE IS FUN"

M.O.T. RETESTS

PHYSIOTHERAPIST ADVICE ON ACTIVITY

DIETARY ADVICE

BRING SOME Kit AND

JOIN IN IF YOU FEEL LIKE

SOME "FUN" Activity.
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