

'Netting a winner': tackling ways to question children online

A good practice guide to asking
children and young people about
sport and physical activity

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Authors' Credits

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1.0 Background, Objectives and Report Structure

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1.1 Structure of report and intended audiences

This report contains findings from a piece of developmental work that involved the design and cognitive testing of online self-completion questions with children. The topic of interest was involvement in sport participation and physical activity. The two initial chapters detail the overall report structure and the study's background (this chapter) and summarise the methodology used at each stage (Chapter 2). The remainder of this report is divided into two parts:

Part A: Conducting Surveys with Children

Part A is dedicated to good practice when carrying out online surveys with children and is intended for **anyone considering conducting research with children**, particularly using self-completion questionnaires (whether paper or computer based). A review of current literature regarding research with children is included and this literature informs and underpins a set of recommendations and suggested guidelines for best practice when conducting research with children. Part A is divided into three chapters:

- + **Chapter 3** contains a review of the existing literature regarding research with children, with a specific focus on self-completion modes of data collection. A set of key recommendations which emerged from the literature regarding conducting research with children are laid out. A full list of references can be found in Appendix A.
- + **Chapter 4** outlines our typology of strategies respondents adopted in completing the online questionnaire, drawing on existing literature on how different types of people go about filling in self-completion forms. It also gives an overview of the Observation, Think Aloud and Probing phases of the interview and lays out our initial recommendations for interviewing very young respondents.
- + **Chapter 5** provides details of the survey mode used and how the specific design features of the new online instrument worked in the field along with our recommendations for improvement in online and visual features. This chapter also sets out our recommendations for improving the online and visual features of the instrument.

Part B: Questions about Sport and Physical Activity

Part B gives an overview of the findings from the cognitive testing which relate specifically to the questions about sports participation and physical activity. It contains information relating to the questions we tested during two rounds of cognitive interviewing with primary and secondary aged pupils. This part of the report is intended for **anyone interested in developing questions and carrying out surveys about Sport and Physical Activity**, particularly with children.

Two individual reports were written up following each round of cognitive testing and much of the detail can be found within these reports; this report is intended to provide an overview of these findings.

Our recommendations for specific wording of these questions are included. Part B is divided into six chapters:

- + **Chapter 6** provides an initial overview of the structure of the online instruments and details the changes that occurred between the two rounds of cognitive testing.
- + **Chapter 7** describes how respondents interpreted three key terms within the questionnaire: 'Sports', 'Physical Activity' and 'Exercise'. These interpretations were fundamental to children's overall understanding of the questions and thus how they went about filling in the instrument.
- + **Chapter 8** details how respondents went about answering questions about Sports Participation in both Round One and Round Two (the main battery of questions) and sets out our recommendations for revision.
- + **Chapter 9** describes how respondents approached the questions regarding Physical Activity in Round One and Round Two and again, lays out recommendations for how these should be revised.
- + **Chapter 10** is dedicated specifically to timeframes and recall, detailing the three different timeframes referenced in the online instrument. Again, our recommendations regarding timeframes are laid out here.
- + **Chapter 11** covers the further questions that were included in the cognitive test and gives recommendations for revision.

1.2 Background to the research study

The Sports Council for Wales (SCW) commissioned the Questionnaire Development and Testing (QDT) Hub, part of the Survey Methods Unit (SMU) at NatCen to evaluate and redesign their measures for Children and Young People's Sport and Physical Activity Participation. Previously, the QDT Hub had carried out a programme of work on behalf of the SCW to develop and test a question which measures Physical Activity among adults, asked as part of the Adults Sports Participation Survey (ASPS). The research programme detailed in this report was designed to evaluate and redesign the Sports Participation and Physical Activity questions which are asked of children and young people aged 7-11 and 11-16 years old.

1.2.1 Children and Young People's Sports Participation Survey

Since 1991 the Sports Council for Wales (SCW) has run two large scale surveys about participation in sport and physical recreation in Wales, both at school and outside of school:

1. Children's Sports and Physical Activity Participation Survey (a large scale survey of primary school pupils, aged 7-11); and
2. Young People's Sports and Physical Activity Participation Survey (a large scale survey of secondary school pupils, aged 11-16).

Both of these surveys have up to now been conducted as paper and pencil self-completion surveys, and were conducted in schools across Wales on a biennial basis. In 2008/09, SCW will be repeating these surveys. However, the SCW had concerns surrounding the accuracy of the data which were collected, particularly when it came to measuring Physical Activity in the younger age groups. To this end the SCW decided to review their entire existing approach, by overhauling the old self-completion paper and pencil questionnaires and creating two new online survey instruments.

1.2.2 Research stages

The first stage of work was conducting a desk review of the original paper and pencil versions of the Children and Young People's Sports Participation Surveys. This review suggested revisions to the existing questions and highlighted key areas for investigation¹. The second stage of work involved development of two new online survey instruments. We worked closely with SNAP Surveys², a company specialising in the development of internet surveys, to design two new tools to be cognitively tested. The third stage of work comprised a round of cognitive testing of the newly designed online instruments and recommendations for their revision.

During the first round of testing numerous issues with the first versions of the online instruments were identified. As the recommendations suggested a complete overhaul of the structure of the online instruments it was considered prudent to extend the original research plan to include a second round of cognitive testing to establish whether or not the next generation instruments were a legitimate improvement, and whether or not they needed further refinement. Following the second round of testing, again recommendations for further revision to the online instruments were put forward³.

¹ The full desk review is available from the Research and Evaluation section: research@scw.org.uk
² <http://www.snapsurveys.com>

³ Full versions of the Round One and Round Two reports are available from the Research and Evaluation section: research@scw.org.uk

The table below outlines the resulting four phases of this work:

Table 1-1
Research stages

No.	Phase	Description
1	Desk Review	+ Desk review of original survey materials
2	Development of online Instruments	+ Development of two new online instruments + Designed in collaboration with SNAP Surveys
3	Cognitive Testing: Rounds One and Two	+ Cognitive testing of online survey instruments + Recommendations on how to improve survey instruments
4	Amalgamated Report	+ Combined report of findings from both rounds of cognitive testing

2.0 Summary of Methodology

This chapter provides a summary of the methodology used at each of the four stages of this research study.

2.1 Desk review

The first stage of this work comprised a desk review of a selection of existing questions asked as part of both surveys. There were three main components to the review:

- + An overview of the principles of visual design and established best practice guidelines
- + Our review of the questions based on (a) our experience of designing and testing survey questions and (b) a systematic review of a selection of the questions using the Questionnaire Appraisal System (QAS)⁴
- + Recommendations for (a) revisions to the existing questions and (b) the focus of the cognitive interviews.

A summary of recommendations from the desk review can be found in Appendix B.

2.2 Development of the new online instruments

2.2.1 Rationale for the switch to online survey instruments

There are many advantages to using an online instrument, provided it is known that the sample in question has universal internet access (as is the case of pupils in schools) and possess sufficient levels of

I.T. literacy. The advantages of conducting a survey online include:

- + Online surveys can make greater use of multiple pictures, colours and images, which would be prohibitively expensive for pen-and-paper self completions.
- + Online surveys can also make use of multi-media technologies, for example, sound and video clips.
- + Online surveys can have 'built-in-repairs', in the sense they can detect when a question has been omitted and thus remind respondents to go back and answer it.
- + Online surveys can make use of complex routing that would be inappropriate for pen and paper self-completions.
- + Results from an online survey are immediately available to researchers as when they are submitted they are immediately uploaded into a data pool that can be worked upon.
- + Conducting a survey online reduces costs as the process of transferring the data collected from the original manuscripts into a data file is done automatically without the interim stage of manual coding.

Prior research has suggested that computer based survey administration might be particularly appropriate for young people. This is discussed in more detail in the literature review in Chapter Two.

2.2.2 Developing the new online instruments

Following a desk review of the existing questions, two online survey instruments were developed for the cognitive testing phase, one for children (Primary school respondents) and one for young people (Secondary school respondents). These instruments contained a selection⁵ of the questions asked in the original versions, with some alterations in wording and content as proposed by the desk review. Once the questions to be included in the online versions of the survey were agreed (and the recommended question wording was implemented) the SCW commissioned SNAP Surveys to construct the online instruments. The design of the instruments was guided by NatCen's knowledge of visual presentation in questionnaire design, the SCW's research objectives and SNAP's knowledge of software and its limitations. The construction of the questionnaires was an iterative process, with feedback from NatCen, SCW and SNAP all shaping the

⁴ The Questionnaire Appraisal System (QAS 99) tool was developed by Willis and Lessler. It provides a systematic method for evaluating questionnaires. The QAS tool and accompanying documents can be found at: Willis GB, Lessler J (1999) Questionnaire Ap-

praisal System QAS-99. Research Triangle Institute, Rockville MD. <http://appliedresearch.cancer.gov/areas/cognitive/qas99.pdf>

⁵ The online instruments contained only a selection of the questions expected to be included in the main survey. This

was due to time constraints in the cognitive interviews; the questionnaires only included those questions that SCW suspected respondents found cognitively difficult.

construction of the online instruments. The online questionnaire was then cognitively tested in field (the first of two rounds of cognitive testing).

2.3 Cognitive interviewing

At Round One cognitive interviews were carried out with a range of children and young people in six schools across Wales. Respondents were drawn from three primary schools and three secondary schools. In total 24 respondents took part (12 males and 12 females of varying ages). At Round Two four schools were included in the sample (two primary and two secondary schools). In total 18 respondents took part (9 boys and 9 girls aged between 7 and 15 years). Respondents with different academic abilities and varying levels of Sport Participation were included in both samples. Full details of sampling, recruitment, fieldwork and analysis are included in Appendix C.

2.3.1 The rationale for cognitive interviewing

Cognitive interviews, which are qualitative in nature, help reduce measurement error by designing questions which respondents understand and are willing and able to answer. Cognitive testing draws from cognitive psychological theory to test the processes by which respondents answer survey questionnaires, particularly by uncovering aspects of the survey response process that are usually hidden.

Four key cognitive stages are involved in the question-answer process (Tourangeau, 1984). Cognitive interviewing sets out to explore these cognitive processes:

1. How respondents understand and interpret survey questions;
2. How respondents recall information that applies to the question;
3. What judgements respondents make as to what information to use when formulating their answer; and

4. How respondents respond to the question (act in expressing their answer).

For example, a respondent may answer a survey question and show no visible signs of confusion, but may be thinking of something different from what the question designer had in mind. Likewise a respondent may not recall information accurately, misjudge the purpose of the question or edit their final response. Additionally the use of cognitive testing in this research study led to broader insights about asking children to complete online questionnaires (rather than just exploring problems with individual questions).

2.3.2 Cognitive interviewing protocol

The aim of cognitive testing is to uncover the process that respondents engage in when attempting to complete a questionnaire. Cognitive interviews use a range of techniques to ascertain what factors influence how respondents understand and respond to questions. Three different techniques were used during the cognitive testing of the online surveys:

Observation

This technique was used at the outset to gain an insight into how children and young people approached the task of filling in the online questionnaire. Observations were made about how respondents accessed the tools and entered their ID codes to gain access to the survey.

Think aloud

Respondents were asked to employ the 'think aloud' technique as they worked through the questionnaire. The interviewer did not ask specific questions about the survey at this point, they simply encouraged the respondents to think out loud as they completed the questionnaire. The 'think aloud' task was designed to gain insight into problems pupils experience in relation

to navigating the tool and understanding the overall task. The 'think aloud' also gave respondents a chance to provide spontaneous feedback regarding the instructions, visual design and layout.

Probing

The final part of the cognitive interview involved the interviewer following up with more direct questions (probes). Interviewers reviewed the respondents' answers and probed directly about each question. All interviewers were provided with a Question and Probe sheet for both versions of the survey. Interviewers also used spontaneous probes to ask directly about specific problems the respondent encountered. Copies of the Question and Probe sheets are contained within the separate Round One and Round Two reports.

2.4 Amalgamated report

Recommendations for improvements to the online instruments were made following both rounds of cognitive testing and individual reports submitted. The final stage involved the amalgamation of these two reports (this report) and also includes a review of the existing literature on interviewing children as well as some broader recommendations for good practice when conducting research with children.

Part A: Conducting Surveys with Children

3.0 Literature Review

The following chapter details our review of the existing literature regarding research with children, with a specific focus on self-completion modes of data collection. The literature under consideration comes from a wide a range of sources; from both the UK and internationally, from experimental evidence and recent textbook reviews and recommendations. The literature was drawn mainly from Research Methodology disciplines but also included data collected from the fields Sociology, Psychology and Adolescent Health. A full list of references can be found in Appendix A. This chapter is also intended to provide practical recommendations based on the findings from the literature in the context of what was found from this project.

The review is organised into four main sections, each covering an issue which emerged from the review as being of particular importance:

- + Why research studies must be **'child-centred'** (tailored to the group of interest)
- + The **age** at which it is possible to collect information directly from children
- + How different **data collection modes** work when interviewing children and which mode is the 'best' (this section has a particular emphasis on self-

completion modes as these are most relevant to this research study)

- + The advantages and disadvantages of different **survey settings** for interviewing children.

Following each of the four sections our recommendations are summarised and an overview of the key messages arising from the literature review is included at the end of the chapter.

3.1 Using a 'child-centred' approach

3.1.1 Collecting data from children

Recent literature has shown there is a growing demand for research conducted with children. Children are increasingly seen as actors in their own right, and as having an increasing influence on market forces. This change in the perception of children and how they are viewed by society is coupled with an increasing interest in the rights of children and children's issues (Scott, 1997). In support of the argument for conducting research and collecting information from children themselves, Scott also notes that information given by parents and teachers (i.e. 'by proxy') on children's behalf is often inaccurate. This is particularly so when it concerns risky behaviours which adolescents attempt to hide from adults. Scott has shown that

the correlation between parent and child reports of behaviours decreases with age i.e. as the child grows older; the adult is less likely to be able to report accurate information about that child's behaviour (Scott, 1997; Borgers and Hox, 2001).

Literature dedicated to research with children has emphasised the importance of tailoring the research study and methodology to suit the particular needs of the group of interest, or in other words developing research that centres on the child. Adapting current methods used for research with adults, and understanding why this is necessary, is key in terms of yielding high quality data from children.

However, despite a general consensus that research methods should be adapted for child respondents, little is known regarding 'best practice' for putting this theory into practice. Borgers, Hox and Sikkels (2004) state that much of the advice surrounding the best methodological approach derives from research studies involving adult respondents and theories based on these respondents. In terms of survey mode it seems that the majority of social research carried out with children has been interview based (that is the questions are read out by an interviewer). Designing self-completion questionnaires

for children in particular has received little attention to date in methodological literature (Lewis and Lindsey, 2000).

3.1.2 Why alternative research methods are necessary for children

Essentially children require the use of different research methods from adults because they interpret what they are being asked to think about and do differently. For example, questionnaires can be seen as intimidating, perhaps because children assume they require a high degree of literacy to be able to fill them in. Children may also see questionnaires as being irrelevant to their age group and thus not 'fun'. These points point towards the need for investigating more children-centred methodologies (Barker and Weller, 2003). However, some writers have tentatively proposed that children are not completely unfamiliar with the concept of filling in self-completion questionnaires and that, provided they are designed from a child-centred perspective, they can be 'fun'. Lewis and Lindsey (2000) note that children can engage in questionnaires for recreation (e.g. quizzes and personal questionnaires in teen magazines).

Writers have also examined the relative merits of using alternative approaches to researching children. In one particular study Barker and Weller (2003) used tools such as diaries, photo-diaries, and tasks involving drawing as well as standard questionnaires. They reported mixed success of results, with different respondents engaging more with different activities. Christensen and James (2008) detailed how alternative methods (other than questions) have been used to help people with limited literacy or verbal skills to express their opinions (e.g. using a stick to draw maps in the sand or using piles of pebbles or stones to represent the distribution of power and control held by certain people). These alternative methods can enable people who are seldom heard to 'speak'. Thus, they raise the possibility

of extending such methods or tools to research with young children rather than conforming to more conventional questioning models.

3.1.3 How children's survey behaviour differs from adults

So why do children react differently to questionnaires than adults? Essentially and simply it is because they are still developing. Children and young adults' cognitive abilities, communicative and social skills are still in development and consequently vary widely. This in turn leads to the use of different strategies when approaching a questionnaire (Borgers et al, 2004). The findings from our cognitive testing support the notion that children employ a variety of strategies when answering questions. We found three separate groups in our sample of children which we termed 'Readers', 'Skimmers' and 'Strugglers'. More detail on the specific differences between these three groups is detailed later on in this report.

The literature has pointed towards the effect of question design errors on data collected from children. Borgers, de Leeuw and Hox (2000) showed that small errors in question design led to greatly amplified errors for children, and somewhat amplified errors for adolescents. Thus, it is essential that instruments designed specifically for younger age groups are thoroughly pre-tested because children are prone to understanding questions differently from the way intended by the researcher (Scott, 1997). This viewpoint is supported by the findings from our first round of cognitive testing explored later on in this report.

The following section outlines some specific examples of how children's behaviour differs from adults.

Understanding of language

Children are prone to literal interpretations when it comes to answering questions, for instance if an interviewer read out 'people my age' children are likely to try and guess the interviewer's age instead of thinking about their own age (Scott, 1997).

Retention of information

Fuchs (2005) showed that young children are unable to retain the necessary information in their minds when going about the question and answer process, a theory supported by the findings from our own cognitive testing. He demonstrated that young children (10-13) were more susceptible to bias in data collection compared with adolescents (14-17). This study also showed that children were more susceptible to primacy effects⁶ and that when compared with adults; children and adolescents were more prone to scale effects⁷.

Interestingly, this study showed that younger children were in fact less susceptible to context effects⁸ (although in a series of experiments the results were not always statistically significant). Likewise, children with poorer academic performance were less susceptible to context effects regardless of their age. It is thought that this reduction of context effects was due to younger (and less able) children being unable to retain information from the previous questions (Fuchs, 2005). This finding leads us to the recommendation that it should not be assumed that children would be able to retain the information necessary to complete a given question (or set of questions) if that information had been displayed on a previous page.

Extent of 'satisficing'

Borgers et al (2004) stress that Krosnick's **satisficing** theory is of particular relevance in relation to both children and elderly people. The satisficing technique describes a situation whereby

⁶ 'Primacy effects' occur where respondents recall earlier items in a list than later items (e.g. within a list of items within the question wording or a list of answer options).

⁷ 'Scale effects' occur where respondents' answers are influenced by the format of the scale and how response options are labelled and displayed (e.g. how response options on a scale are distributed can influence results if respondents always tend to choose middle options).

⁸ 'Context effects' refers to the influence of environmental factors surrounding the respondent on their approach to completing the survey/questionnaire.

a respondent gives a superficial response that appears reasonable without going through all the necessary steps involved in the question-answering process (Krosnick, 1991). This technique is related to three dimensions of this process: how motivated the respondent is, how difficult the task is and the cognitive ability of the respondent. Growing up and ageing involve changes in cognitive function and ability and these are central respondent characteristics that affect the overall reliability of responses.

Borgers, Hox and Sikkel (2003) argue that children are more likely to satisfice than adults owing to not having developed suitable 'optimising' strategies to enable the provision of fully thought through answers. There is a general consensus that growing up is associated with an increase in reliability of responses (Borgers et al, 2004⁹).

3.1.4 Good practice principles for designing research with children

Having outlined the above problems, the following section puts forward a number of suggestions for ways to address them. These 'good practice principles' have been compiled from a review of the current literature on interviewing children.

Meaningful questions

The question topic must be meaningful to children if they are to give each question sufficient thought and attention and then answer adequately. It has been shown that children can provide meaningful responses to questions about events or issues that are of interest to them (Scott, 2008). Borgers and Hox (2001) showed that where children had experience or understanding of the topic being surveyed they were less likely to skip questions.

Short and simple task

Respondents, children in particular, find it difficult to concentrate for long spells, leading to the use of satisficing techniques. Therefore the task must

remain short and attractive (Borgers et al, 2000). Questions must be short, simple, direct, clear and, where possible, personalised. Children have been shown to interpret and respond to questions differently to adults, very literally and using different logic techniques. Thus, negative phrasing should not be used as it can introduce confusion (e.g. 'Which of these Sports do you not do?'). Additionally children have been shown to respond differently to negatively formulated questions from the way they respond to positively formulated ones. The number of response options (or answer categories) should also be kept to a minimum. Borgers et al (2004) suggest that four response options (and thus no midpoint) are optimal for children.

Clear instructions

It is evident that children require unambiguous and comprehensive instructions (Scott, 2008). Other recommendations put forward for computer based self-completion surveys were (1) to include paper instructions for respondents to refer back to (as the use of function keys were too confusing for the children that took part in this research study) and (2) provide a summary 'map' of the question modules to give an overview of the questionnaire structure and provide a sense of control and familiarity (de Leeuw, Hox and Kef, 2003).

Adult assistance

The fact that children may require assistance or reassurance from an adult while completing a questionnaire was a key theme emerging from the literature. This finding was also supported by our findings and recommendations (outlined later in this report). Children require assistance in dealing with technical problems and importantly, even if they are completing the questionnaire as intended they may seek out reassurance or encouragement from an adult. Primary school children particularly worry about giving 'wrong' answers and older children

can refuse to answer questions they don't fully understand (Reeves, Bryson, Ormston and White, 2007).

In fact survey standardisation may not be appropriate at all when interviewing young children. Writers have argued that the problem of children's miscomprehension outweighs the drawbacks of a non-standardised data collection process and therefore it is better to maximise overall data quality through assisting each child with the questionnaire as opposed to not providing this help in an effort to standardise the survey process. Children and young people themselves feel that it should be part of an interviewer's role to provide assistance as and when it is required (Reeves et al, 2007).

Therefore, the need for an adult presence, and the associated costs this may involve, should be borne in mind when considering designing an internet survey instrument for children (de Leeuw et al, 2003; Scott, 2008; Lewis and Lindsey, 2000). Whether or not this adult assistance should be provided by a trained interviewer remains open to debate. Our recommendation is that if interviews are to be conducted in schools it is not essential to have a specialist interviewer on hand to deal with children's queries; rather this assistance could be offered by a teacher, provided they are well informed about the study objectives and what is required. Young children in particular prefer the presence of a known adult when it comes to seeking comfort or support (Reeves et al, 2007).

Visual aids can greatly assist younger children

The literature supported the use of visual aids when interviewing children to help solidify their understanding of the task (Scott, 2008). Visual aids are becoming increasingly common, for instance the use of pictures and photographs. While they can be difficult to use as standalone techniques, when coupled with other

⁹ This paper details Piaget's theory on the stages of childhood development and uses these stages to inform the findings. Piaget's theory is based on the idea that children's intellectual development evolves in a fixed sequence of five stages. For more detail on this theory please refer to this paper.

methods they can encourage a more concentrated focus on a particular topic (Christensen and James, 2008). This view is supported by our findings; we used pictures on each internet page to help support our questions and they were found in both cognitive tests to be a success.

While we found that pictures can aid children's understanding of the meaning of a particular question we recommend that caution is taken when selecting the images for use. Such visual aids must be specific to each individual question as children used them to help interpret the question meaning (see section 5.2.5). Strugglers used them to interpret the question where they experienced problems in reading the wording. Skimmers also used them to interpret the question but importantly not because they could not read the question but as a shortcut to interpreting its meaning and giving an answer.

Labelling scales can help older children

Borgers et al (2003) conducted a piece of research into whether the labelling of scales assisted children when responding to questions. They found that whether the scale was labelled made little difference to younger children (aged below 10-11) whereas labelling scales did help older respondents (aged above 10-11). The reliability of answers increased when the scale was fully labelled in the older group. A linear relationship was found between age and reliability when the fully-labelled scale was used.

3.1.5 Recommendations for designing research with children

- + Consider using alternative approaches for interviewing young children (e.g. diaries and drawing tasks as opposed to questions).
- + Do not expect children to remember information from previous pages;

include all necessary instructions on the page it is relevant to.

- + Bear in mind that children may be more likely to 'satisfice' than adults as they are yet to develop 'optimising' strategies to enable fully thought through answers.
- + Ensure the research topic is meaningful/of interest to children.
- + Keep the overall task as short and simple as possible.
- + Word questions simply and directly, personalising them wherever possible.
- + Keep response options to as few as possible.
- + Ensure instructions are as clear, comprehensive and unambiguous as possible.
- + Consider including paper instructions for reference when conducting computer based self-completion surveys.
- + Consider including a summary 'map' of the question modules when conducting computer based self-completion surveys.
- + Ensure assistance from adults is available and accessible to those children who require it.
- + Use visual aids wherever possible (e.g. pictures) to make the task as 'fun' as possible and to aid understanding of the task. Care must be taken when selecting visual aids so that they are as specific as possible to the question wording as we found that children use them to interpret the question meaning.

- + Label scales where possible (this was found to be helpful for older children).
- + All survey instruments designed for use with children should be thoroughly pre-tested as children often respond to questions in ways unanticipated by researchers.

3.2 The age at which children can participate in survey research

3.2.1 The question of age

The age at which children are able to take part in survey research, (i.e. the age that children can understand the questions and provide meaningful answers), has been a subject of much debate. There does not appear to be a clear age at which children possess all the tools required to complete a questionnaire adequately as there are many factors involved in this process.

Despite the argument that 'age' may not be a useful concept to indicate the developmental stage of a particular child (and thus whether they are able to participate in research) survey researchers will ask for a minimum age at which children are considered competent respondents. Such an 'age cut off' is required to ensure a representative sample, for instance it is not possible to only include children capable of answering survey questions whatever their age, as the sample would be biased towards children with high cognitive ability. Thus, researchers when planning a survey can simply choose a minimum age and design research tools in accordance with the supposed developmental or cognitive abilities of the group in question. A better approach might be to build into the design an awareness of how varied this group may be in practice and develop a more flexible interviewing approach (Christensen and James, 2008).

3.2.2 The minimum age of 7 as a tentative guide

A number of research studies have explored the age at which children can be interviewed or competently complete a self-completion questionnaire and put forward suggestions for the minimum ages for such tasks. Scott suggests that children from the age of 7 can complete individual or group semi-structured interviews although it seems clear that

the interviewing tools must be flexible and tailored specifically for this age group. Scott adds a warning that by the age of 7 children may have begun to master the art of 'impression management', meaning that they may tailor their response to suit themselves or to please the interviewer. Young children particularly are highly suggestible and may shape their answers to please the interviewer. However, motivation at least appears less of a problem for younger respondents in a classroom context as they are more likely to see the survey as a test. Scott's overall recommendation is that by the age of 11 children are able to complete standardised surveys more similarly to the way adults complete surveys although this is very dependent on their level of literacy and also on the more general issues surrounding survey confidentiality and context (Scott, 1997; Scott, 2008).

It is suggested by de Leeuw et al (2003) that children aged 8 and older possess the ability to successfully complete a computer-assisted self-completion questionnaire and that, within the study they conducted, children were found to enjoy this task. Borgers et al (2000) agreed with this assertion, recommending that surveys should only be carried out with children after they reach 8 years of age, although they concede that simple interviews can be appropriate in some cases for younger children. Despite this recommendation, in a later paper dedicated to the labelling of response options, Borgers et al (2003) surmised that before the age of 10-11 children are prone to satisficing as they do not possess the necessary 'optimising strategies' to enable them to give fully thought through answers.

3.2.3 Social, cognitive and literacy skills vs age

Therefore there is some disagreement between writers regarding the age at which children are sufficiently able to provide answers to survey questions. Likewise, there is reluctance from some researchers

to give an indication of age at all. These writers believe that it is either impossible or very difficult to state an appropriate age; rather it is the development of **key skills, namely social, cognitive and literacy (language and reading)** that give the most important indicator of ability to complete a questionnaire successfully. These key skills can be considered as being quite separate from age per se as children vary enormously as to when these abilities develop leading to large individual differences within any given age group.

It seems fair to draw the tentative conclusion that children aged 7-11 are able to provide meaningful answers but this comes with a big caveat; it depends on how developed their key skills are. Likely level of ability for each of these key skills (social, cognitive and literacy) must be considered when designing research programmes with children.

Research in other studies further supports the above notion. Christensen and James (2008) conducted a research study with 10 year old children, which specifically examined whether the indicator of 'age' is a useful concept for the developmental stage a child is at (in terms of their ability to take part in survey research). The study involved children being presented with a blank 'My Week' circle and asked to divide it up to represent their weekly activities and how much time they spent on each one. The way children approached the task varied widely; there were charts with no divisions and simply a list (in order of importance), geometrically divided charts, charts with pictorial illustrations, charts with few sub divisions, charts with many, charts with accurate calculations of hours, charts with simple guesstimates, blank charts and coloured in charts. The use of this tool revealed both similarities and diversities in the experiences of 'being a 10 year old child' and importantly showed that, when presented with a task, children of the same age approached it in a variety of different ways. The writers call into question the usefulness of 'age' as a static

and fixed analytical category within the life course. They propose that their findings seriously call into question the use of 'age' as a dominant signifier when understanding children's every day lives and that existing paradigms may therefore over-standardise models of childhood by according priority to age and thus underplay the impacts of local social and environmental factors.

As shown in the previous section, Fuchs (2005) showed that young children were more susceptible to bias in data collection compared with adolescents. Borgers et al (2000) found that for both children and adolescents low reading ability was associated with poor data quality (for both item non-response and data consistency). They stated that these problems arose from both reading and language abilities. Likewise, Van Hattum and de Leeuw (1999) found literacy to be the main cause of problems children experienced when filling in self-completion questionnaires rather than the survey mode (see next section 3.3 for further details).

3.2.4 Recommendations for the age at which children can participate in survey research

- + Children as young as 7 can take part in survey research BUT the research must be tailored to their specific needs and be as flexible as possible
 - + It may not be possible to standardise survey research processes with children as young as 7
 - + Children from the age of 11 are likely to be more able to complete standardised surveys in a similar way to adults
 - + However, the above recommendations come with a proviso: it must be borne in mind that children's ability to take part in surveys depends heavily on their individual development of key skills such as social, cognitive and literacy skills.
-

3.3 Data collection modes for children

3.3.1 Advantages of Interviewer Administration

The literature is clear that self-completion questionnaires should not be used for children aged 7 and younger (Scott, 1997; Scott, 2008; Borgers et al, 2000). An adaptive interviewer led approach may be the only means of getting information from this age group. The literature also raises many reasons why self completion questionnaires can pose a problem even for older children. Four issues emerged concerning why self-completions are problematic for children. This raises the question of whether an interviewer led approach may be more suitable:

Literacy: During an interviewer administered questionnaire a child is not necessarily required to read survey questions as this is done for them by the interviewer, thus negating the issue of literacy (Scott, 1997).

Concentration: Young children have shorter attention spans and therefore an interviewer's presence is useful to help them remain focused on the task (Borgers et al, 2000).

Motivation: Motivation is seen as a primary concern among adolescents. Interviewers are able to engage with adolescents and help motivate them to complete the task in hand (Scott, 1997).

Complexity of task: Survey questionnaires can involve routing and skip patterns which are likely to confuse children. Trained interviewers are skilled at following complex routing patterns and therefore having an interviewer eases the survey administration. Likewise interviewers can provide assistance and reassurance if the child is uncertain about what they need to do (Scott, 2008).

3.3.2 Advantages of using self-completion modes with children

However, there are very clear downsides to using an interviewer administered mode over self-completions when conducting

any survey. The most obvious drawbacks to relying on interviewer administered surveys are both time and cost. With real world constraints self-completion is often the only feasible way of conducting large scale social research quickly and inexpensively.

Fortunately, the literature suggests that, under certain circumstances (with certain design features implemented), self-completions can successfully be implemented with children over the age of 7 years old. In certain regards self-completion modes even have advantages over interviewer administered surveys. For example, during self-completion questionnaires respondents are in control of the pace of the survey; they can go back and re-read items and have as much time as they need to reflect on their responses rather than having the pressure of answering promptly to an interviewer.

Likewise using self-completion questionnaires should reduce so called 'interviewer effects'¹⁰ (Biemer and Lydberg, 2003). As mentioned earlier, children, by the age of 7, have mastered the art of 'impression management' and can therefore tailor their responses to make them appear in a more favourable light (Scott, 2008).

Furthermore there is a body of literature to suggest that self-completions are 'better' than interviewer administered surveys when it comes to collecting sensitive data, as self-completions afford a greater sense of privacy (de Leeuw et al, 2003). This sense of privacy is particularly important when collecting survey information from adolescents who may be more prone to social desirability effects and are more likely to omit sensitive questions (Borgers and Hox, 2001).

3.3.3 Advantages of computer modes

Types of computer mode

There is a general lack of literature on children completing web-based surveys. However, the literature does discuss the successful application of Computer

Assisted Self-Interviews (CASI) and Computer Assisted Self-Administered Questionnaires (CASAQ) with children. Both of these modes of data collection involve children completing surveys on the computer, but instead of the data being transmitted over the internet upon survey completion, the data is saved on either a disk (CASAQ) or to the computer's hard-drive (CASI). It should be noted that the CASI mode generally forms part of a larger interview. Therefore an interviewer is usually present to deal with any technical problems should they arise or even complete the survey as an interviewer administered interview if the respondent so chooses (Phelps et al, 2007).

Despite this it is envisioned that many of the advantages observed in other forms of computer mode should be directly transferable to web-surveys, as web-surveys can mirror the appearance and functionality of CASAQ and CASI. Whether or not perceived confidentiality is affected depending on the method used to transmit the data is an area that requires further investigation.

Why computer modes are appropriate for children and young people

The literature repeatedly demonstrated that today's children and adolescents have sufficient levels of computer literacy to be able to complete surveys on computers. The literature also suggests that computer based modes of self-completion hold specific advantages for data collection from children and young people. This section will focus on the extent to which the literature demonstrates computer modes are advantageous over other self-completion modes in terms of the following four areas:

1. data quality;
2. anonymity and privacy;
3. attractiveness; and
4. cost.

¹⁰ The term 'interviewer effects' refers to bias in respondents answers that arises from a particular interviewer's characteristics (e.g. sex, age etc).

The section will go on to discuss how technical features employed by computers might be especially useful when conducting research with the target population.

Computer modes are better (or as good as) paper modes in terms of data quality

A number of methodological studies have compared the same survey questions, conducted with children, administered using both computer and paper-and-pencil modes (Brecko and Vehovar 2008; Mangunkusumo et al 2005; Van Hattum and de Leeuw, 1999). These provide evidence that, in terms of data quality, computer based modes are just as good as pencil-and-paper (henceforth referred to as PAP) surveys if not better. Problems encountered by children completing computer based questionnaires are generally due to literacy and comprehension and not a result of survey mode; that is the same problems are likely to be encountered in the PAP version as the computer version (Van Hattum and de Leeuw, 1999). The following section discusses how computer modes perform in terms of their internal reliability, their item non-response rates and their ability to encourage accurate self-disclosure.

Brecko and Vehovar (2008) report that the internal reliability of scales (i.e. to what extent answers given at one part of a questionnaire tally with similar items in a later part of the questionnaire) are higher in a CASAQ mode than in PAP questionnaires. Internal reliability is a marker of data quality as it demonstrates answers are consistent within cases. However, the authors also note that contrary to expectations, children who had more experience using computers had lower internal reliability on the CASAQ version of the survey than those who had less experience using computers. It was thought this could be due to respondents with more

computer experience being less likely to concentrate on the task and being more likely to satisfice (take cognitive shortcuts). Thus the authors conclude that CASAQ is at least as reliable as PAP modes. Van Hattum and de Leeuw (1999) found no differences between internal reliability between CASI and PAP modes and reached the same conclusion.

Another indicator of data quality is item non-response, with low response rates being indicative of poorer quality data. Van Hattum and de Leeuw (1999) demonstrated that a much higher percentage of missing data occurs in PAP conditions compared with computer administered surveys. This is due to the fact that computerised surveys can incorporate monitors to guarantee item response. For instance, error messages can be used in computer-surveys to warn respondents if they accidentally omit an answer. The use of such 'built in repairs' is highly advocated to maintain high data quality (de Leeuw et al, 2003) but naturally cannot be incorporated in PAP modes.

A final indicator of data quality is that children in the CASAQ condition were more likely to report socially undesirable behaviours than those in the PAP condition (Van Hattum and de Leeuw, 1999). This suggests that computer based surveys can improve data quality and levels of self-disclosure making prevalence estimates of undesirable behaviours more accurate. This finding is discussed in greater detail in the following section.

Computer modes support anonymity and privacy

Well over a decade ago the discussion regarding the potential of computers for improving anonymity and confidentiality in survey research was underway. Adult respondents thought that computers were better for asking sensitive questions and getting honest answers as they increased feelings of privacy (Beckenbach, 1995).

These findings have also been replicated in children and adolescents (Van Hattum and de Leeuw, 1999).

Computer self-completions with adolescents have been shown to be less prone to bystander effects compared with PAP self-completions (Aquilino, Wright and Supple, 2000). Respondents in this study were asked directly about their perceptions of privacy in a debriefing session. Those who had completed a computer-based survey were significantly more likely to state they felt that no one was able to oversee their answers. This is likely to be because when a question has been answered it disappears from the computer screen, whereas when it is written down on paper other people might be able to read it. It is therefore recommended that, when designing a computer interface for very sensitive questions, all answers are submitted immediately following the point of entry, rather than remaining on screen for any period of time (Beebe, Harrison, McRae, Anderson and Fulkerson, 1998).

Computer surveys are more 'fun'

Web-surveys offer more possibilities for visual stimuli than their PAP counterparts which make them more appealing for children and young people. Results from the cognitive testing confirmed the importance of pictorial images for making surveys more accessible for the youngest groups by both aiding understanding and making the survey more appealing. Auditory and video features can also potentially be used to make the survey more engaging (Scott, 1997). For younger children, making the process more interactive could potentially help them to concentrate better on the task in hand. Furthermore, Van Hattum and de Leeuw (1999) found that younger respondents tended to be the most enthusiastic about completing CASAQ than older respondents despite the fact they were slower at the task than their older counterparts.

The main problem identified with conducting surveys with adolescents related to their motivation, namely that they are prone to boredom and flippancy (Borgers et al, 2000). It was suggested that computer assisted modes of data collection could act as a moderating factor on motivation by making the survey process more fun (Beckenbach, 1995). When asked directly to evaluate different modes of data collection adolescents stated a preference for using an internet administered tool over a PAP one (Mangunkusomo et al, 2005) as they found it more 'pleasant' to use. This finding was replicated in our cognitive testing with children describing the online mode as more fun and more tailored for their age-group.

Computer modes can reduce cost

Large scale computer surveys can be substantially cheaper than PAP surveys. Van Hattum and de Leeuw (1999) demonstrated that the cost per survey in CASAQ vs. PAP surveys in schools was substantially cheaper when collecting data from large samples (in this case approximately 6,000 respondents). CASAQ was still cheaper than a PAP mode even when it included additional features such as the running of a 'telephone helpline' to provide technical advice for teachers and more extensive question testing procedures. The vast saving made by computer modes over PAP modes comes from eliminating the labour intensive data entry stage.

Other technical possibilities offered by computer modes

Computers offer an array of other technical features that give them an advantage over their PAP equivalents. These are discussed in more detail below:

Question formulation: Computers offer new possibilities for formulating questions. For example, computers can be programmed to randomise the order in which questions appear or the order

of response options for each question. This in turn could help ameliorate systemic question order and primacy effects (Beckenbach, 1995). This may be particularly important when developing surveys for children as the literature suggests they may be more susceptible than adults to primacy effects and other biases (Fuchs, 2005).

Speed of results: Data collected via the internet are instantly available to the researcher with some early stages of data-entry and cleaning already implemented. As internet implemented surveys require less time in the field more time can be dedicated to analysis of results. This offers the possibility of running early analysis to identify problems that can then be rectified while the survey is still in field (although obviously it is best to spot potential problems before the fieldwork period by carrying out extensive pre-testing).

Audio-CASI: Audio-CASI is a form of computerised self-completion where respondents can listen to a pre-recorded question being read out loud before keying in their answer. Audio-CASI has already been used successfully to collect information about criminal offending in 10-25 year olds (Phelps et al, 2007), and coping strategies in visually impaired adolescents and young adults (de Leeuw et al, 2003). Audio-CASI has been investigated in terms of both benefits and drawbacks. Respondents with literacy difficulties are more likely to choose to use the audio feature when using CASI and are more likely to rate it as useful (Phelps et al, 2007). Audio features therefore could be important in making web-surveys more accessible to groups with poor literacy, including children. However, it should also be noted that only having audio presentation of questions (and having recordings repeated) can slow the survey process down and be frustrating to respondents who would prefer to read the questions themselves and thereby work through the

survey at their own pace (Scott, 2008). For this reason, if audio features are used on computer surveys it is recommended that the control of these functions remains in the hand of the users who can turn them on and off as desired or required.

3.3.4 Recommendations for data collection modes for children

- + Decisions regarding survey mode need to address potential problems children have with literacy, concentration, motivation and task complexity
 - + Interviewer administered surveys address all the above problems but are often unfeasible due to cost and time restraints
 - + Computer modes of self-completion are preferential to pencil-and-paper (PAP) based modes when conducting research with this group as they are cheaper, of equivalent or better quality and can address more of the problems experienced by this age group
 - + Make use of visual features to make the task more appealing, potentially improving motivation and concentration
 - + Online methods actually allow for more complexity in design at the same time as reducing task complexity for respondents
 - + Consider use of technical features such as question and response order randomisation to reduce question order and primacy effects
 - + Consider the use of respondent controlled Audio-CASI to make instruments more accessible to those who struggle with literacy
 - + When asking sensitive questions using computer modes answers should be submitted immediately after entry (rather than being left on the screen) to increase privacy.
-

3.4 Survey settings for interviewing children

This section discusses the advantages and disadvantages of the different settings for conducting research with children. In the psychology and child development literature the majority of the discussion on where to conduct research with children focuses on the dichotomy between controlled settings (for example a research laboratory) and a naturalistic setting (for instance the home or the school).

The main advantage of conducting research in a naturalistic setting is that children do not alter their behaviour as a product of being in a strange environment. Research context (how and where the research takes place) has been found to be more important to children than it is to adults, and that children perform better at tasks they understand in an environment they are familiar with (Borgers et al, 2000; Scott, 1997; Scott, 2008; Dockrell, Lewis and Lindsey, 2000).

However, the disadvantage of a naturalistic setting is that researchers have little control over inevitable environmental factors which might disrupt the research process or distract the child. Different naturalist settings potentially have different levels of these confounding factors. As the majority of survey research is done either in the home or in school this section shall focus on the relative merits of conducting research in these two locations.

3.4.1 Cost

The first important consideration to take into account when deciding survey setting is cost. In general surveying children in their homes is more time consuming and thus more costly (Scott, 2008). Interviewing in schools is more cost-effective in-so-much that schools act as gatekeepers who enable numerous

children to be recruited at once. Likewise when conducting research in schools multiple questionnaires can be completed at the same time and place.

3.4.2 Bystander effects

A key issue to consider when deciding where to conduct research with children is how the people in that environment might influence children's responses. At school the presence of classmates can be detrimental to survey performance, but at home the presence of siblings or parents can also have a negative effect (Scott, 1997). For this reason there is no ideal naturalistic survey setting in terms of eliminating bystander effects.

The existing literature on the effect of third-parties on children is mixed. Various studies have been conducted and results show a variety of outcomes. The impact of bystanders varies according to:

1. The identity of the bystander (parent, friend, sibling etc)
2. The age of the respondent
3. The survey mode (see section 3.3)

For example, Aquilino et al (2000) investigated how bystanders influenced self reported use of drugs and alcohol in self-completion questionnaires with adolescents and young adults (Aquilino et al, 2000). They found the presence of a parent significantly affected admission of alcohol use, i.e. where a parent was present respondents were less likely to report using alcohol. Bystander influences were stronger for adolescents than young adults, with parental presence having little impact on reports of alcohol in respondents over 18. Therefore, if surveys are conducted in the home the presence of a parent (or siblings) can have a negative effect on self disclosure (Aquilino et al, 2000). However, the proximity of peers in schools has also been seen to affect data collection (Beebe et al, 1998). Peers can provide a general distraction from

the survey task and also compromise privacy and confidentiality. Respondents may alter their responses to conform to their perceived subjective norms of their peer group.

3.4.3 Interaction between setting and age

The setting of a survey may provide a different perceived context to the research that varies between age groups. For example, if younger children receive a questionnaire in school they are more likely to view it as a test (Scott, 2008). As stated earlier, for this reason younger children are more likely to look for reassurance about whether they are completing the task correctly, even when they are completely competent in completing a task on their own. This is because children in school are subject to teachers' continual judgment and assessment, and they learn that they are to consult them in the case of uncertainty (Christensen and James, 2008).

Older children are more likely to recognise a questionnaire for what it is, regardless of whether they complete it at home or at school. Therefore, their motivation to complete the questionnaire well is not generally as high as that of their younger counterparts. Whether older children are more motivated to complete a survey at school or at home is an area that requires further investigation.

3.4.4 Interaction between setting and mode

The previous section discussed the relative merits found in the literature of using computer based modes of self-completion when conducting research with children and young people. However, if computer modes are being used this will have implications for where the survey should be conducted.

It may not be feasible to rely on children completing an internet based survey at

home. Internet coverage is not universal across all British households and therefore important groups of children might be excluded from web-based surveys. Both primary and secondary schools in the UK have computer facilities to enable them to teach ICT as part of the curriculum. Therefore hosting computer based surveys in schools is a way of ensuring that children have the equipment necessary to take part.

As an alternative to conducting internet surveys at home, CASI surveys could be implemented in the home using a trained interviewer and laptop (thus alleviating the concern about homes not always having computer or internet facilities). However, as previously discussed, interviewing in general, and particularly in the home, is extremely expensive.

Despite the apparent advantages of implementing computer based modes in schools, doing so means further considerations need to be made about data collection. If computer modes are introduced in schools they rely on schools' own computer equipment. It has been theorised that the proximity of computers to each other, the likelihood that computers are networked, and the use of large screen computers might all compromise privacy in a school setting (Beebe et al, 1998).

There is evidence to suggest that if computers are positioned close to one another respondents are less likely to report to socially undesirable behaviours or negative personal experiences (Beebe et al, 1998).

Therefore, the literature recommends taking extra precautions if using computers in the school setting to administer sensitive questions. For example it has been suggested that computers should be separated or partially screened to prevent the likelihood of respondents 'peeping' at each others answers.

A recommendation made earlier in this review was that adult assistance should be provided where necessary for children filling in self-completion questionnaires. When considering conducting research in schools this recommendation raises the issue of additional burden placed on teachers who may be required to invigilate the procedure and provide technical support. If invigilators are present they should be trained to overtly look away from computer screens when they are in use (Van Hattum and de Leeuw, 1999).

These conditional factors add burden to the schools who take part which would not be present if the survey was presented as a PAP self-completion. When designing research protocols for schools, researchers need to balance considerations of data quality against issues of burden (which in turn might deter schools from taking part).

3.4.5 Recommendations for survey settings for children

- + Children are more comfortable doing research in a naturalistic setting e.g. home or school.
- + Research in schools can be more cost-effective than equivalent research done in the home.
- + Children and young people are prone to bystander effects so steps need to be taken to ensure privacy of response.
- + If research is conducted in schools, facilities should be optimised to ensure privacy: proximity to peers and mode of data collection needs to be considered.
- + Children's ability to take part in surveys depends on the more general issues surrounding survey confidentiality and context.
- + If research is conducted in schools, teachers may require instruction on how to provide children with suitable assistance (level of help appropriate, how to deal with technical problems and how they themselves can respect

children's privacy). Younger children will require more substantial assistance than older children therefore it may be more appropriate to conduct research with the youngest children in small groups rather than as a class exercise. However, this approach is more burdensome in teacher time and disruptive to the school timetable.

- + When designing research to be conducted in schools, decisions regarding data quality must be balanced against issues of burden on schools and real-world constraints.

3.5 Summary of key messages arising from the literature review

3.5.1 Designing research with children

- + Consider the use of alternative approaches to questions
- + Include all necessary instructions at the relevant page
- + Bear in mind that children may be more likely to 'satisfice' than adults
- + Keep the overall task as short and simple as possible
- + Word questions simply and directly, personalising them wherever possible
- + Keep response options to a minimum
- + Ensure instructions are as clear, comprehensive and unambiguous as possible
- + Ensure assistance from adults is available to children who require it
- + Use visual aids wherever possible (e.g. pictures)
- + Thoroughly pre-test all survey instruments.

3.5.2 The age at which children can participate in survey research

- + Children as young as 7 can take part in survey research BUT the research must be tailored to their specific needs and be as flexible as possible
- + Standardised survey research processes may be unsuitable for young children
- + Children from the age of 11 are likely to be more able to complete standardised surveys in a similar way to adults
- + However, children's ability to take part in surveys depends heavily on their individual development of key skills such as social, cognitive and literacy skills.

surrounding survey confidentiality and context

- + Research in schools: steps must be taken to ensure privacy, teachers may require instruction on how to provide children with suitable assistance and decisions regarding data quality must be balanced against issues of burden on schools and real-world constraints.
-

3.5.3 Data collection modes for children

- + Decisions regarding survey mode need to address potential problems children have with literacy, concentration, motivation and task complexity
- + Interviewer administered surveys address all the above problems but are often unfeasible due to cost and time restraints
- + Computer modes of self-completion are preferential to PAP based modes
- + Visual features should be used to improve motivation and concentration
- + Computer routing and built-in-repairs can help reduce task complexity
- + Audio-CASI may help those who struggle with literacy.

3.5.4 Survey settings for children

- + A naturalistic setting is more comfortable for children (e.g. home or school)
- + Research in schools can be more cost-effective than in the home
- + Children and young people are prone to bystander effects
- + Children's ability to take part in surveys depends on the more general issues

4.0 Answering Strategies

This chapter outlines our typology of strategies respondents adopted in completing the online questionnaire and draws on existing literature about how different types of people go about filling in self-completion forms. It also gives an overview of the Observation, Think Aloud and Probing phases of the interview and lays out our initial recommendations for interviewing very young respondents.

4.1 Approaches to filling in self-completion documents

At both rounds of cognitive testing, strategies for filling in the online questionnaire differed between pupils. These strategies were not based on the ages of the pupils but rather on how inclined and able they were to read instructions and how engaged they were with the task. Existing literature, including that detailed in the literature review in Chapter 2, has shown that people approach tasks in a variety of ways, one common way being that they immediately look for the quickest way to complete the task or a 'shortcut'. Krosnick has termed this behaviour 'satisficing' (see section 3.1.3) (Krosnick, 1991).

4.1.1 Shortcut heuristics

Heuristics are mental shortcuts or 'rules of thumb' that allow people to make inferences or decisions quickly and with reduced effort (Kahneman and Tversky, 1973). These heuristics have been used to explain how people draw conclusions in social settings but the same rule can be applied to a task such as filling in an online questionnaire. The desire to take a shortcut forms an important part of the cognitive process people go through when making decisions about how

to approach and fill in each question. Different people therefore employ different 'rules of thumb' when filling in questionnaires. At Round One three main groups were identified: 'Readers', 'Skimmers' and 'Strugglers'. At Round Two we found that respondents again fell broadly into these three categories in terms of their approach towards filling in the online questionnaire.

4.1.2 'Readers' and 'Skimmers'

Our typology is based on previous work by Jenkins and colleagues, who suggest that people fall into two categories when completing a form; the 'Readers' are those who read through all or most of the material or instructions provided and the 'Skimmers' read only as much as they think is required to complete the task (or in other words take the shortest route possible). Using this analogy Readers are, on the whole, able to work through a badly designed questionnaire or form whereas Skimmers are more likely to make mistakes if they are unable to understand quickly and easily the information presented to them (Jenkins, Ciochetto and Davis, 1992). If the task becomes difficult Skimmers may become frustrated with the effort required and so give up altogether.

This simple distinction was found in respondents' approaches to filling in a self-completion document in a previous research project conducted by the QDT Hub (McGee, Gray and Collins, 2006; McGee et al. 2006). As detailed in the Round One report, this distinction was also found among cognitive respondents to this questionnaire, along with a third category 'Strugglers' (who struggled with reading and comprehension). Thus, it was anticipated that a similar pattern would be found within the approaches Round Two respondents adopted when filling in the online questionnaires during the second round of testing.

4.2 Strategies for filling in the questionnaire

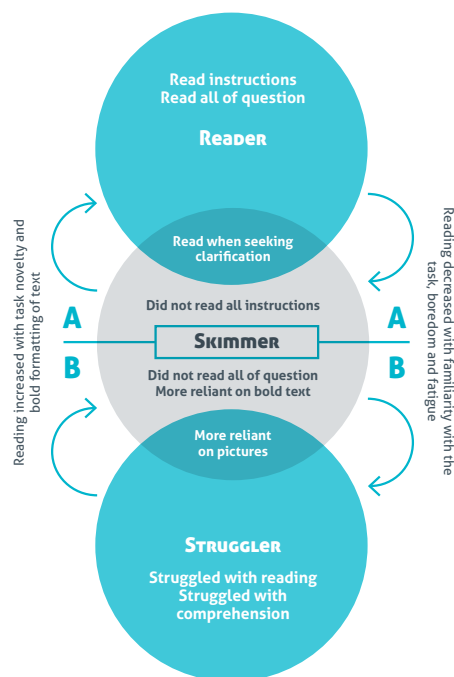
Using the categories identified above we identified Readers, Skimmers and a third group which at Round One we named 'Strugglers'. This third group was made up of respondents who struggled with reading some of the wording and thus with comprehension of what the task involved. At both rounds we found the pictures included within the questionnaire to be very important to Strugglers, these being relied on to convey the meaning of the question where the question text was too difficult. The characteristics of a

'Reader' were fairly easy to spot (those who are prepared to read through all of most of the material or instructions). The characteristics of Skimmers were more varied and subsequently two types of Skimmers emerged from our sample of pupils, each using a different strategy to fill in the questionnaire. These were:

- + **Skimmer A's** – those who were not prepared to read background instructions or material but headed directly for the questions, reading these fairly carefully. Where Skimmer A's got stuck they would refer to instructions, thus slipping here into Reader behaviour.
- + **Skimmer B's** – those who were only prepared to skim read the questions themselves, focussing mainly on the bold text within them. Skimmer B's relied more on the pictures than Skimmer A's, these providing them with a shortcut to interpreting (sometimes incorrectly) and answering the question. This showed a slip into Struggler behaviour; the important distinction being that Skimmer B's focused on the pictures through choice rather than because they were unable to read the question text.

The diagram right shows the main strategies respondents employed to complete the questionnaire and which group or groups adopted each one.

Figure 4-1
Strategies for filling in the questionnaire



As shown, these strategies were not completely exclusive, for instance respondents might start off as a Skimmer A and as the questions went on, and they became more familiar with the content and structure, they would revert to the Skimmer B strategy and skim read more material, focusing on the words that were highlighted in bold. Likewise some Readers grew tired of reading through all the instructions and began to focus on the question wording believing they understood enough to be able to miss out the instructions. Strugglers were easier to pinpoint that Readers and Skimmers and in contrast with these groups, Struggler behaviour remained fairly constant throughout the questionnaire.

Because respondents slipped to and from different types of behaviour, we have not explicitly labelled each respondent and referred to this label throughout the report (with the exception of Struggler

behaviour in places where deemed important). However, these strategies are outlined here to help give a good overview of how respondents approached the task of filling in this questionnaire and the kinds of strategies they applied.

At both rounds of cognitive testing, Skimmers formed the biggest group in our samples, followed by Readers with a handful of Strugglers here and there. Strugglers tended to be exclusive to the youngest age group (ages 7-8, school years 3-4) with the exception of one Year 6 pupil (age 10). As our sample is small and purposive, and not large and representative, we are unable to say whether the Struggler behaviour, which tended to be specific to the younger children, is age specific. It could be that other older children will also struggle with the questionnaire however we suspect that this behaviour is more likely to occur within the youngest age group, and thus there is a need to simplify the questionnaire for them.

The Strugglers in our sample experienced a different range of problems from Readers and Skimmers. It is expected that this pattern (Readers, Skimmers and Strugglers) exists throughout primary and secondary school pupils and therefore within respondents to the main-stage questionnaire.

4.3 Overview of Observation, Think Aloud and Probing stages

Interviewers were asked to provide an overview of how each respondent performed at the Observation, Think Aloud and Probing stages (these stages followed the same pattern for both rounds of testing). Below is a summary of the findings.

4.3.1 Observation

This stage involved the interviewer observing as the respondent read through the sheet of paper they had been given, containing instructions for how to

'log-in' to the online tool and get started. Respondents fell broadly into four categories in terms of how they found this task:

- + Those who needed help with 'logging in':** These tended to be 'Strugglers' who required help from the interviewer to get started. The main problem appeared to be difficulty reading the sheet of instructions – at Round Two this was where it became apparent that one respondent was unable to read the words 'survey' and 'physical'.
- + Those who wanted encouragement or reassurance:** These respondents knew what to do but wanted a few words of encouragement from the interviewer to ensure they were correct in what they were doing. These tended to be primary school respondents who, once they had received the reassurance they needed, were able to press on with the questionnaire with little difficulty.
- + Those who had 'teething' problems:** Some respondents had a few small 'teething' problems, for instance, trouble finding the 'Next' button and were not sure how to move on, or were initially surprised at the error message. However, once they had resolved these themselves they were able to move on without problem or further delay.
- + Those who had no problems beginning the task:** These tended to be secondary school respondents; they were able to get on and begin the task without any assistance at all.

Other comments at the Observation stage related to the pictures; some respondents said they were helpful; they showed what was needed and were friendly and welcoming.

At Round Two, there was one case of a respondent who had no motivation at all to carry out the survey as he was missing his favourite P.E. lesson. This respondent was agitated throughout the interview, in an immense hurry to leave and did

not read most of the question text, just clicking on anything to get through it. While this was frustrating for the interviewer it was of interest to have such a person in our sample as it provides us with a reminder that, however easy the task is, some respondents will not give it the attention it requires because they do not have the interest or motivation.

4.3.2 Think Aloud

Respondents varied considerably in terms of their ability to 'Think Aloud'. Generally they fell into three categories:

- + Unable to think aloud at all:** Some respondents did not respond to encouragement to think aloud and did not find it at all natural.
- + Able to think aloud but only upon being prompted:** These respondents fell quiet when working through the questionnaire but were able to explain what they were doing when prompted to do so.
- + Able to think aloud with ease:** For these respondents thinking aloud came naturally; these respondents were able to paraphrase the questions out loud and resolve problems themselves, talking their way through it out loud.

Interviewers explained the 'Think Aloud' technique at the outset of the interview, using an example of their choice. One example used was the 'favourite room in house' whereby the interviewer asks the respondent to describe their favourite room, explaining their thought process out loud.

4.3.3 Probing

As with the 'Think Aloud' technique respondents' ability varied considerably in terms of responsiveness to probing. Some were able to clearly describe their thought processes and give explanations for them whereas others found this a lot more difficult. This pattern has also been found within cognitive respondents within the adult population.

4.4 Recommendations for improving the instruments for 'Strugglers'

This section outlines our recommendations for improving the instrument specifically for the group we have termed 'Strugglers'. As detailed throughout this chapter these respondents had multiple and fairly specific problems filling in the questionnaire and thus, required more help. These recommendations are laid out towards the beginning of the report to allow the reader to digest our initial thoughts on how to move towards solving the problems experienced by 'Strugglers' and to consider these proposals throughout the remainder of the report.

4.4.1 Recommendations for Strugglers

Simplified version for respondents in Years 3-4

As demonstrated throughout this section, some of the younger respondents in Years 3-4 (termed 'Strugglers' in our typology and throughout this report) were unable to understand and answer the questions included in the online survey. Despite the alterations to the instrument following Round One (e.g. including more pictures and shortening question wording), we were quite simply asking too much of them. These problems mainly centred on respondents lacking the level of reading ability required to perform the task and also related in part to an additional lack of confidence in filling in the questionnaire.

Some Strugglers were unable to read words such as 'physical' and 'survey' and could not understand the concept of a school year (these being basic requirements of completing the task). In places these respondents would guess at the meaning of the question based on the pictures or on some words in the answer categories that stood out to them. The literature review (see section 3.2) showed that children's ability to answer survey questions depends

heavily on their individual development of key skills such as social, cognitive and literacy skills rather than simply on their age. However, due to practical reasons relating to implementation of the survey we recommend that a simplified version is needed for the youngest age group. Therefore our recommendation is to move to a 'three version' approach, the questionnaire for these youngest respondents (Years 3-4) being as simple as possible (meaning we will recommend dropping some existing data requirements for this group).

Extra help for Strugglers

It is important to stress that not all respondents in the youngest age group (Years 3-4) experienced problems; on the contrary, some Year 3 pupils coped very well with the task but others really struggled and therefore help must be targeted at these particular respondents (this recommendation is supported by the findings from our literature review – see section 3.1.4). Our recommendation is that this age group (Years 3-4) are given dedicated help from nominated individuals during, at minimum, the early stages of the questionnaire (opening up the webpage, entering the ID) and the first few survey questions. They would also spend a few moments explaining the point of the survey to each respondent and answering any questions before starting. Ideally an adult (SCW representative) would sit with the respondent as they fill in the first few questions, reading the question out if need be, alleviating any problems surrounding error messages and then, once they feel a little more confident, could leave them to complete the questionnaire, remaining nearby should any problems arise.

The cognitive testing showed that respondents of this age group required help with understanding the task and even very capable young respondents wanted reassurance that they were filling the questionnaire in correctly. Some

also needed assistance with reading the questions and filling in the answers and these respondents would have become unstuck very quickly had the interviewer not been present.

A less costly alternative would be that the interviewer carries out a demonstration of the survey on an interactive white board; however this should only be a secondary option if our primary recommendation (of dedicated individual help) is not possible. Our feeling is that it is only through the actual completion of the instrument themselves that respondents will understand it and learn how to fill it in and that in doing this they currently require assistance at the outset and ongoing encouragement.

5.0 Survey Mode and Instrument Design

This chapter provides details of the survey mode used and how the specific design features of the new online instrument worked in the field along with our recommendations for improvement in online and visual features. This chapter also sets out our recommendations for improving the online and visual features of the instrument.

5.1 Administering online surveys in a school environment

One major consideration that must be taken into account in discussion of survey mode is where respondents will access the online survey. Potentially, an online survey is accessible anywhere and anytime, provided there is a computer and an internet connection. However, it is currently envisaged that the online survey is completed in schools. This form of administration has several advantages namely:

- + I.C.T. (Information and Computer Technology) is a recommended part of the non- core curriculum and therefore most schools will be able to provide computers to pupils who may not have them at home.
- + The survey could have the dual purpose of collecting information for the SCW and being used as a teaching aid in either P.E. (Physical Education) or I.C.T. lessons.
- + If the survey is done as part of lesson in school overall response rate should be high due to there being a captive audience.

+ In the school environment there is likely to be an adult on hand (either a teacher or a class room assistant) to aid children or young people who have difficulties using the tool. As detailed in the literature review, adult assistance is likely to be imperative for the youngest groups (see section 3.1.4).

Although the evidence from the literature review (see section 3.4) and our two rounds of cognitive testing suggest that it can be advantageous to conduct surveys in schools, the following considerations must be made with regards to administering an online survey in a school environment.

5.1.1 Variation in computer facilities

Whereas PAP questionnaires require no special facilities, an online survey is dependent on computers being available for students to use. Where the number of computers available is limited not all students would be able to fill in the survey simultaneously. Schools with only a small number of computers would not be able to offer the survey en-masse, which could lead to a drop in the overall response rate.

Furthermore, even if a school has numerous computers accessible to students it does not necessary mean that these computers are in all classrooms. Therefore it would not always be logistically possible to administer the survey ad hoc during lessons. Teachers may have to plan their lesson in advance if they wanted to include the survey, for instance by booking a school computer suite. This would increase the burden on teachers and make them potentially less receptive to taking part.

5.1.2 Variation in computer settings, hardware and software

It is worth noting that the type of computer used within schools is variable. During the cognitive testing it was noted by interviewers that some schools typically provided laptops for students to use whilst others used standard desktop PCs. This is important as hardware influences how students physically enter their responses, for instance by using a touch pad or keyboard rather than a mouse. This in turn affects the tool's overall usability. The physical size of the computer screen also has an impact on the visual presentation of the questionnaire.

Not only do schools vary in terms of computer provision by number and type, but the computers they provide also vary considerably in terms of their settings and software. For students to be able to access the online tool it is essential they have access to the internet. Moreover, internet connection must run at an adequate speed so that the online survey can upload page by page without major delays. During the cognitive testing respondents expressed frustration when pages were slow to upload. Theoretically such frustration could lead to early survey termination. Inadequate internet connection could also lead to data being not being transmitted and lost.

Another factor that must be kept in mind is that schools will have different versions of internet browsers with different security and accessibility settings. Certain settings could result in pictures, or even the whole instrument being blocked. Certain software can interfere with the process of completing the questionnaire and impinge on respondent confidentiality. For example, during the cognitive testing, some respondents' encountered difficulties due to auto-complete software. This software responded to open answer questions by offering to fill them in with an answer given by a previous respondent.

Browser settings can also influence the size and colour of a page and thereby affect the visual design and layout of the instrument. This is particularly important as inappropriate settings will prevent the website being viewed in the optimum way, for instance instructions and other text might not be visible on screen without scrolling. From a design principle the major flaw in using web technology as the mode of survey delivery is there is no way to ensure the presentation is standardised. Hours can be spent refining a tool to make it as user friendly as possible only for the respondent not to see the optimum layout due to their computer settings.

5.1.3 Privacy and confidentiality

As discussed in the literature review (see section 3.4.2) it is well documented that respondents of this age are likely to be affected by presence of classmates. Computer surveys in schools benefit from offering respondents a greater sense of privacy than their PAP counterparts (Van Hattum & de Leeuw, 1999). Nonetheless, compared with the home environment, a school setting is less private, with a higher likelihood that other children will be able to see their answers.

To help counteract this it is recommended that, where possible, there should be sufficient physical distance between respondents taking part so that privacy is maintained. It is also recommended that although teachers/invisitors should be on hand to help if necessary, they should make a point of not looking at screens unless asked to do so. For more sensitive surveys it could be wise to encourage schools to separate computers or attempt to partially shield computer monitors (Van Hattum & de Leeuw, 1999). However, due to the non-sensitive topic matter it is not thought this precaution should be necessary for the SCW survey.

5.2 Feedback on the online instruments

This section gives feedback on how well respondents were able to access the online instruments as well as feedback on the instruments' technical and visual features.

5.2.1 Computer literacy of respondents

All respondents had some experience of using computers, either just in school or at both school and at home. Even the youngest children (years 3-4) stated they used computers as a source of recreation, e.g. to play games, enter competitions and to browse the internet. Respondents were positive about the fact the survey was online. Secondary school respondents particularly stressed that this mode of delivery was more up-to-date and appropriate for their generation.

5.2.2 Accessing the online instruments

In general respondents of both ages had little trouble accessing the online tool. Even the youngest children (years 3-4) displayed a certain level of computer literacy, and were able to open the site and work through the questionnaire.

Problems that did occur when accessing the site included:

- + Respondents making typos in the web address
- + Respondents trying to type the address into Google or another search engine rather than in the address bar
- + Respondents less adept at typing took a long time to enter the address
- + There was some uncertainty about how to move on from the first introductory page.

The youngest children (years 3-4), when they felt uncertain, were more likely to seek reassurance and ask the interviewer for help, compared with older children who were more likely to resolve uncertainties independently. However, even the youngest children quickly became more confident at operating the tool after moving on from the introductory page and did not require continual technical assistance.

During Round One respondents commented that the web addresses of the surveys were rather cumbersome¹¹ and therefore it was easy to make mistakes in typing them. However, respondents once realising they had made a error in entering the address, were able to rectify the problem and proceed to the correct website without much prompting, although younger children particularly needed more help at this stage. If necessary the following suggestions could help ensure future respondents experience fewer difficulties entering the site:

¹¹ the addresses were www.snapsurveys.com/scw7-11 and www.snapsurveys.com/scw11-16.

- + Make the web-address as simple as possible
- + Ask participating schools to save a shortcut to the final website onto the desktop of their computers.

Despite these minor setbacks it is not anticipated that children and young people would have any difficulty entering the website, and any hiccoughs that do occur could be easily rectified by the pupils themselves or the teacher on hand.

5.2.3 Feedback on the online features

The following section of this report details respondents' reactions to the technical features of the instruments, namely the navigation buttons, the answer buttons and boxes, the progress bar, and the automatic checks.

Next/Back buttons

Respondents knew immediately how to use the Next buttons to move from question to question. During Round One testing a key navigational problem arose as the Next/Back buttons did not always fit on the screen (depending on the screen's size and settings). Respondents who could not see the Next/Back buttons at once tried to move on by pressing the 'return' key, which did not work at taking them to the next page. Some respondents in this scenario found the buttons through searching whilst others asked for interviewer assistance help.

The difficulties described above highlight the problem of standardising the survey format online, because of variations in the web browsers used by schools and the set-up of accessibility and monitor settings. As far as possible it is imperative to attempt to design a survey where all essential information is readily visible. To this end, the second versions of online instruments were redesigned so that long lists of answer categories were split over two screens. This successfully reduced the likelihood of the Next/Back buttons appearing off screen and subsequently problems with initial progression were diminished.

Respondents varied to the extent to

which they used the 'Back' button to go back and correct wrong answers. A minority of Round One respondents went back and corrected their previous answers whereas Round Two respondents tended not to use the back button, even if they noticed they had made a mistake. It could be worthwhile explicitly mentioning to respondents that they can go 'back' at any time to correct wrong answers. This information could be included on the introductory page of the online instrument or a separate introductory sheet if used. For the primary school children particularly, it might be best if this was explained by a person moderating the session.

Answer buttons

All the respondents understood how to use the mouse to select answer buttons. On the whole respondents were able to use the mouse. The one exception to this was a respondent (female, year 5) in Round One who lacked dexterity using the mouse, so sometime found it hard to click on the small answer buttons. Her difficulties arose from the fact that at her school pupils did all their ICT on laptops with touch-pads yet the cognitive interview was administered on an office desktop computer with a mouse. This indicates the importance of recommending to schools that, when administering the surveys, they, where possible, ensure that pupils use equipment they are familiar with. Likewise, making answer buttons bigger could assist those less dexterous using the mouse.

During Round One some respondents had problems seeing all of the answer buttons they were required to click. Respondents with smaller screens were likely not to see some answer buttons until an error message appeared. Again, this issue was largely eradicated at Round Two by splitting the long lists from the Sports section across two separate pages.

Generally difficulties with selecting buttons arose from problems with the equipment, or equipment settings, not through lack of understanding of the task.

Text boxes

Respondents were able to type text into boxes when required. This task of typing was more laborious for the youngest children who had more limited typing skills. These respondents took longer to complete the surveys, and it was acknowledged that typing added to the burden of the task. This was particularly apparent in the Round One Physical Activity section, where respondents were required to type in every Physical Activity they had done over the last five days. An increase in burden led to more respondents omitting activities they had done in order to speed up the answering progress resulting in an under-reporting of Physical Activity.

Due to this, in the Round Two version of the instruments, typing tasks were reduced. In the Physical Activities section respondents were first asked to select common activities done from a list rather than type them in individually. Additional activities could then be typed in afterwards. Minimising the amount of typing required was found to be beneficial in terms of reducing respondent burden and satisfying (see section 3.1.3 for a fuller description). In general it is recommended that the amount of typing required should be kept to a minimum.

Automatic checks

Automatic checks (or error messages) were used throughout both versions of the survey, and appeared when a respondent had accidentally omitted a question. If a respondent accidentally omitted an answer a message would appear and the omitted question would be highlighted using a red line. Respondents varied in how quickly they learned to avoid error messages with some adapting their answering behaviour

straight away to avoid the error message and others taking longer (2-4 attempts) before they realised how to avoid them.

Respondent reactions to the error message varied. Younger respondents, particularly those who had not seen an error message before, were more likely to ask for guidance and clarification on what they needed to do. Despite this, upon reading the message, these respondents were able to go on to correct their mistake although some needed encouragement. Older respondents, or those who had seen error messages before, were quick to understand the purpose of the check and correct their mistake.

Although no major irritation was expressed by the respondents in the cognitive testing about the automatic checks, it is important to remember that repeated error messages can increase respondent frustration and lead to survey termination (Best and Kruger, 2004). Therefore, although useful if well implemented, error messages are no substitute for a well designed survey in which respondents can get things right the first time.

Furthermore, it was suggested by respondents' that it would be better if all their mistakes on a page could be highlighted by the error bar at once rather than displayed one at a time. This could prevent repetitious messages and reduce frustration. Unfortunately, this recommendation could not be carried out due to limitations with the software used.

The Progress bar

Respondents varied on whether or not they noticed the progress bar and knew what it was. The respondents who did not notice the progress bar were all from the youngest group (years 3-4).

Respondents who did notice the progress bar described it as useful, and referred to it to monitor their progression throughout the survey. A sense of progression was important, and respondents felt it was

good to see how much of the survey was still left to complete. Conversely, it should be noted that respondents could feel disheartened if they thought the survey was taking a long time and the progress bar indicated that there was a large proportion of the survey still to do. This indicates the importance of keeping the survey to a reasonable length, so respondents do not get frustrated and potentially give up part way through.

Routing

In general, being able to use routing is seen as being one major advantage that web based self-completions have over their paper-based counter-parts, as respondents are only asked follow-up questions that are relevant to their personal experiences. Compared with Round One, the Round Two survey instruments contained a greater amount of routing and filtering, principally due to changes in the overall structure of the Sport Participation section.

However, it was noted during the Round Two cognitive interviews that in some cases routing and filtering led to problems with data collection (see section 8.4.2). When respondents made a mistake early on in the questionnaire, at a key filter questions, mistakes persisted throughout the survey. By answering filter questions incorrectly respondents could:

- + Be asked follow up questions about things they had not done in the first place; and/or
- + Not be asked follow questions that would be relevant and necessary to collect complete information.

If respondents later realised they had made a mistake they were left feeling awkward. Despite this, respondents were not motivated to go back and change their old answers, but instead answered inapplicable questions as best as they could (again, evidence of 'satisficing' behaviour – outlined in section 3.1.3). This demonstrates that key filter questions, if

used, must be clear and user-friendly to prevent inaccurate data being collected over a potentially large number of filtered questions, some of which may lead to further routing themselves.

Other technical features

Respondents' interest in the questionnaire was also maintained by the online calendar feature used in the Physical Activity battery of questions. This calendar prompted respondents about what day of the week to consider when answering a question. One younger respondent expressed astonishment that the computer knew that yesterday was a Thursday:

*Oh! It's alive'
(male, year 3)*

This demonstrates that this technical feature not only acts as a prompt to what day to consider, it also potentially adds interest to the survey for children and young people.

Respondents were similarly impressed with the expanding grid format used in the battery of questions on Physical Activity. Respondents of both age groups commented that this grid was easy and quick to use, and it was interesting to see all their responses from the previous question taken forward and visually displayed later on. Feeding forward information is a way of personalising questions so they are uniquely pertinent to the respondent. As mentioned in the literature review, simple feed-forward and other text-fill functions offered by computer-assisted modes of interviewing can add to the personalisation of the survey process and was rated positively by this audience (see section 3.3.3).

5.2.4 Feedback on visual features

The following section details feedback on the visual features of the questionnaire, such as the images, colour scheme and the format of the text (font, headings and layout).

5.2.5 Images

One major advantage of internet surveys is that high quality images and colours can be used without incurring the high printing costs associated with similarly formatted paper based self-completions. Images and colours can be used to break up text and to make the survey more visually stimulating. As discussed in the literature review, the use of pictorial images can be extremely good at providing a helping hand for children when answering the questions, as long as they are carefully selected. Children may use these to interpret the question where they are unable or unwilling to read the question wording in full (see section 3.1.4 and below).

The response to the use of images was positive, with respondents expressing the view that pictures added interest, colour and made the survey appear more fun and attractive. The number of pictures used was considered appropriate; there were not so many that the screen appeared too 'busy.' In both Rounds respondents expressed positive reactions regarding the following:

- + Photos of 'Sporting heroes' such as the Welsh rugby team and Kelly Holmes in the introduction
- + The fact images showed many different types of Sport
- + The image of the Welsh dragon
- + The use of many pictures on the introductory page was thought to be a positive way of starting the survey.

Relevance to question

During cognitive testing of the first versions of the online instruments the principle criticism made of the images was that they were not always relevant to survey questions.

The issue of picture relevance is not only important in terms of respondent satisfaction but also in terms of the cognitive processes involved in answering questions. For instance, images may be used as mental short cuts to question

comprehension when question meaning is uncertain. This is particularly true of respondents who are less competent at reading, who will use pictures to supplement their understanding of the written text. For example, during Round One a respondent had difficulty understanding a question which asked how frequently she attended lunchtime and after school clubs. Instead of thinking about lunch time and after school clubs the respondent talked about how frequently she went cycling after school. Part of the confusion was likely to have arisen from the picture that accompanied the question i.e. a cyclist riding a bike. This demonstrates how pictures irrelevant to the text can lead to questions being misunderstood, and thereby degrade the quality of data collected.

Whereas inappropriate pictures can pose problems with question validity, relevant pictures can help improve question validity. Research has demonstrated that pictures are a useful way of making concepts clearer, preventing misclassification of concepts and broadening classes of objects under consideration (Hartman et al, 2005). Additionally, respondents believed that relevant images helped them recall what activities they had done. Relevant pictures could therefore potentially improve data quality by aiding recall.

An important change that was implemented at Round Two was that the number of pictures was dramatically increased and additional effort made to ensure images were relevant to the questions they appeared with. Respondents in Round Two particularly praised the fact images were related to the questions being asked:

'It's good that when you are talking about badminton there is a picture of it' (male, year 9).

At Round Two pictures were considered useful by respondents for understanding the task. This was particularly true of the Swimming question that showed a

picture of a swimming pool angled to indicate both the length and width of the pool. This illustrates how good image use can aid question comprehension under certain circumstances.

Relevance to target audience

During Round One respondents voiced dissatisfaction over the fact the images only showed adults playing Sport rather than people their own age. Therefore, effort was made in the second versions of the surveys to only include images of young people. The Secondary school respondents were happy with the images, but Primary school respondents commented that they would like to see more pictures of children their own age. Therefore, to engage respondents, images used should be specifically selected to match the needs of the age group the instrument is designed for.

5.2.6 Colour scheme

Respondents did not express a clear and consistent preference for a particular colour scheme. Respondents seemed generally accepting of the green background and the comment was made that green was a 'unisex' colour, i.e. not too feminine and not too masculine. Therefore there is no evidence to suggest the colour scheme ought to be reviewed.

5.2.7 Text, headings and layout

Formatting important information

In both rounds of cognitive testing no difficulties were expressed by respondents in relation to being able to read the question text due to its current font or colour.

At both Rounds bold text was used to draw attention to key words or phrases. Bold text was successful at capturing respondents' attention. The downside of using bold text is that Skimmers tend to only read the text in bold. However, it is envisioned that Skimmers would not read all of the question text anyway and therefore it is recommended the use of bold text is retained for key words and phrases.

At Round One, the use of inverted text (white text on a black background) was used to draw attention to the introductory text in the Physical Activities section. This formatting received mixed reviews from the respondents; some stating the formatting made the text more eye-catching and others saying it made no difference. On occasion inverted colour formatting led to confusion as respondents mistakenly thought they had highlighted the text themselves using the mouse. Therefore the use of inverted text is not recommended as a means of highlighting important blocks of text.

For Round Two the introductory text for the Physical Activity section was reformatted so that it appeared in blue, with the aim that this would make it stand out from the body of the question text. The success of making the introductory text blue was varied. Respondents fell into three groups regarding this:

- + Thought the blue text stood out and therefore made a greater effort to read it
- + Did not differentiate between the blue and the black text
- + Ignored the blue text completely.

The latter group is clearly the most problematic as it resulted in respondents not attempting to read the instructions. It appeared to be the case that these respondents did not read the blue text as they thought it was not applicable to them. For example, when asked what he thought he should do on the first Physical Activity page one respondent answered:

'I should read the signs [words]. Not the blue signs, just the others.'
(male, year 3).

The group who ignored the blue text consisted solely of the youngest respondents (years 3-4). Although it is not possible to generalise across the entire population from our small sample there was no evidence that the youngest respondents found the blue text at all helpful. It is

therefore possible that this formatting should not be used for this age group. In contrast, Secondary School respondents tended to comment that they found the blue formatting helpful, to the extent they thought its use should be increased.

Headings

Headings were used throughout both versions of the online questionnaires to break the survey into sections and to attempt to clarify the difference between similar appearing questions. These headings appeared at the top of each page, and were formatted as white text on a black background to try to make them appear eye-catching. However, despite this respondents often failed to notice or read these headings. This could have been due to one (or a combination) of the following:

1. The respondents could not see the headings as they appeared off the screen (due to screen set-up).
2. The heading was overlooked as a result of 'banner blindness' i.e. where internet users ignore salient visual headers when using websites (Benway, 1998). Banner blindness is thought to result from individuals learning to associate garish headers (online) as being advertisements. There is some evidence to suggest that when individuals are focusing on a specific task online they, consciously or subconsciously, suppress cognitive processing of web-banners (Pagendam and Schaumberg, 2001).
3. Respondents were reducing cognitive effort by only reading the bare minimum they felt necessary to answer the question (see Chapter 4 on Answering Strategies for further information on Skimmer behaviour).
4. Respondents did not realise that the heading was part of the question.

As respondents frequently failed to notice the headings at first it seems prudent to take steps to make the

headings more prominent. However, looking at the possible reasons headings were ignored suggested doing so may prove fruitless, as even if the headings were more prominent there is still no guarantee that respondents will be able to see them if they do not fit on the screen. Likewise, one would expect 'Banner Blindness' to occur no matter how visually prominent the heading appears to be (Benway and Lane, 1998).

During Round Two the step was taken to ensure no survey-crucial information was contained solely within the headings. Therefore respondents ignoring headings did not have an impact on data quality with second versions of the online surveys. In general it is recommended headings should not be used as the sole or principle medium of communicating important survey information.

Layout

At both Rounds opinions varied on whether a large volume of text on the page was off-putting, with young children in particular (although not exclusively) finding large blocks of text disconcerting. If a respondent is intimidated by too much text on a page it is possible they would not attempt to read that page properly. For example, one respondent justified not reading the Physical Activity Questions:

'Not many people would want to read all that, would they?'
(male, year 7)

It is even possible that some respondents could be so put off by large amounts of text they would terminate the survey. It should be noted that during the main-stage research respondents may be more likely to terminate the survey than during the cognitive testing, as the presence of an interviewer can act as a deterrent to quitting prematurely. Care therefore needs to be taken to ensure that the amount of text on a page is kept to a level where it is not intimidating but still provides the respondents with adequate

information. Excessive amounts of text should be discouraged and where lots of information needs to be given it is best if it is broken up using formatting e.g. boxes, bullet points or appropriate pictures.

5.3 Recommendations

The following recommendations have been drawn as a result of the two rounds of cognitive testing and findings from the literature.

Recommendations for administration

- + Ask schools to conduct a 'test-run' prior to administering the survey to ensure browser settings allow the survey to be opened and that all text and images are displayed.
- + Give recommendations to schools asking them to disable auto-complete software and optimise display settings.
- + Recommend that pupils should use equipment they are familiar with when completing this survey.
- + Including a link to the website saved on the computer desktop is a way to save time and help prevent errors in typing out website address.
- + The youngest groups (years 3-4) are likely to need reassurance and help with reading throughout the survey if accurate data is to be collected.
- + With the older groups (years 5-11) teachers should be on hand to deal with queries. It is possible this age group will have a greater desire for privacy therefore teachers should be asked not to overtly watch their pupils' screens.
- + A paper copy of instructions can be provided to all pupils with key points of how to use the survey e.g. overview of survey structure and instructions on how to go back and forth to change answers if necessary.

- + Consider having a survey 'helpline' so that advice is available to teachers who experience technical difficulties or other queries about the survey process.

Recommendations for visual design

- + Make every effort to ensure each question fits on a single page, without the need for scrolling (although this cannot be guaranteed due to variation in individual respondents' computer settings).
- + Large blocks of text are off-putting and should be avoided wherever possible.
- + Use bold formatting to highlight key words.
- + Do not use 'inverted text' formatting to highlight important information.
- + Consider not using blue text in the years 3-4 version as it was not demonstrated to be helpful and could potentially be ignored.
- + Headings tend to be ignored so should not be used as the sole medium of transmitting important information or distinguishing between sections.
- + Pictures should be used to break up text, add colour and interest and assist respondents in interpreting the questions.
- + All pictures should be relevant to the question (this is particularly important for children who struggle with reading (Strugglers) and those who are unwilling to read all of the question text (Skimmers).
- + Where possible make pictures relevant to the target audience (i.e. include pictures of children in the children's version and young people in the young person's version).
- + Typing should be minimised or omitted as much as possible. This is especially important for the youngest group (years 3-4).

Recommendations for online features

- + Use automated checks to highlight where information has been omitted. If software allows, automated checks should highlight all errors found on a page at once not just highlight them one at a time.
- + If software allows consider making answer buttons larger for the youngest age group.
- + Make use of progress bars to demonstrate survey progression.
- + Make use of technical devices such as calendars, feed-forward data and expanding grids to personalise questions to the respondent.
- + Ensure key filter questions are as clear as possible to prevent escalation of errors as the survey progresses.

Part B: Questions about Sport and Physical Activity

6.0 Structure of Survey Instruments

This chapter provides an initial overview of the structure of the online instruments and details the changes that occurred between the two rounds of cognitive testing.

6.1 Changes to online instruments from Round One to Round Two

Numerous changes were made to the question order, structure and visual design of online instruments from Round One to Round Two. In contrast with the Round One instruments, the Round Two surveys:

- + Broke questions up into smaller components: this resulted in a larger number of questions in total
- + Made greater use of follow-up questions and routing
- + Included a new section of questions on swimming
- + Generally incorporated less text per page
- + Made greater use of pictures.

Please refer to Table 6-1 and Table 6-2 below for an overview of how the order and structure of the online instruments altered between the two rounds of cognitive testing.

The most important change in structure, in both the primary and secondary online instruments, occurred in the Sports Participation section. Compared with Round One, the Round Two Sports Participation section:

- + Started with a generic 'catch all' question to ascertain what Sports had been done in the last year, rather than asking about Sports done in different places separately
- + Broke questions up into smaller components, i.e. instead of asking about Sports done 'at lunchtime or after school', asking about 'lunchtime' and 'after school' Sports separately
- + Asked about participation in each Sport done (e.g. badminton/basketball) individually, rather than asking follow-up questions about Sport in general.

Please refer to Appendix D for pictorial illustrations of the changes made to the Sport Participation section from Round One to Round Two. Significant alterations were also made to the section on Physical Activity. These changes included:

- + Shortening the introductory text
- + Moving the introduction from a separate introductory page to the same page as the first Physical Activity question
- + Changing the mode of answering from open text boxes to a check list plus open boxes
- + Shortening the section by only asking about Physical Activity done in the last three days rather than the last five days.

Please refer to Appendix E for a pictorial illustration of the changes made in the Physical Activities section from Round One to Round Two.

Table 6-1
Overview of change in Primary Instrument's order and structure

Round One Sections	Round One Sub Sections	Round Two Sections	Round Two Sub Sections
1. Places to do Sport	Places to do Sport	1. Sports Participation	All Sports done
2. Sports Participation	P.E.		Where Sports done
	Lunchtime and after school (with adult help)		When (in school)
	Sports Clubs		Adult help
3. Physical Activity	Physical Activity		Frequency
			Other Sports
		2. Swimming	Swimming
		3. Physical Activity	Physical Activity
		4. Places to do Sport	Places to do Sport

Table 6-1
Overview of change in Secondary Instrument's order and structure

Round One Sections	Round One Sub Sections	Round Two Sections	Round Two Sub Sections
1. Sports Participation	P.E	1. Sports Recreation	All Sports done
	Extracurricular Sport		Where Sports done
	Sports Clubs		When (in school)
	Club Membership		Adult help
	Coaching		Frequency
2. Leisure Centres	Leisure Centres		Coaching
3. Physical Activity	Physical Activity		Other Sports
			Club Membership
		2. Swimming	Swimming
		3. Physical Activity	Physical Activity
		4. Leisure Centres	Leisure Centres

7.0 Interpretations of 'Sport', 'Physical Activity' and 'Exercise'

7.1 Understanding of key terms within the questionnaire: 'Sport', 'Physical Activity' and 'Exercise'

Key terms were used throughout the questionnaire. Consistent understanding of these terms between respondents is crucial to the success of the survey. Therefore, respondents at both rounds were asked, during probing, how they understood the terms 'Sport', 'Physical Activity' and 'Exercise'. Respondents were probed more fully about these distinctions at the first round of testing as it was considered unlikely that respondents' interpretations at the second round would differ significantly. The findings on understanding of these terms have been brought together in this chapter since they cut across all sections of the questionnaire.

Only 'Sport' and 'Physical Activity' were terms included within the Round One questionnaires but it was felt necessary to gain an understanding of how respondents interpreted all three terms to discern which wording was most appropriate. The term 'Exercise' was used within the original PAPI questionnaire and removed for the cognitive testing phase during the desk review. The earlier questions about participating in Sports use the wording 'Sports and Physical Activity'. The later questions about Physical Activity used only the term 'Physical Activity'.

At both rounds interpretations of all three terms overlapped to some degree, with no clear pattern emerging at first glance. Any sort of activity that involves movement was a definition applied to all three terms. When asked to define Sport respondents used the term Exercise itself and this also happened with the term Physical Activity.

'[Sport is] like, to keep you healthy and gives you energy and it's like doing skipping and jumping.'
(female, year 3)

'[Physical Activity is] having fun and playing games.'
(female, year 3)

Under closer examination it became evident that there were some distinctions between Sport and the other two categories but far more overlap between Physical Activity and Exercise. As intended, Physical Activity and Exercise were understood as involving more than just Sport. Sport was seen as being an organised or formal activity, as it involves playing games with rules. Physical Activity and Exercise were more to do with every day life, involving movement and staying healthy, although this pattern was not completely clear across all respondents.

'[Exercise is] keeping fit and making sure don't get overweight and keeping your body healthy and eating healthy things. Sports is not very different, they go together.'
(female, year 3).

The table on the next page gives an overview of how respondents described Sport, Physical Activity and Exercise and where these definitions overlapped:

7.1.1 Difficulties understanding Physical Activity

Importantly, some of the younger children at both rounds could not read the words 'Physical Activity' or 'Exercise'. Where children did not understand the terminology they relied heavily on the examples, and therefore these were very important in enabling them to answer the questions in this section. This difficulty also emphasises the need for the Struggler group to have adult assistance available to them when completing the questionnaire (see section 4.4). Other respondents also sometimes found it difficult to read these terms. Primary school respondents were less likely to have heard of the term 'Physical Activity' although some were able to describe it after reading the introduction and examples in the Physical Activity section.

Table 7-1
Definitions of Sport, Physical Activity and Exercise

Activity	Sport	Physical Activity	Exercise
Any activity where you move about/move your body/all the time	✓	✓	✓
Running around/jumping around	✓	✓	✓
Keeping fit/staying healthy	✓	✓	✓
Team or individual games	✓	✓	
Physical Games (ball games, football, tennis, rugby, throwing and catching)	✓		
Contact Sports/competitive games (not dance)	✓		
Weightlifting		✓	
Dance		✓	
Walking around/walking the dog		✓	✓
Going to the gym		✓	✓
Housework		✓	✓
Everyday life			✓

Aside from this problem children appeared to have an understanding of what Physical Activity was. In one case however, a respondent misunderstood Physical Activity altogether. This respondent defined Physical Activity as being:

'...tough things like roaring and running into people.'
(male, year 3)

This respondent said he had not done any Physical Activity i.e. he answered 'No' to Q10a on all five days, when in actual fact he had done lots and was able to describe all of these activities to the interviewer. The reasons for this error could have been (a) his misinterpretation of 'Physical Activity' or (b) the use of a satifying technique (Krosnick, 1991) i.e. he took the shortest route possible to complete the last few questions as it had become an overly burdensome task (see section 3.1.3). Following Round One, due to the confusion younger respondents experienced with the term 'Physical Activity', we recommended that only the term 'Sport' be used at the Sports Participation questions and 'Physical Activity or Exercise' be used at the Physical Activity questions.

7.1.2 Warm and slightly out of breath

(Primary Schools (Round One): Q10a, Q10b and Q10c) (Secondary Schools (Round One): Q13a, Q13b and Q13c) At both rounds a definition of Physical Activity was given. At Round One the definition was: 'By 'Physical Activity' we mean ANY activity that involves movement such as walking, cycling, housework and gardening as well as Sport. It should make you feel warm or at least slightly out of breath.' Respondents were asked to explain what they understood by feeling 'warm or at least slightly out of breath'. Descriptions included:

- + Heart beating fast
- + Get warmer and start to sweat
- + Using energy
- + Needing a drink of water
- + Making you feel 'worn out'.

'...felt like that when running the 800m yesterday. Also walking or cycling up a steep hill.'
(female, year 6)

'...getting a bit tired and feeling hot and bothered.'
(male, year 4)

Further examples of these feelings included: running up the stairs, playing with the dog and doing things in the warm weather. This last example is potentially concerning as it may be that respondents associated 'feeling warm' with being warm outdoors in the sunshine.

For Round Two the definition was shortened considerably to 'Physical Activity includes **anything** that involves movement'. For more detail about this see section 9.3.2.

8.0 Questions about Sports Participation

This chapter will focus on questions (within both questionnaires) which asked about Sports Participation. These questions formed the main part of the interview. Findings from both rounds of cognitive testing are presented.

8.1 Chapter structure

This chapter will include the following:

- + An overview of the questions under consideration; first we outline the questions asked at Round One (section 8.2) and second, we describe in brief the changes that were made to the structure for the Round Two questionnaire (section 8.3);
- + Approaches respondents used when filling in the main long list of activities (section 8.4);
- + Respondents' comprehension of key terms used within the Sports Participation section. Where findings relate to the same topic we have included findings from both rounds of cognitive testing together wherever possible rather than following the separate structures of the two questionnaires (section 8.6);
- + Respondents' understanding of the different answer categories used in these questions (section 8.7);
- + How Round Two respondents approached the follow up questions about 'Where' and 'When' they took part in Sports selected at the initial long list (section 8.8);

Table 8-1
Questions Under Consideration – Sports Participation

	P.E. and Games	Lunchtime/ After school activities	Sports Clubs	Coaching
Primary				
Ever do	Q2	Q4	Q7	
Which activities (list)	Q3	Q5	Q8	
How often activities		Q6	Q9	
Secondary				
Ever do	Q1	Q3	Q6	Q10
Which activities (list)	Q2	Q4	Q7	Q11
How often activities		Q5	Q8	
Whether member of Sports Club			Q9	

- + How respondents approached the questions about frequency of participation in Sports (section 8.9); and
- + Recommendations for revisions to these questions (section 8.11).

8.2 Questions under consideration – Round One

Table 8-1 displays the structure of the Round One questions relating to Sports Participation. The following points give a brief overview of the structure of this section of the Round One cognitive questionnaire.

1. A series of questions about sports participation were asked separately for three (primary) or four (secondary) different types of settings:

(a) *P.E. and games*

(b) *Lunchtime and after school activities*

(c) *Activities with Sports Clubs*

(d) *Secondary school respondents were asked additional questions about Coaching.*

2. For each setting respondents were asked about the Sports they take part in as a series of questions. Respondents were asked:

a) *whether they participate in Sport*

(b) *if so, they were presented with a long list of different Sports and asked to select the ones they had taken part in*

(c) *for Extra Curricular activities (i.e. at lunchtime, after school or with a Sports club), respondents were asked to give an indication of **how often** they participated in Sports*

(d) *Secondary school respondents were asked an additional question regarding whether or not they were a member of a Sports Club*

For specific question wording please refer to Appendices F and G.

8.3 Changes to the structure of the Sports Participation questions

As a result of the recommendations following Round One the task was completely restructured and cognitively tested again at Round Two. Below is a broad outline of the questions that formed this section following the revisions we recommended.

The underlying crucial reason for the overhaul in structure was that respondents were confused between the three main batteries of questions (Sports in P.E lesson, Extra Curricular Sports and Sports with a club). Thus, the structure was altered to first ask a 'catch-

all' question upfront about **all** Sports done during the school year and second following up with a series of questions to find where and when these Sports were carried out and how often.

8.3.1 Step by step overview of the structure – Round Two

In Round Two the interview structure was as follows. Firstly, respondents were asked to choose from two lists the **Sports they had participated** in during the previous school year. Next there followed a series of **follow up questions for each Sport** they had selected. These questions asked:

- + **Where** they had participated in each Sport (at school, at a Sports Club or elsewhere).
- + **When** in school they had participated (in P.E. lessons, at lunchtime or after school. Secondary school respondents could also select 'at the weekend').
- + Respondents who had selected lunchtime, after school (or at the weekend) were asked **whether an adult had helped** (in order to identify structured formal activities as opposed to informal ones).
- + Respondents who said an adult had helped were asked **how frequently** they participated in the Sport. This frequency question was also asked of respondents who had selected the 'Sports Club' option earlier on.
- + Secondary school pupils were asked whether they had received **Coaching** in each particular Sport.

Next both sets of respondents were asked if they had participated in any **other Sports** and finally secondary school respondents were asked if they were a **member of a Sports Club**.

For specific question wording please refer to Appendices H and I. The changes to the structure between rounds of cognitive testing are explained in detail in Chapter 6. Additionally, two diagrams can be found in Appendix D depicting the

differences between the structure and routing of this set of questions. As the changes were fairly complex we **strongly recommend** that the reader refer to these diagrams while reading this chapter.

8.4 How pupils approached filling in the list of activities

8.4.1 Findings from Round One

(Primary Schools (Round One): Q3, Q5 and Q8)

(Secondary Schools (Round Two): Q2, Q4, Q7 and Q11)

At Round One, after having answered a filter question for whether they had participated in Sports and activities within a given setting, respondents were presented with a list of numerous Sporting activities. Respondents were then required to indicate whether they had participated in that activity (at the time under consideration) by selecting either Yes or No for each activity. Separate versions of this long list were designed for primary and secondary schools. Secondary school pupils were also required to fill in the list thinking about Sports that they had received Coaching in.

Difficulty in differentiating the separate questions

At Round One, respondents being unable to differentiate between the three or four separate settings when thinking about sports participation was a common problem. Instead they simply ticked anything that they had done whether in school, outside of school or in their free time.

Respondents expressed surprise to the interviewer the first time they saw what they felt to be the same question appear again and would either re-read the question or set about filling it in again. Where this happened respondents would become irritated and thus fill in each repetition more quickly leading to activities being missed or ticked in error. Some examples of the comments Round One respondents gave are:

'I've done this one. I'll do it again.'
(female, year 3)

'Oh back to this again...it went backwards. If it asked you twice, then that's annoying, they're trying to catch you out, to see if you are lying.'
(male, year 7)

This is not to say that all respondents were unable to complete the task correctly. Some understood what was required and were able to complete each set of questions effectively and this was not confined to the older respondents. There was evidence of some of the youngest respondents completing this task in the way intended (years 3-6).

8.4.2 Findings from Round Two

(Primary Schools (Round Two): Q1-3)
(Secondary Schools (Round Two): Q1-2)

At Round Two, the first task within the Sports Participation section was to work through the long list of different Sports (across two or three screens) selecting 'Yes' or 'No' to indicate whether they had participated in each activity during the previous school year. Importantly respondents were not asked to fill in separate versions of this list depending on where they had participated in the Sport (as at Round One). This one initial list included Sports at school or outside of school, formally or informally etc. Separate versions of these lists were designed for primary and secondary schools.

Understanding the task

Respondents appeared to understand the task fairly well and for some there were no problems at all – a range of activities were selected varying from those done at school, swimming at the local pool and playing in the park with friends.

Problems occurred for Skimmers and Strugglers who either (a) chose not to read the question to find out what they were meant to do and instead simply guessed (Skimmers) or were (b) unable to read the question (Strugglers). In some

cases Strugglers asked the interviewer to help them read the question. The main area of confusion (for respondents in both primary and secondary schools) surrounded **what to include or exclude**.

Respondents questioned whether they should:

- + Restrict thinking to activities done **at school** (because (a) the question referred to the school year and (b) it was being completed at school)
- + Restrict thinking to activities done **outside school** (because it was thought that we should know which activities form part of the school curriculum)
- + Include **informal** activities (e.g. playing outside the house or with friends in the park)
- + Include **irregular** activities or activities they had only done once.

'No, I haven't done any of these, shall I click No? I played basketball outside my house, shall I click Yes or not?'
(female, year 5)

'This is in school, isn't it?'
(female, year 6)

Where confusion arose some respondents were able to 'reason this out' or overcome their confusion individually. However others remained confused (e.g. commented that it was strange to see horse riding and skateboarding on the list as they do not fit with activities done in school).

Other 'Struggler' problems

Other problems restricted to Strugglers were:

- + Filling in the list thinking about what they like doing (rather than what they did), one young respondent said
'...What sports I like to do.'
(male, year 3)
- + Including sports played on a computer rather than in 'real-life' (e.g. Wii Sports).

'Knock-on' problems relating to filtering

Confusion over these questions meant that problems arose later on if these important filter questions were incorrectly answered (as the follow up questions depended on correct answers being given). This led to respondents feeling awkward at the point they realised they had made a mistake earlier on. The main activity that tended to be missed was swimming. It is clear that this question must be explicitly clear that respondents should include **all** activities, not just those they have done at school.

Filtering problems could occur due to (a) the respondent making a mistake in selecting a box (i.e. just clicking on the wrong code in error) or (b) a lack of motivation to read the question fully and answer adequately and thus in cases respondents would just click on any answer to get through the questionnaire. Therefore, both of these problems need to be resolved. The first problem could be resolved through improving the internet tool to reduce or eliminate these kinds of mistakes. The second problem is trickier and will require careful thought regarding ways to shorten the question wording, make questions clearer, easier to fill in, or more interesting to this age group.

8.5 Strategies for filling in the list of activities

Strategies respondents employed in filling in the long list of Sports were the same at both rounds of cognitive testing:

- + Working through the list ticking 'Yes' or 'No' for each one separately
- + Working through the list selecting all 'Yes' items then returning and selecting the 'No' items
- + Selecting 'Yes' to all relevant Sports at the first page, attempting to move to the following page (by clicking on the 'Next' button) and being confronted by the error message. On the whole, respondents were able to

quickly understand what this error message meant and how to avoid it appearing again (i.e. selecting 'No' where applicable). Some of the younger respondents were flummoxed by this error message and did not know how to resolve it without the interviewer's help. At Round Two this problem was confined to the youngest age group (years 3-4) and to Strugglers.

8.6 Comprehension of key terms used within the Sports Participation questions

This section details findings on respondents' understanding of key terms used within the Sports Participation questions. The structure of this section follows the structure of the Round One questionnaire as it was built around four main concepts (P.E. and Games, Lunchtime and After School activities, Sports Clubs and Coaching). Where Round Two respondents were probed on their understanding of these key terms findings are included.

8.6.1 Understanding of P.E. and Games Findings from Round One

(Primary Schools (Round One): Q2 and Q3)
(Secondary Schools (Round One): Q1 and Q2)

Round One respondents from both primary and secondary schools were asked to answer questions about the kinds of activities they had undertaken within P.E. and Games lessons at school. This task was divided into two questions. The first question asked whether or not they take part in P.E. or Games lessons at school. The second question asked respondents to choose which Sports they had done in these lessons by selecting Sports from a long list.

Respondents from both primary and secondary schools had little difficulty answering the first question. All had taken part in P.E. or Games lessons at school and were able to recall fairly easily what they had done within these lessons.

Two primary school respondents experienced difficulty when answering. A Year 6 respondent mistakenly thought the question asked whether she liked P.E. lessons (see section 8.4.2) and a Year 4 respondent struggled throughout the questionnaire due to her inability to read many of the words. This respondent concentrated on the pictures and tended to answer in relation to those, demonstrating how important the pictures are for those children that struggle to read all of the words. For this first question she thought she was being asked whether she played bat and ball:

'I looked at the bat and balls and knew I didn't do that.'
(female, year 4)

It was clear following Round One that younger respondents in particular relied heavily on the pictures, using them to interpret the question, and found them helpful in terms of recall (see section 5.2.5). Therefore we recommended that more relevant pictures be included throughout the Sports Participation questions as an aid to younger children in particular. Additionally due to the difficulty younger respondents experienced in reading some of the words within the questionnaire we recommended using as 'easy' language as possible, removing long sentences and technical words.

The only activity that arose that was not on the list was using the apparatus in the school gym. Where things not on the list arose these tended to be Sports done longer ago or that were less common.

Some respondents thought of P.E. and Games lessons as being the same thing. To others they were different. As a result of this difference between P.E. lessons and Games it was recommended, following Round One, that P.E. lessons be referred to alone (i.e. Games was dropped).

Findings from Round Two

(Primary Schools (Round Two): Q4-5)
(Secondary Schools (Round Two): Q3-4)

As mentioned, the Round Two questionnaire differed significantly in terms of structure from the Round One questionnaire. Instead of the long list of Sports appearing separately for each different place the respondent may have taken part in them, respondents were asked to select from one long list all Sports they participated in. Then, specific follow ups relating to 'Where' and 'When' they played each Sport were asked. Findings from these follow up questions are detailed in section 8.8.

The wording 'or Games' was dropped from the Round Two questionnaire and instead respondents were only asked about 'P.E. lessons'. Round Two respondents were able to understand and describe P.E. lessons; below is a brief overview of how they were interpreted:

- + In school time
- + In lesson time
- + A 'normal lesson'
- + Physical education
- + With a teacher

8.6.2 Understanding of Lunchtime and After School Activities (or Extracurricular Activities)

Findings from Round One

(Primary Schools (Round One): Q4, Q5 and Q6)

(Secondary Schools (Round One): Q3, Q4 and Q5)

Round One respondents were next asked whether they took part in lunchtime or after school activities at school with the help of an adult. If they answered 'Yes' they would be taken to the same list of activities and asked to choose which ones they took part in.

During probing Round One respondents were asked about their understanding of lunchtime and after school activities. Respondents were mixed in their understanding of this concept. Some understood the distinctions and some were confused about how this question differed from the previous ones. There were four main concepts that respondents needed to understand regarding extracurricular activities at this question to enable them to answer it as intended. These were that the activity is: (1) organised by the school, (2) carried out outside of school lessons, (3) either at lunchtime, (4) or after school.

Respondents within both primary and secondary schools generally fell within three categories:

- + Those that understood **all four** distinctions
- + Those that understood a **mixture** of distinctions (e.g. they thought about all activities in school including lessons and those after school or they considered all activities after school including those not organised by the school)
- + Those that did not distinguish at all and included all activities they had done regardless of where.

Findings from Round Two

(Primary Schools (Round Two): Q4-5)
(Secondary Schools (Round Two): Q3-4)

Round Two respondents were asked about lunchtime and after school activities separately rather than combining them within one question. Below is a brief overview of how Round Two respondents interpreted both:

8.6.3 Understanding of 'adult help'

Findings from Round One

(Primary Schools (Round One): Q4, Q5 and Q6)

Table 8-2
Understanding of 'Lunchtime' and 'After School' answer categories

At Lunchtime	After School (at school)
During break times in school yard/ playground	Sports Clubs at school (e.g. gymnastics)
Practice at lunchtime (structured)	Playing for school team (e.g. hockey, football)
Playing with friends on the school field (not structured)	Competing with other schools or just attending practice
	When other children have gone home
	Going on school trips

The wording 'with the help of an adult' was included within the Extra Curricular question (detailed above) for the Round One primary school questionnaire only. The inclusion of this wording formed an attempt to help respondents refine the kinds of activities to include at this question. These children were probed about their understanding of this term. Primary school children understood this term in the way intended, only considering those adults that helped them learn or understand the rules of the activity. '

A teacher or the cricket coach, who comes into school to help us with activities.'
(male, year 6)

Findings from Round Two

(Primary Schools (Round Two): Q6)
(Secondary Schools (Round Two): Q5)

The structure at Round Two differed from Round One; respondents were asked separate follow up questions about whether an adult had helped with each individual Sport they said they had taken part in at lunchtime or after school. This ascertained whether or not the Sport was a 'formal' or structured activity (rather than a kick around in the playground or in the garden at home). At Round Two secondary school respondents were also asked these questions. Please refer to Appendix D for diagrams which show the differences

between the cognitive questionnaires used at Rounds One and Two.

Secondary school respondents grasped the meaning behind this question without problems. Examples of adults were: dinner ladies, teachers, parents and grandparents and visitors to the school.

'Sometimes parents would come to school to help, run and organise and even coach with football tournaments.'
(female, year 7)

However, some of the younger primary school respondents experienced a few issues. Problems experienced at this question were:

- + **Inability to understand what was being asked:** some of the younger respondents did not understand what was meant by 'help from an adult'. In these cases assistance from the interviewer was provided. This meant the concept was then fully understood but only after help was given, not from reading the screen independently. One respondent was unable to read the word 'adult'.
- + **Unwillingness to read the question:** Again, respondents began to feel tired at this question and some were unwilling to read the question properly, simply skimming over it to get the 'gist'. The question wording was described as being too long.

+ Restricting thought: There was some confusion surrounding whether to consider all adults or only teachers (as the question focused on activities at school). Also some of the younger respondents did not consider lesson times, restricting their thought to 'fun' Sports, including computer games.

8.6.4 Understanding of Sports Clubs

Findings from Round One

(Primary Schools (Round One): Q7, Q8 and Q9) (Secondary Schools (Round One): Q6, Q7 and Q8)

Round One respondents were next asked the same set of three questions about Sports Clubs outside of school (i.e. if they did Sport with clubs outside of school, and if so what Sports they did and how often). All of the secondary school children answered 'Yes' to the initial question, indicating that they were in Sports Clubs outside of school. There was a more mixed response within the primary school children.

Respondents fell into two distinct categories when answering this question.

- + Respondents who were able to distinguish that this question was asking whether they were involved in Sports Clubs outside of school, regardless of whether they actually belonged to such a club.
- + Respondents who were unable to distinguish this question from the ones that preceded it. There were two sub-groups within this category:
 - (a) those that understood that the question related to Sports Clubs but included school teams and clubs they were in; and
 - (b) those that missed the point of the question altogether and included all kinds of Sport they did (whether in or outside of school).

This second sub-group is perhaps the most concerning. In part this confusion arose due to reading problems. One

respondent took 'outside school' to mean physically outside school (i.e. in the playground or on the playing field).

Findings from Round Two

(Primary Schools (Round Two): Q4) (Secondary Schools (Round Two): Q3)

As mentioned throughout this section, the structure at Round Two differed from Round One; respondents were asked as a separate follow up question about where they had taken part in each individual Sport they had selected from the initial long list. Below is a brief overview of how respondents interpreted 'Sports Clubs (not at school)':

- + Somewhere children go to learn about sports
- + Clubs outside of school
- + Anywhere not connected to the school
- + Leisure Centre (not necessarily a team)
- + Taught by teachers (in or outside of school)
- + Some inclusion of computer games
- + Don't know what a Sports Club is (this problem was restricted to Strugglers).

8.6.5 Understanding of Sports Club Membership (Secondary only)

(Secondary Schools (Round One): Q9) (Secondary Schools (Round Two): Q9)

At both rounds Secondary school respondents were asked a further follow up question to find whether they were members of Sports Clubs. By the time respondents arrived at this question they had managed to 'unpack' the different concepts and appeared to have a clearer understanding of 'Sports Clubs' and what the question was getting at. Thus, respondents were able to answer this question and could give examples of the types of clubs that could be included here. For some respondents there was a degree of overlap between Sports Clubs in school and those outside of school for some respondents and they could not differentiate between the two. This is

perhaps understandable as one can see how respondents would interpret this to include clubs in school: they did attend a club and that club was organised for one main Sport (e.g. the school gymnastics club).

8.6.6 Understanding of Coaching (Secondary only)

Findings from Round One

(Secondary Schools (Round One): Q10 and Q11) (Secondary Schools (Round Two): Q7)

At Round One, Secondary school pupils were asked two questions about Coaching: whether they'd received any Coaching and, if so, which of the Sports on the same long list (used for previous questions) they had been coached in. At Round Two, they were asked, for each Sport they had done with a Sports Club outside school or somewhere else, whether they had received Coaching in it. At both rounds respondents appeared to understand the term Coaching and were able to provide definitions on it and explain how it differed from teaching. The main characteristics of Coaching were:

- + People who provide Coaching have their own, sometimes professional, background in that Sport
- + Coaching often takes place on a one to one basis
- + Coaching is more 'serious' training, it is not about teaching
- + Coaching is about improving ability, skill and technique
- + Coaching is different from an adult 'helping'.

Despite this, at Round Two some problems did emerge concerning the term 'Coaching'. Similarly to earlier questions there was confusion regarding whether this question referred to activities in school or outside of school (despite the text in brackets). It filters from the much earlier questions at the beginning, asking whether the respondent plays each Sport outside of

school with a club or elsewhere and so it may be that it is too far removed from these initial questions to relate back to them in the respondent's mind. There was also confusion in cases where the school had invited someone from outside school to come in and coach the school team.

'Does this mean someone coming in from [name of place] and Coaching us or does it mean one of the teachers?'
(female, year 9)

This question appeared if the respondent ticked 'Somewhere else' at the initial questions (Q1-2). Despite the intention for the question to appear if this option had been selected, in cases respondents thought it had come up incorrectly (e.g. if they had not played in a Sports Club, rather in the park with their friends). This in turn made respondents feel uncomfortable, as though they had made a mistake earlier on. Finally respondents commented here that the questions were becoming boring and repetitive.

8.7 Understanding of answer categories

The answer categories within both questionnaires appeared to be fairly well understood. Where problems occurred these tended to be raised by just one or two respondents rather than being more systematically misunderstood.

8.7.1 Primary school answer categories

(Primary Schools (Round One): Q3, Q5 and Q8)

(Primary Schools (Round Two): Q1-3)

At Round One, with the exception of Judo/ Martial Arts, every answer category was ticked at least once across the three times it appeared. At Round Two, all answer categories were selected at least once. Most of the answer categories were well understood. The most problematic answer category was 'Aerobics' at Round One. Some of the children did not understand this category, either because they could not read it or because they had not heard of it.

'Acrobatics, whatever!'
(male, year 3)

What does aerobics mean? I've heard the name...something like yoga I think.'
(male, year 6)

Younger respondents mistook the word for 'acrobatics'. Another respondent reasoned that if she had done it she would know it, but then again, she could have done it under a different name. A further respondent described it as 'fitness dancing' and suggested it could be included under Dance. Due to this confusion we recommended, following Round One, that it be deleted. Other categories questioned were: what **Short tennis** was and how it differed from ordinary tennis. One respondent misunderstood **Cross Country running** as meaning one would literally run across the country. Another respondent commented that he did not think anyone would learn Golf at primary school. **Gymnastics** was confused with 'games lessons' in general by one respondent. One respondent commented that the activity 'shooting' would fall into the **Athletics** category, showing he was not clear on what athletics involves. One of the younger respondents had not heard of **Badminton**. This respondent was able to reason that if he did not know what it was he had probably not played it. **Martial Arts**, **Cross-Country running** and **Bowls** were all Sports respondents said they had not heard of or were unsure what they were.

8.7.2 Secondary school answer categories

(Secondary Schools (Round One): Q2, Q4, Q7 and Q11)

(Secondary Schools (Round Two): Q1-2)

At Round One, all secondary school answer categories were chosen at least once with the exception of Volleyball. At Round Two activities not selected by secondary school respondents were: Squash, Volleyball, Golf, Horse riding and Street sports. Categories that respondents

had problems with or queried were Circuit training and **Street sports**. One respondent said **Circuit training** sounded like 'go-carting'. Street sports was not clear, for instance one respondent asked if it included football out on the street and another asked if it meant break dancing. Another activity respondents mentioned was HRE or Health Related Exercise. This activity can include circuit training, weight lifting, squats, sit-ups and press-ups. Respondents were not sure where this should sit; it was not felt to fit under fitness classes.

One respondent deliberated over whether to select **Martial Arts** as someone had come into school just once to show them how to do this, after some consideration she decided to include it. Another respondent was unable to read and understand the word **Squash**.

At Round Two a more significant problem that arose was the distinction between Circuit training, Fitness and Aerobics. These appeared to be quite muddled in respondents' minds and were defined differently leading to inconsistent answers. There also appeared to be an overlap between fitness and circuit training.

'They're nearly the same, in circuit training we do the same sorts of things like we do in fitness training, in the gym, with apparatus, running, weights, lifting benches and that.'
(female, year 7)

A further problem with these categories was that activities such as sit ups and warming up could be included both under fitness and the Sport itself (e.g. warming up before football), leading to double-counting.

Rugby League and Rugby Union

For the secondary school questionnaire 'Rugby' was divided into these two categories and respondents were asked if they could explain the difference (or whether there was confusion between the two). There was some confusion between the two types of rugby and

it was recommended that they are not included as separate categories in the final questionnaire. For more detail on these findings please see the Round Two report.

8.7.3 Answer category groupings

(Primary Schools (Round One): Q3, Q5 and Q8)

(Secondary Schools (Round Two): Q2, Q4, Q7 and Q11)

(Primary Schools (Round Two): Q1-3)

(Secondary Schools (Round Two): Q1-2)

The answer categories were organised into groups following the desk review and displayed as such on the screen. Following Round One, the categories were refined for Round Two following respondent comments that in places they were illogical or overlapping. Respondents at both rounds fell into three groups in relation to the grouping of the answer categories:

- + Did not notice groupings at all
- + Noticed the groupings and found them helpful
- + Noticed the groupings but did not find them helpful.

Those respondents that noticed the groupings made both positive and negative comments. Positive comments were that dividing the activities into separate groups was helpful and worked better than a long list would do as it is easier to read through all of the activities. Respondents also felt the titles to be useful as they helped pinpoint activities and enabled them to think about them separately. At Round Two respondents said they found the indoor and outdoor activity split helpful as were the ball games and girls' and boys' Sports being placed together.

Negative comments related mainly to how the activities had been divided up rather than their presentation. At Round One respondents felt some of the

categories to overlap and questioned how indoor and outdoor games had been divided up (particularly basketball, netball and bowls). They also pointed out the overlap between team and non-team Sports (for instance Golf is not necessarily a team game and tennis could be as you can play as a 'two people team'). Swimming sitting alone was also questioned and respondents thought this could be an indoor or outdoor Sport, and both team or non-team. One respondent suggested indoor games and indoor Sports could be combined as could the corresponding outdoor categories. Comments relating to the presentation of the list were that the dark and pale green lines help to separate the items but you have to look closely, there is a lot on the page and the text is quite small.

'The coloured lines were all right, they stand out so you can't get mixed up.'
(female, year 10)

8.7.4 Outdoor adventure activities

Primary school respondents were asked whether they had participated in outdoor adventure activities.

Findings from Round One

(Primary Schools (Round One): Q3, Q5 and Q8)

At Round One this option was part of the long list of Sports. This category was chosen by some respondents but there was some overlap between this and the 'Other Sports' category. When asked what kinds of activities these were, respondents gave examples of: adventure playgrounds, an outdoor centre, rock climbing and canoeing. One respondent queried whether 'Clan Glen' should be included within this category or the 'Other' category (the respondent described Clan Glen as being where students go away for a few days with the school to do outdoor activities such as rock climbing and canoeing). Other respondents were not sure what was meant by 'outdoor adventure activities'.

Due to this confusion, following Round One we recommended that 'Outdoor Adventure Activities' be asked as a separate question (i.e. rather than appearing at the bottom of the long list) and that examples of these types of activities be included.

Findings from Round Two

(Primary Schools (Round Two): Q3)

At Round Two this was asked as a separate question so that a picture could be included and so that it would not be confused with other types of Sport. In practice, only one sample member selected this Sport.

There appeared to be a fair degree of confusion surrounding this category. Respondents understanding and approaches fell into the following five categories:

- + Respondents who said they **did not know** what 'outdoor adventure activities were' and so did not understand what the question was asking
'I didn't really understand what it meant'
(female, year 5)
- + Those who **misunderstood** it to simply mean 'outdoor activities' (e.g. football or riding a scooter)
- + Those who restricted their thinking to the white water rafting activity in the picture or to other **water Sports** (this was a particular problem for Strugglers who had trouble reading the question and example wording)
- + Those who thought adventure activities could also be **indoor Sports** and questioned this category (e.g. wall climbing)
- + Those who **understood** that this referred to any Sport that had to be done outdoors like water Sports or climbing (e.g. surfing or 'orienteeing' with the school [male, year 4]).

This question was particularly difficult for those respondents who had trouble reading as the word 'adventure' caused problems along with the wording in the example sentence (for example going to adventure playgrounds, climbing and canoeing). This meant that respondents ignored the words they could not read and either misinterpreted the question altogether or decided to just tick No and move on.

During retrospective probing, respondents were asked about their understanding of 'outdoor adventure activities'. The range of responses showed (a) that the interpretation varied considerably between respondents and (b) it was unlikely that this term was well understood across primary school sample members.

8.7.5 'Other Sports'

Respondents were asked whether they had participated in any other Sports than those named within the questionnaire.

Findings from Round One

Other Sports – Primary Schools (Primary Schools (Round One): Q3, Q5 and Q8)

At Round One this option was part of the long list of Sports for both primary and secondary questionnaires. Primary respondents were asked about 'any other Sports' and asked to type them into a box on the screen below this category. Examples of other Sports primary respondents recorded were: Relay, 400m sprint, Non-stop cricket (which was felt to be different from Cricket) and Climbing. When asked for further examples during probing pupils thought of Snooker, Pool, Roller-hockey, Volleyball and Lacrosse

Other land-based and water-based pursuits – Secondary schools

(Secondary Schools (Round One): Q2, Q4, Q7 and Q11)

Secondary respondents were presented with two 'other' categories: land-based and water-based pursuits. Respondents were not altogether clear what these

Table 8-3
Other Sports

Primary	Secondary
Throwing and catching balls	Morris dancing
Skiping	Tag rugby
Riding a scooter	Rollerblading
Boccia (like French boules)	Snowboarding
Trampolining	Parkour (free running)

two categories meant. In some instances respondents thought land-based meant the type of surface a game is played on (e.g. football pitch, tennis court, grass and astro turf) and some respondents recorded these at this category. Other activities recorded were: Football pitch, Tennis court, Skiing, Motorcross, Archery and Swimming with Dolphins. The word 'pursuits' itself was not clear to this age group. One respondent questioned whether it was referring to activities outside of school. Due to this confusion we recommended, following Round One, that these two categories be deleted. When asked to give examples of Other land-based pursuits respondents mentioned: Rock climbing, Trekking, Abseiling, Orienteering, Army training and Boxing. Examples of Other water-based pursuits were: Water-polo, Canoeing, Kayaking, Sailing, Water skiing, Diving, Life- saving and Rowing.

Findings from Round Two

(Primary Schools (Round Two): Q8)

(Secondary Schools (Round Two): Q8)

At Round Two respondents were asked as a separate follow up question whether they had done any other Sports (in or outside of school) that had not already been mentioned in the questionnaire. The Sports in Table 8-3 were given.

8.8 Findings from the 'where and when' follow ups – Round Two

(Primary Schools (Round Two): Q4-5)

(Secondary Schools (Round Two): Q3-4)

As explained earlier, the structure of the Round Two cognitive questionnaire differed considerably to that used at Round One. Round Two respondents were not expected to differentiate between where they had taken part in different Sporting activities when working through the 'long list' of Sports and thus at Round Two the pinning down of exactly where respondents had taken part in each Sport was achieved through a series of follow up questions (termed 'Where' and 'When'). Please refer to Appendix D for diagrams which show the differences between the cognitive questionnaires used at Rounds One and Two.

8.8.1 Understanding of initial 'where' follow ups

Following the initial 'catch-all' questions, at which the respondent recorded the Sports they had participated in, a number of follow up questions were asked. The first of these focused on determining where the respondent had taken part in these Sports; at school, at a Sports Club (not at school) or somewhere else.

Primary school respondents experienced a wider set of problems at this question than secondary respondents. The main problem which emerged centred on **inconsistency** between the answers given

at the initial 'catch-all' questions and this follow up question; this inconsistency was indicated by respondents selecting 'No' at all three answer categories or stating that in actual fact they had not played that Sport during the previous school year. It is likely that the problem came about for three main reasons:

- + Confusion surrounding whether to **include or exclude** Sports in and outside of school)
- + Selecting the **wrong code by mistake** at the earlier questions
- + Choosing activities respondents **liked rather than those they had done** (as outlined earlier this problem was restricted to Strugglers and the youngest age group (years 3-4), see section 8.4.2 for more detail).

This inconsistency problem was experienced by both primary and secondary school respondents and demonstrated the knock-on effects of errors at the initial question (showing just how important it is to get those first answers right).

A subsequent problem emerged following this situation, where the respondent felt uncomfortable as it had become apparent to them that they had made a mistake. Secondary school children grasped more easily that a mistake had been made earlier on and commented that the initial questions (Q1-2) had not been clear enough (in terms of what to include or exclude) thus leading to this problem.

'It's a bit confusing in my brain.'
(female, year 5)

Respondents were asked, during probing, to explain what they understood by each of the different answer categories. Table 8-4 summarises how respondents described each one.

At school

As the above table shows, respondents understood that the first category 'At school' included all types of activity at

Table 8-4
Understanding of 'where' answers categories

At school	Sports Clubs (not at school)	Somewhere else (not at school)
P.E. lessons	Somewhere children go to learn about Sports	At home
Break times	Clubs outside of school	In the garden
After school (training)	Anywhere not connected to the school	At the park
Anything connected to the school	Leisure Centre (not necessarily a team)	In the street
	Taught by teachers (in or outside of school)	At the Leisure Centre/ Sports Centre
	Some inclusion of computer games	
	Don't know what a Sports Club is (this problem was restricted to Strugglers)	

school, whether they were structured activities in P.E. lessons or activities at break times or after school. The only problem which emerged here related to the overlap between Sports Clubs in school and those outside school – this is explored in more detail below.

Sports Clubs not at school

The second category 'Sport Clubs not at school' caused more problems. Some respondents were able to identify Sports Clubs not at school with relative ease and provide examples of such places (e.g. disability basketball, a basketball club outside of school, golf or a tennis club).

'Not in school but in a different place.'
(female, year 7)

However, others struggled more and there was some overlap between Sports Clubs **at school** and those outside of school (i.e. some school based Sports Clubs were included under 'out of school' clubs in the second category). This problem was not restricted to primary school

respondents, the confusion appeared for secondary respondents also. This seemed to occur because respondents were not considering the distinction, it was unimportant to them.

Somewhere else

Again, some respondents understood the third answer category (somewhere else) well and what was required and others experienced problems. In brief, the problems were:

- + **Not typing in the box:** Some respondents selected 'somewhere else' but did not type in the place because they: (a) did not want to; (b) did not realise they were supposed to; or (c) they did not understand the instruction.
- + **Doubling up:** The problem of double-counting surfaced here as Sports Club had already been ticked and could also be counted again under 'somewhere else'.

Table 8-5
Understanding of 'When in school' answers categories

P.E Lessons	At Lunchtime	After school (at school)	At the weekend (at school)
In school time	During break times in school yard/ playground	Sports Clubs at school (e.g. gymnastics)	A big (one-off) international tournament at school
In lesson time	Practice at lunchtime (structured)	Playing for school team (e.g. hockey, football)	
A 'normal lesson'	Playing with friends on the school field (not structured)	Competing with other schools or just attending practice	
Physical education		When other children have gone home	
With a teacher		Going on school trips	

+ Confusion about what the box was for:

There was some confusion surrounding what was meant to be typed into the box (the name of the Sports Club or another place altogether).

+ Vagueness of the place: One respondent commented that he played football everywhere and so would not be able to write all the places in! For this reason he ticked 'No' (thus giving an inaccurate answer).

+ Don't know: Some respondents were unable to give any examples of where 'somewhere else' might be or guessed their answer altogether because it was simply beyond their reading ability to fully understand what was required.

8.8.2 Understanding of the 'when in school' follow ups

For each Sport respondents selected as having taken part in at school, they were asked a separate question to determine the timing and situation (i.e. whether in P.E. lessons, at lunchtime, after school (and for secondary respondents at the weekend) or a combination of more than one answer).

Primary respondents experienced a broader range of problems than secondary respondents. The main problems experienced were:

+ Restricting thought: Respondents restricted their thoughts to activities in P.E. lessons. This is an important problem as having restricted their thought early on, respondents were subsequently only routed to answer certain follow up questions and thus missing questions about other activities they had done.

+ Fatigue: This was the point where respondents began to tire of the same questions appearing over again – this was found across all ages.

+ Inability to understand the question: This problem was restricted to primary school respondents who were unable to adequately read and digest what was being asked. In some cases the respondents were able to understand the differences between the categories but were unable to answer the question (or simply guessed) because they did not understand the question wording and what they were being asked to do. In places problems also appeared where respondents had played a particular Sport in more than one place; respondents were unsure whether they were meant to choose more than one answer (i.e. multi-code).

+ Unwillingness to read the question: Similarly respondents who were not prepared to read the question fully (Skimmers) experienced problems in answering as they were unsure what to include and exclude.

Respondents were asked, during probing, to explain what they understood by each of the different answer categories. The following table above summarises how respondents described each one.

Respondents were able to understand and describe **P.E. lessons**. The lunchtime category also did not present problems, respondents (as we had expected) including both structured and unstructured play at this option.

The after school (at school) category posed a few more problems.

+ While some respondents had no problem understanding the meaning behind this category, others felt it to be two concepts wrapped together (after school and at school) and were confused by it. These respondents were not sure whether they should include after school activities both in and outside of school and in practice both strategies were adopted.

+ In cases respondents considered all kinds of after school Sporting activities, **not confining these to those undertaken at school.**

An **'at the weekend (at school)'** option was also included for secondary school respondents. Only one example of a Sports event at the weekend at school was given. This was the taking part in an international Sporting event where teams had come from other countries to compete.

There were few problems associated with this category; respondents said they did not have to think here because they knew they do not do Sports at the weekend. A notable point (but one that did not seem to be problematic for the respondents) was that one of the secondary schools included in our sample actually opened to the general public as a leisure centre at the weekends. This could be potentially confusing where respondents attended the leisure centre to practice certain Sports as these activities were not related to the school itself.

8.8.3 Answer category differentiation

Secondary school children did not experience problems in differentiating between the three answer categories (lunchtime, after school and at the weekend). Primary school respondents found this a lot more difficult and some confusion existed between after school, at school and lunchtime. This was mainly because both are at school and are not lessons, thus this meant that in some of the younger respondents' minds they overlapped and were difficult to differentiate between.

8.9 Understanding of frequency of participation questions

Respondents at both rounds of cognitive testing were asked to give an estimate of how often they took part in Sports. At Round One this formed the third element of the set of questions, repeated for (a) Extra Curricular activities and (b) activities with Sports Clubs outside school (e.g. 'Thinking about the **last school term, that is the Spring Term**, about how often did you take part in Sports or Physical Activities **organised by your school outside of lesson times, at lunchtime, after school or at the weekends?**').

At Round Two this question formed part of a set of follow up questions for each separate Sport the respondent had selected, once it had been established that it had been participated in as an

'extra-curricular Sport' (i.e. at lunchtime, after school, at the weekend and with a Sports Club) (e.g. 'Thinking about **the last school term**, that is the **Summer Term**, about how often did you play badminton **at lunchtime** (at school) **with help from an adult?**').

8.9.1 Findings from Round One

(Primary Schools (Round One): Q6 and Q9)
(Secondary Schools (Round One): Q5 and Q8)

Respondents seemed to understand what this question meant with the exception of a few cases where the question needed to be re-read and re-read again. These findings indicate that this question is cognitively difficult for respondents to decipher and answer, perhaps understandably as there are a number of different concepts wrapped together relating to a timeframe, what activities to include and exclude as well as the calculation of a frequency.

Methods of calculation

When it came to measuring the frequency of participation respondents employed four strategies:

- + Listing out the activities for each week and then working out whether it was more than once a week
- + Thinking about the activity/ies and then calculating an average for how often it was 'usually' done
- + Considering how regularly activities occur and selecting that option
- + Considering how many times each week lunch is rushed to get to something or the school bus immediately after school, is not taken home and applying this number. This strategy meant some non-Sporting activities were included and thus figures are over reported (e.g. gardening club, welsh club, amateur dramatics).

8.9.2 Findings from Round Two

(Primary Schools (Round Two): Q7)
(Secondary Schools (Round Two): Q6)

Respondents were asked, for Extra Curricular Sports (i.e. at lunchtime, after school, at the weekend and with a Sports Club) how frequently they played each one. It was not asked of those respondents who had selected 'Somewhere else' as it was thought that this category would catch informal or unstructured activities that may be more 'ad hoc' and thus more difficult to quantify.

Understanding of task

There were a number of problems with this question:

- + **Question wording was too long:**
Some of the younger respondents in particular found the question wording to be too long and this meant they were deterred from reading the whole question. Thus, these respondents were not clear about what they were meant to do. This led to the problem of respondents guessing at the question meaning based on the answer categories and answering accordingly. In some cases respondents guessed correctly; however, the important finding here was that the question itself was too long and respondents found it off-putting.
'I'm mixed up with all the lines. It is too long and too much to read and needs to be much shorter.'
(male, year 7)
- + **Repetitiveness:** Respondents commented that this question was now becoming repetitive, as more and more cycles appeared. Notably this was only a problem for respondents who had done a lot of different Sporting activities. Not all respondents disliked the repetition; one respondent commented that she liked the repetition as it provided a pattern and she could become used to

it. Other positive comments were that the pictures helped where respondents became stuck and that the highlighting of important words at this question helped them to stand out.

- + **Filtering mistakes:** As with some of the earlier questions, if a mistake had been made at the initial lists of Sports (Q1-2) this question did not seem to apply; in these cases respondents ticked the 'Never' answer category.
- + **Intended vs actual frequency:** One strategy for answering how often one participated in a certain Sport was to think about how often the Sport was scheduled. This led to the problem of respondents over-reporting because practice sessions did not always go ahead if circumstances changed (e.g. if there were not enough people or the weather was bad). This was not always a problem; other respondents were able to consider how often Sport was scheduled and whether it had actually gone ahead as planned and then give an adjusted answer.
- + **'Less often' answer category:** With the exception of the 'less often' answer category all categories appeared to be understood. Some of the younger respondents had difficulty reading the words 'less often' and so would choose another category.

Details regarding the switch of timeframe (from the previous school year to the last school term) can be found in Chapter 10.

8.10 Length and routing of the section – Round Two

Although the Round Two questionnaire seemed quite long, the length was not a problem for secondary school pupils (unless they were unmotivated and wanted to be elsewhere). The length was more of a problem for primary school respondents as they were becoming tired by the end. However, far bigger problems for younger pupils were:

- + **Reading** the questions adequately enough to understand their meaning
- + **Differentiating** between the questions
- + **Selecting the wrong categories** at the original filter questions leading to confusion later on.

Routing was occasionally a problem for secondary school respondents as differentiating between clubs in and outside of school could overlap. Differentiating between lunchtime, after school (and the weekend) did not appear to be a problem.

8.11 Final recommendations for improving questions about Sports Participation

This section summarises the recommendations for improving the Sports Participation battery of questions.

8.11.1 Generic recommendations for question wording

Recommendations applying to both questionnaires are:

- + Add an instruction to the initial long lists of Sports to make it clear that respondents should include Sports undertaken both in and out of school: 'Include **All** Sports (at school and in other places)'.
- + Retain the reference period of the existing school year but do not reiterate this at every question. Instead remove as much bracketed text as possible to keep the questions short and to the point. Cognitive testing showed that, where the question wording was very long, respondents were deterred from reading it and instead guessed at the meaning based on the pictures or answer category wording.
- + Retain the coloured lines within the list of activities.
- + Retain the existing grouping of Sports.

8.11.2 Specific recommendations

Primary school questionnaires

- + We recommend altering the battery of questions for each individual Sport to move to more of an overall 'Yes/No' approach (that is a set of 'Yes/No' questions' rather than selecting from multiple choice lists which respondents found difficult) as we believe this will be easier (see Appendices J and K for details of recommended question wording). We are recommending that some of the existing data requirements are dropped, particularly for the new Years 3-4 questionnaire. The cognitive testing showed that respondents were particularly confused regarding the differentiation between activities that were in or outside of school and we hope that the new proposed set of questions will clear this up. Cognitive testing also showed that the questions were overly burdensome as they stand and respondents became tired and fed up as they worked through them. Thus, the removal of certain data items means that the task should become both more straightforward and shorter; the theory being that this will lead to the collection of higher quality data.
- + Within specific question wording, refer to 'Sports Clubs' as 'clubs not at school' (e.g. In Year 'X' have you played 'Y' in a club not at school?). Alternatively wherever possible insert the name of the particular Sport it applies to. During testing we found that respondents refer to Sports Clubs using this kind of language and so it is likely to be more appropriate (e.g. cycling club, gymnastics club etc). We appreciate the term 'not at school' is a little 'clunky' and we are also concerned that it is phrased negatively which was something the literature review recommended against for young children (see section 3.1.4). However we are unable to think of a better way to put this to this age group. The previous version used the term

'outside' school and on occasion young respondents translated this literally to mean the physical area outside school, supported by the literature review which showed that young respondents are prone to literal interpretations (see section 3.1.3). Thus, while this phrase may sound slightly strange to adults the aim is that it is clearer to the young age group in question.

- + Add a 'trampolining category' to the initial Sports list.
- + Delete the 'Bowls' category from the initial Sports list.
- + Alter the picture at the 'Dance' category to a more relevant picture of children dancing (rather than adults).
- + Remove the 'outdoor adventure activities' question as evidence showed respondents did not understand what this referred to. Alternatively we could list out the different types of outdoor adventure activities and ask respondents to select them in the same format as the previous two questions.
- + Consider dropping the 'with adult help' questions.

Years 3-4 questionnaire

- + Drop the 'how often' questions as the young respondents found these difficult.

Secondary school questionnaire

- + We recommend retaining the overall existing structure of questions for secondary schools. While there were some problems with this structure the cognitive interviews showed that, on the whole, respondents were able to understand and answer the questions. We recommend this instrument requires 'tweaking' in places to improve it rather than a more significant re-structure (as recommended for the primary school questionnaire). We consider that to significantly re-structure this tool

would be a mistake given that the issues secondary school respondents experienced did not appear too problematic. We have recommended altering the structure of the primary school questionnaire(s) because these respondents experienced a broader and potentially more problematic range of issues.

- + We recommend using the wording 'outside school' to refer to Sports Clubs not organised by the school (and wherever possibly inserting the name of the particular Sport it applies to (e.g. badminton club). Although we recommend not using this wording for primary school respondents (for reasons given above) we consider secondary school respondents will be more able to understand this distinction and we would like to avoid negatively phrased wording ('not at school') for this age group.
- + Clear up the distinction between 'Fitness classes' and 'Circuit training' (perhaps through dropping the 'Fitness classes' category or using an alternative example to Aerobics).
- + Revert to using one overall category for 'Rugby'. Evidence showed that respondents did not clearly understand the distinction between 'Rugby League' and 'Rugby Union'.
- + Drop 'with help from an adult' from the frequency questions to shorten overall question wording.
- + Drop the 'Membership' question as it is covered by earlier questions included in the individual batteries of questions for each Sport (unless it can be shown that the data requirement is not covered).

8.11.3 Other general recommendations

As at Round One, our other non-specific recommendations that apply to both questionnaires are:

- + Ensure the wording in the banners and headings is always consistent with the questions wording and that nothing is contradictory.
- + Include less on each page to reduce the possibility of respondents having to scroll down the screen (thus potentially missing something)
- + Include as many relevant pictures as possible, these are very important to younger children who struggle with some of the words
- + Use as 'easy' language as possible, removing long sentences and bracketed text, technical words, sticking to very basic language

The full recommended question wording for the Sports Participation questions can be found in Appendices J (primary years 3 and 4), K (primary years 5 and 6) and L (secondary).

9.0 Questions about Physical Activity

The purpose of this battery of questions was to ascertain how much Physical Activity children and young people get on a day-to-day basis. Unlike the questions previously discussed (about Sports Participation) the measurement objectives of this section were broader, in so much as they were intended to establish how much exercise respondents get in general.

Therefore the section aimed to measure how long respondents spend doing any Physical Activity (for instance by having active lifestyles and engaging in unstructured play) as well as participating in Sport.

9.1 Chapter structure

This chapter will include the following:

- + An overview of the **overall structure** of the Physical Activity section for Round One and Round Two instruments (section 9.2).
- + Findings regarding the introduction to the Physical Activity questions, in particular whether respondents read and understood the introduction, why changes were made to the introduction and to what extent these changes worked as intended (section 9.3).
- + Findings regarding to what extent both versions of the instrument were successful at **establishing the activities** respondents had done over a given number of days. This section explores how respondents understood the questions' scope, how they entered the data and to what extent changes in the question structure improved quality of response (section 9.4).

Table 9-1
Round One Questions

	Primary	Secondary
Instruction page – Definition and examples of Physical Activity	Q10 intro	Q13 intro
Did you do any activities on X-day?	Q10a	Q13a
Which activities (type in)?	Q10b	Q10b
How long did you do each activity for (expanding grid)?	Q10c	Q13c

- + The extent to which **double-counting**, whereby respondents over-reported the Physical Activity they had done by reporting single periods of activity more than once, was a problem in both rounds (section 9.4.6).
- + Findings from both rounds regarding how **activity duration** was measured (section 9.5); and
- + A summary of **recommendations** for revising the Physical Activity battery of questions (section 9.6).

9.2 Overall structure of Physical Activities section

9.2.1 Questions under consideration

Tables 9-1 and 9-2 indicate the questions under consideration in this chapter.

For specific question wording please refer to Appendices H and I.

9.2.2 Changes in structure from original pencil-and-paper instruments

The original PAP survey only asked one question to measure Physical Activity. The question was formatted as a single grid, with respondents being asked to tick how long they spent doing exercise from Monday to Saturday of the preceding

Table 9-2
Round Two Questions

	Primary	Secondary
Definition. Which activities did you do on X-day? (Checklist)	Q10a	Q11a
Which other activities (type in)?	Q10b	Q11b
How long did you do each activity for (expanding grid)?	Q10c	Q11c

week. However, previous research has demonstrated that asking simply for time spent doing general Physical Activity does not yield accurate data (McGee and Andrews, 2008). Therefore, when the online surveys were developed the task was broken down into smaller stages with the aim of encouraging respondents to think about their levels of different activities in greater detail.

9.2.3 Physical Activity: Round One structure

The first version of the web-survey broke the Physical Activity measure into four stages, each stage being a separate page of the online instrument:

- + **Introduction:** to define the scope of 'Physical Activity' and differentiate the section from the previous 'Sports Participation' section.
- + **Screening Question:** to ascertain if any Physical Activity had been done on the day under consideration.
- + **What Activities done:** where respondents were asked to type in all the activities they had done that day (if any Physical Activity had been done).
- + **Activity Duration:** where respondents were asked to specify how long they had spent doing each activity (if any Physical Activity had been done).

This cycle was repeated five times, to collect data from the previous five days. A calendar function was used so the day under consideration was explicitly named

(or 'text-filled') e.g. 'What activities did you do yesterday (Thursday)?'

9.2.4 Physical Activity: Round Two structure

As a result of the Round One cognitive testing, the overall structure of the Physical Activity section was adjusted. The Round Two instrument comprised three stages, again with each stage displayed on a separate page.

- 1) **Introduction and Activity list:** in which the section was introduced and respondents were asked to select from a list of examples what activities they had done on the day under consideration.
- 2) **Other Activities:** where respondents were asked to type in any other activities they had done on that day.
- 3) **Activity Duration:** where respondents were asked to specify how long they had spent doing each activity.

This cycle was repeated three times, to collect data from the previous three days (Round One testing found that recall was significantly impaired after three days – see section 10.4 for further details). As with Round One a calendar function was used so the day under consideration was explicitly named.

The changes to the structure between rounds of cognitive testing are explained in detail in Chapter 6. Additionally; a diagram illustrating changes in the Physical Activities section is available in Appendix E. We recommend that the

reader refer to this diagram while reading this chapter. Details of each stage, why changes were implemented at each, whether changes were successful and recommendations for the final Physical Activity section are explored below.

9.3 Introduction to Physical Activity section

An introduction to the Physical Activity section was included in both the Round One and Round Two versions of the online instrument. The purpose of the introduction was to help respondents understand what was meant by Physical Activity. It was hoped that this definition would encourage respondents to think more broadly about the types of Physical Activity they do, including exercise done as part of everyday living (e.g. walking to school) rather than confining their thinking to Sports. This section explores how the introduction was structured at each round and to what extent changes made between the two versions were successful at improving the instruments. The extent to which respondents read the introduction is also discussed.

9.3.1 Overall structure of introduction Round One structure

During Round One the Physical Activity battery of questions started with a separate introductory page that included a list of examples of Physical Activity. All that the respondents were required to do was read this page then click 'Next' to be taken to the following questions.

However, as there was nothing for respondents to do at this screen apart from read the text confusion arose; respondents were not sure how to move on. A common reaction was to attempt to click on the examples themselves to get the program to move on. This change in the presentation of the screens was confusing for respondents as they had been used to answering questions or having some task to perform at each of the previous screens.

Due to these findings it was recommended that in Round Two the introduction be shortened so it could be incorporated onto the same page as the first question.

Round Two structure

The Round Two introduction differed from Round One in that it had been condensed and moved so that it appeared on the same page as the first question. To differentiate the introduction from the remainder of the question, the introduction appeared in blue text while the question appeared in black. This restructuring was not found to be successful as combining the introduction with the first question meant that there was an intimidating amount of text on the first page. This had implications for whether respondents read all of the text (discussed in the next section).

9.3.2 Reading introductory text

Length

During Round One, respondents had a variety of reactions upon being presented with the introduction page. Some were happy to sit and read everything while others only gave it a cursory look or gave up after the first sentence. Respondents were surprised by the appearance of the page, mainly due to the off-putting amount of text on the screen, with some younger respondents immediately asking what they were meant to do.

For the Round Two instrument the introductory text was substantially shortened. However, as the introductory text was combined with the text of the first question, the amount of text on the first page remained intimidating to some. Generally, the Primary School respondents were more put off by the volume of text than the Secondary School respondents. This even applied to Primary School respondents who were very literate.

It was highlighted by the interviewers that, as this battery appeared late on in the survey, by now even the most able

Primary School respondents had become fatigued by the process. Unsurprisingly, respondents who struggled with reading or with motivation, regardless of their age, found the large volume of text off-putting. Additionally, the amount of text meant that on some computers not all of the page could be viewed without using the scroll down option on the screen.

All the above factors being the case it is worth considering moving back to the structure used in Round One, where the introduction and the first question are spread out over two separate pages.

However, to overcome the problem encountered at Round One (where respondents were unsure what they were meant to do on the introduction page) it is recommended an instruction is inserted telling respondents to 'Click Next to Continue.' A reminder of the introduction (i.e. 'Physical Activity is **anything** that involves movement') should then be included with the newly detached first question.

Difficulty with words

During both rounds respondents varied in how well they grasped the introduction. The usefulness of the introduction was very much linked to respondents' answering strategies and reading ability.

Respondents who struggled with literacy (generally, but not exclusively, the youngest respondents) were unable to read key words unassisted. As a general rule when Strugglers came across a word they could not read they either skipped that word or skipped the whole passage. Words which Strugglers had difficulty reading included: questions, physical, activity, exercise, movement, includes and involves.

Obviously, if they were unable to read any of these key words, Strugglers gained little from the introduction. It should also be noted that the primary school respondents who were able to read were becoming fatigued by this stage of the

questionnaire and so started to exhibit Skimmer type behaviours.

Respondents who could not read the entire introduction varied on how well they completed the task. Primary school respondents who struggled with some of the above words could still find the introduction useful. For example, one respondent (male, year 4) did not understand the word 'physical' but as he could understand the word 'activities' and the examples, he therefore had a good grasp of what the task was about. However, an alternative strategy displayed by youngest respondents with reading difficulties was to guess at the nature of the task completely.

'What does this one mean? Oh, I get it. I have to underline the words that are not right...There are lots of words to read... they want me to choose the words that are the same as the one ones here.'
(female, year 4)

This indicates the importance of help being available to assist the youngest groups with reading and comprehension.

Secondary school respondents (provided they were motivated to read the text) understood the introduction and thought it helped to explain the task.

9.4 Establishing activities done

After the introduction, the first element of the Physical Activities section was to get respondents to give all the Physical Activities they had done on a given day. This section details the structure of this task at both rounds and examines the extent to which changes in the task influenced responses.

9.4.1 Structure of task

Round One structure

During Round One respondents were first asked a routing question to establish if they had done any Physical Activity on the day under consideration. If respondents said yes they were then

asked to type in all the activities they had done that day. However, this routing question was abolished at Round Two to prevent respondents from selecting it as an easy shortcut to reduce survey length.

Round Two structure

At Round Two the task of specifying what Physical Activities had been done was broken up into two stages, these split over two pages.

As previously stated there was no routing question at Round Two to ascertain whether or not a respondent had done any activities on the day under consideration. Instead, as part of Section A, there as a single check item 'I didn't do any Physical Activities or Exercise on X-day' that respondents were to tick if the question did not apply to them.

9.4.2 Entering data

Findings from Round One

During Round One respondents were required to type in each activity they had done. It was found that young respondents particularly found the physical task of typing text burdensome. It is suspected that respondents did not always include all the activities they did due to the effort required in typing in all activities, leading to **under-reporting**. Respondents who exhibited poorer motivation typed progressively fewer activities each time the battery of questions was repeated over the successive days. This problem is probably compounded due to respondent fatigue, as this was the final section respondents were asked to do.

In some cases interviewers observed respondents trying to actually click on the list of examples on the instruction page to indicate which ones they had done. For this reason it was recommended that the task structure should be changed so respondents could select Physical Activities from a list. A follow up question was also proposed where respondents

Table 9-3
Structure of Physical Activities done section – Round Two

Section	Task
A	Select what activities done on the day under consideration from a tick all that apply list
B	Type in additional activities done

could enter additional activities by typing them in, so as not to limit respondents to only activities mentioned on the list.

Findings from Round Two

In Round Two, the data entry for ascertaining Physical Activities done took part in two stages split over two pages. The first stage involved selecting activities done from a pre-given checklist. The second stage involved respondents typing in additional activities. As encountered in the Round One testing, the youngest participants were not proficient typists. However, by including the first checklist of responses separately at the previous question the amount of typing required, and therefore burden of task, was substantially ameliorated at Round Two.

However, splitting the question across two pages had implication in terms of double-counting, which is discussed in section 9.4.6.

9.4.3 Scope

Findings from Round One

During Round One respondents systematically under reported the Physical Activities they did. One major cause of this underestimation occurred when respondents made false inferences about the question's scope. These included:

- + Thinking the question only applied to activities done outside of school
- + Thinking the question only applied to activities done as part of Sports Clubs.

It is thought that these false inferences occurred due to context effects from the previous questions at Round One. Immediately prior to the battery of questions on Physical Activity respondents had answered questions on Sports Clubs, Coaching and Leisure Centres. These questions included the instruction to only consider activities done 'outside of school or not organised by your school'. Therefore it is probable that any false inferences about scope occurred because respondents retained the instruction used in the previous section. It was anticipated that the complete restructuring of the Sports Section at Round Two (so Sports Participation questions were structured by Sport rather than location) would eliminate this problem at the next round.

Findings from Round Two

During Round Two respondents still varied in whether they understood the scope of the task. Either:

- + Respondents understood that the task was to state all the activities they had done on a given day; or
- + Respondents misunderstood the task and thought they needed to state which activities on the list they had done at some point, which they did everyday or which they enjoyed.

Unlike at Round One these misunderstandings of question scope led to respondents **over reporting** their Physical Activity. Respondents answering strategies were examined to explore how this error in understanding occurred.

Unlike other errors throughout the survey, it was not the youngest respondents (years 3-4) who made this mistake. This may be because:

- + The youngest respondents were most likely to completely ignore the blue introduction and therefore leap straight to the actual question
- + The youngest respondents, by this stage, were tired and needed interviewers to intervene to enable them to complete the task.

Instead, respondents who misunderstood the question scope were entirely comprised of intermediate aged children (years 5-6) who manifested strong Skimmer behaviour. These respondents did not read the actual question before starting to answer. This was partly due to the fact that the question itself was not obvious to the eye as it was surrounded by so much other text (introduction and answer categories).

Therefore it is recommended that the question itself is made more prominent on the page, so that even Skimmers notice it straight away. This could be done by:

- + Making the font size larger
- + Positioning the question so it is nearer to the answer categories
- + Removing extraneous text that draws attention away from the question.

These recommendations again point towards splitting up the introduction and the first question onto two separate pages.

9.4.4 Understanding of Physical Activity examples and answer categories

Findings from Round One

During Round One respondents approached the list of examples of Physical Activities in two main ways. They either saw it:

- + As an exclusive list, selecting activities only from this list and not thinking of any other kinds of activities
- + As a list of examples (as intended), considering them and also other similar activities.

However, restructuring the task at Round Two (asking first which activities had been done from a list and then asking specifically about other activities) ensured that the problem of respondents only considering items on the list was removed.

The rest of this section examines how respondents understood the examples of Physical Activity given. During Round One respondents queried three of the examples:

- + **Walking** was thought to be ambiguous as there are different types of walking (hiking, fell walking, walking to town, walking around the school or shops). As an example one girl had walked round a supermarket and hiked for 8 miles as part of her Duke of Edinburgh award. She described these as being very different types of walking but both fitted into this example category.
- + **Housework** was questioned as respondents felt it did not fit with their understanding of 'Physical Activity'. One boy asked if housework meant just dusting and tidying your bedroom as this would not count as 'Exercise' to him.
- + **Gardening** was also questioned in terms of whether it counted as 'Physical Activity'. One respondent said he loved gardening but it did not make him out of breath.

Therefore, at Round One it was recommended that the walking option be split into two separate categories, walking and hiking, to help differentiate between these types of activities. Likewise the walking category was adjusted to read 'walking to/from school' to differentiate more sustained walking from, for example, walking between lessons. This particular example was given as it was thought to be appropriate to the audience in question.

The decision was made to retain housework and gardening as examples, as even though respondents may not consider them as Physical Activity, they are classified as mild to moderate Physical Activity in other established Health Surveys (e.g. Health Survey for England).

Findings from Round Two

Unfortunately, during Round Two, respondents were confused by the new 'Walking to/from school' item. Respondents did not know whether to include other types of walking (walking around town/walking to shops/walking to football practice/walking the dog) at this option. Therefore it is recommended that the 'walking to/from school' option is either amended so that it includes more examples of walking or that it is restored to simply 'walking' as it appeared in Round One.

As it is now planned that the survey will be administered in the Summer Term it is preferable that the examples given include Sports more likely to be undertaken in the summer e.g. athletics, rounders and cricket. In general the list should include the most common types of activities children and young people participate in.

One further problem with answer categories at Round Two was that respondents failed to see the, 'I didn't do any Physical Activities or Exercise on X-day' option at Section A, or the 'I didn't do any other Physical Activities or Exercise on X-day' option at Section B. It is suggested both these options should be made to stand out more.

9.4.5 Problems arising from Round Two - Section B

It is still thought that splitting the 'Establishing Activities Done' question into two sections (activities done on the checklist and other activities) was advantageous because it reduced respondent burden and encouraged respondents to think beyond the

activities originally listed. However, there were a number of specific problems encountered with the new section which led to respondents being confused:

- + Respondents did not understand why they were being asked the Section B 'other activities' question if at the previous question they had not selected the 'Something else' option
- + Skimmers did not notice that this question was about other activities done, and therefore thought the previous question was repeating itself
- + Strugglers were overwhelmed by the amount of text and could not absorb the question task as a whole.

All these issues need to be addressed in the next versions of the instrument. Furthermore, the creation of an additional section exacerbated the problem of respondent double-counting. This is explored in detail in the next section.

9.4.6 Double-counting

During both Round One and Round Two testing double counting resulted in substantial over-reporting of Physical Activity. As a result of introducing an additional stage to the process of collecting information on activities done, the problem of double-counting was exacerbated at Round Two.

Double-counting that occurred at both Round One and Round Two

Cases of double-counting were manifested in both primary and secondary respondents. Double-counting of answers occurred when respondents participated in one period of activity and counted it twice (or more) under different names. To illustrate, an example of double-counting is included in Table 9-4 above.

This demonstrates how double-counting could lead to over-reporting to such an extent it could look like a respondent is meeting the SCW's target of 60 minutes

Table 9-4
Example of double-counting by male, year 9, Round Two

Activities actually done	Actual duration	Total
Basketball	30 Minutes	30 Minutes
However, the respondent coded this activity as follows:		
Activities recorded	Duration recorded	Total recorded
Running around: Basketball:	30 minutes 30 minutes	60 minutes

Table 9-5
Examples of 'Cloning' double-counting at Section B

Activities actually done	Actual duration	Total
Housework	30 Minutes	30 Minutes
However, the respondent coded this activity as follows:		
Activities recorded at A	Duration recorded	Total recorded
Housework	30 minutes	
Activities recorded at A		
'Housework'	30 minutes	60 minutes

Table 9-6
Examples of 'Clarifying' double-counting at Section B

Activities actually done	Actual duration	Total
Dog walking	45 Minutes	45 Minutes
However, the respondent coded this activity as follows:		
Activities recorded at A	Duration recorded	Total recorded
Walking to/from school	45 minutes	
Activities recorded at A		
'Walking the dog'	45 minutes	90 minutes

of Physical Activity a day when in fact they are actually doing half of or even less than this recommended amount. Due to this finding at Round One, an instruction was introduced at Round Two asking respondents to count each activity only once and giving an example of what was meant by this ('so if you ran around while you played tennis you only need to put tennis'). On a positive note the respondents who did read the instruction appeared to understand it and adjusted their responses accordingly. However, double-counting still persisted as Skimmers overlooked the instruction. Therefore it is recommended that the instruction not to double-count is made more prominent in the next version of the survey (perhaps by making it bold).

Additional double-counting during Round Two

During Round Two, the addition of a separate 'other activities' section (Section B) meant there was an extra opportunity for respondents to double-count their answers which led to more over-reporting of Physical Activity. Feed-forward data (where the activities respondents had already said they had done on X-day were listed prior to the question) was used as part of Section B in an attempt to minimise double-counting. However, despite the use of the feed-forward data, double-counting still occurred. Two types of double-counting occurred at Section B.

- + **Cloning:** Where exactly the same activity was typed in at Section B as had been checked at Section A; and
- + **Clarifying:** Where a clarification of an activity was typed at Section B of an activity checked at Section A.

Examples of these two types of double-counting, taken from Round Two, are illustrated below:

The feed-forward data used at Section B to prevent this double-counting did not prove to be very successful. There was a tendency for the feed-forward data to be

completely overlooked by respondents, particularly those who were manifesting Skimmer type behaviour. Likewise, Strugglers did not benefit from the feed-forward data as they could not absorb it along with the rest of the information provided on the page.

The fact that the addition of a second question on Physical Activities increased the opportunity for double-counting is further evidence that respondents should not be presented with the option to write in further activities unless they specify at the previous question they have done 'something else' on the day under investigation. All other respondents should be routed past this question entirely.

9.5 Measuring activity duration

The final aspect of the Physical Activity battery of questions was designed to establish how long respondents had spent doing each type of Physical Activity. This section discusses to what extent the activity duration measures were successful at both rounds of testing.

9.5.1 Structure of task

The third part of the Physical Activity battery was an 'expanding grid' in which respondents had to select how long they had done each activity for. After stating the activities they had done at the previous section all their answers were expanded to become the vertical axis of a table. The horizontal axis of the table gave different amounts of time. Respondents had to select a radio button on each row of the table to indicate how long they had spent doing each activity. The expanding grid format was used at both rounds of testing.

9.5.2 General understanding of the task

In general respondents from both rounds understood the nature of this task. Even the youngest respondents

were able to understand the task just by looking at the grid.

'...Easy to read the little graph and the axis...' (female, year 6)

Furthermore, positive feedback about the grid was given by respondents. Respondents commented that the grid was simple and quick to use and that they found it interesting to see everything they had done ordered in this way.

Where mistakes did occur in filling in the grid this was due to respondents having input the wrong activities at previous Physical Activity questions. For example, at Round Two, respondents who had not read the initial question (What Physical Activities did you do yesterday?) had numerous activities appear on the grid they had not actually done. Where this occurred respondents either:

- + Put in the amount of time they normally spent doing the activity (even if they had not done it on the day in question); or
- + Put in any amount of time just to move on (usually the smallest amount of time i.e. less than 10 minutes).

The respondents who noticed they had made errors when reaching the expanding grid did not go back to the previous questions to amend their answers. It is recommended that, from the outset, respondents are told they can go back and change their answers using the back button (see section 5.2.3).

9.5.3 Answer categories

During Round One a problem was identified with the answer categories used in the expanding grid. Respondents were over-reporting the amount of Physical Activity done due to the limited response categories available for recording the time spent doing each activity. Respondents were forced to classify activity duration as either:

- A) About quarter of an hour (15 mins);
- B) About half an hour (30 mins);
- C) About three quarters of an hour (45 mins);
- D) About an hour (60 mins); or
- E) Over an hour.

There was a tendency for respondents to round up intermediate answers rather than round down. This is possibly due to social desirability bias; respondents feel they look more favourable if they have done greater amounts of activity. However the main problem was that the shortest period of time was relatively large. Zealous respondents would often list activities that they had done for a very short periods of time e.g. running because they had run to fetch something or skipping to class. Respondents who did this sometimes felt it was misleading saying they had done these activities for 'about quarter of an hour' when the activities themselves lasted only 2-5 minutes.

Therefore, as a result of the Round One testing a further answer category was added so respondents could state when an activity had been done for less than 10 minutes. During the Round Two cognitive testing no problems were identified with the answer categories and frequently made use of the new answer category.

Specific findings relating to the timeframes or reference periods used in the Physical Activity section can be found in section 10.4.

9.6 Recommendations for improving Physical Activity questions

This section summarises all recommendations for further improving the Physical Activity section.

9.6.1 Recommendations for structure and introduction

- + Split the introduction and the initial Physical Activity question back into two separate pages
- + The new introductory page should include numerous pictures of different types of Physical Activity (Sport and non-Sport) so the difference between this and the previous section is clear (e.g. use pictures of skipping, gardening, cycling, and a Sporting activity).

9.6.2 Recommendations for selecting Physical Activities from list

- + Increase the size of the font for the question text.
- + Amend 'Walking to/from school' response to read 'Walking.'
- + Consider adding additional activities to the initial list as without the introduction there will be more space to do so. New items should focus on summer activities, e.g. Athletics/ Rounders etc.
- + Instruction not to double-count needs to be more obvious.
- + Make the item 'I didn't do any Physical Activities yesterday' stand out more, either by making it a different colour, making the type face bigger or separating it from the rest of the items.

9.6.3 Recommendations for writing in additional activities

- + Adjust the routing so that respondents who do not tick the 'something else' box are routed past the question on other Physical Activities
- + Remove the item 'I didn't do any other Physical Activities yesterday'
- + The feed-forward data at Physical Activity B needs to stand out more
- + Instruction not to double-count needs to be more obvious. It could be re-phrased to state not to include activities already mentioned.

9.6.4 Recommendation for measuring activity duration

- + Retain expanding grid in its current format.

Suggestions for new question wording are included in Appendices M and N.

10.0 Timeframes and Recall

The findings in this chapter relate solely to the timeframes used in the two main batteries of questions: namely the Sports Participation questions and the Physical Activity questions.

10.1 Summary of timeframes used

Three different timeframes were used within the Sports Participation and Physical Activity sections at both rounds of testing. These were:

1. **The previous school year**
(Timeframe A)
2. **The last school term**
(Timeframe B)
3. **The last five/three days**
(Timeframe C)

The first two of these timeframes fell within the Sports Participation questions and the third within the Physical Activity section. This section describes the different variations within these timeframes as well as detailing how well they performed as anchors to assist recall.

10.2 Previous school year: Timeframe A

One of the key measurement objectives of the Sports section was to ascertain which sports respondents had done over the last year. Following the desk review it was felt that including a specific reference to a school year would help school children anchor their thoughts more securely. Therefore three different 'anchors' were tested over the two rounds of the cognitive testing to ascertain how best to frame this time period. These anchors were:

1. **Since you have been in Year X**
(a text-fill of the current school year)
2. **When you were in Year X**
(a text-fill of the previous school year)
3. **Last school year**

The anchor used depended partly on the timing of the cognitive testing. Round One testing took part in June (the end of the school year) so it was more appropriate to ask respondents to consider their current school year. Round Two took place in November (the start of a new school year) and therefore it was more appropriate to ask about the previous school year. This section will look at the anchors used to encourage respondents to think about the timeframe and their success.

10.2.1 Anchor 1: 'Since you have been in Year X'

(Primary Schools (Round One): Q1, Q3, Q5 and Q8)

At Round One, respondents did seem to find the text-filled school year a helpful tool. Respondents were able to think back to the beginning of the school year, consider what they had done since then and were fairly confident about their answers. This approach was especially useful for thinking about activities within P.E. or Games lessons or other activities at school.

Thinking about activities outside school was a little more difficult as the seams between each school year are less clear. Also for some respondents the mention of a school year meant that they only connected the question with activities within school.

Therefore, the approach of asking respondents to think about a particular school year (and supplying the year number itself as a text) appears to have been a successful strategy to help respondents anchor their thoughts.

10.2.2 Anchor 2: 'When you were in Year X'

(Primary Schools (Round One): Q3, Q5 and Q8)

(Primary Schools (Round Two): Q1-5 and Q8)

(Secondary Schools (Round Two): Q1-4 and Q8)

Primary respondents at Round One were also asked, hypothetically, how they would have answered had the question referred to the previous school year (despite the fact cognitive testing took place in June). Opinions were more divided on how easy this would have been. Some respondents said that they had tended to do similar activities from year to year and so the answers would

not be very different. Other respondents said that it would be more difficult to remember this far back.

Round Two gave us the opportunity to test Anchor 2 in a more realistic context, as the testing took place near the start of the school year, when asking about the previous school year was more appropriate to context. As with Anchor 1 the text-filled school year was also a helpful tool to aid consideration of the previous school year. Respondents fell into **three** main categories in terms of whether they were able to consider this reference period:

- + Those who were **able to recall Sports from the previous school year with little or no difficulty**. One strategy for doing this was to think about the teacher from the previous year and use that as an anchor to recall the Sport they had done with that teacher. Remembering activities outside school was a little more challenging (as these activities are often more informal) and required more careful thought.
- + Those who were **only able to think about the activities they do now** (rather than those of the previous year) and therefore missed out some Sports that they did during the reference period.
- + Those that had a great deal of difficulty as they were **unsure of what a 'school year'** was in itself. This problem was restricted to the youngest age group (years 3-4) and to Strugglers.

There was a general agreement that it would be easier to think about the current school year rather than the previous one. Respondents pointed out that it would make more sense to ask the questionnaire at the end of the existing school year when they would have participated in all of the Sports for that year. Due to these findings the intention now is to conduct the main stage survey in the Summer Term and use Anchor 1 (thus Anchor 2 will not be used in practice).

10.2.3 No Anchor: 'Last school year' (Secondary Schools (Round One): Q2, Q4, Q7 and Q11)

Round One Secondary respondents were not provided with a specific anchor (e.g. 'Year 8') though in practice, respondents tended to consider the previous school year even without a clear anchor. There was one exception to this where one respondent said she had started off thinking about the last 12 months but changed her mind when she re-read the question and instead thought back to last September. We recommended for Round Two that the anchor of the last school year be introduced for secondary respondents also, to improve clarity and because it worked well for primary respondents.

10.3 Last school term: Timeframe B

This section will look at the anchor used to encourage respondents to think about the previous school term i.e. 'Last school term, that is the X term...' and its relative success as a reference period. This reference period was used at questions that tried to ascertain how frequently respondents did certain sports in certain settings.

10.3.1 Findings from Round One and Round Two

(Primary Schools (Round One):
Q6 and Q9)

(Secondary Schools (Round One):
Q5 and Q8)

(Primary Schools (Round Two): Q7)

(Secondary Schools (Round Two):
Q6 and Q12)

Timeframe B referenced the last school term, with the term itself text-filled. For Round One this was the Spring Term, as testing took place in the summer. For Round Two this was the Summer Term as testing took place in the autumn. Respondents at both rounds were mixed in their ability to think about the previous school term. They fell into the following four categories:

- + Those who considered the last school term (as intended) and were able to describe it accurately
- + Those who considered the last school term but were unable to describe exactly when this period started and finished
- + Those who did not realise they were meant to switch timeframe and considered the previous school year or whichever timeframe they had been considering prior to answering this question
- + Those who were unsure of what exactly a 'school term' was. For the most part this group consisted of primary school respondents.

Despite respondents having some problems with being able to date exactly when school terms were it seemed that this was a more useful frame of reference than asking respondents about the last few months. Respondents appeared to like this approach as it fitted with how their lives are structured and thus how Sports at school and in clubs are structured.

10.3.2 Problems arising from Round Two only

At Round Two the timeframe referenced as the last school term was the Summer Term, as interviews took place in the autumn. This led to an additional problem as respondents mistook the reference 'Summer Term' to mean the summer holidays. This problem was not confined to the youngest respondents, it was also found within secondary school members of the sample. Asking about the summer term (of a previous school year) in the autumn was especially difficult. It is hoped that if the survey takes place during the Summer Term, as recommended, this problem with Timeframe B will be avoided.

10.4 Last five/three days: Timeframe C

For the Physical Activity Section respondents were asked to recall the activities they had done, and for how long, over the last given number of days. The original PAP versions of the questionnaires asked children and young people to recall the amount of Physical Activity they had done over the last seven days. However, as a result of the Desk review this period was shortened to the last five days as it was thought that respondents would not be able to recall what they had done seven days ago with any great accuracy. This section will discuss how well respondents could recall activities done, and activity duration, over a five and three day period. Factors influencing recall are also discussed.

10.4.1 Recall of activities – last five days

(Primary Schools (Round One): Q10;
Secondary Schools (Round One): Q13)

During Round One respondents encountered some problems in recalling what activities they had taken part in over the last five days. In general activities that respondents undertook more recently were easier to recall. The factors implicated in ease of recall are summarised in Table 10-1.

Implications of impaired recall of activities

If the information respondents were trying to recall was not immediately cognitively accessible they were forced to use various strategies to answer the question. Strategies included:

- + Answering as much as they could and then returning to the question later on to fill in activities they had missed (it was observed by the interviewers that the process of thinking about activities done the preceding day often helped remind respondents what they initially missed out)

Table 10-1
Factors affecting recall of activities

Easier Recall	Harder Recall
Activities that occurred more recently (1-3 days ago)	Activities that occurred less recently (3-5 days ago)
Activities included in the example list	Activities not included in example list
Regular/ planned activities e.g. weekly Sports Clubs	Unstructured/ unplanned activity e.g. housework
Activities done on a school day (more likely to be regular/ planned)	Activities done ad hoc at weekends
Memorable 'one off' activities e.g. one off event/excursion	Lots of activities crammed into one day e.g. activities done in a single day whilst on holiday
Daily informal occurrences e.g. walking to school	Less regular informal occurrences e.g. walking elsewhere

- + Using guesswork (for instance if a respondent rides their bike on most days they might guess they used it on the day in question)
- + Omitting activities done (i.e. the respondents stated they knew they had done more but could not think of what they were).

The strategies used were to an extent dependant on how engaged the respondent was with the task. Respondents who were fatigued by the survey process were potentially more likely to omit activities (i.e. 'satisfice', see section 3.1.3) as doing so reduced both the cognitive load (of having to think about what they had done) and the survey duration.

Difficulties in recall have implications for the accuracy of data collected. Respondents not remembering led to under-reporting of Physical Activity. Equally, difficulties in recall can occur when a respondent does not remember when they did an activity, even if they can recall doing the activity itself. This can result in a phenomenon called

telescoping, where a respondent recalls an event (and includes it in their answer) when that particular event did not actually take place in the time-frame under investigation (Willis, 2005). Telescoping would, therefore, lead to over-reporting of Physical Activity.

Reducing timeframe under consideration – last three days

(Primary Schools (Round Two): Q10)
(Secondary Schools (Round Two): Q11)

During Round Two the timeframe under consideration for the Physical Activity section was reduced from five days to three days. Respondents still varied on whether they were able to recall all the activities they had done over the last three days. As a general rule the number of activities reported by respondents was reduced the further back the questions were asking about. This indicates either that the respondents could not recall all the activities they had done or they were still becoming fatigued with answering the questions by the third day. It is recommended that the three day period

is retained as any further back and the memory begins to 'decay', leading to inaccurate data being collected.

10.4.2 Recall of time spent on activities

The purpose of the battery of questions on Physical Activity was not to gauge what activities respondents had done but to measure how long they spent doing them. Therefore, for the measure to be successful, respondents not only had to recall what activities they had done but also to recall how long they spent doing each activity. Recall was particularly difficult for respondents at Round One, who had to consider the whole five day period. By the time the fifth day was asked about some respondents expressed impatience at being asked to recall activity duration:

*'How am I supposed to know?'
(female, year 5)*

Other factors that influenced recall included whether the activity was preplanned and took up a specified time slot, whether the activity was part of a regular routine and whether the activity was done in short bursts throughout the day. The factors that influenced recall of time spent doing each activity are typified in Table 10-1.

Implications of impaired recall of activities

Again, if respondents could not readily access the information required to give a timeframe they were forced to use a strategy to provide an answer. Strategies used included:

- + Trying to work out a precise time
- + Using a heuristic, such as how long a P.E. class lasts for on the timetable
- + Using pure guesswork (particularly for unstructured activities done multiple times throughout the day such as walking or jumping around).

Some of these strategies may result in respondents over or under estimating

how long they spent doing each activity. For instance one respondent used the heuristic of how long he spent at the pool as being equal to the time he spent swimming, when actually part of the time at the pool was spent 'Mucking around'. Using such rules of thumb could lead to over estimations of time spent doing Physical Activity. Likewise, guesswork or approximations could lead to both over and under estimations.

Reducing timeframe under consideration

At Round Two, respondents voiced less difficulty in recalling how long they spent doing each activity due to the shorter reference period. As found at Round One respondents used a range of strategies to establish how long they did each activity for (calculations, heuristics, guesswork etc).

However, in general it is thought that the impact of poor recall on time spent doing each activity will be less detrimental than not being able to recall activities done. This is due to the fact the answer categories were sufficiently broad so respondents were not actually required to provide precise times doing each activity. Therefore estimations and guesses are more appropriate still likely to result in the respondent ticking the 'correct' box.

experienced fewer problems in relating to this time period. Additionally as the mainstage questionnaire will ask about the Spring Term, as opposed to the Summer Term, we expect this will alleviate the confusion between the Summer Term and the Summer holidays.

10.5.2 Physical Activity questions

- + Retain the time period under consideration as the last 3 days.

10.5 Recommendations for reference periods and timeframes

10.5.1 Sports Participation questions

Primary school questionnaire (years 5-6)

- + Drop the reference to the previous school term at the 'how often' questions and instead simply ask about the current time.

Secondary school questionnaire

- + Retain the timeframe 'last school term' at the 'how often' questions as secondary school respondents

11.0 Further Questions

As well as asking questions about Sports Participation and Physical Activity, the new online measures were used to test two further questions related to the facilities children and young people use.

11.1 Questions under consideration

This section contains findings from both rounds of cognitive testing on the remaining questions within the survey instruments:

- + Questions about Swimming (Round Two only)
- + Questions about Places to do Physical Activity (primary respondents only); and
- + Questions about Leisure Centres (secondary respondents only)

For specific question wording please refer to Appendices F and G (Round One) and H and I (Round Two).

11.2 Questions about 'Swimming' (Round Two only)

The three additional questions about Swimming were only included within the Round Two questionnaire. On the whole, these questions were understood well. After a series of more complex questions, both primary and secondary respondents reported finding these questions easier and more enjoyable to answer. There were two main problems:

- + Respondents misunderstood and confused the terms 'width' and 'length' (particularly those aged 11 and under); and
- + Respondents rushed or did not read

the questions fully, therefore missed out the words 'without armbands or floats'. This problem was confined to Strugglers.

11.2.1 Answer categories

There was evidence that the answer categories 'No' and 'Don't know' could be used interchangeably. For example, a respondent who could swim on both her front and back, but only with armbands, answered 'Don't Know' for on her front and 'No' for on her back. Another respondent whose disability prevented him from being able to swim on his back answered 'Don't know' as he had never tried – 'No' would also appear to be a correct answer as well. The problems were found among primary school respondents only.

11.2.2 Understanding of terms 'width' and 'length'

Respondents reported confusion over the terms 'width' and 'length'. This was either (a) because they mixed the two terms up and were unclear which referred to which distance in the swimming pool or (b) they were trying to think about how far they could swim but were unable to then relate this to the measures given in the answer categories (width and length). This led to incorrect answers as respondents either over or under

reported how far they could swim. These problems were found among primary school respondents and young secondary school respondents.

The picture of the swimming pool was found to be particularly useful in helping respondents visualise the 'length' and 'width' of a pool and assisted them in working out their answer.

11.2.3 Recommendations for Swimming questions

- + Consider whether 'don't know' is necessary as an answer category
- + Use labels on a picture of a swimming pool to show the distance of a width and a length
- + Display the words 'without armbands or floats' in bold rather than 'front without' and 'back without'.

Our recommendations for new question wording are shown in Appendix O.

11.3 Places to do Sport and Exercise (Primary only)

(Primary Schools (Round One): Q1)

(Primary Schools (Round Two): Q11)

Primary school respondents at both rounds were asked one question to establish which places, if any, they had been to (apart from school or on school grounds) to do any Sport or Physical Activity. At Round One this question was positioned at the beginning of the questionnaire. At Round Two it was shifted to the end of the questionnaire so that the order of questions would replicate the order used in the secondary questionnaire and in an attempt to alleviate any bias resulting from the order of the questions (i.e. so that answering this question would not affect the main battery of Sports Participation questions that followed next).

11.3.1 Understanding of places

Round One respondents seemed to have good understanding of the answer categories and whilst answering thought about:

- + Local parks, playing fields and playgrounds
- + Going swimming with their families
- + Going ice-skating/tenpin bowling for someone's birthday
- + Activity holidays they had been on.

Respondents also took into consideration the amount of activity that had been partaken in at a particular place – places were not selected if the respondent felt that their activities there would not be classed as 'Physical Activity'.

At Round One the Outdoor activity centre option was considered ambiguous so was dropped for Round Two.

Other places/Somewhere else

At Round One an 'Other' option was included. Places that respondents referred to were tennis courts, athletics stadiums, football pitches and the beach.

At Round Two this wording was altered to 'Somewhere else'. Additional places that were given were 'the beach' and 'at home'.

Whether inside or outside of school

At both rounds confusion existed among respondents with regards to whether they were to include places they had been to inside or outside school time. At Round One this confusion was not confined to respondents who struggled with reading the question. Instead, the main problem was that respondents were not willing to read, or missed the instruction in capital letters. If they did read the instruction, they mistook it to mean that they should only include activities that they had done whilst at school. There was strong feeling that the instruction should be presented in a bigger font or in bold so that it would stand out more. In addressing this problem, following Round One we recommended that the wording ('not in school') be inserted after items that may be on school grounds.

At Round Two, whilst there was evidence that respondents had interpreted and answered the question correctly, there was also evidence to the opposite effect - that the question was interpreted incorrectly as answer categories were excluded due to the respondent having **not** done them during school time. The inclusion of '(not in school)' inserted after certain answer categories was also problematic. Respondents inferred that the answer categories without this wording must have been done 'in school' in order to be selected.

11.3.2 Timeframe and Recall of Places

(Primary Schools (Round One): Q1)

(Primary Schools (Round Two): Q11)

With regard to timeframe, at Round One respondents were accurately thinking of anything from the previous September – when they started their current school year. At Round Two, there appeared to be no clear evidence as to whether the school year 'anchor' used had positive or negative

effects on the way respondents answered. Interviewers commented that they felt respondents had a tendency to either:

- + **Over report:** that is, they 'telescoped' and included places they had been to outside of the specified time period (Willis, 2005); or
- + **Under report:** that is, they failed to include places that they had been to during the time period (e.g. they had mentioned earlier in the interview they went swimming but did not answer 'yes' here).

Interviewers also described how respondents may not have always considered places they had been to during school holidays. It is therefore not clear how effectively the use of the school year anchor worked.

11.3.3 Recommendations for questions about places to do Sport or Physical Activity

- + Drop the reference to 'Sport or Physical Activity' as Strugglers had difficulty reading the words 'Physical Activity' and we have proposed not including this wording at all in the new years 3-4 questionnaire
- + Add information to make it clear to respondents that they should not include places they have been to during school time or whilst on school trips
- + Remove the '(not in school)' statements
- + Consider altering the time anchor to 'the last year' as opposed to 'since you have been in Year X' as it may lead respondents to think about activities in school.

Our recommendations for new question wording are shown in Appendix P.

11.4 Sport and Leisure Centres (Secondary only)

Respondents from Secondary Schools at both rounds were asked one question to determine how often they visit a Sport or Leisure Centre outside of school time. At Round One this question was positioned midway through the questionnaire following the battery of questions about Sports participation. At Round Two it was shifted to the end of the questionnaire in an attempt to alleviate any bias resulting from the order of the questions (i.e. so that answering this question in the middle of the main battery of questions about Sports Participation would not affect the overall set of questions). In general respondents encountered few difficulties when answering this question and were able to respond appropriately. No alterations were made following the Round One testing.

11.4.1 Understanding of Sport and Leisure Centres

Respondents at both rounds consistently understood the term 'Sport or leisure centre.' A Sports or leisure centre was described in the following ways:

- + A place that provides Sporting opportunities or sports or all kinds
- + A building you can do lots of different sports in
- + Big buildings with varying sports facilities (such as Sports halls, gyms, wet weather pitches and swimming pools)
- + Places where you can work out and keep fit
- + A Sports area, that contains various indoor and/or outdoor facilities for sport
- + Places that were open to the public and might be used by individuals or groups and Sport clubs.

The only ambiguity that arose at both rounds regarding comprehension of Sports or leisure centres occurred for respondents whose school contained Sports facilities that were used by the school but were also open to the public at the weekend. However, these respondents still recognised correctly the facilities as being a Sport or leisure centre and decided independently to only include the times they used them outside of school time when answering the question.

11.4.2 Recommendations for questions about Sports and leisure centres

-
- + No other amendments necessary.
-

Our recommendations for new question wording are shown in Appendix Q.

Appendix A

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Appendix B

Summary of recommendations for cognitive testing from desk review

Table -1

Question Numbers	Section	Recommendations from desk review
Primary & Secondary	All sections	+ Explore concepts of 'Sport' and 'Physical Activity' + Explore timeframes children and young people consider at each question + Explore recall strategies and how/whether anchors are used + Find whether children were able to think about the previous school year 'When you were in Year X' rather than 'Since you have been in Year X?' + Find whether using grouping of activities on long response lists helped children and young people look at all items on the list
Primary Q1	Places to Sport and Physical Activity	+ Explore understanding of each of the answer categories + Explore the recall strategies used by children to remember the facilities they used + Investigate what other facilities the children might use for Sport or Physical Activity
Primary Q2 Secondary Q1 - Q3	P.E. and Games	+ Explore children's comprehension of the answer category terminology + Investigate the concepts of 'Cross County Running' and 'Golf' to see to see if they are narrow or broad + Establish where children put general P.E. activities which don't clearly fall into any particular Sport + Examine whether all children and young people think of 'P.E or Games lessons' in the same way + Explore whether the young people understand all answer categories in the same way, particularly 'Circuit-training,' 'Land-based outdoor pursuits,' and, 'Water-based outdoor pursuits' + Establish if there are any activities frequently mentioned in the 'Other' category for both age groups
Primary Q4 - Q6	Lunchtime and after school activities	+ Test how children understand the question phrasing, particularly what is meant by, 'with the help of an adult' and 'Sport'

Table -2

Question Numbers	Section	Recommendations from desk review
Secondary Q3-Q5	Extracurricular Activities	+ Examine whether all young people think of '...Sports or Physical Activities that are organised by your school outside of lessons, at lunchtime, after school and at the weekends,' in the same way, and that they are not including lesson Sports or Sports not organised by the school + Explore whether the young people understand all answer categories in the same way, particularly 'Circuit-training,' 'Land-based outdoor pursuits,' and, 'Water-based outdoor pursuits' + Establish if there are any activities frequently mentioned in the 'Other' category
Primary Q7-Q9 Secondary Q6-Q9	Sports Clubs	+ Test how children understand the question phrasing, particularly what is meant by 'Sports Clubs outside of school' + Examine whether there is disparity between what young people think count as 'a club or group' in the context of the survey question + See if there is any ambiguity on whether a club is organised by the school or not with more outside Sports agencies operating on school grounds + Establish if there are any activities frequently mentioned in the 'Other' category + See if there is any ambiguity surrounding whether a club is organised by the school or not with more outside Sports agencies operating on school grounds
Secondary Q10-Q12	Coaching	+ Examine how young people interpret Coaching + Establish whether young people are able to only think about Coaching not provided by school + Establish if there are any activities frequently mentioned in the 'Other' category
Primary Q10a-c Secondary Q13a-c	Physical Activity	+ Test what Physical Activity the children think of when answering this question, particularly whether or not they are focusing on activities beyond those listed in the examples + Probe on how well the children recall their levels of Physical Activity and the time they spent on each activity + Test if children include all the activities they knew they had done on the list. If activities were omitted probe to find out why

Appendix C

Sampling, recruitment, fieldwork and analysis

The sampling and recruitment for each round of the cognitive testing carried out on two levels:

1. The school level
2. The respondent level

Sampling and recruitment strategies at both levels are discussed below.

Sampling and Recruitment of Schools

For both rounds of testing it was felt important that the cognitive interviewing of the online instruments should take place in schools, so as to mimic the context of the main-stage survey as much as possible. Naturally it was anticipated that the selection of schools would have a knock-on effect on the respondents we would be able to access. Therefore, the first stage of the sampling procedure was to identify a number of school characteristics that could potentially have bearing on the types of respondents we wished to take part in the cognitive testing. Slightly different considerations were made in the Round One compared with the Round Two Testing. Considerations made at each Round are extrapolated below:

Round One Considerations:

- + The sample needed to be drawn from both primary and secondary schools
- + Ideally the sample should include respondents from both south and north Wales
- + Ideally the sample should include respondents from different environments, i.e. urban, suburban and rural environments
- + Ideally the sample should include respondents from different socio-economic backgrounds
- + Ideally the sample should include respondents from schools with variable levels of academic performance, particularly in standards in physical education provision.

Round Two Considerations:

- + Schools who had taken part at Round One were not re-contacted: By going to the same schools there would be a danger that the same pupils would take part, thus biasing the results.
- + It was discussed at the Round One interviewer debriefing that those respondents in the Round One cognitive testing all appeared to come from fairly affluent backgrounds (and

were therefore more likely to have use of a computer at home). Therefore, for the second round of cognitive testing areas targeted were those more likely to include respondents from less affluent socio-economic backgrounds.

- + The sample needed to be drawn from both primary and secondary schools.
- + The sample needed to include respondents from both south and north Wales.

From these initial considerations the following Unitary Authorities (UAs) were selected as a starting point from which to draw the sample of schools. The percentage of pupils receiving free school meals was used as an indicator of the socio-economic diversity between schools. During Round One the priority was to select schools that varied in terms of socio-economic diversity. During Round Two UAs which had a high percentage of pupils receiving free school meals were targeted for recruitment, provided they met other selection criteria.

(See Table 3-0, overleaf)

Once these sampling areas had been decided on, the SCW (and its affiliates with contacts within schools) went about the process of recruitment. Unfortunately,

Table 3 - 0
Table of Unitary Authorities from which Schools were targeted for recruitment

Round	Unitary Authority	North/South	Geography	% Free school meals
Round One	Cardiff	South	Urban	19.0%
	Wrexham	North	Suburban	13.2%
	Monmouthshire	South	Rural	9.0%
Round Two	Merthyr Tydfil	South	Suburban	24.5%
	Conwy	North	Rural	13.3%

as no school league-tables are published in Wales, it was not possible to deliberately target schools with varying academic track records. However, despite this, attempts were made to recruit schools with varying track records of performance in providing extracurricular Sports opportunities. For instance, the recruitment drive was partially focused on recruiting schools that had different levels of implementation of SCW Sporting initiatives, such as the Dragon Sport¹² and 5x60¹³ programmes.

From the UAs identified (see table above) a total of 10 schools were recruited, comprising of 1 primary school, and 1 secondary school from each area.

All schools who agreed to take part were sent an information pack in advance of the interview detailing the procedure and purpose of the study. This pack contained a quota sheet detailing who should be interviewed (in terms of age and gender) and further recruitment instructions. Furthermore the pack contained information booklets for pupils and letters of consent for parents/guardians.

Sampling and Recruitment of Respondents

When sampling respondents to take part in the cognitive interviews the following considerations were kept in mind:

- + The sample had to include children and young people with a range of ages;
- + The sample had to include a higher percentage of the youngest children (aged 7) as this group was anticipated to have greater difficulties completing the online instrument;
- + The sample had to include an equal number of boys and girls;
- + The sample had to include pupils with mixed general aptitudes and mixed aptitude for Sport in particular;
- + The sample had to include at least some respondents from less well-off socio-economic backgrounds.

Each school that agreed to take part was sent a quota sheet specifying a quota of how many respondents they needed to recruit (between 2 and 8), of what gender and what school year. Due to the timing of the Round One cognitive interviews no Year 11 respondents could be recruited due to their sitting GCSE examinations. However, it is not anticipated that this affected the results of the cognitive interviews at this

Round; it is highly unlikely that cognitive or behavioural capacities differ between Year 11 and Year 10 students (who were recruited) to such an extent performance of the survey task would be influenced. This theory was supported by the Round Two testing which found no age-related differences between respondents in Year 10 and those in Year 11.

The following sample was achieved over both rounds of cognitive testing:

(See Table 4-0, overleaf)

Beyond the specifics of gender and age, selection of the respondents was left to the discretion of their teachers (who were in the best position to realise which pupils were most able to afford time away from their studies). Each school was asked that at least one of their respondents should be involved in some extra-curricular Sport, and at least one must (to the best of their knowledge) be involved with no extracurricular Sport. It was also stressed that pupils with varying aptitudes, both in general and particularly when it came to Sport, were needed for the research and this should be kept in mind when selecting students to take part. It was also stressed that we were interested in talking to children and young people from less affluent backgrounds.

¹² <http://www.sports-council-wales.org.uk/getactiveinthecommunity/active-young-people/dragon-sport>

¹³ <http://www.sports-council-wales.org.uk/getactiveinthecommunity/active-young-people/5x60>

Table Appendix 4 - 0
Table of achieved sample of respondents

		Primary School Respondents		Secondary School Respondents			Total
School Year		3-4	5-6	7	8-9	10-11	
Round One	Girls	4	3	1	1	3	12
	Boys	3	4	2	2	1	12
Round Two	Girls	2	2	2	2	1	9
	Boys	3	2	2	1	1	9
Total for Year Group		12	11	7	6	6	42
Total Primary/Secondary			23		19		42

Teachers were given a full written brief on the project aims to explain why it was necessary to pick students with eclectic abilities. Feedback from the interviewer debriefing and the interviewer notes confirmed that respondents with varied backgrounds, academic abilities and interest in Sport took part in the cognitive interviews.

Fieldwork

Round One fieldwork was carried out in May and June 2008 and Round Two in November 2008. All the interviews were carried out by members of NatCen's core team of cognitive interviewers who are highly trained in cognitive interviewing techniques.

All interviews were carried out in respondents' schools using the schools' computer facilities. Where possible computers were used that would be used by respondents in a real life situation although due to school time-tabling constraints some interviews were carried out on whatever equipment was readily available (e.g. a staff room PC rather than a classroom PC sometimes had to be used).

Prior to commencing the interview all respondents were shown an information booklet detailing the aims and procedures of the study to ensure informed consent could be given. All interviews were digitally audio recorded, with respondent consent, and lasted approximately one hour. At Round One respondents each received a £20 high street voucher as a thank you for taking part in the interview, which was either given to the respondent directly or posted to their home address, depending on the wishes of the school involved. As this caused various practical problems at Round One a different approach was taken at Round Two. Each participating school received a £100 cash incentive to thank them for their time and the effort involved.

Analysis

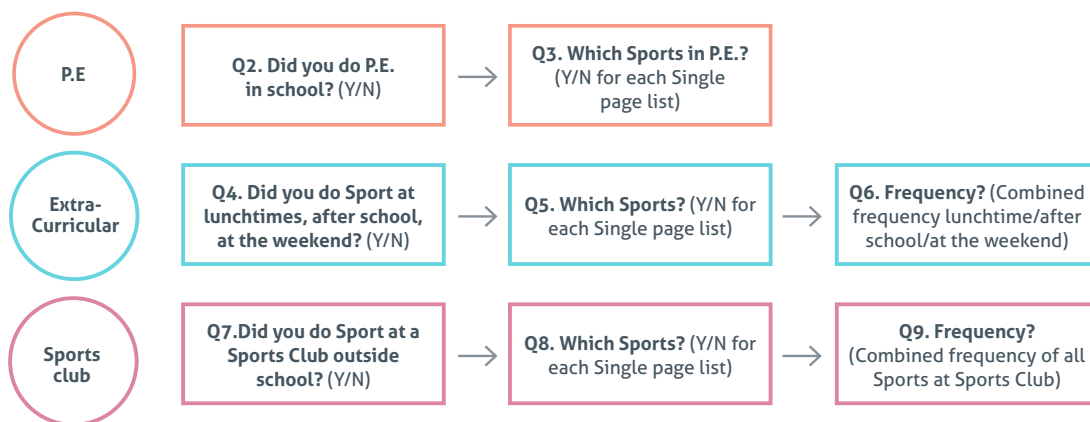
The interviewers listened to each recording as soon as possible after the interview in order to draw up detailed notes on a standard template provided by the research team. These notes, the recordings of the interviews, and the completed test questionnaire (provided by SNAP subsequently to the surveys' completion) were all used in the analysis.

Analysis was carried out using **Framework**, an analytical tool devised by the Qualitative Research Unit (QRU) at NatCen. The **Framework** analysis process consists of transferring the structured notes of cognitive interviewers onto a series of thematic matrices (or „charts“). Each chart consists of columns and rows. The columns each represent a particular theme identified from the research while each row is allocated to a specific interview. In this way the data from an interview is entered under the appropriate thematic heading, but in the same row, across all the charts. This process permits detailed within case and across case analysis.

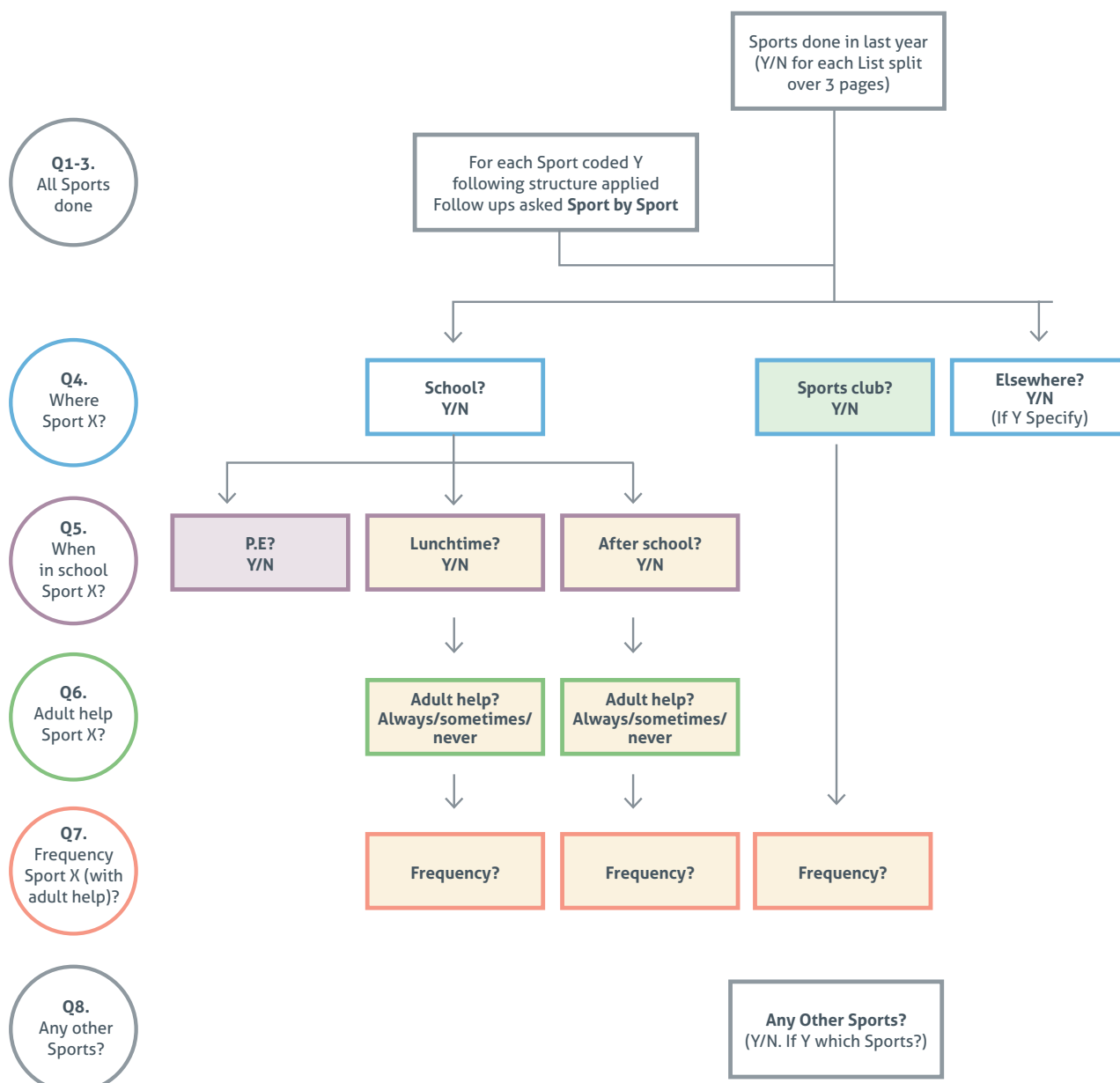
Appendix D

Diagrams illustrating the changes in the sports participation section

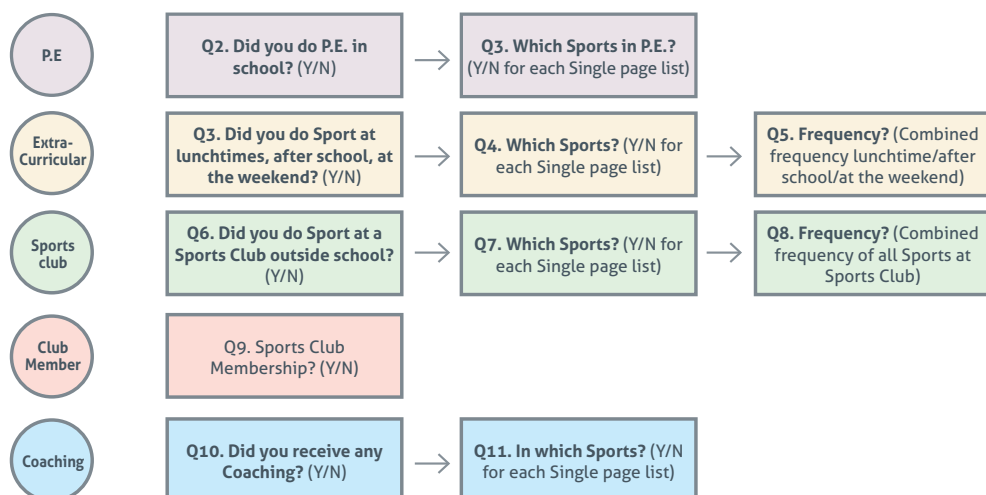
Primary Round One



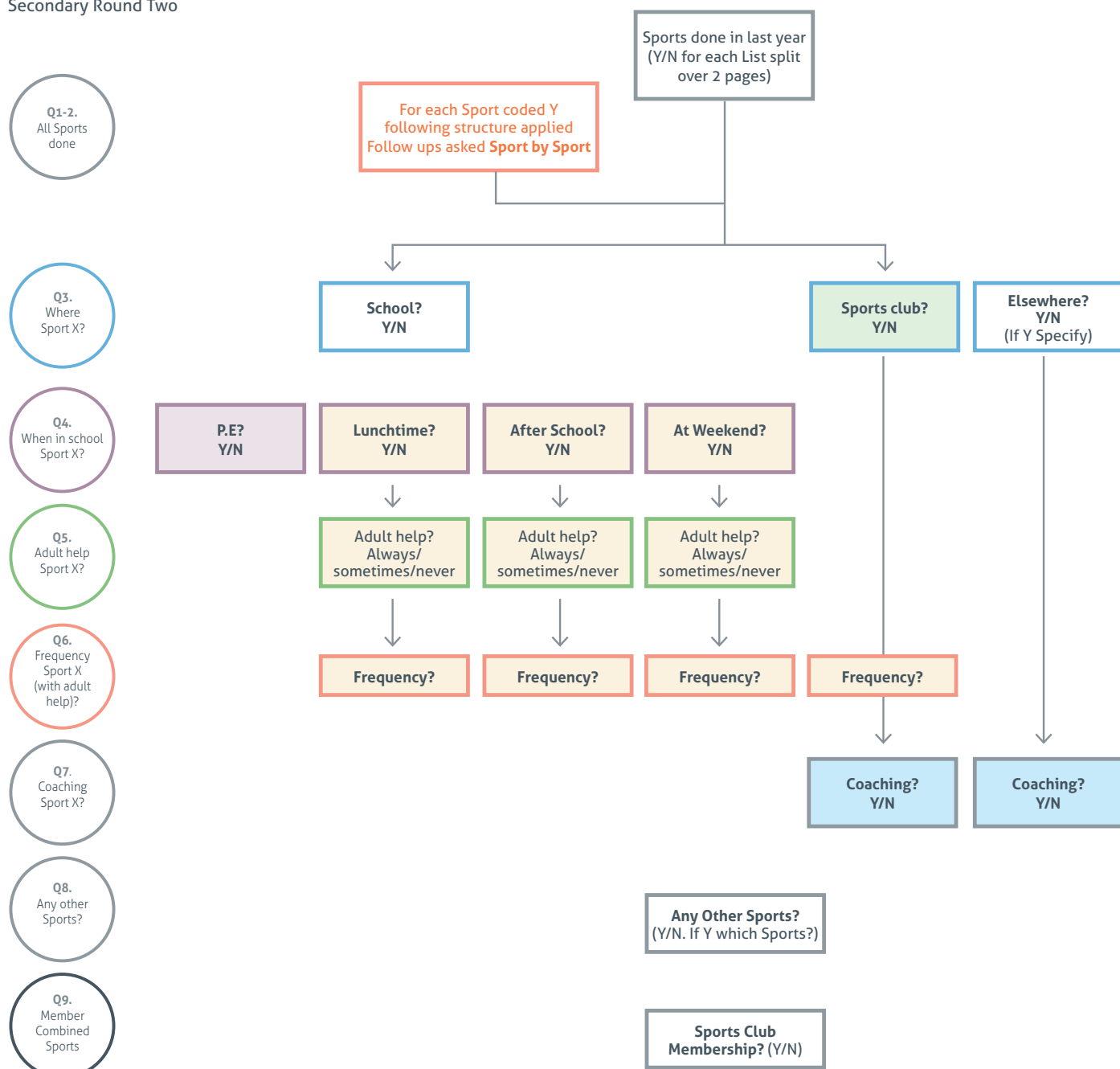
Primary Round Two



Secondary Round One



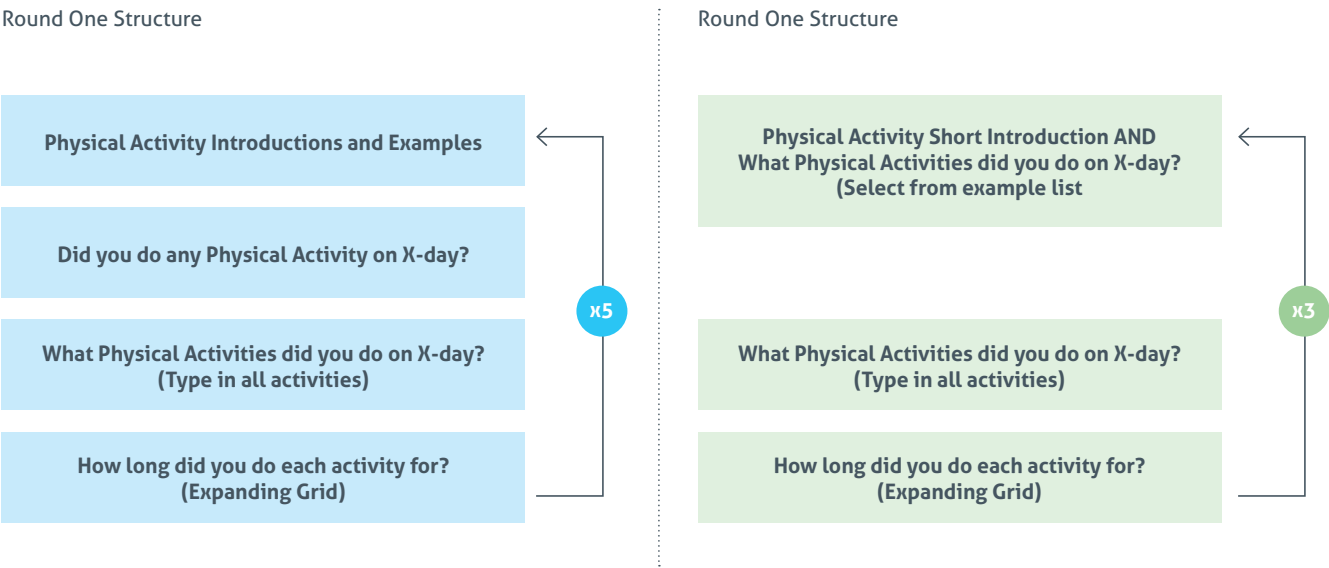
Secondary Round Two



Appendix E

Diagram illustrating the changes in the physical activity section

Changes in Structure of Physical Activity Section From Round One to Round Two (both Primary and Secondary versions)



Appendix F

Round one primary school questionnaire

This appendix contains the wording of the Round One Primary School Questionnaire. This round of testing was conducted in June 2008.

Places

Q1 (Places to do Sports)?
(Asked of All)

Places to do Sport and Physical Activities

Physical activity means **ANY** activity that involves movement such as walking, cycling, housework and gardening as well as sport. It should make you feel warm or at least slightly out of breath.

Sport means any activity that has **RULES** such as football, martial arts or swimming in a competition.

Since you have been in Year 5 have you been to any of these places to do sport or physical activity?
DO NOT INCLUDE ANY PLACES AT SCHOOL OR ON SCHOOL GROUNDS
PLEASE CHOOSE AS MANY AS YOU LIKE

☐ Playground
☐ Playing field
☐ Park
☐ Skatepark
☐ Ice rink
☐ Swimming Pool
☐ Tenpin bowling alley
☐ Outdoor activity centre
☐ Other (please tell us where in the box below)
☐ None of these since been in Year 5

Sport Participation

Sports Q2 (Ever do – P.E. and Games)?
(Asked of All)

PE and Games

Do you do P.E. or Games lessons at school?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☐ No



Sports Q3 (Which activities list – P.E. and Games?)
(Q3 if Q2=Yes)

PE and Games

Have you done any of these sports in P.E. or Games lessons since you have been in Year 6?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Indoor sports		Yes	No
Aerobics	☐	☐	
Dance	☐	☐	
Gymnastics	☐	☐	
Indoor games		Yes	No
Badminton	☐	☐	
Basketball	☐	☐	
Table tennis	☐	☐	
Tennis or short tennis	☐	☐	
Outdoor sports		Yes	No
Athletics	☐	☐	
Cross country running	☐	☐	
Outdoor team games		Yes	No
Rounders or Baseball	☐	☐	
Bowls (not tenpin bowling)	☐	☐	
Cricket	☐	☐	
Football	☐	☐	
Golf	☐	☐	
Hockey	☐	☐	
Netball	☐	☐	
Rugby	☐	☐	
Swimming	☐	☐	
Other sports		Yes	No
Outdoor adventure activities	☐	☐	
Any other sports (please tell us which other sports you have done in the box below)	☐	☐	

Sports Q4 (Ever do – Lunchtime/After school activities)?
(Asked of All)

Lunchtime and after school physical activity

Apart from P.E. and Games lessons, do you do sports at school, at lunchtime or after school with the help of an adult?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☐ No



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Sports Q5 (Which activities list – Lunchtime/After school activities)?
(Q5 if Q4=Yes)

Lunchtime and after school physical activity

Apart from P.E. and Games lessons, have you done any of these sports at school, at lunchtime or after school with the help of an adult since you have been in Year 6?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Indoor sports <table border="0" style="width: 100%;"> <tr><td>Aerobics</td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td>Dance</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Gymnastics</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Judo/Martial arts</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table> Indoor games <table border="0" style="width: 100%;"> <tr><td>Badminton</td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td>Basketball</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Table tennis</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Tennis or short tennis</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table> Outdoor sports <table border="0" style="width: 100%;"> <tr><td>Athletics</td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td>Cross Country running</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table>	Aerobics	Yes	No	Dance	☐	☐	Gymnastics	☐	☐	Judo/Martial arts	☐	☐	Badminton	Yes	No	Basketball	☐	☐	Table tennis	☐	☐	Tennis or short tennis	☐	☐	Athletics	Yes	No	Cross Country running	☐	☐	Outdoor team games <table border="0" style="width: 100%;"> <tr><td>Rounders or Baseball</td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td>Bowls (not tenpin bowling)</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Cricket</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Football</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Golf</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Hockey</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Netball</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> <tr><td>Rugby</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table> Swimming <table border="0" style="width: 100%;"> <tr><td></td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td></td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table> Other sports <table border="0" style="width: 100%;"> <tr><td>Outdoor adventure activities</td><td style="text-align: center;">Yes</td><td style="text-align: center;">No</td></tr> <tr><td>Any other sports (please tell us which other sports you have done in the box below)</td><td style="text-align: center;">☐</td><td style="text-align: center;">☐</td></tr> </table>	Rounders or Baseball	Yes	No	Bowls (not tenpin bowling)	☐	☐	Cricket	☐	☐	Football	☐	☐	Golf	☐	☐	Hockey	☐	☐	Netball	☐	☐	Rugby	☐	☐		Yes	No		☐	☐	Outdoor adventure activities	Yes	No	Any other sports (please tell us which other sports you have done in the box below)	☐	☐
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Outdoor adventure activities	Yes	No																																																																	
Any other sports (please tell us which other sports you have done in the box below)	☐	☐																																																																	

Sports Q6 (How often – Lunchtime/After school activities)?
(Q6 if Q4=Yes)

Lunchtime and after school physical activity

Thinking about the last school term, that is the Spring term, about how often did you do sports in school, at lunchtime or after school with the help of an adult?
PLEASE CHOOSE ONE ANSWER ONLY

☐ More than once a week
☐ About once a week
☐ About once every 2 weeks
☐ About once a month
☐ Less often
☐ Never



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Sports Q7 (Ever do – Sports Clubs)?
(Asked of All)

Sports Clubs

Are you in any sports clubs outside of school?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☐ No

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Sports Q8 (Which activities list – Sports clubs)?
(Q8 if Q7=Yes).

Sports Clubs

Have you done any of these sports with a sports club outside of school since you have been in Year 6?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Indoor sports <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Aerobics</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Dance</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Gymnastics</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Judo/Martial arts</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table> Indoor games <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Badminton</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Basketball</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Table tennis</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Tennis or short tennis</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table> Outdoor sports <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Athletics</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Cross Country running</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	Aerobics	Yes	No	Dance	☐	☐	Gymnastics	☐	☐	Judo/Martial arts	☐	☐	Badminton	Yes	No	Basketball	☐	☐	Table tennis	☐	☐	Tennis or short tennis	☐	☐	Athletics	Yes	No	Cross Country running	☐	☐	Outdoor team games <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Rounders or Baseball</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Bowls (not tenpin bowling)</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Cricket</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Football</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Golf</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Hockey</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Netball</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> <tr> <td>Rugby</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table> Swimming <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;"></td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td></td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table> Other sports <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Outdoor adventure activities</td> <td style="width: 10%; text-align: center;">Yes</td> <td style="width: 10%; text-align: center;">No</td> </tr> <tr> <td>Any other sports (please tell us which other sports you have done in the box below)</td> <td style="text-align: center;">☐</td> <td style="text-align: center;">☐</td> </tr> </table>	Rounders or Baseball	Yes	No	Bowls (not tenpin bowling)	☐	☐	Cricket	☐	☐	Football	☐	☐	Golf	☐	☐	Hockey	☐	☐	Netball	☐	☐	Rugby	☐	☐		Yes	No		☐	☐	Outdoor adventure activities	Yes	No	Any other sports (please tell us which other sports you have done in the box below)	☐	☐
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Outdoor adventure activities	Yes	No																																																																	
Any other sports (please tell us which other sports you have done in the box below)	☐	☐																																																																	

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Sports Q9 (How often – Sports Clubs)?
(Q9 if Q7=Yes).

Sports Clubs

Thinking about the last school term, that is the Spring term, about how often did you take part in sports at a sports club outside of school?
PLEASE CHOOSE ONE ANSWER ONLY

☐ More than once a week
☐ About once a week
☐ About once every 2 weeks
☐ About once a month
☐ Less often
☐ Never

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Physical Activity Q10
(Instruction, Examples, Additional, How long) (Asked of All)

Q10
(Instruction and Examples)

Being Active

The next questions are about the physical activity you did over the last week.

By "physical activity" we mean **ANY** activity that involves movement such as walking, cycling, housework and gardening as well as sport. It should make you feel warm or at least slightly out of breath.

You should include any physical activity you may have done in school, on the way to/from school, with a club, with your friends or on your own.

Firstly, please think about any physical activity you did yesterday.

Examples of physical activity:

- Walking
- Running around
- Jumping around
- Riding a bike
- Skipping
- Dancing
- Gymnastics
- Swimming
- Tennis
- Football
- Netball
- Housework
- Gardening

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Q10a
(Any Physical Activity on X-day)

Being Active

Did you do any physical activity yesterday (Wednesday)?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☐ No



Q10b
(Physical Activities)

Being Active

What physical activities did you do yesterday (Wednesday)?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 6

Activity 7

Activity 8

Examples of physical activity:

- Walking
- Running around
- Jumping around
- Riding a bike
- Skipping
- Dancing
- Gymnastics
- Swimming
- Tennis
- Football
- Netball
- Housework
- Gardening

Q10c
(How Long)

Being Active

How long did you spend doing each of the following things yesterday (Wednesday)?
PLEASE CHOOSE ONE ANSWER FOR EACH ROW

	About quarter of an hour (15 mins)	About half an hour (30 mins)	About three quarters of an hour (45 mins)	About an hour (60 mins)	More than an hour
Skipping	☐	☐	☐	☐	☐

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Appendix G

Round one secondary school questionnaire

This appendix contains the wording of the Round One Secondary School Questionnaire. This round of testing was conducted in June 2008.

Sports Participation

Sports Q1 (Ever do – P.E. and Games)?
(Asked of All)

SPORTS, GAMES AND OTHER PHYSICAL ACTIVITIES SURVEY 2008

Curricular Physical Activity - PE and Games

This question is about the sports or physical activities you have taken part in during the **last school year**. By the **last school year** we mean from when school started **last September** up until now.

Have you taken part in **P.E. or Games Lessons** over the last school year?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No



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Sports Q2 (Which activities list – P.E. and Games?)
(Q2 if Q1=Yes).

Curricular Physical Activity - PE and Games

Which of the sports or physical activities listed have you taken part in during **P.E. or Games Lessons** over the last school year?
PLEASE CHOOSE YES IF YOU HAVE TAKEN PART IN THE LAST SCHOOL YEAR. PLEASE CHOOSE NO IF YOU HAVE NOT TAKEN PART IN THE LAST SCHOOL YEAR.

Team sports		Yes	No	
Football		☒	☐	
Rugby		☒	☐	
Cricket		☒	☐	
Basketball		☒	☐	
Hockey		☒	☐	
Netball		☒	☐	
Baseball/Rounders/Softball		☒	☐	
Volleyball		☒	☐	
Non-team sports		Yes	No	
Badminton		☐	☒	
Squash		☐	☒	
Table tennis		☐	☒	
Tennis		☒	☐	
Outdoor activities		Yes	No	
Athletics		☒	☐	
Circuit training		☒	☐	
Cross country running		☒	☐	
Cycling		☒	☐	
Golf		☒	☐	
Horse riding		☒	☐	
Street sports (e.g. skate boarding)		☒	☐	
Indoor activities		Yes	No	
Dance		☐	☒	
Fitness classes (e.g. Aerobics)		☒	☐	
Gymnastics		☐	☒	
Martial arts (e.g. Judo, Karate)		☒	☐	
Trampoline		☐	☒	
Swimming		☐	☒	
Other		Yes	No	
Other land-based outdoor pursuit (please tell us in the box below)		☐	☒	
Other water-based outdoor pursuit (please tell us in the box below)		☒	☐	
Land based outdoor pursuit				
Water-based outdoor pursuit				

Sports Q3 (Ever do – Lunchtime/After school activities)?
(Asked of All)

Extra Curricular Physical Activity	
This question is about the sports or physical activities you have taken part in during the last school year . By the last school year we mean from when school started last September up until now .	
Have you taken part in sports or physical activities that were organised by your school, outside of lessons, at lunchtime or at the weekend over the last school year?	
PLEASE CHOOSE ONE ANSWER ONLY	
☐ Yes	☒ No

Sports Q4 (Which activities (list) – Lunchtime/After school activities)?
(Q4 if Q3=Yes).

Extra Curricular Physical Activity			
Which of the sports or physical activities listed have you taken part in over the last school year as part of an activity organised by your school outside of lesson times, at lunchtime, after school or at the weekends? e.g. playing in a school sports team, or attending a dance club.			
PLEASE CHOOSE YES IF YOU HAVE TAKEN PART IN THE SPORT OR ACTIVITY IN THE LAST ACADEMIC YEAR. PLEASE CHOOSE NO IF YOU HAVE NOT TAKEN PART IN THE LAST ACADEMIC YEAR			
Team sports		Indoor activities	
Football	☒ Yes ☐ No	Dance	☒ Yes ☐ No
Rugby	☐ Yes ☒ No	Fitness classes (e.g. Aerobics)	☒ Yes ☐ No
Cricket	☐ Yes ☒ No	Gymnastics	☐ Yes ☒ No
Basketball	☒ Yes ☐ No	Martial arts (e.g. Judo, Karate)	☐ Yes ☒ No
Hockey	☒ Yes ☐ No	Trampolining	☐ Yes ☒ No
Netball	☐ Yes ☒ No	Swimming	☒ Yes ☐ No
Baseball/Rounders/Softball	☐ Yes ☒ No	Other	☐ Yes ☒ No
Volleyball	☐ Yes ☒ No	Other land-based outdoor pursuit (please tell us in the box below)	☒ Yes ☐ No
Non-team sports	☐ Yes ☒ No	Other water-based outdoor pursuit (please tell us in the box below)	☐ Yes ☒ No
Badminton	☒ Yes ☐ No	Land-based outdoor pursuit	
Squash	☐ Yes ☒ No	Water-based outdoor pursuit	
Table tennis	☐ Yes ☒ No		
Tennis	☒ Yes ☐ No		
Outdoor activities	☐ Yes ☒ No		
Athletics	☐ Yes ☒ No		
Circuit training	☐ Yes ☒ No		
Cross country running	☒ Yes ☐ No		
Cycling	☒ Yes ☐ No		
Golf	☐ Yes ☒ No		
Horse riding	☐ Yes ☒ No		
Street sports (e.g. skate boarding)	☐ Yes ☒ No		

Sports Q5 (How often – Lunchtime/After school activities)?
(Q5 if Q3=Yes).

Extra Curricular Physical Activity	
Thinking about the last school term, that is the Spring term , about how often did you take part in sports or physical activities organised by your school outside of lesson times, at lunchtime, after school or at the weekends?	
PLEASE CHOOSE ONE ANSWER ONLY	
☐ More than 3 times a week ☐ 2-3 times a week ☐ Once a week ☐ 2-3 times a month ☐ Once a month ☐ Less often ☐ Never	

Sports Q6 (Ever do – Sports Clubs)?
(Asked of All)

Sports Clubs

This question is about the sports or physical activities you have taken part in during the **last school year**. By the last school year we mean from when school started last September up until now.

Have you taken part in sports or physical activities with a club or group that is not organised by your school over the last school year?
PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes
☐ No

Sports Q7 Sports Q7 (Which activities (list) – Sports clubs)?
(Q7 if Q6=Yes)

Sports Clubs

This question is about the sport or physical activities you have taken part in during the **last school year**. By the last school year we mean from when school started last September up until now.

Have you taken part in any of the sports or physical activities listed below over the last school year, with a club or group that is **not** organised by your school?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Team sports		Yes	No	Indoor activities		Yes	No
Football	☒	☐		Dance	☐	☒	
Rugby	☒	☐		Fitness classes (e.g. Aerobics)	☒	☐	
Cricket	☐	☒		Gymnastics	☐	☒	
Basketball	☒	☐		Martial arts (e.g. Judo, Karate)	☒	☐	
Hockey	☐	☒		Trampoline	☒	☐	
Netball	☒	☐					
Baseball/Softball	☒	☐		Swimming	Yes	No	
Volleyball	☒	☐			☐	☒	
Non-team sports		Yes	No	Other		Yes	No
Badminton	☐	☒		Other land-based outdoor pursuit (please tell us in the box below)	☒	☐	
Squash	☒	☐		Other water-based outdoor pursuit (please tell us in the box below)	☒	☒	
Table tennis	☒	☐					
Tennis	☒	☐		Land-based outdoor pursuit			
Outdoor activities		Yes	No	Water-based outdoor pursuit			
Athletics	☐	☒					
Gymnastics	☒	☐					
Cross country running	☐	☒					
Cycling	☒	☐					
Golf	☒	☐					
Horse riding	☒	☐					
Street sports (e.g. skate boarding)	☒	☐					

Sports Q8 (How often – Sports Clubs)?
(Q8 if Q6=Yes)

Sports Clubs

Thinking about the **last school term**, that is the **Spring term**, about how often did you take part in sports or physical activities with a club or group that was **not** organised by your school?
PLEASE CHOOSE ONE ANSWER ONLY

☐ More than 3 times a week
☐ 2-3 times a week
☒ Once a week
☐ 2-3 times a month
☐ Once a month
☐ Less often
☐ Never

Sports Q9 (Whether member of Sports Club)?
(Q9 if Q6=Yes).

Sports Clubs

Are you a member of a sports club that is organised for the purpose of doing one main sport or physical activity?

(By sports club we mean a club run outside of school that helps you develop your skills in one sport or activity. We do not mean an ordinary youth club which may sometimes offer different sports).

☒ Yes
☐ No

Sports Q10 (Ever do – Coaching)? (Asked of All)

Coaching	
This question is about the sports or physical activities you have taken part in during the last school year. By the last school year we mean from when school started last September up until now. Have you received coaching that was not organised by your school (such as a club or a group) over the last school year? PLEASE CHOOSE ONE ANSWER ONLY ☐ Yes ☒ No	
	

Sports Q11 Which activities (list) – Coaching?
(Q7 if Q10=Yes).

Coaching			
Over the last school year, in which sports or physical activities, have you received coaching that was not organised by your school (such as a club or a group)? By 'coaching' we mean when you are instructed or taught how to play and given advice on how to improve the way in which you play. PLEASE CHOOSE YES OR NO FOR EACH ONE			
Team sports		Indoor activities	
Football	Yes ☐ No ☒	Dance	Yes ☐ No ☒
Rugby	Yes ☒ No ☐	Fitness classes (e.g. Aerobics)	Yes ☐ No ☒
Cricket	Yes ☒ No ☐	Gymnastics	Yes ☐ No ☒
Basketball	Yes ☒ No ☐	Martial arts (e.g. Judo, Karate)	Yes ☐ No ☒
Hockey	Yes ☐ No ☒	Trampolining	Yes ☐ No ☒
Netball	Yes ☐ No ☒		
Baseball/Rounders/Softball	Yes ☐ No ☒	Swimming	Yes ☐ No ☒
Volleyball	Yes ☒ No ☐		
Non-team sports		Other	
Badminton	Yes ☐ No ☒	Other land-based outdoor pursuit (please tell us in the box below)	Yes ☐ No ☒
Squash	Yes ☐ No ☒	Other water-based outdoor pursuit (please tell us in the box below)	Yes ☐ No ☒
Table tennis	Yes ☐ No ☒		
Tennis	Yes ☒ No ☐	Land-based outdoor pursuit	
Outdoor activities		Water-based outdoor pursuit	
Athletics	Yes ☒ No ☐		
Circuit training	Yes ☒ No ☐		
Cross country running	Yes ☒ No ☐		
Cycling	Yes ☒ No ☐		
Golf	Yes ☒ No ☐		
Horse riding	Yes ☒ No ☐		
Street sports (e.g. skate boarding)	Yes ☒ No ☐		

Sports Q12 (Leisure Centres)
(Asked of All)

Leisure Centres
Thinking about the last school term, that is the Spring term, about how often, if at all, did you visit a sports or leisure centre to undertake a sport or physical activity outside of school time? Please do not include visits organised by your school. PLEASE CHOOSE ONE ANSWER ONLY ☐ More than 3 times a week ☐ 2-3 times a week ☐ Once a week ☐ 2-3 times a month ☒ Once a month ☐ Less often ☐ Never

Physical Activity Q13

(Instruction, Examples, Additional, How long) (Asked of All)

Q13 (Instruction and Examples)

Physical Activity	
The next questions are about the physical activity you did over the last week. By "physical activity" we mean ANY activity that involves movement such as walking, cycling, housework and gardening as well as sport. It should make you feel warm or at least slightly out of breath. You should include any physical activity you may have done in school, on the way to/from school, with a club, with your friends or on your own. Firstly, please think about any physical activity you did yesterday.	Examples of physical activity: - Walking - Running around - Jumping around - Riding a bike - Skipping - Dancing - Gymnastics - Swimming - Tennis - Football - Netball - Housework - Gardening

Q13a (Any Physical Activity on X-day)

Physical Activity	
Did you do any physical activity yesterday (Thursday)? PLEASE CHOOSE ONE ANSWER ONLY ☒ Yes ☐ No	

Q13b (Physical Activities)

Physical Activity	
What physical activities did you do yesterday (Thursday)? Activity 1 swimming Activity 2 housework Activity 3 Activity 4 Activity 5 Activity 6 Activity 7 Activity 8	Examples of physical activity: - Walking - Running around - Jumping around - Riding a bike - Skipping - Dancing - Gymnastics - Swimming - Tennis - Football - Netball - Housework - Gardening

Q13c (How Long)

How long did you spend doing each of the following things yesterday (Thursday)? PLEASE CHOOSE ONE ANSWER FOR EACH ROW					
	About quarter of an hour (15 mins)	About half an hour (30 mins)	About three quarters of an hour (45 mins)	About an hour (60 mins)	More than an hour
swimming	☐	☒	☐	☐	☐
housework	☒	☐	☐	☐	☐

Appendix H

Round two primary school questionnaire

This appendix contains the wording of the Round Two Primary School Questionnaire. This round of testing was conducting in November 2008.

Sports Q1 (Did you do any of List A)?
(Asked of All)

Sports				
Did you do any of these sports when you were in Year 2 ? PLEASE CHOOSE YES OR NO FOR EACH ONE				
	Yes	No		
Basketball	☐	☐	Dance	☐
Badminton	☐	☐	Gymnastics	☐
Tennis or short tennis	☐	☐	Judo/Martial Arts	☐
Table tennis	☐	☐	Swimming	☐

Progress

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Sports Q2
(Did you do any of List B)? (Asked of All)

Sports				
And did you do any of these sports when you were in Year 2 ? PLEASE CHOOSE YES OR NO FOR EACH ONE				
	Yes	No		
Football	☐	☐	Athletics	☐
Rugby	☐	☐	Cross Country Running	☐
Cricket	☐	☐	Golf	☐
Rounders or Baseball	☐	☐	Bowls (not ten pin bowling)	☐
	Yes	No		
Netball	☐	☐		
Hockey	☐	☐		
Volleyball	☐	☐		

Sports Q3 (Did you do Outdoor adventure)?
(Asked of All)

Sports	
And did you do any outdoor adventure activities when you were in Year 2 ? (for example going to adventure playgrounds, climbing and canoeing)	
☒ Yes ☐ No	
	

Sports Q4 (Where)?

(Asked separately for each sport selected at List A, List B and Q3)

Hockey

Where did you play hockey (when you were in Year 2)?
PLEASE CHOOSE YES OR NO FOR EACH ONE

	Yes	No
At school	☒	☐
At a sports club not at school	☐	☒
Somewhere else not at school (please write in)	☐	☐
In my garden	☐	☐



Sports Q5 (When at school)?

(Asked separately for each sport selected at List A, List B and Q3 if Q4=At school).

Hockey

When did you play hockey at school (when you were in Year 2)?
PLEASE CHOOSE YES OR NO FOR EACH ONE

	Yes	No
In P.E. lessons	☒	☐
At lunchtime	☐	☒
After school (at school)	☐	☐



Sports Q6 Sports Q6 (Adult help)?

(Q6a separately for each sport selected at List A, List B and Q3 if Q5=at Lunchtime)

(Q6b separately for each sport selected at List A, List B and Q3 if Q5=After School)

Q6a (Help at lunchtime)

Hockey

When you played hockey at lunchtime (at school) did an adult help?
PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes, an adult **always** helped
☐ Yes, an adult **sometimes** helped
☐ No, an adult **never** helped



Sports Q6b (Help After school)

Hockey

When you played hockey after school (at school) did an adult help?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes, an adult **always** helped
☒ Yes, an adult **sometimes** helped
☐ No, an adult **never** helped



Sports Q7 (Frequency lunchtime/after school/ club not in school)
(Q7a separately for each sport if Q6a=Always or Sometimes helped at lunchtime)
(Q7b separately for each sport if Q6b=Always or Sometimes helped after school)
(Q7c separately for each sport if Q4=At a sports club not at school)

Q7a (Frequency lunchtime)

Hockey

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play hockey **at lunchtime** (at school) **with help from an adult**?

PLEASE CHOOSE ONE ANSWER ONLY

- ☐ More than once a week
- ☒ About once a week
- ☐ About once every 2 weeks
- ☐ About once a month
- ☐ Less often
- ☐ Never



Q7b (Frequency after school at school)

Hockey

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play hockey **after school** (at school) **with help from an adult**?

PLEASE CHOOSE ONE ANSWER ONLY

- ☐ More than once a week
- ☐ About once a week
- ☐ About once every 2 weeks
- ☐ About once a month
- ☒ Less often
- ☐ Never



Q7c (Frequency club not at school)

Hockey

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play hockey **at a sports club** not at school?

PLEASE CHOOSE ONE ANSWER ONLY

- ☐ More than once a week
- ☐ About once a week
- ☐ About once every 2 weeks
- ☐ About once a month
- ☒ Less often
- ☐ Never



Sports Q8 (Other sports)

Q8a (Whether other sports)

Other Sports

Are there any **other sports** you did in Year 5 (in or out of school) that we haven't asked you about already?
PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes
☐ No



Q8b (What other sports)

Other Sports

Please tell us which sports these were in the box below.

Swimming Q9

Q9a (Armbands)

Swimming

Can you swim on your **front** without armbands or floats?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No
☐ Don't know

Can you swim on your **back** without armbands or floats?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No
☐ Don't know



Q9b (How far)

Swimming

How far can you swim?
PLEASE CHOOSE ONE ANSWER ONLY

☐ A width (across the swimming pool)
☒ A length (from one end of the pool to the other)
☐ More than one length of the pool



Physical Activity Q10 (Instruction, Examples, Additional, How long)

Q10a (Instruction and Examples)

Physical Activity and Exercise

The next questions are about your **physical activity** or **exercise** over the last three days. You have already told us about the sports you do but now we **also** want to know about things in your every day life like *walking to school, running around, playing ball games, going to the park and doing housework and gardening.*

Physical activity includes **anything** that involves movement.

What physical activities or exercise did you do **yesterday (Tuesday)**?
CLICK ON THE EXAMPLES THAT YOU DID. CHOOSE AS MANY AS YOU LIKE

Please only count each activity **once** (so if you ran around and jumped around while you played tennis you only need to put tennis)

☐ Walking to/from school ☐ Hiking ☐ Running around ☐ Jumping around ☐ Skipping ☐ Riding a bike ☐ Housework ☐ Gardening	☐ Dancing ☐ Gymnastics ☐ Swimming ☐ Tennis ☐ Football ☐ Netball ☐ Something else ☐ I didn't do any physical activities or exercise yesterday
---	---

Q10b (Additional physical activities)

Physical Activity and Exercise

Physical activity includes anything that involves movement.

Yesterday (Tuesday) you did the following physical activities Riding a bike, Tennis and Netball.
What **other** physical activities did you do **yesterday (Tuesday)**?

Please only count each activity **once** (so if you ran around and jumped around while you played tennis you only need to put tennis)

Activity 1 Trampolining Activity 2 Activity 3 Activity 4	Activity 5 Activity 6 Activity 7 Activity 8
---	--

☐ I didn't do any other physical activities or exercise **yesterday**

Q10c (How long)

Physical Activity and Exercise

How long did you spend doing each of the following physical activities or exercise **yesterday (Tuesday)**?
PLEASE CHOOSE ONE ANSWER FOR EACH ROW

	Less than 10 minutes	About quarter of an hour (15 mins)	About half an hour (30 mins)	About three quarters of an hour (45 mins)	About an hour (60 mins)	More than an hour
Riding a bike	☐	☒	☐	☐	☐	☐
Tennis	☐	☐	☒	☐	☐	☐
Netball	☐	☐	☐	☒	☐	☐
Trampolining	☒	☐	☐	☐	☐	☐

Places to do Sport and Physical Activities Q11

Q11a (Places)

Places to do Sport and Physical Activities

When you were in Year 5 did you go to any of these places to do sport or physical activity?
PLEASE CHOOSE YES OR NO FOR EACH ONE

	Yes	No
Park	☒	☐
Skatepark	☐	☒
Ice rink	☐	☒
Tenpin bowling alley	☒	☐
Swimming pool (not in school)	☒	☐
Playground (not in school)	☒	☐
Playing field (not in school)	☐	☒
Somewhere else	☒	☐



Q11b (Other places)

Places to do Sport and Physical Activities

Please tell us what other places you have been to do sport or physical activity.

Appendix I

Round two secondary school questionnaire

This appendix contains the wording of the Round Two Secondary School Questionnaire. This round of testing was conducting in November 2008.

Sports Q1 (Did you do any of List A)?
(Asked of All)

SECONDARY SCHOOL CHILDREN SPORT AND PHYSICAL ACTIVITY SURVEY 2008

Sports

Did you do any of these sports when you were in **Year 8**?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Basketball	Yes ☐	No ☐	Dance	Yes ☐	No ☐
Badminton	☐	☐	Fitness classes (e.g. Aerobics)	☐	☐
Squash	☐	☐	Gymnastics	☐	☐
Tennis or short tennis	☐	☐	Martial Arts (e.g. Judo, Karate)	☐	☐
Table tennis	☐	☐	Trampolining	☐	☐
			Swimming	☐	☐

Progress

Sports Q2 (Did you do any of List B)?
(Asked of All)

Sports

And did you do any of these sports when you were in **Year 8**?
PLEASE CHOOSE YES OR NO FOR EACH ONE

Football	Yes ☐	No ☐	Athletics	Yes ☐	No ☐
Rugby league	☐	☐	Circuit Training	☐	☐
Rugby union	☐	☐	Cross Country Running	☐	☐
Cricket	☐	☐	Cycling	☐	☐
Rounders/Baseball/softball	☐	☐	Golf	☐	☐
			Horse Riding	☐	☐
Netball	Yes ☐	No ☐	Street sports (e.g. skateboarding)	☐	☐
Hockey	☐	☐			
Volleyball	☐	☐			

Sports Q3 (Where)?
(Asked separately for each sport selected at List A and List B)

Badminton

Where did you play badminton (when you were in **Year 8**)?
PLEASE CHOOSE YES OR NO FOR EACH ONE

At school	Yes ☐	No ☐
At a sports club not at school	☐	☐
Somewhere else not at school (please write in)	☐	☐



Sports Q4 (When at school)?
(Asked separately for each sport selected at List A and List B if Q3=At school)

Badminton

When did you play badminton **at school** (when you were in Year 8)?

PLEASE CHOOSE YES OR NO FOR EACH ONE

	Yes	No
In P.E. lessons	☒	☐
At lunchtime	☐	☒
After school (at school)	☒	☐
At the weekend (at school)	☒	☐



Sports Q5 (Adult help)?
(Q5a separately for each sport selected at List A and List B if Q4=at Lunchtime)
(Q5b separately for each sport selected at List A and List B if Q4=After School)
(Q5c separately for each sport selected at List A and List B if Q4=At the weekend)

Q5a (Help at lunchtime)

Badminton

When you played badminton **at lunchtime** (at school) did an adult help?

PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes, an adult **always** helped

☐ Yes, an adult **sometimes** helped

☐ No, an adult **never** helped



Q5b (Help After school)

Badminton

When you played badminton **after school (at school)** did an adult help?

PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes, an adult **always** helped

☐ Yes, an adult **sometimes** helped

☐ No, an adult **never** helped



Q5c (Help At the weekend)

Badminton

When you played badminton **at the weekend (at school)** did an adult help?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes, an adult **always** helped

☒ Yes, an adult **sometimes** helped

☐ No, an adult **never** helped



Sports Q6 (Frequency lunchtime/after school/at the weekend/club not in school)

(Q6a separately for each sport if Q5a=Always or Sometimes helped at lunchtime)
 (Q6b separately for each sport if Q5b=Always or Sometimes helped after school)
 (Q6c separately for each sport if Q5c=Always or Sometimes helped at the weekend)
 (Q6d separately for each sport if Q3=At a sports club not at school)

Q6a (Frequency lunchtime)

Badminton

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play badminton **at lunchtime** (at school) **with help from an adult**?
PLEASE CHOOSE ONE ANSWER ONLY

☒ More than once a week

☐ About once a week

☐ About once every 2 weeks

☐ About once a month

☐ Less often

☐ Never



Q6b (Frequency after school at school)

Badminton

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play badminton **after school** (at school) **with help from an adult**?
PLEASE CHOOSE ONE ANSWER ONLY

☐ More than once a week

☒ About once a week

☐ About once every 2 weeks

☐ About once a month

☐ Less often

☐ Never



Q6c (Frequency at the weekend at school)

Badminton

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play badminton **at the weekend** (at school) **with help from an adult**?
PLEASE CHOOSE ONE ANSWER ONLY

- ☐ More than once a week
- ☐ About once a week
- ☐ About once every 2 weeks
- ☒ About once a month
- ☐ Less often
- ☐ Never



Q6d (Frequency club not at school)

Badminton

Thinking about the **last school term**, that is the **Summer Term**, about how often did you play badminton at a **sports club** not at school?
PLEASE CHOOSE ONE ANSWER ONLY

- ☐ More than once a week
- ☒ About once a week
- ☐ About once every 2 weeks
- ☐ About once a month
- ☐ Less often
- ☐ Never



Q7 (Coaching)
(If Q3=At a sports club not at school)

Badminton

Did you receive **coaching** in badminton?
PLEASE CHOOSE ONE ANSWER ONLY

- ☒ Yes
- ☐ No



Sports Q8 (Other sports)
Q8a (Whether other sports)

Other Sports

Are there any **other sports** you did in **Year 8** (in or out of school) that we haven't asked you about already?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No



Q8b (What other sports)

Other Sports

Please tell us which sports these were in the box below.

Sports Q9 (Membership)
(Q8 if Q3=At a sports club or Somewhere else)

Sports Clubs

Are you a member of, or do you go to, a **sports club** that is organised for the purpose of doing **one main sport**?
PLEASE CHOOSE ONE ANSWER ONLY

☒ Yes
☐ No

Swimming Q10
Q10a (Armbands)

Swimming

Can you swim on your **front without** armbands or floats?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No
☐ Don't know

Can you swim on your **back without** armbands or floats?
PLEASE CHOOSE ONE ANSWER ONLY

☐ Yes
☒ No
☐ Don't know



Q10b (How far)

Swimming

How far can you swim?
PLEASE CHOOSE ONE ANSWER ONLY

☐ A width (across the swimming pool)
☐ A length (from one end of the pool to the other)
☐ More than one length of the pool



Physical Activity Q11 (Instruction, Examples, Additional, How long)

Q11a (Instruction and Examples)

**SECONDARY SCHOOL CHILDREN SPORT
AND PHYSICAL ACTIVITY SURVEY 2008**

Physical Activity and Exercise

The next questions are about your **physical activity** or **exercise** over the last three days. You have already told us about the sports you do but now we **also** want to know about things in your every day life like *walking to school, running around, playing ball games, going to the park and doing housework and gardening*.

Physical activity includes **anything** that involves movement.

What physical activities or exercise did you do **yesterday (Sunday)**?
CLICK ON THE EXAMPLES THAT YOU DID. CHOOSE AS MANY AS YOU LIKE.

Please only count each activity **once** (so if you ran around and jumped around while you played tennis you only need to put tennis).

☐ Walking to/from school	☐ Dancing
☐ Hiking	☐ Gymnastics
☐ Running around	☐ Swimming
☐ Jumping around	☐ Tennis
☐ Skipping	☐ Football
☐ Riding a bike	☐ Netball
☐ Housework	☐ Something else
☐ Gardening	☒ I didn't do any physical activities or exercise yesterday.

Q11b (Additional physical activities)

Physical Activity and Exercise

Physical activity includes anything that involves movement.

Yesterday (Sunday) you did the following physical activities: Dancing, Gymnastics and Tennis.
What **other** physical activities did you do **yesterday (Sunday)**?

Please only count each activity **once** (so if you ran around and jumped around while you played tennis you only need to put tennis).

Activity 1 trampolining	Activity 5
Activity 2	Activity 6
Activity 3	Activity 7
Activity 4	Activity 8

☐ I didn't do any other physical activities or exercise **yesterday**

Q11c (How long)

Physical Activity and Exercise

How long did you spend doing each of the following physical activities or exercise **yesterday (Sunday)**?
PLEASE CHOOSE ONE ANSWER FOR EACH ROW.

	Less than 10 minutes	About quarter of an hour (15 mins)	About half an hour (30 mins)	About three quarters of an hour (45 mins)	About an hour (60 mins)	More than an hour
Dancing	☐	☐	☐	☐	☐	☐
Gymnastics	☐	☐	☐	☐	☐	☐
Tennis	☐	☐	☐	☐	☐	☐
trampolining	☐	☐	☐	☐	☐	☐

Leisure Centres Q12

Leisure Centres

Thinking about the last school term, that is the summer term, how often, if at all did you visit a sports or leisure centre to undertake a sport or physical activity outside of school time?

☐ More than once a week
☐ About once a week
☐ About once every 2 weeks
☐ About once a month
☐ Less often
☐ Never

Appendix J

New recommended wording for the sports participation questions (years 3-4 primary)

This appendix contains the new suggested wording for the new recommended version for years 3-4 respondents for questions about Sports Participation

Banner 'Sports'

(Ask All)

Q1 (List A)

Which of these Sports have you done since you have been in Year 'X'?

Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Basketball	Y	N
Badminton	Y	N
Tennis or short tennis	Y	N
Table tennis	Y	N
Dance	Y	N
Gymnastics	Y	N
Judo/Martial Arts	Y	N
Trampolining	Y	N
Swimming	Y	N

(Ask All)

Q2 (List B)

And which of these Sports have you done since you have been in Year 'X'?

Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Football	Y	N
Rugby	Y	N
Cricket	Y	N
Rounders or Baseball	Y	N
Netball	Y	N
Hockey	Y	N
Volleyball	Y	N
Athletics	Y	N
Cross Country Running	Y	N
Golf	Y	N

Banner 'Y'

(i.e. name of each individual Sport)

(Ask separately for each Sport selected at List A and List B)

Q3 (P.E)

In Year 'X' have you played 'Y' in P.E.?

Y/N

Q4 (School club)

In Year 'X' have you played 'Y' in a school club?

Y/N

Q5 (Other club) In Year 'X' have you played 'Y' in a club not at school?

Y/N

Q6a

(Else) In Year 'X' have you played 'Y' somewhere else?

Y/N

(If Q6=Yes)

Q6b

Please tell us where else you played 'Y' in the box below.

(Repeat Q3-Q6b for each Sport selected at List A and List B)

(Ask All)

Banner 'Other Sports'

Q7a

(Other) Are there any other Sports you did in Year 'X'

(in or out of school) that we haven't asked you about already?

Y/N

(If Q7=Yes)

Q7b

Please tell us which Sports these were in the box below.

Appendix K

New recommended wording for the sports participation questions (years 5-6 primary)

This appendix contains the new suggested wording for the years 5-6 primary school questions about Sports Participation.

Banner 'Sports'

(Ask All)

Q1 (List A)

Which of these Sports have you done since you have been in Year 'X'?

Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Basketball	Y	N
Badminton	Y	N
Tennis or short tennis	Y	N
Table tennis	Y	N
Dance	Y	N
Gymnastics	Y	N
Judo/Martial Arts	Y	N
Trampolining	Y	N
Swimming	Y	N

(Ask All)

Q2 (List B)

And which of these Sports have you done since you have been in Year 'X'?

Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Football	Y	N
Rugby	Y	N
Cricket	Y	N
Rounders or Baseball	Y	N
Netball	Y	N
Hockey	Y	N
Volleyball	Y	N
Athletics	Y	N
Cross Country Running	Y	N
Golf	Y	N

Banner 'Y' (i.e. name of each individual Sport)

(Ask separately for each Sport selected at List A and List B)

Q3 (PE)

Have you played 'Y' in **P.E. lessons** since you have been in Year 'X'?

Y/N

Q4 (School club)

Have you played 'Y' in a school club since you have been in Year 'X'?

Y/N

(If Q4=Yes)

Q5 (Often)

How often do you play 'Y' in a school club?

More than once a week

About once a week

About once every 2 weeks

About once a month

Less often Never

Q6 (Other club)

Have you played 'Y' in a club not at school since you have been in Year 'X'?

Y/N

(If Q6=Yes)

Q7 (Often)

How often do you play 'Y' in a club not at school?

More than once a week

About once a week

About once every 2 weeks

About once a month

Less often

Never

Q8a (Else)

Have you played 'Y' anywhere else since you have been in Year 'X'?

Y/N

(If Q8=Yes)

Q8b Please tell us where else you played 'Y' in the box below.

(Repeat Q3-Q8b for each Sport selected at List A and List B)

(Ask All)

Banner 'Other Sports'

Q9a

(Other) Are there any other Sports you did in Year 'X' (in or out of school)

that we haven't asked you about already?

Y/N

(If Q9=Yes)

Q9b

Please tell us which Sports these were in the box below.

Appendix L

New recommended wording for the sports participation questions (secondary)

This appendix contains the new suggested wording for the secondary school questions about Sports Participation

Banner 'Sports'

(Ask All)

Q1 (List A)

Which of these Sports have you done since you have been in Year 'X'?

Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Basketball	Y	N
Badminton	Y	N
Squash	Y	N
Tennis Y N		
Table tennis	Y	N
Dance Y N		
Fitness Classes (e.g. Aerobics or Yoga)	Y	N
Gymnastics	Y	N
Martial Arts (e.g. Judo, Karate)	Y	N
Trampolining	Y	N
Swimming	Y	N

(Ask All)

Q2 (List B)

And which of these Sports have you done since you have been in Year 'X'? Include ALL Sports (at school and in other places).

Please choose yes or no for each one

Football	Y	N
Rugby	Y	N
Cricket	Y	N
Rounders/Baseball/Softball Y N		
Netball	Y	N
Hockey	Y	N
Volleyball	Y	N
Athletics	Y	N
Circuit Training	Y	N
Cross Country Running	Y	N
Cycling	Y	N
Golf	Y	N
Horse Riding	Y	N
Street Sports (e.g. skateboarding)	Y	N

Banner 'Y'

(i.e. name of each individual Sport) (Ask separately for each Sport selected at List A and List B)

Q3 (Where)

Where have you played 'Y' since you have been in Year 'X'?

Please choose yes or no for each one

At school	Y	N
At a club outside school	Y	N
Somewhere else (write in)	Y	N

(If Q3=At school)

Q4 (When)

When have you played 'Y' at school since you have been in Year 'X'?

Please choose yes or no for each one

In P.E. lessons	Y	N
At lunchtime	Y	N
After school (at school)	Y	N
At the weekend (at school)	Y	N

(If Q4=At lunchtime/After school/At the weekend)

*NB: separate follow ups for each alternative (5a, 5b and 5c)

Q5 (Help)

When you play(ed) 'Y' at lunchtime/after school (at school) /at the weekend (at school) does an adult help?

Please choose yes or no for each one

Yes, an adult **always** helped
Yes, an adult **sometimes** helped
No, an adult **never** helped

(If Q5a,b,c=Always/Sometimes OR Q3=Club outside school)

*NB: separate follow ups for each alternative (6a, 6b, 6c and 6d)

Q6 (Often)

Thinking about **the last school term**, that is the **Spring Term**, about how often did you play 'Y' at lunchtime (at school)/ after school (at school)/at the weekend (at school)/at a 'Y' club outside school?

Please choose yes or no for each one

More than once a week

About once a week

About once every 2 weeks

About once a month Less often

Never (If Q3=At a club outside school OR Somewhere else)

Q7 (Coach)

Did you receive **Coaching** in 'Y' that was not organised by your school?

Y/N

(Repeat Q3-Q7 for each Sport selected at List A and List B)

(Ask All)

Banner 'Other Sports'

Q8a (Other)

Are there any **other Sports** you did in **Year 'X'** (in or out of school) that we haven't asked you about already? Y/N

(If Q8=Yes)

Q8b

Please tell us which Sports these were in the box below.

Appendix M

New recommended wording for the physical activity questions (years 3-4)

This appendix contains the new suggested wording for the questions about Physical Activity for years 3-4.

(Show All)

Banner 'Being Active'

Q-INTRO

Being Active can be walking to school, running around, playing Sport, going to the park, doing housework and gardening.

Being Active is doing anything that moves your body.

Click next to continue

(N.B. On this initial screen include pictures of different types of Physical Activity, Sport and non-Sport, so the difference between this and the previous section is clear).

(Ask All)

Banner 'Being Active'

QA

Being Active is doing anything that moves your body.

Yesterday/the day before yesterday/on (X-day), which of these did you do to be active?

Please only count each activity once (so if you ran around and jumped around while you played tennis you only need to put tennis).

Click on what you did yesterday. Choose as many as you like.

Walking
Dancing
Skipping
Trampolining
Riding a bike
Football
Running around
Cricket
Jumping around
Rounders
Gardening
Tennis
Housework
Athletics
Swimming
Something else

I did nothing active yesterday

(N.B. As we have removed the introduction from this page there will now be more space to include extra items on this list. We welcome suggestions of age appropriate activities).

(Ask if something else selected at QA) Banner 'Physical Activity and Exercise'

QB

Being Active is doing things that move your body.

What else did you do **yesterday/the day before yesterday/on (X-day)** to be active?

Please do not count activities you have already told us about.

Activity 1
Activity 2
Activity 3
Activity 4

I did no other activities yesterday

(If did any activities at QA and QB)

QC

How long did you spend doing each of these activities
yesterday/the day before yesterday/won (X-day)?

Please choose one answer for each row

Retain expanding grid from Round One (i.e. list out each activity entered vertically on the left with the following categories displayed horizontally across the top).

- Less than 10 minutes
- About quarter of an hour (15 mins)
- About half an hour (30 mins)
- About three quarters of an hour (45 mins)
- About an hour (60 mins)
- More than an hour

Appendix N

New recommended wording for the physical activity questions (primary years 5-6 and secondary)

This appendix contains the new suggested wording for the questions about Physical Activity for years 5-6 and secondary schools.

(Show All)

Banner 'Being Active'

Q-INTRO

The next questions are about your **Physical Activity** or **Exercise** over the **last three days**. We want to know about **all the ways you were active**. Physical activity includes things like walking to school, running around, riding a bike, going to the park, doing housework or gardening and all sports.

Physical Activity includes anything that involves movement.

Click next to continue

(N.B. On this initial screen include pictures of different types of Physical Activity, Sport and non-Sport, so the difference between this and the previous section is clear).

(Ask All)

Banner 'Physical Activity and Exercise'

QA

Physical Activity includes anything that involves movement.

What Physical Activities or Exercise did you do **yesterday/the day before yesterday/on (X-day)?**

Please only count each activity once (so if you ran around and jumped around while you played tennis you only need to put tennis).

Click on what you did yesterday. Choose as many as you like.

Walking
Dancing
Hiking
Gymnastics
Running around
Swimming
Jumping around
Tennis
Skipping
Football
Riding a bike
Athletics Housework
Rounders
Gardening
Cricket
Something else

I did nothing active yesterday

(Ask if **Something else** selected at QA) Banner 'Physical Activity and Exercise'

QB

Physical Activity includes anything that involves movement.

Yesterday/the day before yesterday/on (X-day) you did the following activities:

QA Activity 1 QA Activity 2
QA Activity 3 QA Activity 4...

What other Physical Activities or Exercise did you do yesterday/the day before yesterday/on (X-day)? Please do not count activities you have already mentioned.

Please do not count activities you have already told us about.

Activity 1
Activity 2
Activity 3
Activity 4

I did no other activities yesterday

(I didn't do any other Physical Activity or Exercise yesterday
(If did any activities at QA and QB)

QC

How long did you spend doing each of these activities
yesterday/the day before yesterday/on (X-day)?

Please choose one answer for each row

Retain expanding grid from Round One (i.e. list out each
activity entered vertically on the left with the following
categories displayed horizontally across the top).

- Less than 10 minutes
- About quarter of an hour (15 mins)
- About half an hour (30 mins)
- About three quarters of an hour (45 mins)
- About an hour (60 mins)
- More than an hour

Appendix O

New recommended wording for the swimming questions (primary and secondary)

This appendix contains the recommended question wording for the swimming questions for all three questionnaires.

Questions about 'Swimming'

Banner 'Swimming'

Q1a

(Ask All)

Can you swim on your front without armbands or floats?

Please Choose One Answer Only

Yes

No

Don't know

Q1b

Can you swim on your back without armbands or floats?

Please Choose One Answer Only

Yes

No

Don't Know

(Ask if Q1a or Q1b=Yes)

Q1c

How far can you swim?

Please Choose One Answer Only

A width (across the swimming pool)

A length (from one end of the pool to the other) More than one length of the pool

NB: One of our recommendations was to use labels on a picture of a swimming pool to show the distance of a width and a length.

Appendix P

New recommended wording for the places to do sport or physical activity questions (primary; years 3-4 and years 5-6)

This appendix contains the recommended question wording for the questions about places in which children do sport or physical activity for both primary questionnaires.

Banner 'Places to do Sport and Physical Activity **Not** at School'

(Ask All)

Q1a

Have you been to any of these places in the last year?

Don't include places at school please choose as many as you like

Park

Skatepark

Ice rink

Tenpin bowling alley

Swimming pool

Playground Playing field

Other

None of these

(If Q1aOther=Yes)

Q1b

Please tell us what other places you have been to in the box below.

Appendix Q

New recommended wording for the leisure centre questions (secondary)

This appendix contains the recommended question wording for the questions about leisure centres for the secondary questionnaire.

(Ask All)

Q1

Banner 'Leisure Centres'

Thinking about the last school term, that is the **Spring Term**, how often, if at all, did you **visit a Sports or leisure centre** to undertake a Sport or Physical Activity **outside of school time**?

More than once a week

About once a week

About once every 2 weeks

About once a month

Less often

Never

