

Activity: ICT & Fitness

ICT
Years 5/6

ABOUT THE ACTIVITY

As with all of our activities, this is designed to complement the work done in school – it is not meant to offer total coverage.

What will take place

- Using spreadsheet software to collect and analyse the results from a fitness session the children do on site
- The option of using heart rate monitors to record and analyses data collected during exercise

WHERE THE ACTIVITY FITS IN:

To a visit to Beaumanor

- Fitness is one of the activities which is popular with visiting groups

To the QCA schemes

- For ICT at KS 2 – Finding things out - 1b and 1c; Developing ideas and making things happen – 2a and 2c; Exchanging and sharing information – 3a and 3b; Reviewing, modifying and evaluating work as it progresses – 4a, 4b and 4c; Breadth of study – 5a, 5b and 5c.
- This activity would also link directly to Unit 5D Introduction to spreadsheets, 5F Monitoring environmental conditions and changes and 6B Spreadsheet modelling in the ICT Scheme of Work
- For PE at KS 2 – Knowledge and understanding of fitness and health – 4a

ADAPTING THE ACTIVITY FOR A DIFFERENT AGE GROUP

- The activity would be suitable for a Year 5 group – Year 4 children could use a version of the spreadsheet with some of the formulae already entered for them. Year 6 children could get more involved in the modelling aspects of using a spreadsheet

PRIOR LEARNING

- None required in terms of ICT

VOCABULARY

- Spreadsheet, cell, formula, sum, average, calculate, data, model

RESOURCES

- Computer with appropriate software and printer
- Disc for pupils to take work back to school
- Heart rate monitors and unit for connection to PC

EXPECTATIONS

At the end of this activity, due to age or ability

most children will:

- Understand what a spreadsheet will do and the language associated with it's use, at year 6 explore the effects of changes made
- Understand that heart rate increases with exercise
- Understand that data can be collected automatically and downloaded to a computer

some children will not have

made so much progress and will:

- Enter data from the event onto a spreadsheet, at year 6 calculate totals

some children will have

progressed further and will:

- Use the spreadsheet to perform calculations, at year 6 they should be able to make predictions about what will happen if the model is changed
- Could consider factors that can affect heart rate – possibly designing an experiment to test the actual effect

ICT POSSIBILITIES

- Use of digital cameras to record the activities – images to be downloaded and taken back to school for use later

WORK BACK IN SCHOOL

- After the visit the children could
Take the spreadsheet and heart rate data back to school on disc to do more work on – analysis, presentation etc.

RISK ASSESSMENT

In addition to the ‘Group Visits - General Risk Assessment’, the following specific risks have been identified

Hazard	Risk control
Groups in ICT room	No children should be left in the ICT room unsupervised by an adult.
Fire	On entry to the ICT suite, leaders are instructed in the fire procedure for the cellars and given a fire exit map and instructions.
Chair hazards in the ICT room	Children are told that they must not use the wheeled chairs to traverse the room.
Light from digital projector	All visitors should be positioned behind the light from the projector to avoid looking into the bright lamp

LEARNING OBJECTIVES	ACTIVITY	LEARNING OUTCOMES	POINTS TO NOTE
CHILDREN LEARN		CHILDREN	
<ul style="list-style-type: none"> Computers can perform calculations on data that is entered 	<p>Calculations as to the average time, the minimum time taken and who took the longest. Graphs for an activity.</p>	<ul style="list-style-type: none"> Can associate the concept of formulae to functions of the spreadsheet Understand that the spreadsheet can produce a graph to illustrate results 	<p>Different versions of the spreadsheet could be made available – one including the formulae pre entered</p> <p>Discussion around - Why is a graph useful?</p>
<ul style="list-style-type: none"> Data is manipulated according to formulae 	<p>What happens if you alter a persons time</p>	<ul style="list-style-type: none"> The spreadsheet automatically re-calculates 	
<ul style="list-style-type: none"> Accuracy is important when entering data 	<p>Check data entered for validity and accuracy</p>	<ul style="list-style-type: none"> Check the result the spreadsheet offers is sensible 	<p>Prompt experimentation of errors – what if you enter letter o instead of a zero?</p>
<ul style="list-style-type: none"> How exercise affects heart rate 	<p>Volunteers use the heart rate monitors to record data during the exercise session</p>	<ul style="list-style-type: none"> Heart rate increases with exercise Devices can capture data remotely and use it later with a computer 	<p>Privacy aspect of heart rate fitting and only those who ant to have a go.</p>
<ul style="list-style-type: none"> The importance of collecting data accurately in order to be able to draw conclusions – the role data logging kit can play 	<p>What happens if the data logging stops or is interrupted during exercise. Comparison with manually collecting the same data.</p>	<ul style="list-style-type: none"> Data logging is more accurate than doing it manually You can't always rely entirely on what the data tells you 	