

## Overview of Year 9 Project: Lesson Plans

Lesson	Objectives	Activity	Notes
1	To introduce the data handling cycle and questionnaire. Complete the questionnaire. Evoke discussion on how to use the data.	Use the Y8 data cycle poster as the focus for discussion on how a data handling project develops. Introduce the Phase 3 questionnaire. Help pupils to complete the questionnaire. Discuss with pupils the types of information they might find out from the questionnaire and write some questions or hypotheses that they may want to investigate.	Y8 poster is in the Handling Data Pack. Print off/photocopy enough questionnaires and make sure you keep them for next lesson: pupils may lose them. These pupils needed support in doing the measuring. Discuss with the pupils that you will give them some data so that they can make comparisons; in this case we compared with Y8 and other national data from CensusAtSchool.
2	To input the data into the website. Discuss with the pupils how the data is collected and returned. Allow pupils to explore the CensusAtSchool website.	Show pupils how to input the data. Support pupils in inputting their data. Explain to pupils how the data is then collected and returned and the format it will be in. Discuss ideas on how they could process the data using ICT methods. Allow pupils to look at info on 'What a Census is'	You will need to have your LEA code and School ID clearly displayed in the classroom. Get a pupil to do the demonstration with you supporting: choosing a weaker child and then get them to act as an expert for another pupil. Make sure you are familiar with how data is collected and retrieved. Try to emphasise cross-curricular links with ICT so pupils can incorporate previously learnt skills. Make sure you ask for the data back (email <a href="mailto:censusatschool@rsscse.org.uk">censusatschool@rsscse.org.uk</a> ) in order to prepare for the next lesson.
3	Allow pupils to investigate the responses and generate appropriate graphs from the data. Encourage pupils to think about the results and graphs, and what they imply.	Using the returned data, show pupils the spreadsheet of results. Emphasise sensible ways of processing the data, e.g. cutting and pasting into new worksheets; putting graphs on separate pages. Pupils to plot appropriate graphs and print off. Put graphs onto the wall and discuss trends and anomalies. Highlight reasons for the outcomes.	In this case some of the data had already been processed e.g. the postcodes have been put into a frequency table (see Excel file) for the pupils to plot. (The COUNTIF statement in Excel is tricky for lower ability pupils.) Pupils were asked to produce 1 pie chart, 1 bar chart (choosing the data they wanted) and a scatter graph of height v footsize (including line of best fit/trendline)

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4	<p>Allow pupils to investigate the responses and generate appropriate statistics from the data.</p> <p>Encourage pupils to think about the results and statistics and what they imply.</p>	<p>As a continuation of last lesson, pupils should calculate simple statistics e.g. mean, mode and median of height.</p> <p>Pupils can print off results.</p> <p>Promote discussion on any statistic of note and question pupils on what they think might happen in a different scenario.</p>	<p><a href="http://www.censusatschool.org.uk/resources/ict/67-finding-averages-using-excel">http://www.censusatschool.org.uk/resources/ict/67-finding-averages-using-excel</a> from the CensusAtSchool site provides good ideas on helping pupils to use Excel effectively: use these as A3 posters around the room as a prompt.</p> <p>Make sure you have copies of all results and</p>
5/6	<p>Allow pupils to draw conclusions from their data.</p> <p>Make comparisons with other data sets.</p> <p>Write a report incorporating all results and findings.</p>	<p>Pupils to write a report: including methods, hypotheses/questions, results (including printouts) and conclusions.</p> <p>Pupils to make comparisons from secondary sources and include discussion about the samples used.</p> <p>Reports generated using ICT allow pupils to easily present their findings and some might like to produce a presentation.</p>	<p>Putting all the information onto a wall display allows pupils to search and discuss the results.</p> <p>Probing questions like 'Why does the graph look like this?' can be included as part of the display. Printouts in colour make it attractive.</p> <p>Include the data from other sources. The CensusAtSchool site has many resources that can be used in order to make comparisons and using another classes data makes the discussion more relevant. If possible leave space for pupils reports to be added.</p>

<b>Resources</b>	Internet Connection, CensusAtSchool Phase 3 Questionnaires, Measuring Equipment, Handling Data Cycle Poster, Printer
<b>Keywords</b>	CensusAtSchool, Questionnaires, Data Handling, Statistics, Graphs, Pie Charts, Bar Charts, Spreadsheet, Comparisons, Interpretation, Hypotheses, Conclusions.
<b>KS3 Strategy /NC Links</b>	Mathematics: MA4 Data Handling/KS3 Numeracy Strategy pages 248-275. ICT: Finding Things Out and Exchanging and Sharing Information. Citizenship: NC 2a/c Developing Skills of Enquiry and Communication.
<b>Prior Knowledge</b>	Simple statistics e.g. Mean/Mode/Median, Some Experience of Spreadsheets, Interpretation of Data/Graphs
<b>Assessment of Learning</b>	Question and Answer, Reports Produced by Pupils, Wall Display.
<b>Extension/Hmwk Activity</b>	Investigate differences with pupils from South Africa/Queensland/New Zealand.
<b>Notes</b>	