



Ten out of Ten Investigations using *CensusAtSchool* 2010/11 Data



Notes for teachers:

This resource is designed to give learners ideas on possible investigations using the *CensusAtSchool* 2010/11 data.

For this resource to be most effective your learners need to have completed the *CensusAtSchool* 2010/11 online questionnaire (www.censusatschool.org.uk **Take Part/Questionnaires10/11**) and you then need to request your school's data from the *CensusAtSchool* team (**Get Data/Request Your School's Data** and follow the instructions).

Before giving the *CensusAtSchool* data to the learners you may wish to tidy up your school's *CensusAtSchool* spreadsheet by deleting variables not needed eg data stamp, school name, LEA and school code and others. It is a good idea to leave anomalies in the data to give learners the opportunity to clean raw data.

The '*CensusAtSchool* Planning Worksheet' uses the Problem Solving Cycle to help learners plan and work through their investigations.

The resource 'Pivot Tables in Excel' is designed to quickly give counts and plot data in Excel and uses the 'Pivot Tables in Excel' spreadsheet.

The Excel spreadsheet '*CensusAtSchool* 2010/11 Summary' contains the counts and percentages of the results from *CensusAtSchool* 2010/11 up to February 2011. These results can be used for comparison with your school's data.

You can take random samples of up to 200 responses from the UK and international *CensusAtSchool* databases using the Random Data Selector (RDS). Open www.censusatschool.org.uk Select Get Data/Random Data Selector/Click here to access Random Data Selector. Enter your email address, name of your school, answer the security question at the bottom and **Submit**.

Select UK



10 2010-1011/Submit

Phase:

Sample size/100/Submit

Sample Size:

Get Data/Open

The data you receive will be a csv file. This will open in Excel and can then be saved as an Excel file.

Introduction

The most important feature of any statistical investigation is that it is carried out for a valid reason and has real meaning. Data should always be collected for a purpose and the main goal is to get information from the data in order to illuminate or give some answers or conclusions to the original problem or question. An investigation should always follow through the problem solving cycle.



Some ideas to help your learners plan their investigations

Part 1: PLAN What is the question you want answers to? Is there a problem you want to find out some information about? How can statistics help you to find out the answer? Do you already have an idea of what it is you may discover? What do you expect the outcome and conclusions to be?

Part 2: COLLECT Exactly what data do you need to help you answer your question? Where will you go to find it? What variables will you use – are there useful extras that might be interesting to investigate? Eg gender, age, height. How much data will you need? Does it need to be a random sample?

Part 3: PROCESS How are you going to organise your data? What kinds of tables and graphs will best present your data? How can you ensure you are concentrating on things that are important for your investigation?

Part 4: DISCUSS What does your data tell you? Does it answer your question? Does it answer other questions? How are you going to present your conclusions? Does your data present other questions to you? Can you use your results to make predictions? Does it raise any concerns? Where should the investigation go next?

Part 5: EVALUATION Were there weaknesses in your methods? Did these affect the quality of the results and conclusions? What would you do differently next time?

Ten ideas for statistical investigations

For all these investigations learners may like to compare their class's data with the '*CensusAtSchool* 2010/11 Summary' results or take a random sample from the RDS.

Height

1. Is your class, on average, taller, shorter or the same as other UK children?
(Use histograms to look at the distribution of heights. Boxplots could be used for comparisons.)
2. Are UK children taller, shorter or the same height than South African children?
Take a random sample from South Africa *CensusAtSchool* data using the RDS for comparison.
3. Are UK children taller, shorter or the same height as Australian children?
Take a random sample from Australian *CensusAtSchool* data using the RDS for comparison.
4. Is there a relationship between height and open arm span?
Learners will need to plot a scatter diagram. Comment on outliers – errors or real outliers? Learners may find this easier to plot with their class's data.
How could this graph be useful?

Favourite football team

5. What is your class's favourite UK football team?
Use bar charts.
6. How does the result from your class compare to the results for the children who responded to the 2010/11 questionnaire? Comparison bar charts would be useful here. This question was also asked in 2000/01, 10 years ago. Have children's favourite football teams changed after 10 years?
7. Do boys and girls support the same teams?
8. Do parents, guardians and carers support the same UK football teams as their children?

Keeping up with the news

9. How does your class like to keep up with the news?
10. Do boys and girls like different types of news?

Other ideas

How do children travel to school? Compare UK with South African children.

Do boys and girls have different reaction times?

Do right-handed children have longer arms than left-handed children?

Do boys and girls like to watch the same Olympic sports?

What TV programmes do children like to watch?