


| Subject | Year | Month |  |
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| Mathematics | 11 | September | |
| Topic: | | | |
| Collecting Data (includes Sampling and Capture-Recapture) | | | |
| 2 lessons | | | |
| Content (Intent) | | | |
| Prior Learning Year 8 Statistics project June | | Future Learning | |
| Objectives <ul style="list-style-type: none"> Specify the problem and plan; decide what data to collect and what analysis is needed; understand primary and secondary data sources; consider fairness; Understand what is meant by a sample and a population; Understand how different sample sizes may affect the reliability of conclusions drawn; Identify possible sources of bias and plan to minimise it; Writing questionnaire questions to eliminate bias, and on timing and location of survey to ensure sample is representative (see note); Select and justify a sampling scheme and a method to investigate a population, including random and stratified sampling; Random sampling: know the definition of random sampling; use random numbers to get a sample; Stratified sampling: know the definition and state it in terms of proportion, fraction, percentage or ratio. Use Capture-recapture as a method to estimate the total population and know the assumptions required and limitations | | | |
| Pedagogical notes (implementation) | | How will understanding be assessed & recorded (Impact) | |
| <p>Emphasise the difference between primary and secondary sources and remind students about the difference between discrete and continuous data.</p> <p>Discuss sample size and mention that a census is the whole population (the UK census takes place every 10 years in a year ending with a 1 - the next one is due in 2021).</p> <p>Specify the problem and planning for data collection is not included in the programme of study, but is a prerequisite to understanding the context of the topic.</p> <p>Writing a questionnaire is also not explicitly mentioned, but is a good topic to demonstrate bias and ways to reduce bias in terms of timing, location and question types that can introduce bias.</p> | | End of half term no End of Year Mocks in November yr11 | |
| | | How can parents help at home? | |
| | | MathsWatch clips (Qualification KS4) 63: Data - Discrete and Continuous 176: Stratified Sampling 152: Sampling Populations | |
| Further reading/discussion | | | |
| Reading / Enrichment | Literacy | Numeracy Links | Careers Links Data Analyst Business strategist Statistician Actuary |

