Data collection (AS)

K1   Understand and use the terms 'population' and 'sample'.

Use samples to make informal inferences about the population.

Understand and use sampling techniques, including simple random sampling and opportunity sampling.

Select or critique sampling techniques in the context of solving a statistical problem, including understanding that different samples can lead to different conclusions about the population.

For a brief commentary on this content go to the MEI outline SoW.

Pre-requisites

- GCSE: Data collection techniques.
- GCSE: How to collect identify bias.

Common student errors

- Removing every item of data which looks like an outlier.
- Understanding how bias can be introduced in sampling and its effects on data analysis.
- Making rash comments such as 'there *are* outliers in the data' rather than 'there could be some outliers in the final class'.

Teaching it!

- **Coming soon** A series of videos designed to support students on this topic.
- Working with a random sample: A Making Stats Vital resource comparing sampling with intuition.
- Discuss Sampling methods: A bit dated but the spreadsheets for Opinion poll & Further Opinion Poll are simple to use and good to demonstrate different sampling spreads clearly.
- Random sampling methods: This is a lesson from Skew the script, aligned to the US curriculum but contains a good Desmos activity

Getting them thinking

- What is the same and what is different about random sampling and opportunity sampling?
- Give me an example of a data set with an outlier which should not removed
- Which colour Smartie is the most common?
- Can you predict the winner of the student council elections by taking a sample?