

3 Sampling – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

*Write each word three times.***English****Write it 3 times** (English)

population

sample

random sample

Bias

Recall

To learn about a big group, you cannot ask everyone:

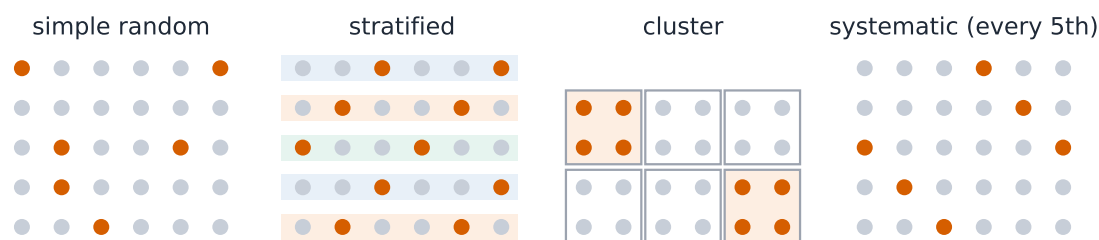
- To find the average height of a country, you cannot measure every person.
- Instead you measure a smaller group and use it to estimate.
- But the smaller group must be chosen fairly.

This sheet lines up how to collect data by sampling. Each idea has a worked example.

New ideas

■ 1 Population and sample

The **population** is the whole group you want to study; a **sample** is the smaller part you actually measure.



SRS: equal chance · stratified: sample within groups · cluster: take whole clusters · systematic: every kth

■ 2 Random sampling

A **random sample** gives everyone an equal chance of being chosen. This keeps the sample fair and representative.

■ 3 Bias

Bias is anything that makes a sample unrepresentative – for example, only surveying people online misses those without internet.

■ 4 A worked example

Worked example. To learn students' opinions, surveying only the football team is biased (not representative); drawing names randomly from the whole school is fair.

Watch out: a **biased** sample leads to wrong conclusions no matter how **large** it is. A huge but unfair sample is worse than a smaller, properly random one.

Practice

Try these in order. The methods are all above.

2.1 State the difference between a population and a sample.

[2]

2.2 State what makes a sample “random”.

[2]

2.3 State what “bias” means in sampling.

[2]

2.4 A survey about a town is done only outside a gym. Explain why this could be biased. [2]

2.5 State whether a large but biased sample or a smaller random sample is more trustworthy, and why. [2]
