

# Edexcel (A) Biology A-level

## 1.8 to 1.10 + 1.17 - Data Collection and Analysis

### Flashcards

This work by [PMT Education](https://www.pmt.education) is licensed under [CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)



# Differentiate between correlation and causation.



Differentiate between correlation and causation.

- Correlation= where a change in one variable occurs at the same time as a change in another variable.
- Causation= where a change in one variable **causes** a change in another variable.



# Why is the difference between correlation and causation important?



Why is the difference between correlation and causation important?

Just because two factors correlate does not mean one causes the other. There could be a third variable causing the change in one of the variables.



Give features of a good scientific study.



Give features of a good scientific study.

- Clear aim or hypothesis
- Representative sample
- Valid and reliable results



# How might we obtain a representative sample?





# How might we obtain a representative sample?

- Select a sample large enough to reflect the size of the target population.
- Randomly select participants to avoid sampling bias.



# How might we ensure results are valid and reliable?



# How might we ensure results are valid and reliable?

- Control extraneous variables that may influence results.
- Repeat study using the same method to check the same results are produced.
- Use a representative sample.



# How does public perception of risk differ from actual risk?



# How does public perception of risk differ from actual risk?

- People overestimate risk if something is not under their control, is unfamiliar, or has particularly severe consequences.
- People underestimate risk if something only has an effect in the long-term.



Give some ethical issues surrounding the use of invertebrates in research.



Give some ethical issues surrounding the use of invertebrates in research.

Some consider it wrong to harm any living creature. However others argue that invertebrates are not complex enough to suffer stress or pain.

