Planning and collecting multivariate data

Mana Maths

Te reo Māori terms

tauira
plan/model
Open in Te Aka

raraunga
data
Open in Te Aka

kohikohi
collect/gather
Open in Te Aka

tauira
sample
Open in Te Aka

Planning and collecting multivariate data — Foundation

1. Is 'height' a categorical or numerical variable?

2. Is 'favourite colour' a categorical or numerical variable?

3. What is multivariate data?

4. What is a sample?

5. Give an example of a statistical question.

6. In a study about student study habits, identify one categorical variable.

7. In the same study, identify one numerical variable.

8. What is a sampling method?

9. Name one sampling method.

10. What is bias in data collection?

11. Give an example of bias.

12. Why is random sampling important?

13. What is a population?

14. What makes a question a 'statistical question'?

Planning and collecting multivariate data — Proficient

1. Design a statistical question that involves at least one categorical and one numerical variable.

2. For your statistical question, identify the population.

3. Describe a simple random sampling method for your study.

4. Describe a stratified sampling method for your study.

5. What is sampling variation?

6. Explain why a convenience sample might be biased.

7. Give an example of a sampling method that reduces bias.

8. What is the difference between a sample and a census?

9. Identify a potential source of bias in a survey about smartphone usage.

10. How could you reduce bias in that survey?

11. What is the purpose of a pilot study?

12. Why is it important to pre-test a survey questionnai

Planning and collecting multivariate data — Excellence

1. Design a study to investigate the relationship between two variables (e.g., study time and test scores). Include a statistical question, population, and sampling method.

2. For your study, identify at least one categorical and one numerical variable.

3. Explain how you would ensure your sample is representative of the population.

4. Describe a stratified sampling plan that accounts for a relevant categorical variable.

5. What is sampling variation and how does sample size affect it?

6. Explain the concept of 'bias' in the context of your study.

7. How could non-response bias affect your results?

8. What is the difference between random sampling and random allocation?

9. Discuss ethical considerations when collecting data from people.

10. How would you pilot your data-collection instrument?

11. What is the purpose of a control group in an experiment?

12. Explain the difference between observational study and experiment.

13. How might confounding variables affect your study?

14. Describe how you would use a random number generator to select a simple random sample.

15. What is the 'margin of error' and how is it related to sample size?

16. Why is it important to clearly define variables before collecting data?