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Data Handling Cycle

- Pose your Question
- Collect the Data
- Present the Data
- Analyse the Data
- Interpret the data

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Pose your Q: What do you want to find out?

Collect the Data: Survey/experiment

Present the data: Table/graph

Analyse the data: Central tendency/distribution/shape

Interpret the data: Draw conclusions & reflect on original question

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Collect the Data: Survey/Experiment

What is your population?

What sample size do you want?

How will you select your sample?

How will you ensure your sample is representative and unbiased?

What questions would you need to ask?

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Present the data: Table/Graph

What type of data are you using?
(Categorical nominal or ordered/numerical discrete or continuous)

What is the most suitable way to display your data?
(Hint: Refer to the type of data you are using)

Can you use a graph that allows us to easily compare responses from different groups?
(Are you able to compare by age/occupation/etc.)

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Analyse the data: Central tendency/Distribution/Shape

Describe the data using:

- **Central Tendency** (Mean, Median and Mode):
  - o Decide which central tendency method is the most suitable for your data and why? Outliers?
- Spread/Distribution:
  - o What is the range/interquartile range? Which is the most suitable?
- Shape:
  - o Skewness?

In all the above, what does the analysis tell us about the data?

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Interpret the data: Draw conclusions, reflect on original question

What does our data tell us?

What does our analysis of that data tell us?

Did we get an answer to our original question?

- If yes, we need to ensure we justify our conclusions by referring to the data.
- If not, what went wrong or do we need to ask a different question or ask questions to different people?

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