Formulate the question

Start by asking 'What do we want to find out?'

Invite students to pose a relevant question for the data investigation. A general question such as, 'How much rubbish does our school generate' may need to be refined to make the process of data collection easier.

Discuss definitions - *What do we mean by 'rubbish'?* and timelines - *Will we analyse the data over a day, a week, or a year?*

Appropriate questions for this topic may be:

- *What is in our waste?*
- *How much waste does our school produce in one day?*
- *Where is the waste coming from? (e.g., lunchboxes or the canteen)*
- *How much of our waste can be reused or recycled?*

Collect the data

Once students have posed an appropriate question, support them to devise a plan for answering it. Guide them by asking questions such as:

- What information will we collect?
- How will we collect the information? (Survey, questionnaire, observation)
- How much data do we need and why?
- What is the best time of day to collect the data?
- How will we record the information?

Analyse the data

Discuss how to analyse and represent the data.

- How might we sort and categorise the data we collected?
- What calculations need to be carried out to highlight the data?
- What types of graphs will display the data effectively?
- How can we describe the data using numbers and sentences?

Select appropriate graph types and use these to analyse and interpret the data.

Optional extension: Use spreadsheet software to represent the data digitally.

Interpret the results

Discuss the findings from the investigation. Draw conclusions based on the data and relate the interpretation to the original question. Questions might include:

- What information does the graph tell?
- How effectively does the graph communicate the findings of the data?
- What factual information can we tell from the graph?
- What inferences can we make that we can't directly observe in the graph?
- What can you learn from this graph?
- What do you not know that you wish you knew?