

HANDLING DATA

Pupils should be taught to:

Solve a problem by collecting, organising, representing, extracting and interpreting data in tables, graphs and charts

As outcomes, Year 4 pupils should, for example:

Use, read and write:

vote, survey, questionnaire, data, count, tally, sort, set, represent... table, list, graph, chart, diagram, axes, label, title... most common or popular...

Find the answer to a question by collecting data quickly then making a **tally chart**. For example:

Do many children get measles nowadays?

Find out by asking at home who has had German measles, chicken pox, mumps, flu...
Make a tally chart.
Discuss the findings, such as the risk of catching measles, or flu.

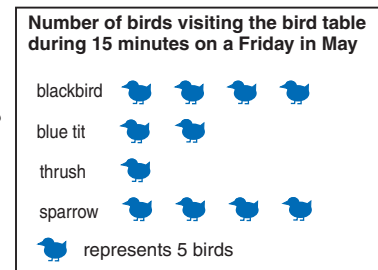
ILLNESSES	
German measles	### III
Mumps	III
Chicken pox	### ###
Flu	### ### III
Measles	I

Find the answer to a question by using data collected in another subject or at home. Make a **pictogram**, where the symbol represents several units. For example:

It is said that thrushes are becoming less common. Are there any around our school?

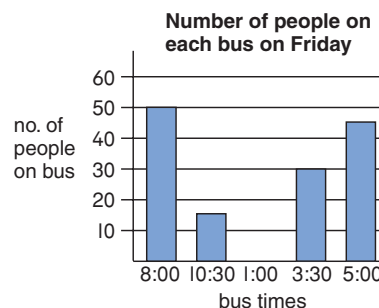
Discuss the findings. For example:

- How many thrushes?
- How many more sparrows than thrushes?
- How many birds altogether?
- Were there many thrushes compared with other birds? Why might this be?
- How might more accurate data be collected?



Answer a question or solve a problem by interpreting a **bar chart** with the vertical axis marked in multiples of 2, 5, 10 or 20, noting that the graph has a title, and axes are labelled. For example:

At what time of day do most people use the local bus?



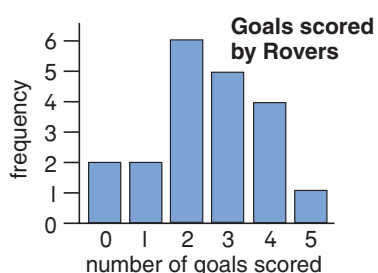
- 25 people were on the 1:00 bus. Draw in the bar.
- On a Friday, which bus is most likely to be full?
- Which bus had the fewest people on it? Why?
- What might the graph for Saturday look like?
- How often do the buses run? Do you think that the bus timetable should change? How and why?

As outcomes, Year 5 pupils should, for example:

Use, read and write, spelling correctly, the vocabulary from the previous year, and extend to: *classify, mode, maximum/minimum value, range... outcome...*

Test a hypothesis about the frequency of an event by collecting data quickly: for example, from a simple experiment, a local newspaper, a reference book, work in other subjects... Discuss a **bar chart** or **bar line chart** showing the frequency of the event and check the prediction. For example:

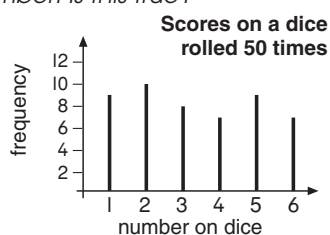
We think Rovers scored more than 3 goals in a quarter of their matches last season.



This **bar chart** shows the number of goals scored by Rovers in last season's matches. Discuss questions like:

- How many matches in total did Rovers play?
- What was the maximum number of goals Rovers scored in a match?
- In how many of their matches did Rovers score more than 3 goals?
- What was the most common number of goals (mode)?
- How likely are Rovers to score 7 goals in a match when they play in the same league this season?

You are more likely to throw a 6 on a dice than any other number. Is this true?



This **bar line chart** shows how many times each number was thrown when a dice was rolled 50 times. Discuss questions such as:

- Which number was rolled most often?
- Was this what you would have expected? Why?
- Do you think the next time you roll the dice you are more likely to roll a 2 than a 6? Why?
- What do you think will happen if you roll the dice 50 more times? Now try it and see.

Know that it is not appropriate to join the tops of the bars when the values in-between have no meaning; for example, a dice does not show the number 2.5.

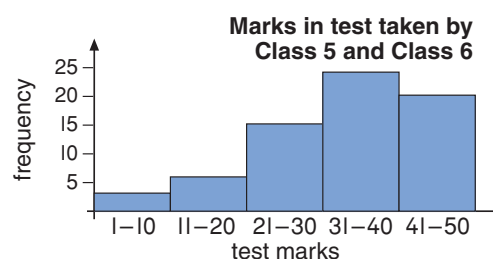
As outcomes, Year 6 pupils should, for example:

Use, read and write, spelling correctly, the vocabulary from the previous year, and extend to: *statistics, average, distribution... median, mean...*

Test a hypothesis by drawing and discussing a **bar chart where (discrete) data are grouped**: for example, to check predictions of the most common number of:

- lengths that will be swum in a sponsored swim;
- peas in a pod;
- scores in a tables test...

We think that most of the class will get more than 30 marks in the test.

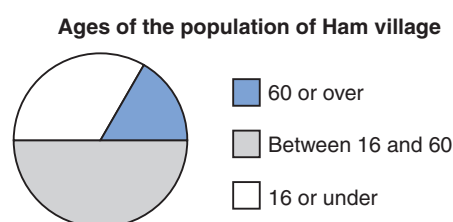


Discuss questions such as:

- What was the most common score in the test?
- How many children took the test? Estimate how many of them got fewer than half marks.
- The children who took the tables test practise recalling their tables each day for a week. They then take the same test again. Sketch a graph showing how you think the marks in the second test will be distributed.

Know that for grouped discrete data the bars may be labelled with the range that they represent but not the divisions between the bars.

Begin to interpret **simple pie charts**, such as those showing the data in a computer database.



Answer questions such as:

- What fraction (percentage) of the population of Ham is 16 or under? 60 or over?
- Why do you think there are more people aged 16 or under than aged 60 or over living in Ham?