# Statistics

Statistics is all about data. Data can be collected in tally or frequency charts, then displayed in a variety of graphs.
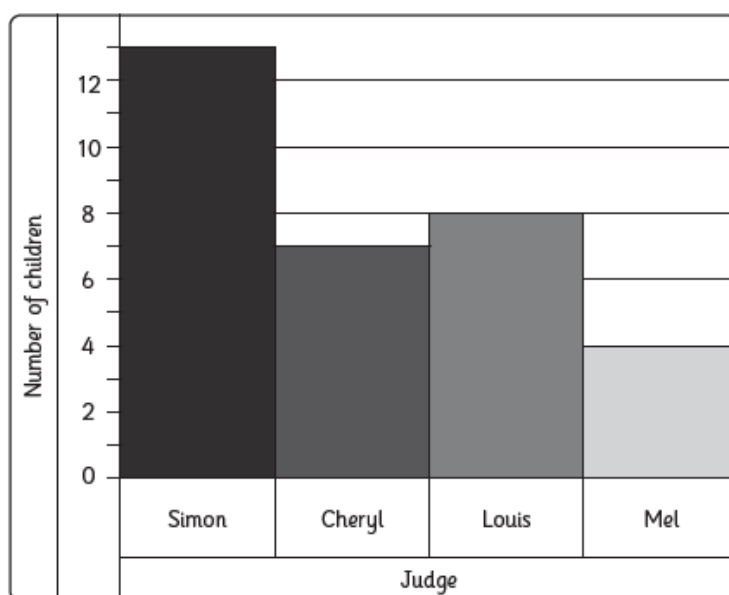
2. Year 4 did a survey outside school and collected the following data regarding the colours cars that passed their school:

| colour of car | number that passed by |
|---|---|
| red | 20 |
| blue | 16 |
| silver | 9 |
| white | 5 |
| gold | 1 |
| yellow | 2 |

Tables are used to show data that has been collected. This data is then put into graphs.

# Bar Charts

1. Here is a bar chart showing Year 4's favourite X Factor Judges:
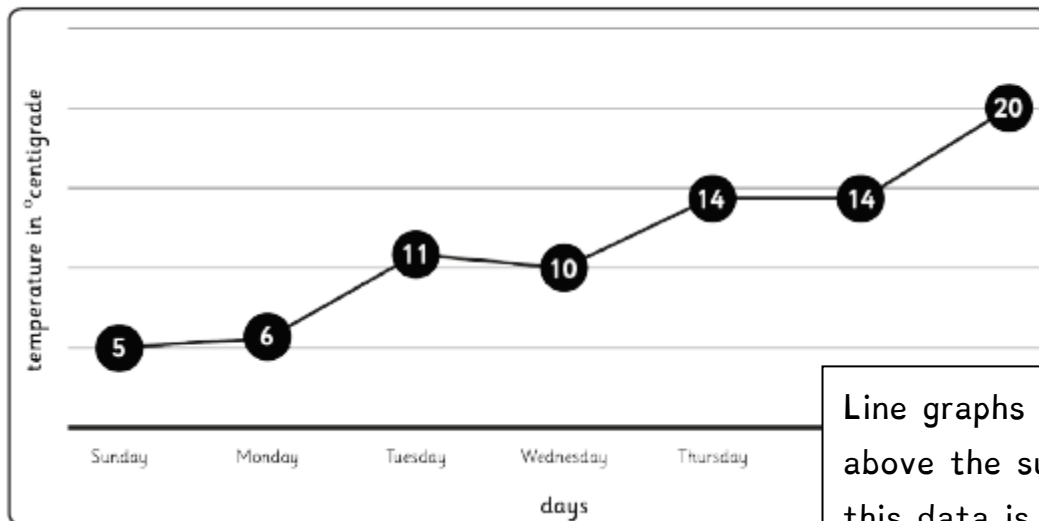
It is important to read the scale properly and ensure you understand the increments.



Bar charts use 2 axis to display data. Usually the groups along the bottom X axis, then the amount up the Y axis.
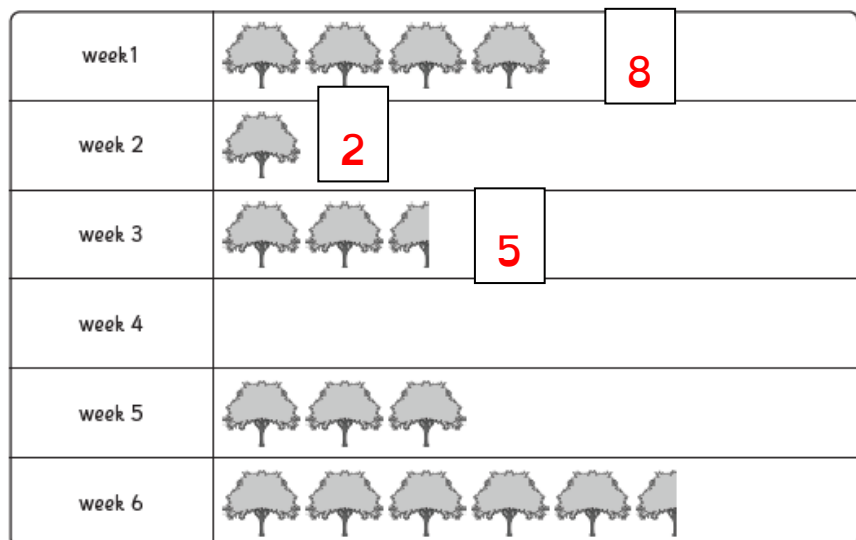
## Line Graphs

3. Here is a line graph to show the maximum temperatures in a town across a week:

temperature in °centigrade

20

14    14

11
      10

5     6

Sunday    Monday    Tuesday    Wednesday    Thursday

days

Line graphs plot data above the subject, then this data is joined by straight lines to help spot rising and falling trends.

## Pictogram

Pictograms use pictures and a key to display data. It is vital to look at the key on a pictogram, because an image often represents more than one. So if 1 tree represents 2, what would half a tree represent?

4. The following pictogram shows a tree planting project in a local town:

| week 1 | | 8 |
| week 2 | | 2 |
| week 3 | | 5 |
| week 4 | | |
| week 5 | | |
| week 6 | | |

= 2 trees

a) What does [tree] represent?

When answering questions based on a table, line graph, bar chart or pictogram it is important to read the question **carefully** and pick out the **key information.**

3. Here is a pictogram showing the number of apples sold by the fruit shop in one week:

| Monday | |
|---|---|
| Tuesday | |
| Wednesday | |
| Thursday | |
| Friday | |
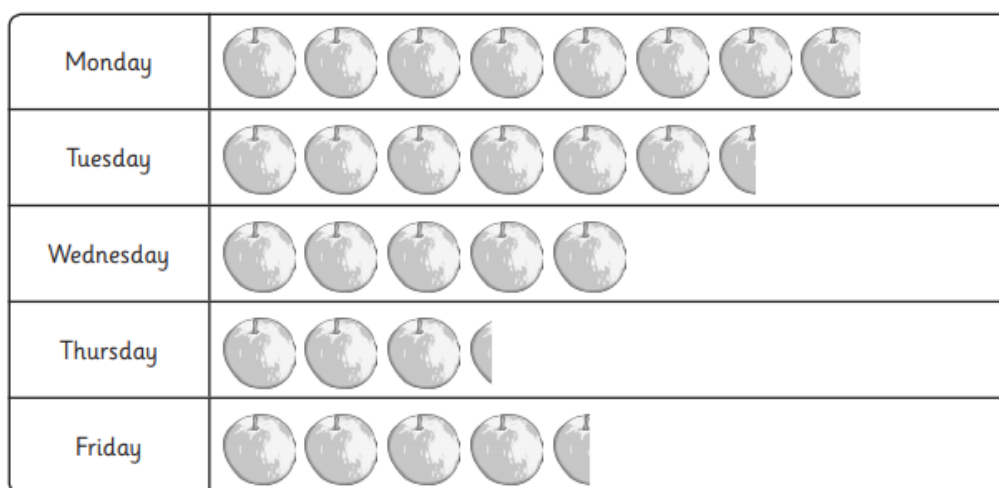
= 4 apples

Eg.

Q1. How many apples were sold on Wednesday? 20

Q2. How many <u>more</u> were sold on Tuesday?

Question 2 is asking how many <u>more</u> were sold on Tuesday, the key word being more! So you must work out how many were sold (26), then work out the how many more this is than 20.

Therefore your answer would be 6.

Always read your question carefully and ensure you fully understand what the question is asking you to do.

# Key Vocabulary

## Median

To find the median, order the numbers and see which one is in the middle of the list.

E.g. 3, 3, 6, 13, 100 = 6

The median is 6.

If there are two middle values the median is halfway between them. This might not be a whole number.

## Mode

The mode is the number that appears the most.

To find the mode, order the numbers lowest to highest and see which number appears the most often.
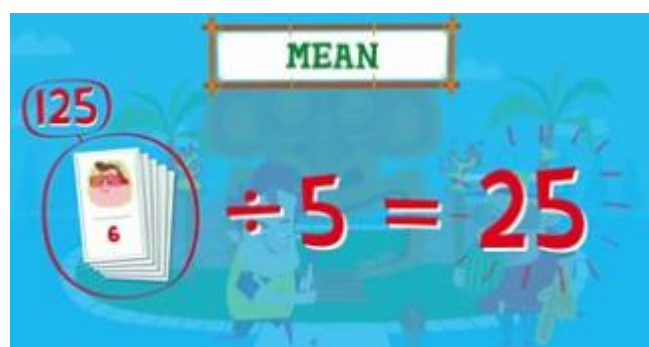
E.g. 3, 3, 6, 13, 100 = 3    The mode is 3.

## Mean

The mean is the middle value of a set of data, found by adding up all the values, then dividing by the total number of values.

E.g. 6 + 3 + 100 + 3 + 13 = 125 ÷ 5 = 25 The mean is 25.

(The mean is not always a whole number)

## Range

The range is the difference between the biggest and the smallest number. To find the range, subtract the lowest number from the biggest number.

E.g. 100 – 3 = 97    The range is 97.



## Other Key Vocabulary

| Bar chart | A chart that uses solid bar blocks to display data, using its height. |
|---|---|
| Pictogram | A chart displaying data using images and a key. |
| Frequency table<br><br>Tally chart | <br><br>Collection of data being shown as a tally chart (lines grouped up to 5) and the written number. |
| Sum | "add up" – the total amount of the numbers that have been added. |
| Difference | The amount between two numbers. |
| Comparison | Compare means to look at and analyse two pieces of data. |
| Interpret | Understand and explain the meaning of something |