

Key vocabulary	Definition
statistics	The collection, organisation, presentation, interpretation and analysis of data
bar chart	visual diagram used to represent statistical information
pictogram	visual diagram used to represent statistical information
frequency	How often something occurs
frequency table	a table used in statistics that organises data as an ordered list of scores and their frequency
tally chart	A record of items using lines to represent each item
pie chart	visual diagram used to represent statistical information
discrete data	data that can be counted and has a finite number of possible values (e.g. days of the week)
continuous data	has an infinite number of possible values within a selected range e.g. temperature range
line graph	visual diagram used to represent <u>statistical</u> information
sum	The result when two or more numbers are added together
difference	how much a number is bigger or smaller than another
interpret	To make sense of something
mean (average)	the total of all the scores or amounts, divided by how many scores or amounts there were

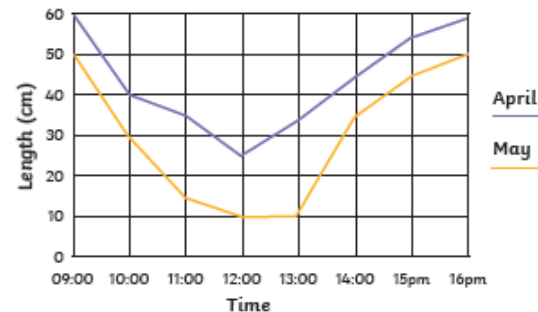
### Interpreting Data

Information can be shown in tables, charts or graphs. Interpreting data simply means understanding or working out what is being shown by a table, graph or chart and being able to answer questions about that information.

### Line Graph

Line graphs are used to show changes to a measurement over time. Data shown in a line graph is continuous. Sets of points are joined together to make the line.

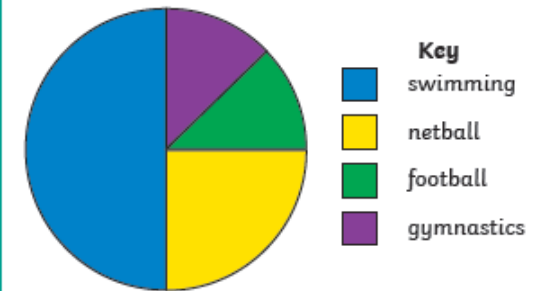
A line graph to show the length of shadows over time



### Pie Charts

Pie charts represent discrete data. A circle is divided into segments, where each segment represents a data category. The size of each segment matches its proportion of the total amount.

A pie chart to show children's favourite sports



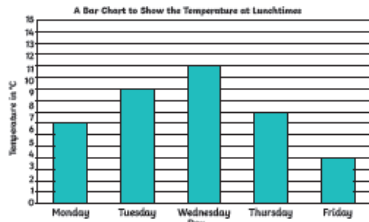
24 children were asked in total.  
 Swimming =  $\frac{1}{2}$  so  $\frac{1}{2}$  of 24 = 12 children  
 Netball =  $\frac{1}{4}$  so  $\frac{1}{4}$  of 24 = 6 children  
 Football =  $\frac{1}{8}$  so  $\frac{1}{8}$  of 24 = 3 children  
 Gymnastics =  $\frac{1}{8}$  so  $\frac{1}{8}$  of 24 = 3 children

### Real Life

- **Temperature:** Reading temperatures for weather, people, food
- **Bus / train timetables:** When you go to secondary school!
- **Research:** Choices of where to eat with friends - who wants Nandos / McDonalds / Pizza Express
- **In hospitals:** Doctors and nurses use charts all the time (remember when the midwife who visited showed us her blood pressure charts)
- **Gardeners:** How much have their plants grown over a month?

### Bar Chart

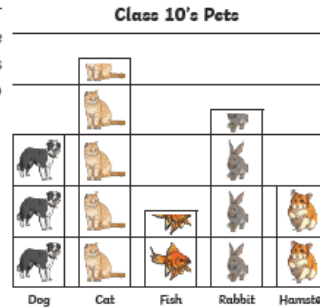
A bar chart has a horizontal axis and a vertical axis. Bars show the data value of each category. There must be a gap between each bar. The scale of the bar chart is chosen based on the data range.



### Pictogram

This graph uses pictures or symbols to represent the data. The pictogram uses one picture or symbol to represent a value.

= 4 Children



### Frequency Table

Eye Colour	Tally	Frequency
brown		6
blue		8
green		3
grey		4
hazel		5

Tally marks are used to help count things. Each vertical line represents one unit. The fifth tally mark goes down across the first four to make it easier to count.

The frequency column is completed after all the data has been collected.



### Mean Average

The mean is the average of a set of data.

To find the mean or average, add up all of the values to find the total. Divide the total by the number of values that you added together. This will give you the mean.

12	15	10	8	15
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$$12 + 15 + 10 + 8 + 15 = 60$$

$$60 \div 5 = 12$$

The mean of this data is 12.

## Prior Knowledge

### Completing Tables

Here is a table showing the favourite drink flavours of some children.

	Boys	Girls	Total
Orange	8		18
Blackcurrant		6	
Total	15		

To find how many boys voted for blackcurrant, look at the total number of boys who voted and subtract the number of votes for orange.

To find how many girls voted for orange, look at the total number of votes for orange and subtract the number of votes from boys.

To find the total number of votes for blackcurrant, the total number of girls or the total number of voters, simply add up the values from the appropriate row or column.

## Zooming out...

- Statistics has its origin in *census* counts (count of all people in a country)
- Remember when we did our *AJS Census* last year? You answered questions about yourselves and then analysed the data in class.
- The *Han Dynasty* (China) and *Roman Empire* were first to collect and analyse data

