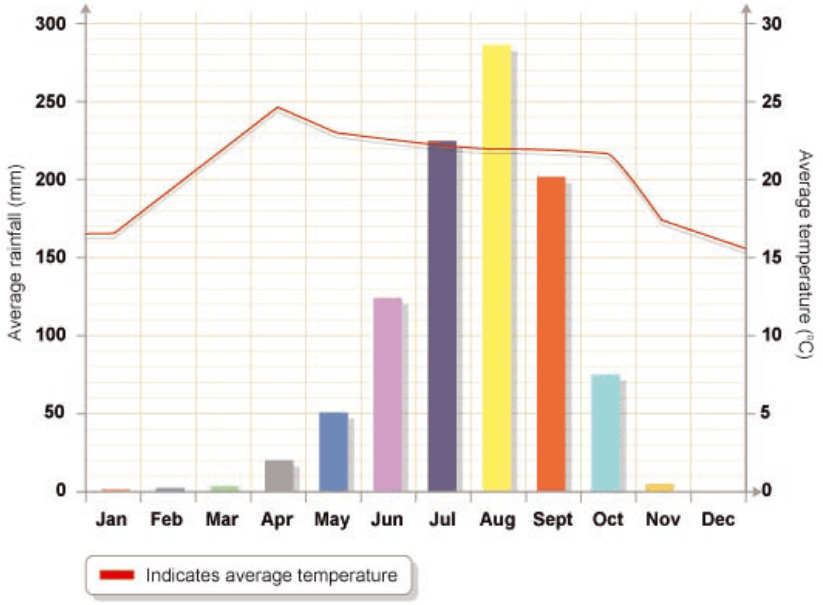
Numeracy Across the Curriculum

GEOGRAPHY

Representing Data

The 3 main ways you might represent data are in a bar chart, a pie chart or a line graph.



This **climate graph** shows average annual rainfall and temperature throughout the year for a particular area.

A bar chart is used here to show the rainfall. Note how there are equal spaces between the bars. You should always leave spaces between the bars if the data is not numerical (or is numerical but is not continuous).

A line graph is used here to show the temperature and how it changes over the year. Line graphs should only be used with data in which the order in which the categories are written is significant.

Points are joined if the graph shows a trend or when the data values between the plotted points make sense to be included.

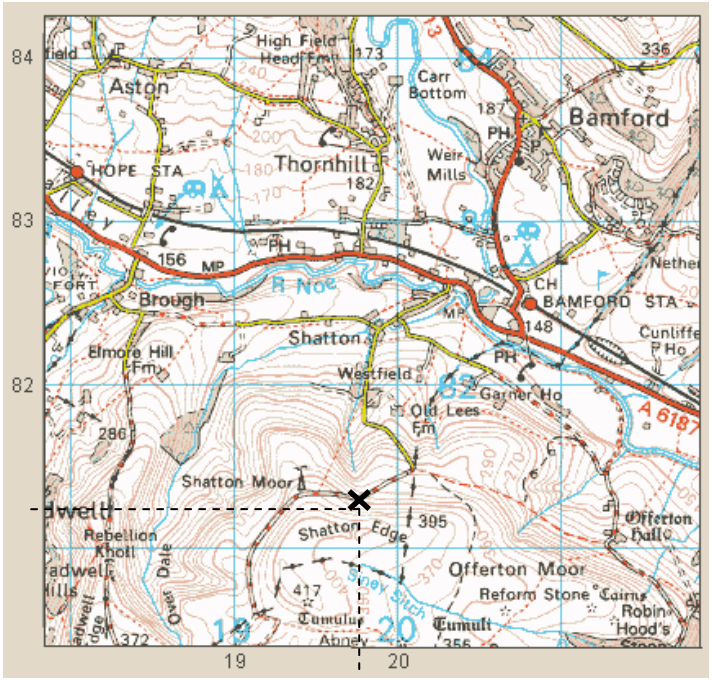
With any kind of graph take care to label your axes carefully and accurately.

Numeracy Across the Curriculum

GEOGRAPHY

Grid References and Coordinates

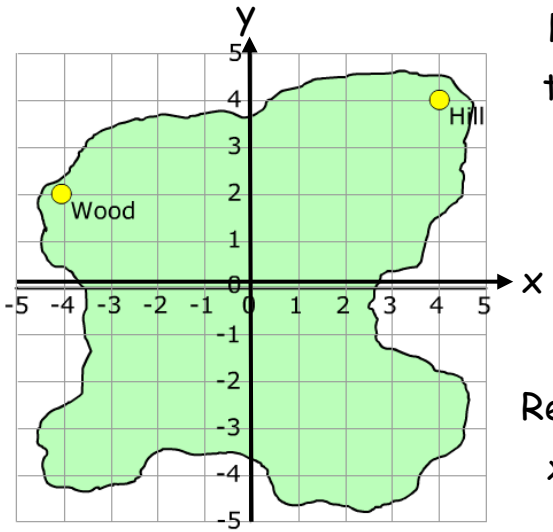
Grid references give the position of objects on a map. Coordinates give the position of points on a 2D plane.



In **geography grid references** are given using the number **across** the bottom of the map first (**Easting**) followed by the number **up** the side of the map (**Northing**).

The grid reference of the point shown would be **19**7**81**4

In **maths** we use coordinates to describe the position of a point on a plane. The **x-coordinate** (given by moving **across** the horizontal axis) is given first followed by the **y-coordinate** (given by moving **up or down** in the direction of the vertical axis).



Here the coordinates of the hill and the wood are given by:

Hill: (4 , 4)

Wood: (-4 , 2)

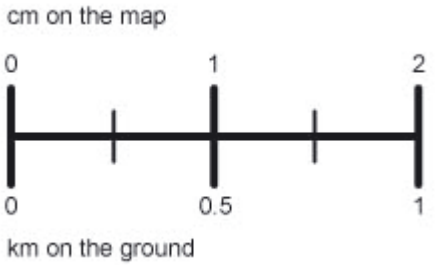
Remember: Always give the x-coordinate before the y-coordinate.

Numeracy Across the Curriculum

GEOGRAPHY

Scale

In **Geography** the **scale** of a map is the ratio between the size of an object on the map and its real size.



This scale is for a 1:50 000 scale map.

1 cm on the map represents 50 000 cm on the ground.

50000 cm = 500 m = 0.5 km

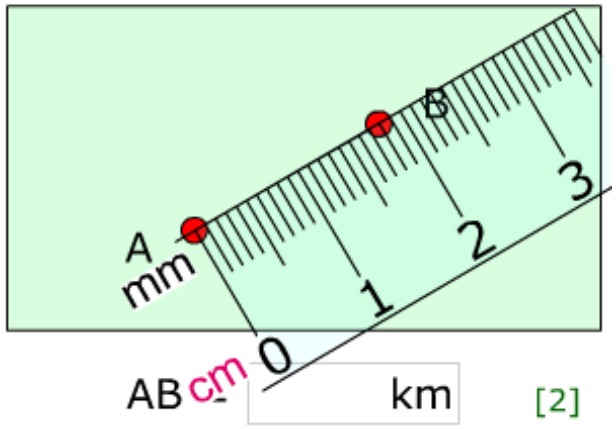
Ordnance Survey maps have different scales.
Travel maps, for long distance travel, have a scale of 1:125 000 where 1 cm represents 1.25 km.

Explorer maps, for walking, have a scale of 1:25 000 where 1cm represents 250 m.

Landplan maps, used by town planners, have a scale of 1:10 000 where 1cm represents 100 m.

In **Maths** we use **scale** in a similar way.

Scale is 1 : 250,000.



AB = 1.8 x 250 000 = 450 000 cm = 4 500 m = 4.5 km

Similarly to find what length to draw an object on a diagram you would divide the real length by the scale factor. A distance of 6 km in real life would be represented by:

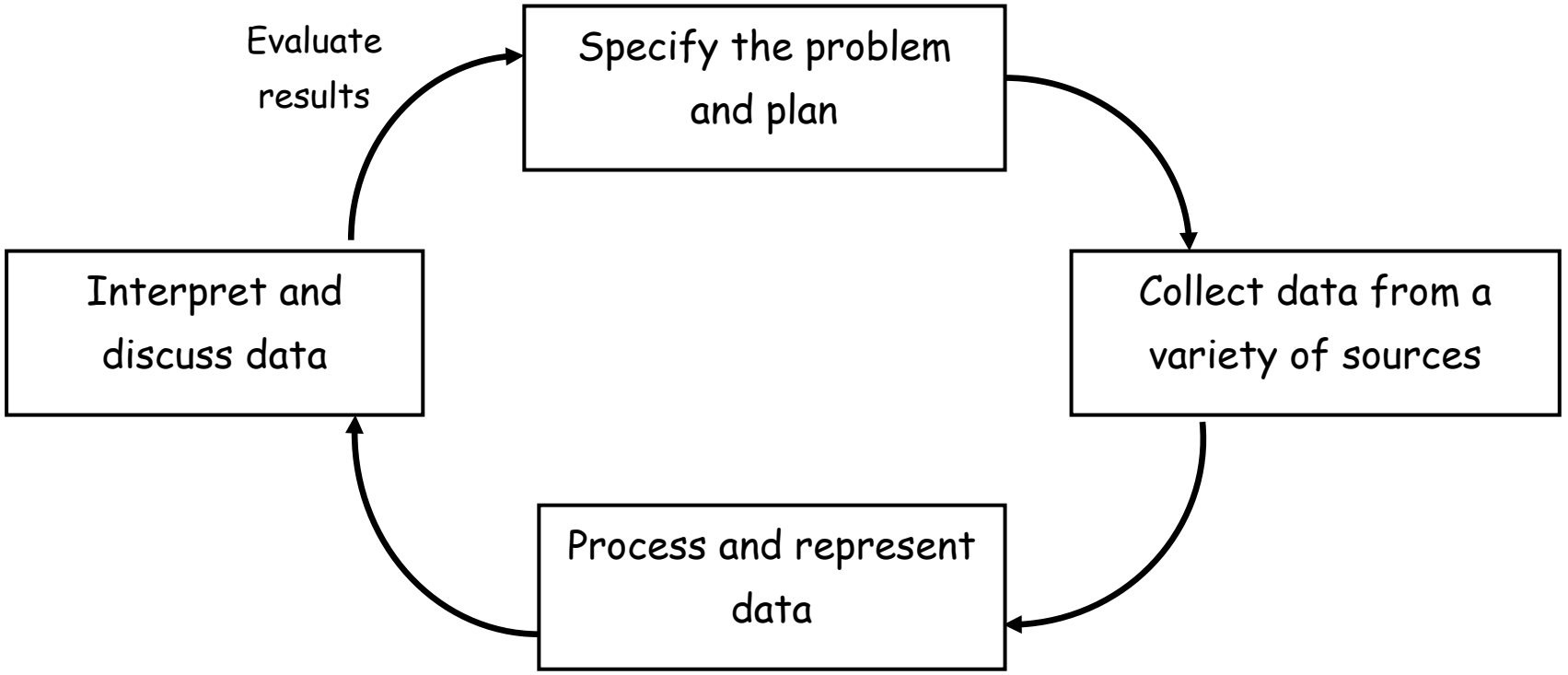
6 ÷ 250 000 = 0.000024 km = 0.024 m = 2.4 cm

Numeracy Across the Curriculum

GEOGRAPHY

The Handling Data Cycle

The handling data cycle is used when collecting and analysing data. You might use it for a controlled assessment or on a field trip in Geography. In maths you would use it for a statistical investigation. It's important to be aware of each of the stages to make sure that vital steps aren't missed out.

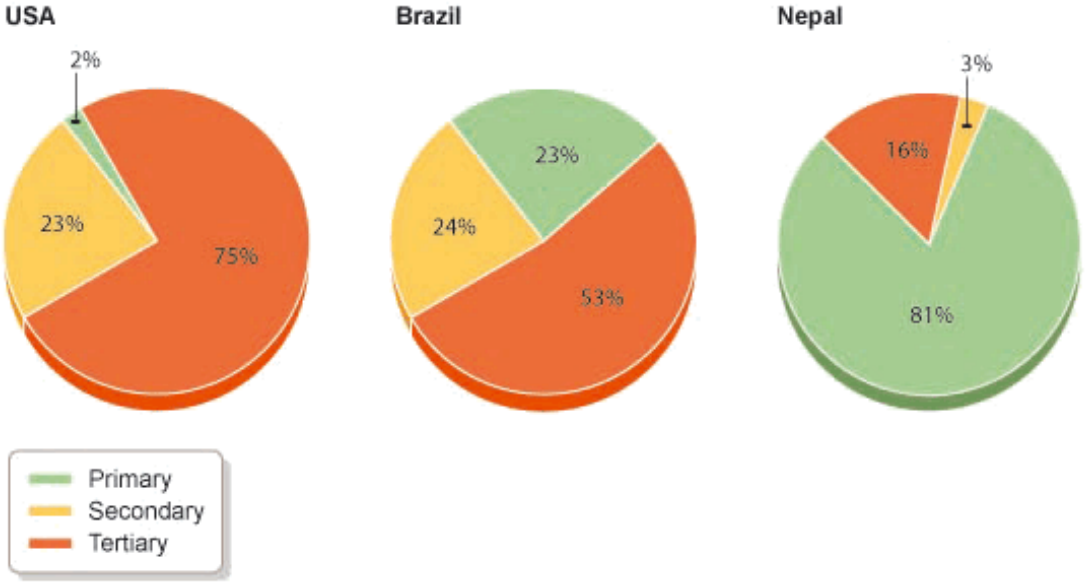


Numeracy Across the Curriculum

GEOGRAPHY

Representing Data

The 3 main ways you might represent data are in a bar chart, a pie chart or a line graph.



The **pie charts** show the differences in the split between primary, secondary and tertiary employment in USA, Brazil and Nepal. Make sure to include a **key** whenever you draw pie charts and to label your charts clearly.

These pie charts use data in the form of percentages. Percent means "out-of-100." In a percentage pie-chart the circle is divided into 100 equal parts and shared out between the groups. Since there are 360° in a full turn, each percent of the pie chart uses:

$360° \div 100 = 3.6°$

So for a sector representing 23% you would need to measure a sector of:

$23 \times 3.6° = 82.8°$

You would then round this to the nearest whole degree, i.e. 83°