

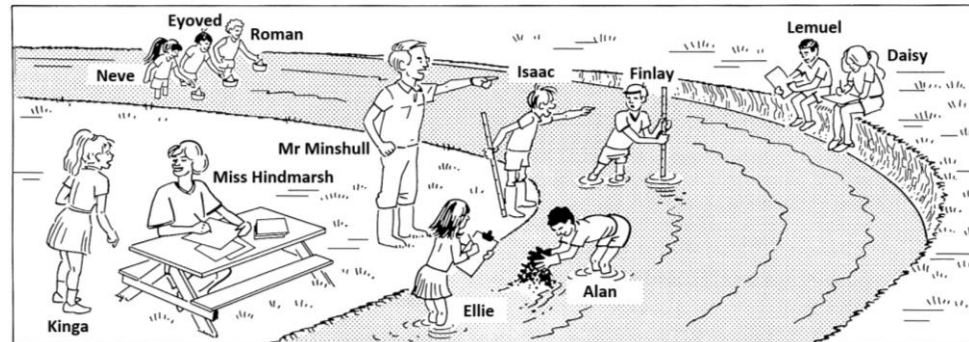
# Y8 Rivers



## Summary of all the topics

- Introduction to Rivers (Why are some rivers dangerous to humans?)
- What is a drainage basin?
- How does the water cycle work?
- What are waterfalls?
- What happens on a meander bend?
- Why do rivers flood?
- What happened when floods hit Sheffield and Bangladesh?

The drawing shows some of **8S** from All Saints Catholic High School on a Geography visit.



## Key geographical concepts

- Rivers can be dangerous if people live near them, e.g. flooding. But they are also incredibly beautiful and provide us with an important source of water and food. They are also important ecosystems and are home to aquatic wildlife.
- Some of the world's great rivers are the Nile (the longest) and the Amazon (the one which contains the most water).
- The purpose of a river is to drain water from the land and take it to the sea. Rivers form an important part of the drainage basin hydrological cycle.
- Rivers have amazing landforms such as v-shaped valleys, waterfalls, rapids, meander bends, ox-bow lakes.
- Meander bends are cool. Inside a meander bend water is shallower on the inside and deeper on the outside. So be careful if you are standing near a river cliff on the outside of a meander bend!
- Rivers will sometimes flood. Every country on the planet suffers from river flooding on occasion: including the UK and Bangladesh.
- A major flood hit Sheffield in 2007. Bangladesh was also hit by a flood in 2007. Bangladesh was hit much worse because it is a low-income country (LIC) and didn't have the money or resources to deal with the flood on its own.
- Scientists tell flooding is expected to get worse over the coming years. This is because of global warming which is going to make some parts of the world wetter (including the UK!).

## Summary of key learning

- You understand that rivers have a key terminology all of their own: source, mouth, upper course, middle course, watershed, confluence and drainage basin.
- You understand that there are physical causes of flooding such as heavy rainfall and snow melt. You also understand that humans can make flooding worse by building cities near to rivers. Cities have drainage systems which funnel water into rivers more quickly.
- You understand that there were important similarities and differences between the Sheffield Flood of 2007 and the Bangladesh flood of 2007. Sheffield's flood was expensive to fix, but the death toll was low. Sheffield could rely on well trained and well resources emergency services. Bangladesh's flood in 2007 was both costly to fix and the death toll was much higher. The Bangladeshi flood was on a much bigger scale compared to Sheffield.

## Key words and definitions:

**Source** = start of a river.

**Tributary** = small river joining the main river.

**Confluence** = where two rivers join.

**Mouth** = the end of a river (just where it enters a sea or lake)

**Drainage Basin** = the area of land drained by a river

**Watershed** = an imaginary line that separates one drainage basin from another.

**Meander** = a bend in a river.

**Estuary** = a flat wide river mouth where fresh river water mixes with salty sea water.

**Floodplain** = the flat area either side of the river which is flooded when a river bursts its banks.

**Flooding** = what happens when a river bursts its banks and spills onto the floodplain.

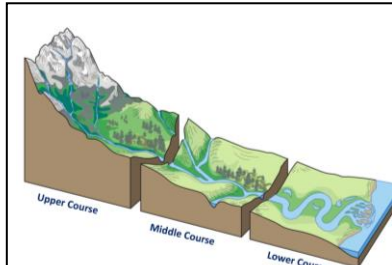
**Upper course** = The first stage in a rivers journey where the land is high and steep.

**Middle course** = The second stage in a rivers journey where the land is gently sloping.

**Lower course** = The final stage in a rivers journey where the land is flat.

**LIC** – Low income country, e.g. Bangladesh. Often much worse hit by flooding.

**HIC** – High income country, e.g. UK. Hit less often by flooding and usually lower impacts.





# Y8 Development

## Key questions:

- What is development?
- How can development be measured?
- How does development compare between countries?
- How are places represented?
- Why can trade in clothes be unfair?
- What are factories like in China?
- Why is the banana trade system unfair?
- How does Fair trade make lives better?

## Key facts and information:

- There is a pattern to global development - some countries are richer, whilst other countries are poorer,
- We can measure these differences by comparing indicators, such as life expectancy
- As Geographers we need to be careful not make stereotypes and assumptions of what life is like in other countries
- Some products we buy have been manufactured in factories where workers do not get a fair price or work in safe living conditions, like in Bangladesh, and therefore people working in the factories remain poor.
- In other factories, such as those in China, manufacturing has enabled China to become very wealthy. We are reliant on lots of goods being manufactured in China.
- Other trade in products, such as Bananas, can also be unfair, with workers being given a low price for their bananas.
- Fair Trade was an organisation which was set up to make sure farmers got a fair price for their products, the extra money could be used in the community to build schools and hospitals.
- Charities work hard to lift people out of poverty



## Key words and definitions:

**Development** = differences that exist between countries

**Inequality** = things are not equal, e.g. access to education is not equal in some countries. Some children can go to school whereas other children cannot

**Poverty** = the state of lacking basic goods or money

**Life expectancy** = how many years someone is expected to live

**HIC** = High Income Country

**LIC** = Low Income Country

**Manufacturing** = Making things

**Trade** = Buying and selling of goods

**Fair trade** = Growers get a fair price for their products





# Geographical skills: map skills

Y8

## Summary of this topic:

- Use of scale and distance
- Reading contours and understanding spot heights
- Drawing cross sections of physical features
- Calculating central tendency
- Calculating percentage increase and decrease
- Ability to estimate trend lines through scatter graphs
- Divided and comparative bar charts
- Divided and comparative line graphs

## Key geographical skills rules & things to know

### Use of scale and distance

- Most maps have a scale. These help us to work out distances on maps. This is given by the scale statement (eg 1:25,000) and/or by showing a scale bar (shown in fig 1)
- The scale shows how much bigger the real world is than the map. If the scale is 1:50,000 it means that the map is 50,000 times smaller than the real world. For example, every 1 cm on the map represents 50,000 cm in the real world.

### Reading contours and understanding spot heights

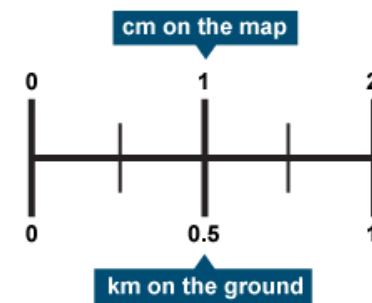
- These are lines drawn on maps that join places of the same height. They are usually an orange or brown colour. Some contour lines have their height above or below sea level written on them. It is possible to use them to see the shape of the land - if contour lines are close together the slope is steep, if they are far apart the slope is gentle (shown in fig 2)

### Drawing cross sections of physical features

- Cross sections are line graphs that show a sideways view of a landscape. They can show features such as hills and valleys, or depths, such as the depth of a river. Cross sections of hills use contour lines to determine the height of the land.

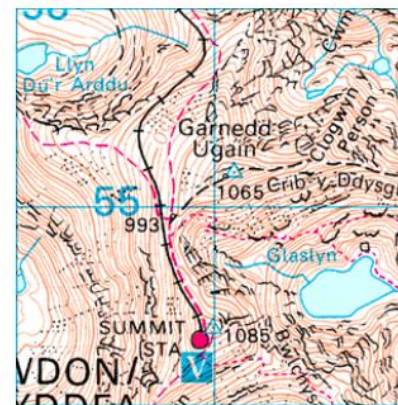
## Summary of key learning

- I know how to use scale on a map
- I know what contours are and what they show
- I know what a cross section is and will practice drawing one



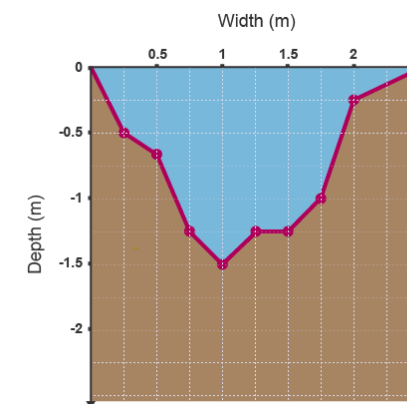
Scale and distance

Fig 1



Contours and spot heights

Fig 2



Drawing cross sections

Fig 3

## Key words and definitions

- Scale

*The relationship between distance on a map and the corresponding distance on the ground*

- Distance

*The length of the space between two points*

- Contours

*A line found on a map that joins points of equal height*

- Spot heights

*An exact point on a map that shows how high it is above sea level (normally represented by a triangle on an OS map)*

- Cross sections

*Are line graphs that show sideways views of a landscape*

- Central tendency

*Looks at the spread of data around a mean, mode or median*

- Scatter graph

*A graph used to show the relationship between two variables in the form of dots or crosses*

- Divided graphs

*A graph that can show several data sets - bars and lines often appear stacked*

- Comparative graphs

*A graph used to show several data sets - bars and lines often have different colours*

# Geographical skills: maths skills

## Y8

### Summary of this topic:

- Use of scale and distance
- Reading contours and understanding spot heights
- Drawing cross sections of physical features
- Calculating central tendency
- Calculating percentage increase and decrease
- Ability to estimate trend lines through scatter graphs
- Divided and comparative bar charts
- Divided and comparative line graphs

### Key geographical skills rules & things to know

#### Calculating central tendency

- Averages, or **measures of central tendency**, are commonly taken in three different ways: Mean - add the total of all values that have been collected and then divide by the number of values. Median - write out all of the numbers that have been collected in numerical order and find the middle number (**shown in fig 4**)

#### Calculating percentage increase and decrease

- Calculating **percentage increase** is an important skill for geographers to **have**. ... Calculating a **percentage increase** allows a geographer to see how much their data has changed. For example, it may be useful to **find out** how much the width of a river channel increases as **you** travel downstream (**shown in fig 5**)

#### Ability to estimate trend lines through scatter graphs

- A line of best fit can only be drawn if there is a strong positive or negative correlation
- The line of best fit does not have to go through the origin
- The line of best fit shows the trend but it is only approximate (**shown in fig 6**)

### Summary of key learning

- You know how to calculate measures of central tendency
- You know how calculate percentage increase and decrease
- You know how to estimate trend lines through scatter graphs

**Mean** : The sum of all the data divided by the number of data sets

Example:  $8 + 7 + 3 + 9 + 11 + 4 = 42 \div 6 = \text{Mean of } 7.0$

**Median** : The mid data point in a data series organised in sequence

Example : 2 5 7 8 11 **14** 18 21 22 25 29 (five data values either side)

**Mode** : The most frequently occurring data value in a series

Example : 2 2 4 4 4 7 9 9 9 9 12 12 13 ( '9' occurs four times, so is the 'mode

#### Calculating central tendency

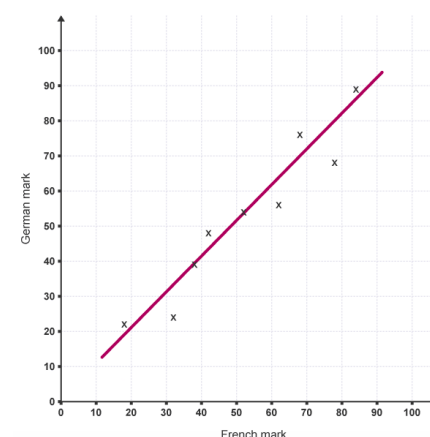
Fig 4

To calculate the percentage increase:

1. First: work out the **difference (increase)** between the two numbers you are comparing.
2. **Increase** = New Number - Original Number.
3. Then: divide the **increase** by the original number and multiply the answer by 100.
4. % **increase** = **Increase**  $\div$  Original Number  $\times$  100.

#### Calculating percentage increase and decrease

Fig 5



#### Trend lines on scatter graphs

Fig 6

### Key words and definitions

- Scale

*The relationship between distance on a map and the corresponding distance on the ground*

- Distance

*The length of the space between two points*

- Contours

*A line found on a map that joins points of equal height*

- Spot heights

*An exact point on a map that shows how high it is above sea level (normally represented by a triangle on OS map)*

- Cross sections

*Are line graphs that show sideways views of a landscape*

- Central tendency

*Looks at the spread of data around a mean, mode or median*

- Scatter graph

*A graph used to show the relationship between two variables in the form of dots or crosses*

- Divided graphs

*A graph that can show several data sets - bars and lines often appear stacked*

- Comparative graphs

*A graph used to show several data sets - bars and lines often have different colours*



# Geographical skills: graph skills

Y8

## Summary of this topic:

- Use of scale and distance
- Reading contours and understanding spot heights
- Drawing cross sections of physical features
- Calculating central tendency
- Calculating percentage increase and decrease
- Ability to estimate trend lines through scatter graphs
- Divided and comparative bar charts
- Divided and comparative line graphs

## Key geographical skills rules & things to know

### Divided/compound bar graphs and line graphs

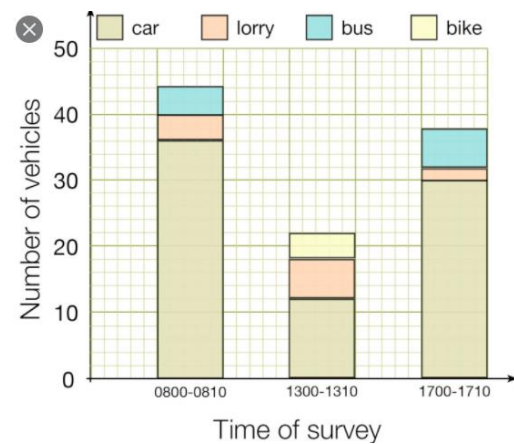
- **Divided Bar Graphs.** A **Divided Bar Graph** is a special type of **bar graph**, and it is characterised by: a rectangle or **bar** is **divided** into smaller rectangles or sections. the length of each rectangle or **bar** is proportionate to the value of data it represents, i.e what fraction of the whole rectangle
- **Divided or compound line graphs.** A **compound line graph** is a development on the simple **line graph**. They show layers of data and allow you to see the proportion that makes the total. On a **compound line graph**, the differences between the points on adjacent **lines** give the actual values. (fig 7)

### Comparative bar and line graphs

- **Comparative Bar Graph.** A **comparative bar graph** is used to compare two sets of data on the same axis, such as comparing the amount of precipitation in two separate regions over the course of a year.
- A **comparative line graph** is used to compare two sets of data on the same axis, such as comparing two separate rivers discharge throughout the course of a year (fig 8)

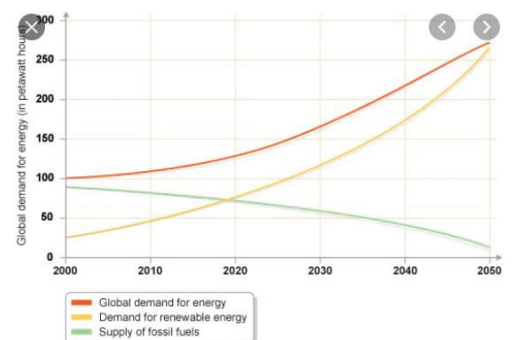
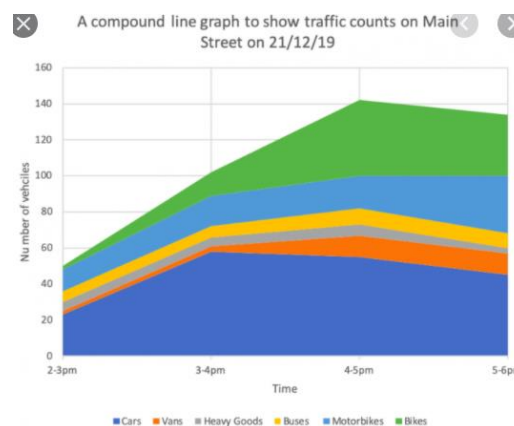
## Summary of key learning

- You know what a divided and comparative bar is
- You know what a divided and comparative line graph is



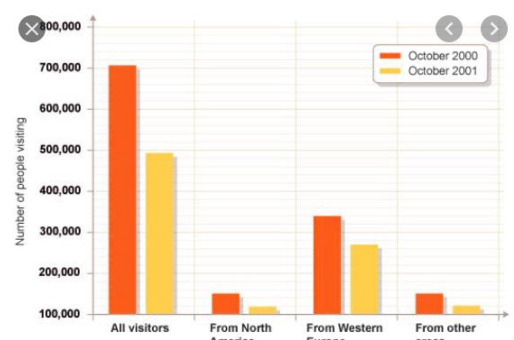
Divided graphs

Fig 7



Comparative graphs

Fig 8



## Key words and definitions

- **Scale**

The relationship between distance on a map and the corresponding distance on the ground

- **Distance**

The length of the space between two points

- **Contours**

A line found on a map that joins points of equal height

- **Spot heights**

An exact point on a map that shows how high it is above sea level (normally represented by a triangle on an OS map)

- **Cross sections**

Are line graphs that show sideways views of a landscape

- **Central tendency**

Looks at the spread of data around a mean, mode or median

- **Scatter graph**

A graph used to show the relationship between two variables in the form of dots or crosses

- **Divided graphs**

A graph that can show several data sets - bars and lines often appear stacked

- **Comparative graphs**

A graph used to show several data sets - bars and lines often have different colours

