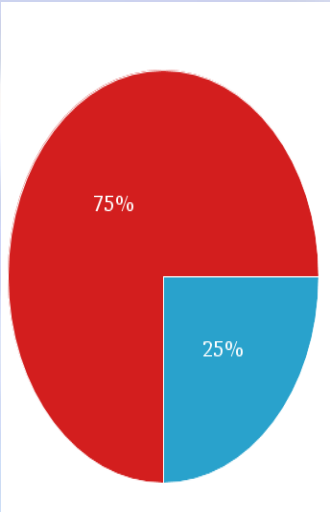
DO IT NOW

Be great: chose one graph and state an advantage and disadvantage to this data presentation.

1



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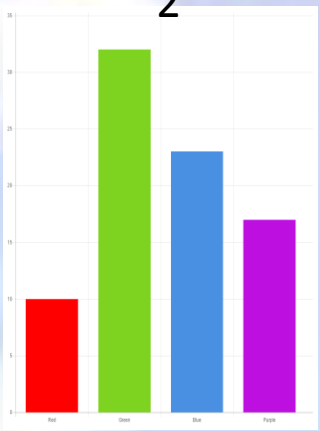

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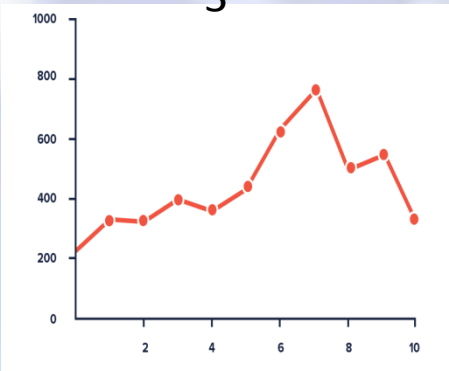

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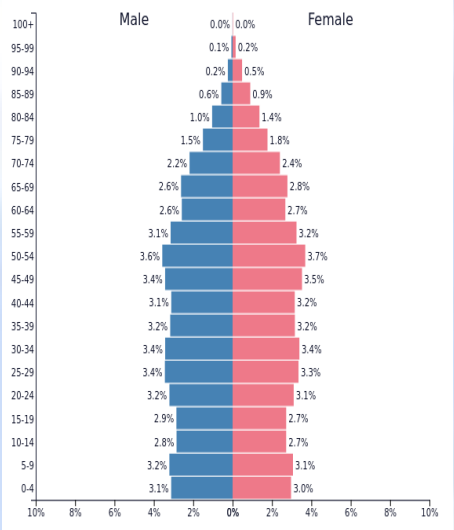


Task: Name the chart and match the type of graph with the data set

To show changes in population in a country and ratio of male to females

To show transport type of people commuting to work e.g. bus, cars etc.

To show annual temperature change in rainforest

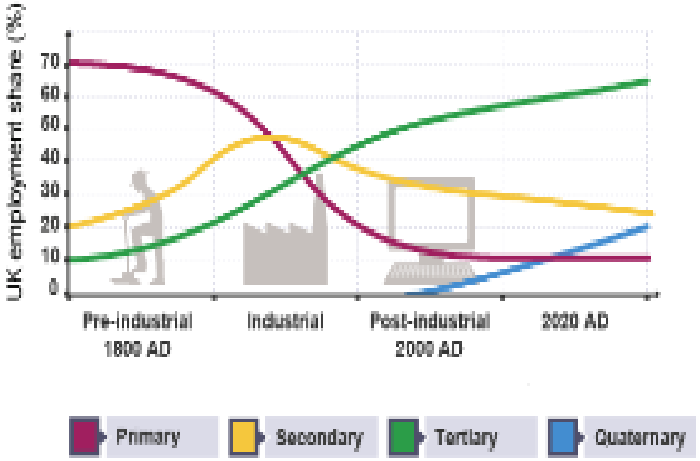
To show total number of imports and exports to the UK

Key Geographical Graphs .

Learning Objectives	Grade
To describe the different types of graphs	45
To explain how to construct the different types of graphs	55
To evaluate how effective each graph type is.	65
Literacy Focus = use of Key word e.g. energy insecurity.	

Line graphs

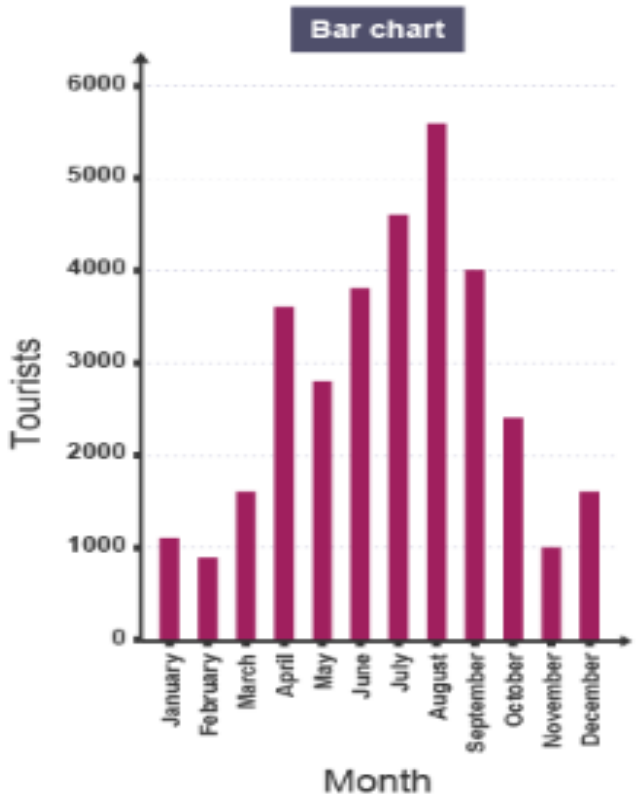
Line graphs show how data changes over time or space. The **x-axis** shows time or distance.

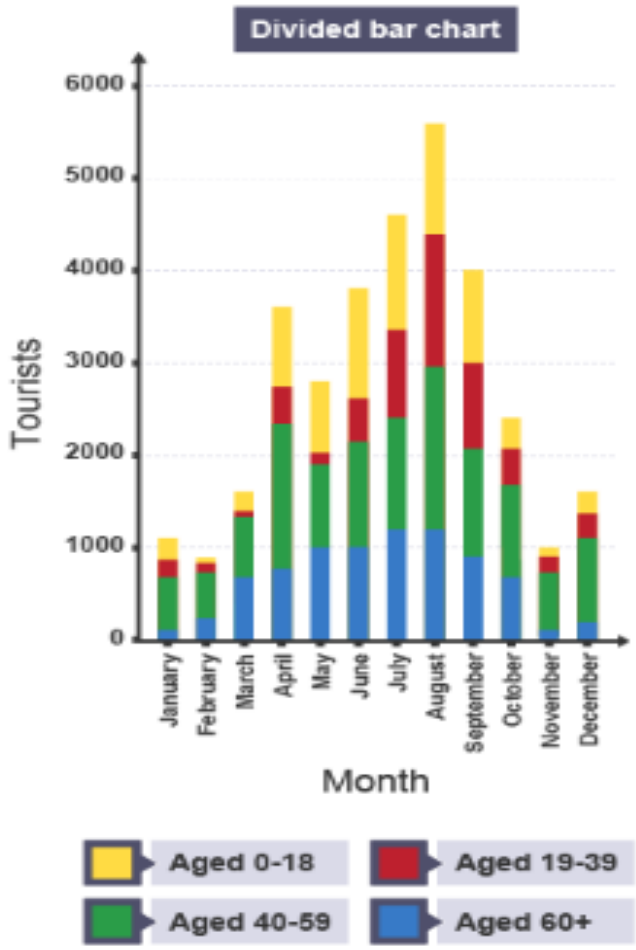


A line graph could be used to show the changes in a country's employment structure over time. This graph shows that in the post-industrial era approximately 11% of employed people work in primary industries, 31% in secondary industries, 54% in tertiary industries and 4% work in quaternary industries. Note how the total adds up to 100%.

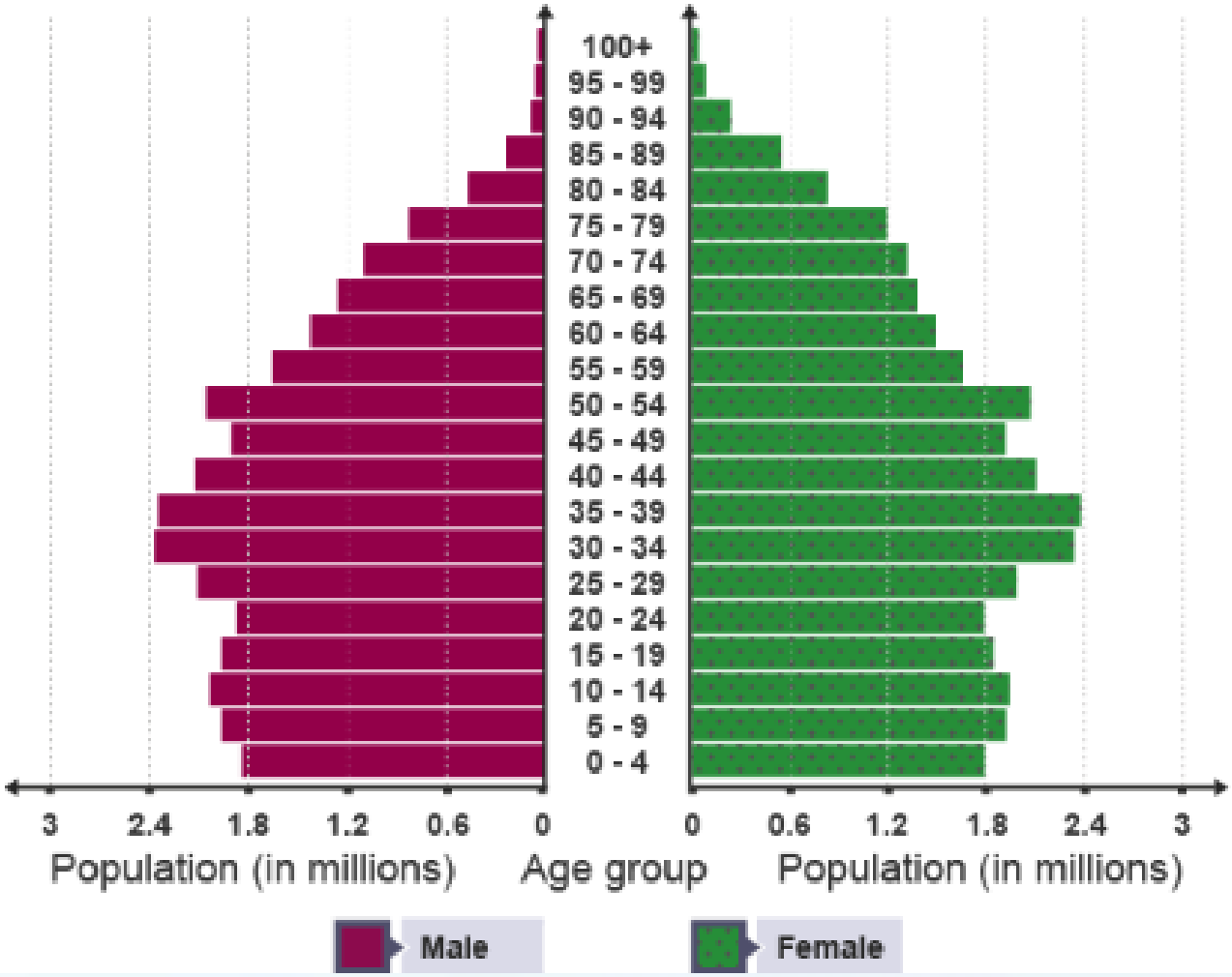
Bar charts

Bar charts show grouped data as rectangular bars, eg the number of tourists visiting a resort each month. Divided bar charts split up each rectangular bar to break the information down further. A divided bar chart could be used to show the age breakdown of tourists visiting a resort.

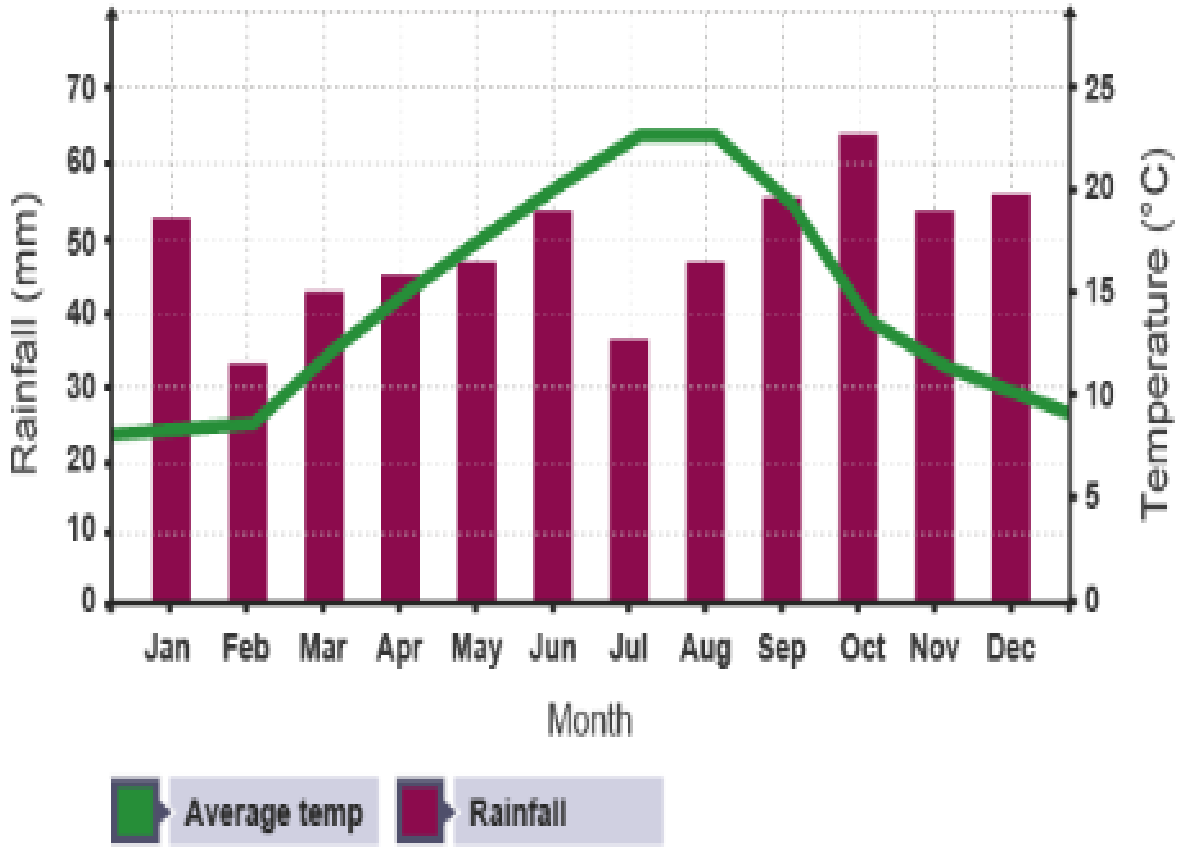




Population pyramids are bar charts that show how many people of different ages are living in a place or country. Population pyramids show the bars arranged sideways, rather than upwards. The x-axis shows the number of people, the **y-axis** shows their ages. The bars on the left show the number of males and the bars on the right show the number of females.



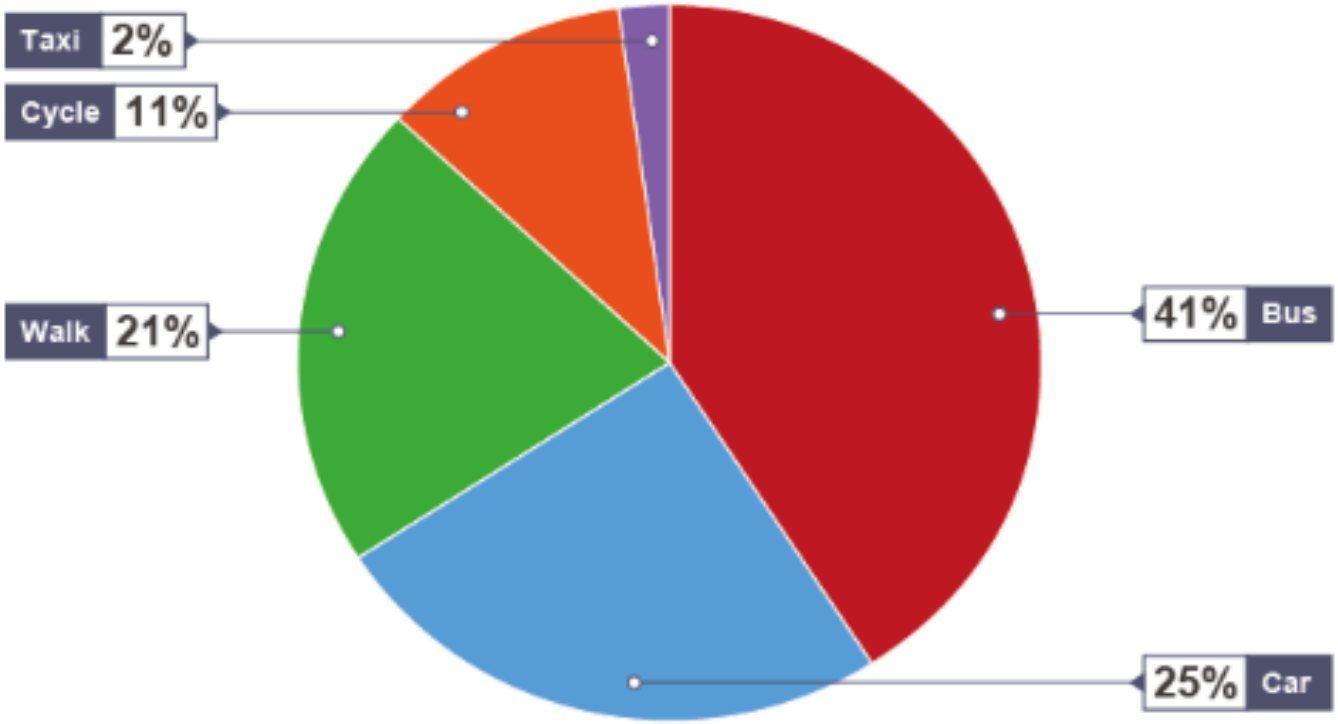
Bar charts and line graphs can be combined. **Climate graphs** are an example of this. The x-axis shows the months of the year and there are two y-axes to show average temperature and total rainfall. The temperature is shown as a line and the rainfall as bars.



Other geographical graphs

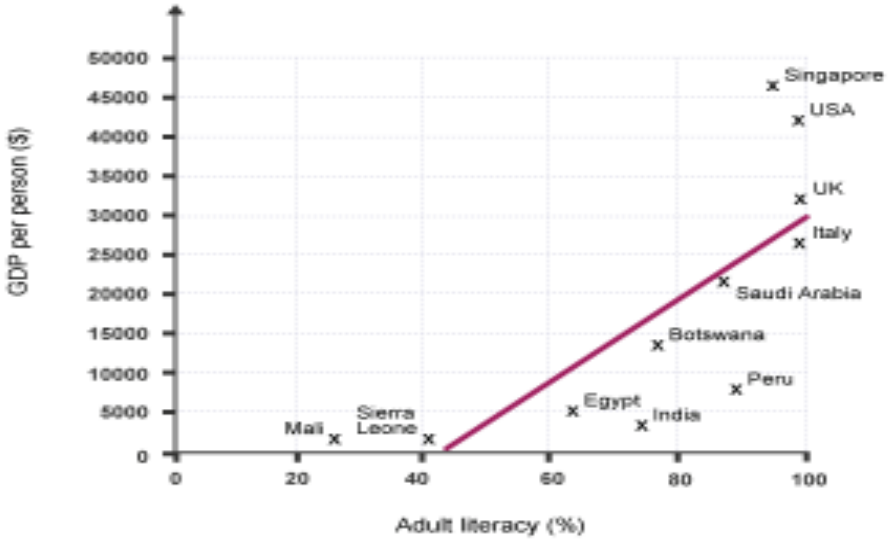
Pie charts

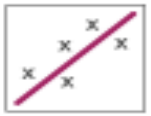
Pie charts show percentages as a circle divided into segments. A pie chart could be used to show how students travel to school. Each piece of data is shown as a proportion of 360, because there are 360 degrees in a circle. If 25 out of 100 students travel to school by car, the angle is worked out using the calculation: (25 ÷ 100) × 360 = 90 degrees.



Scatter graphs

Scatter graphs show relationships between two sets of data. Points are located using the x and y-axis. Sometimes these points are arranged in a pattern. A scatter graph could be used to show how literacy is related to GDP.





Positive correlation

No correlation

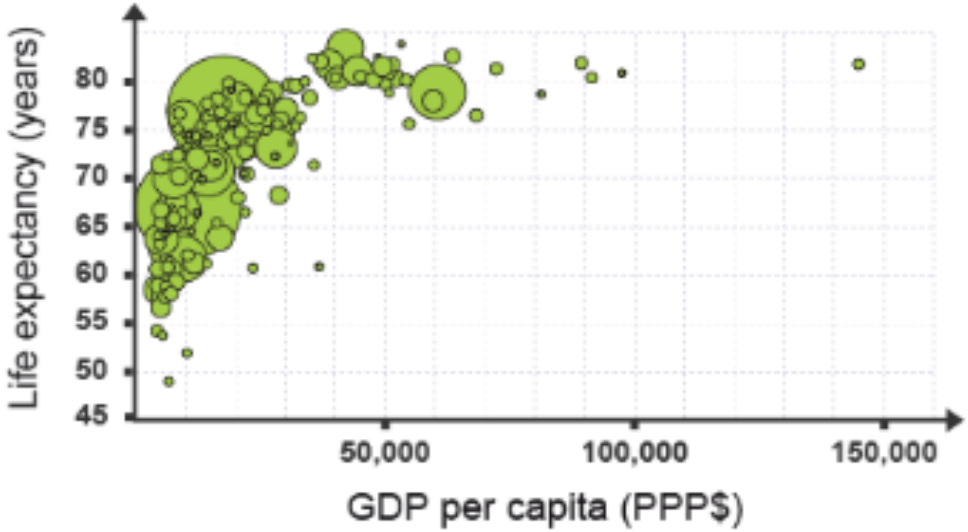
Negative correlation

A **line of best fit** helps to show correlations, or patterns within the data. The line of best fit runs through the middle of a collection of points on the graph, ideally with an equal number of points on either side of the line.

- A **strong correlation** is when the points are very close to the line of best fit.
- A **weak correlation** is when the points are far away from the line of best fit.
- A **positive correlation** is when an increase in one factor is mirrored by an increase in another (the line of best fit goes from the bottom left to the top right).
- A **negative correlation** is when an increase in one factor is mirrored by a decrease in another (the line of best fit goes from the top left to the bottom right).

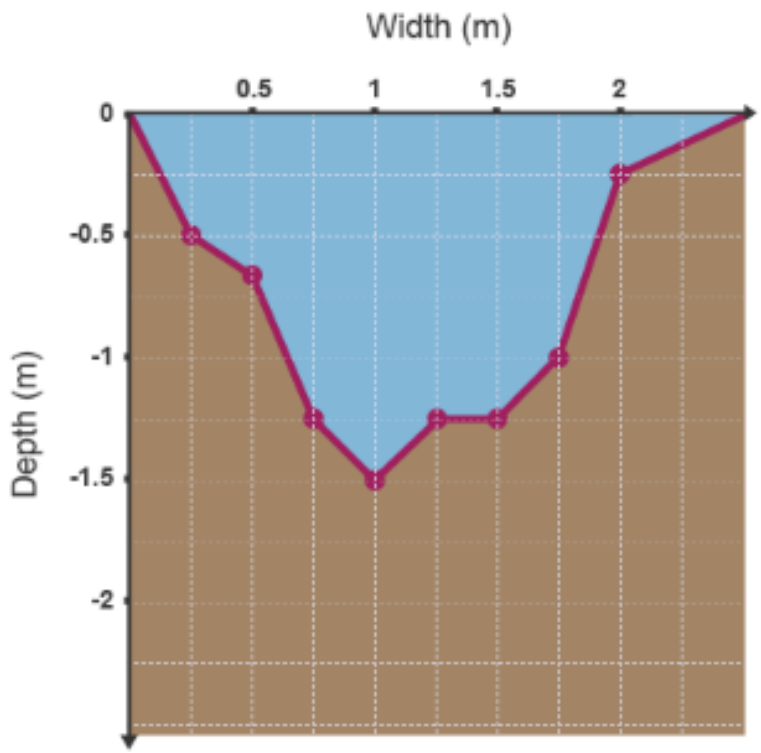
Proportional symbols, pictograms and cross sections

Proportional symbols can be added to maps or graphs to show information about different places. The graph below plots **life expectancy** against income for each country. It also shows population size. Each country is shown as a circle where the size of the circle is proportional to the population of the country, ie the bigger the circle, the bigger the population of that country.

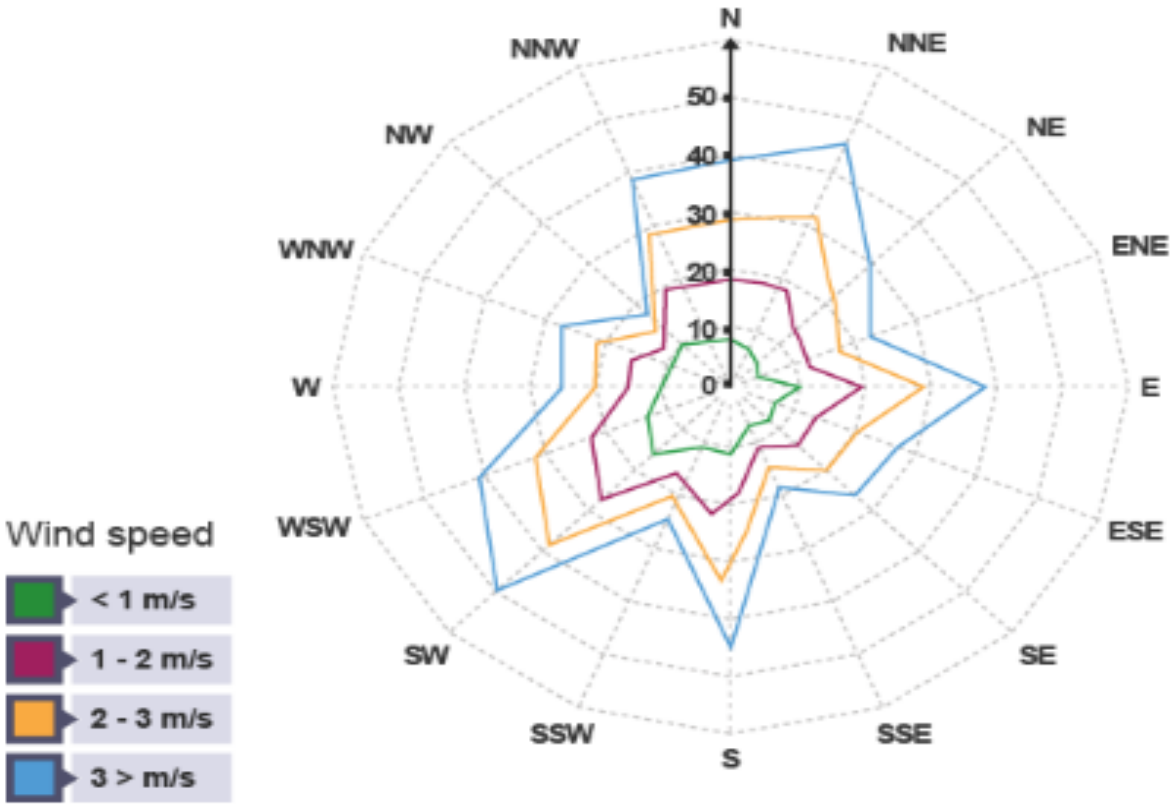


Pictograms are like bar charts, but they use small pictures or icons to show data instead of bars. Pictograms could be used to show the weather conditions experienced in a particular place over a period of time.

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. Cross sections of river depths are drawn using negative numbers so that the line graph looks like depth, rather than height.

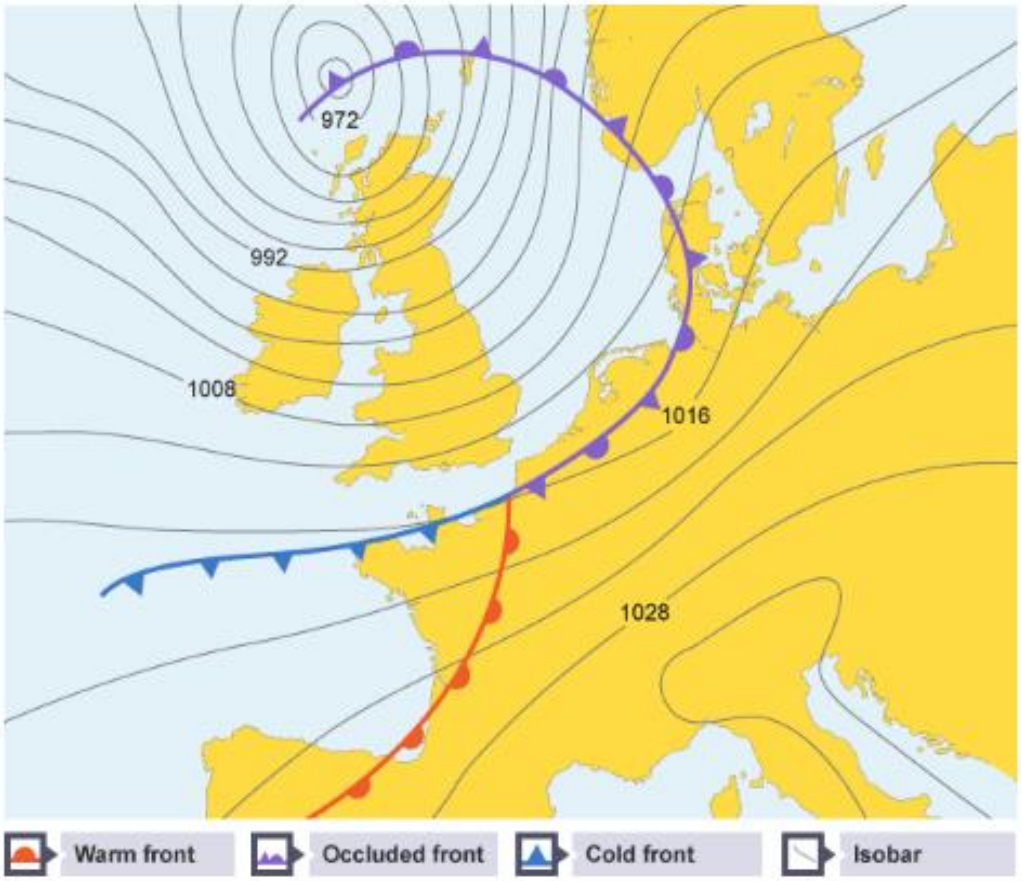


Radial/radar graphs are sometimes called **rose charts**. They have a central point from which data radiates outwards. This data can be plotted as points along a line, where all points are joined up to form a shape. It could also be plotted as segments along a line. Wind speed and direction is often shown as a radial graph. Radial graphs can show lots of different data and do not have to involve compass points.



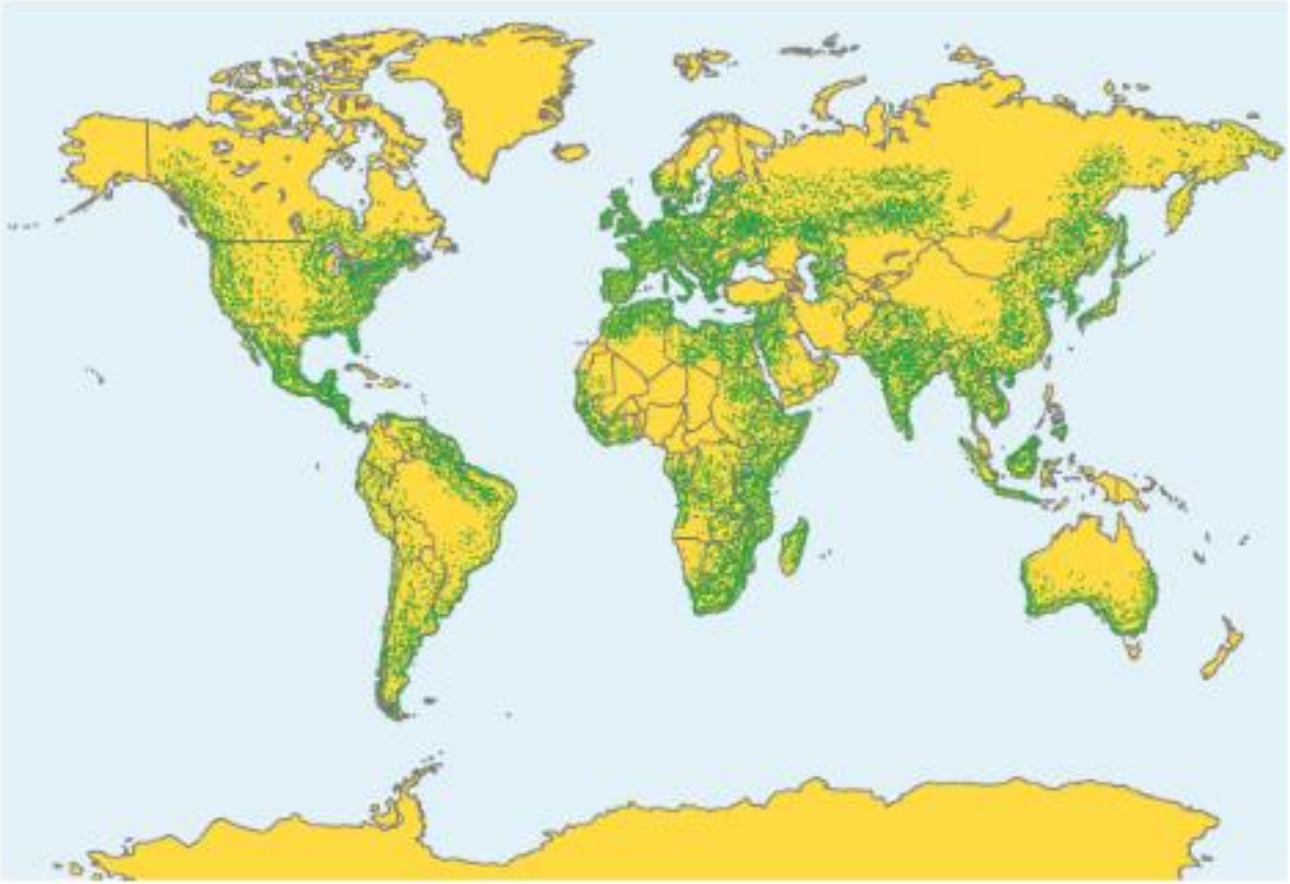
Isoline maps

Isoline maps show lines that join up areas or values that are equal. **Atmospheric pressure** is shown using an isoline map. The areas of equal pressure are joined using a line, which helps people to see the position of high and low-pressure systems.



Dot maps

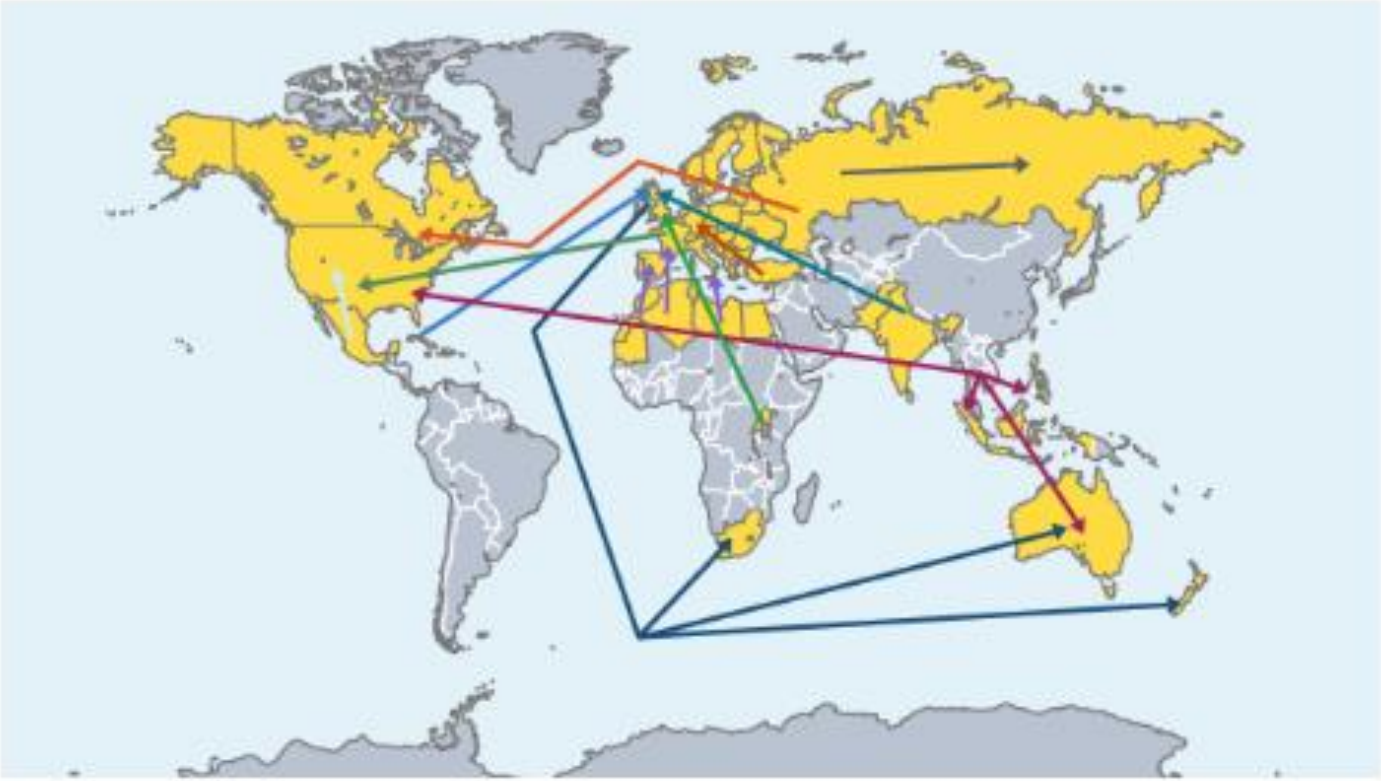
Dot maps show information as individual dots on a map. Each dot might represent more than one of something. Dot maps are often used to show **population distribution**.



Desire and flow line maps show movements from one place to another:

- flow lines show the exact path of movement
- desire lines show a general direction of movement

Movements are shown as lines. Thick lines show high amounts of movement and thin lines show low amounts. **Trade** or **migration** patterns are often shown using desire or flow lines.



World trade patterns shown using desire lines

Desire lines and flow lines

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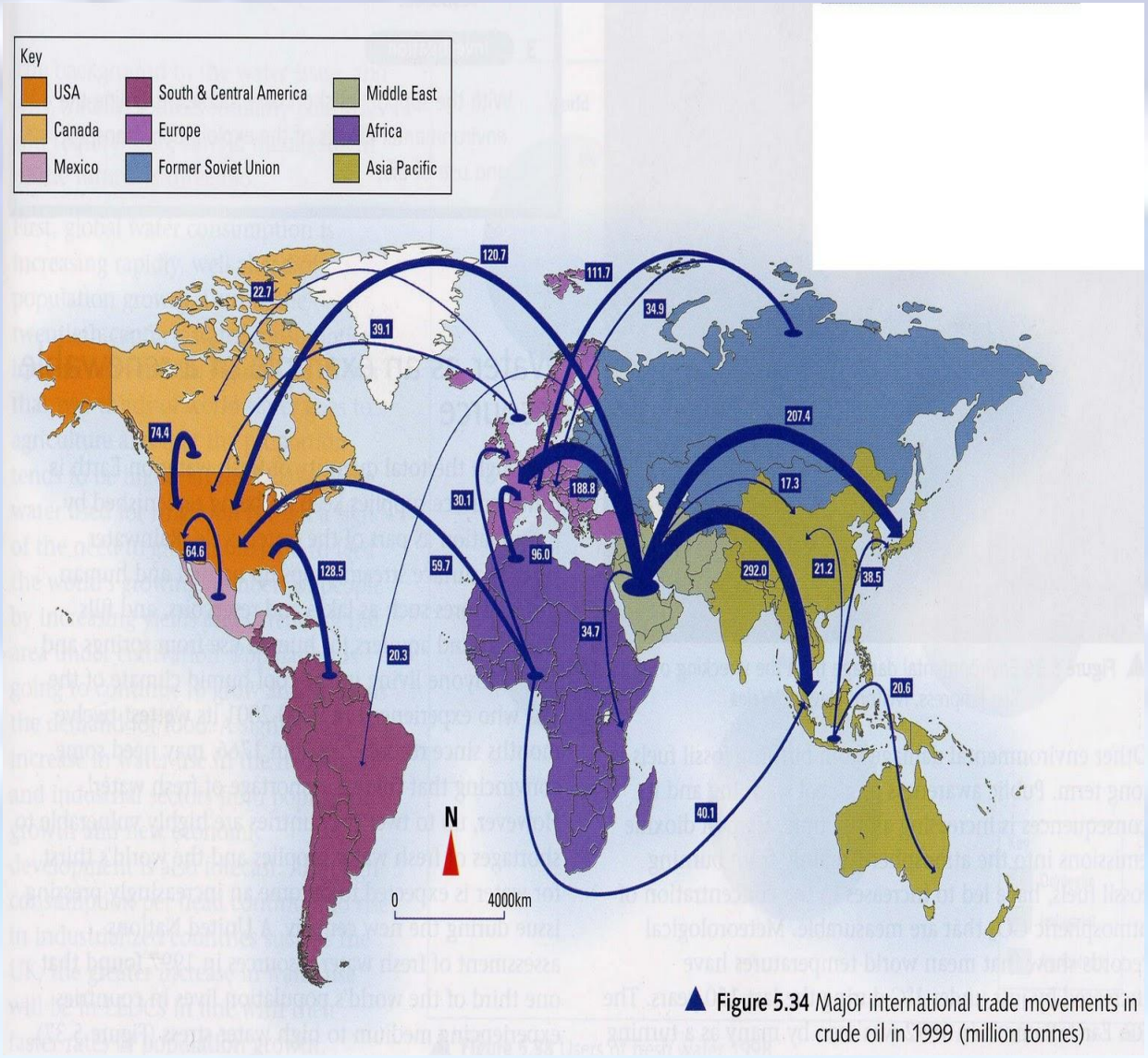
Task:

1. Describe the distribution of global trade as seen in figure 5.34
2. Comment on the pattern shown in each map

Be great: explain a disadvantage of using desire lines to show data



▲ **Figure 5.34** Major international trade movements in crude oil in 1999 (million tonnes)

Proportional symbols can be added to a map to show differences between places. The same symbol appears larger or smaller, depending on how something changes. Proportional symbols on maps could be used to show the number of **wind farms** within a country.

Wind energy generation (MW)

10	26-50	121-200
11-25	51-120	201-350

Advantages and disadvantages

30

Tasks:

These are advantages and disadvantages for desire/flow lines, bar charts and population pyramids.

1. Sort these into advantages and disadvantages
2. Identify which of the 3 graphs each one is referring to.

Be great: Think of data sets used in geography for all 3 graphs.

Do not show causes, impacts and patterns	Can show more than one factor about a given country on one graph	Easily constructing (not time consuming)
Easier to spot trends than other methods e.g. tables	Can show categoric data and its frequency	Figures are in groups therefore some specific data is lost
Useful to may predictions in the future	Relies on lots of data collection from many different countries (for example)	Do not allow data to be compared on one chart for several countries
You can interpret data about a specific country	Gives a clear spatial understanding of movement between places	They only show one factor – population structure.

Advantages and disadvantages

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You can interpret data about a specific country _____	Gives a clear spatial understanding of movement between places _____	They only show one factor – population structure. _____

Average	Advantages	Disadvantages
Mean	All the data is used to find the answer	Very large or very small numbers can distort the answer
Median	Very big and very small values don't affect it	Takes a long time to calculate for a very large set of data
Mode or modal class	The only average we can use when the data is not numerical	1. There may be more than one mode 2. There may be no mode at all if none of the data is the same 3. It may not accurately represent the data