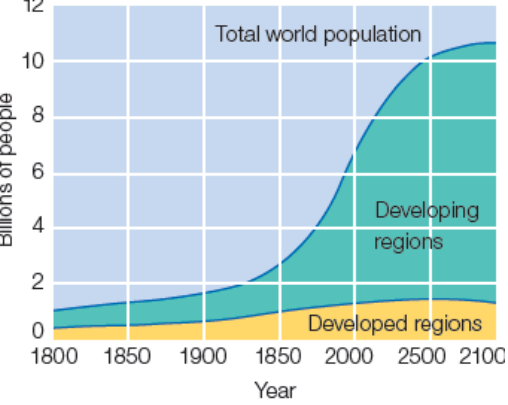
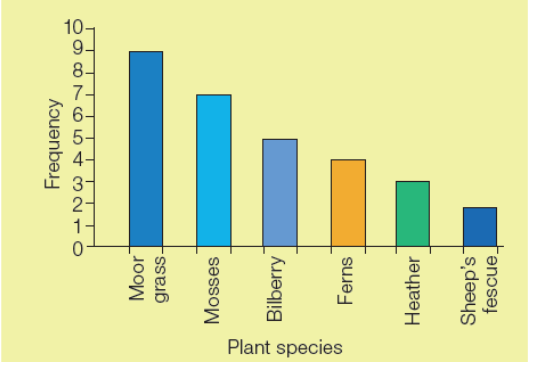
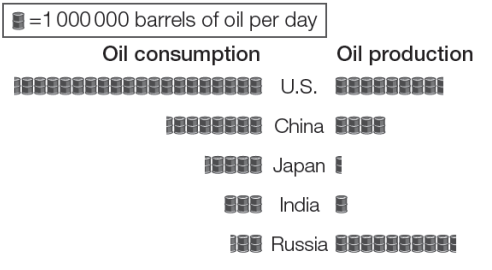
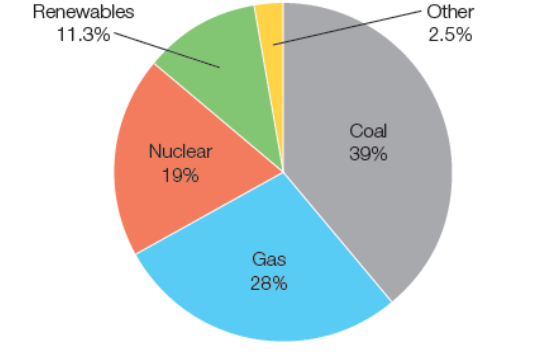
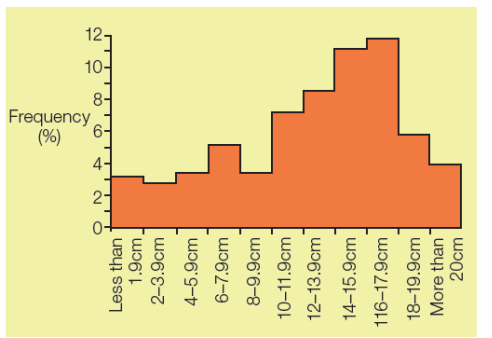
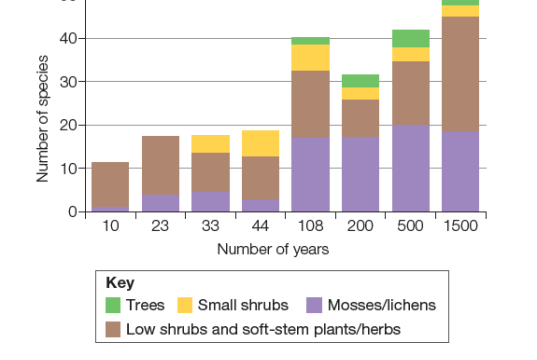
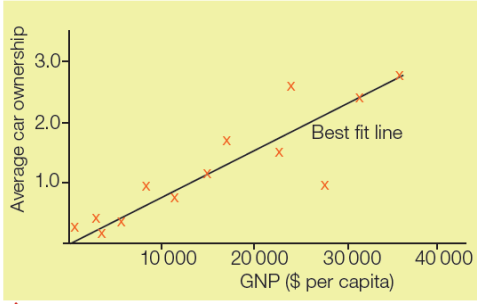
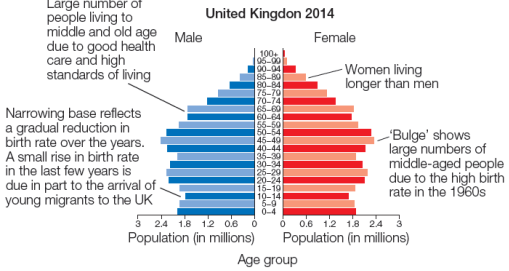

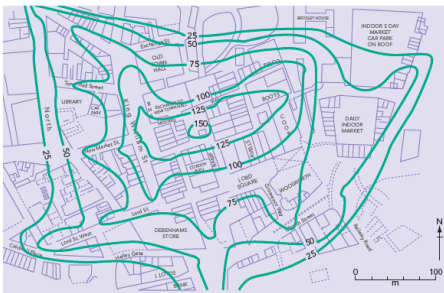
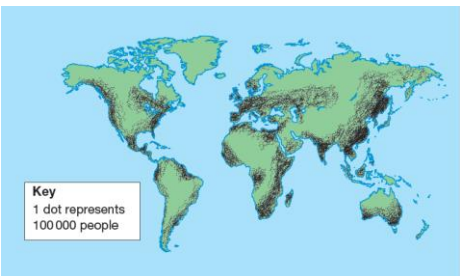
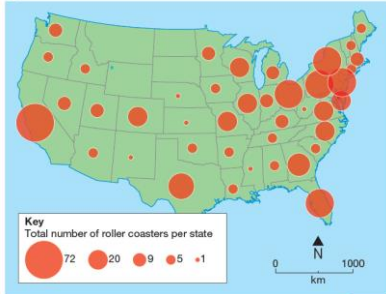

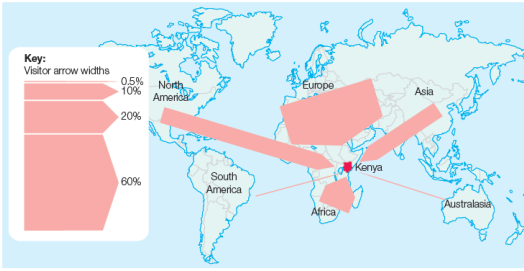
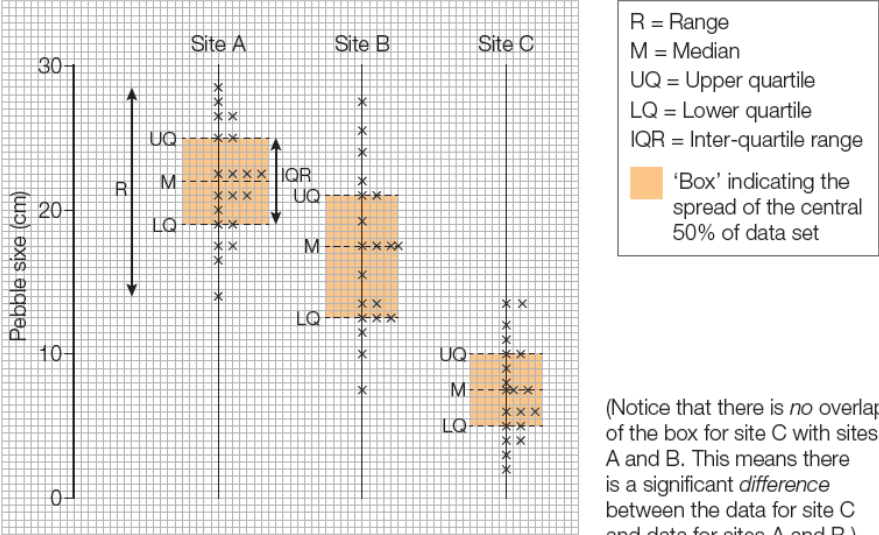


What to do... AQA GCSE (1-9) Graphs and Maps

| | | | |
|-------------------|--|--------------------------|---|
| Line Graph | Shows continuous changes over time | Bar Chart | Compares quantities or frequencies in different categories |
| Data to Use | Continuous: e.g. stream flow, traffic flow, population change on the Y axis and equally spaced time on the X axis | Data to Use | Categorical (discrete): e.g. types of vegetation or transport people use to get to school. X axis is categories and Y axis is the frequency |
| Visual Example |  | Visual Example |  |
| Pictogram | Use a pictorial symbol or icon instead of a bar (all of the icons must be the same size) | Pie Chart | Shows the proportions of a total amount |
| Data to Use | Categorical (discrete): e.g. the amount of oil consumption over different countries | Data to Use | Categorical (discrete): 4 to 8 categories of data. The data needs to be in % out of 100 before it can be plotted |
| Visual Example |  | Visual Example |  |
| Histogram | Uses bars but with no gaps between them | Divided Bar Chart | Compares quantities or frequencies in different categories where the bars are subdivided to show multiple data |
| Data to Use | Continuous data: e.g. daily rainfall values over a period of a month with the amount on the X axis (equal class intervals are used) and frequency on the Y axis. | Data to Use | Categorical (discrete): e.g. 5 sites of a river with each bar showing the 15 pieces of bedload but in the angularity categories |
| Visual Example |  | Visual Example |  |

| | | | |
|-----------------------|--|-----------------------------|---|
| Scatter Graph | If two sets of numerical data are thought to be related they are plotted on a scatter graph | Population Pyramid | Compares male and female populations for a country |
| Data to Use | Continuous: e.g. GNP and average car ownership. The independent variable goes on the X axis (variable that is causing the change) and the dependent variable on the Y axis | Data to Use | Continuous data on the X axis (population represented in millions) and age on the Y axis (categorical). The proportions are represented as bars (males on the left, females on the right) |
| Visual Example |  <p>A scatter plot with 'Average car ownership' on the y-axis (ranging from 0 to 3.0) and 'GNP (\$ per capita)' on the x-axis (ranging from 0 to 40,000). Several data points are plotted as 'x' marks. A solid black line, labeled 'Best fit line', shows a positive linear correlation between the two variables.</p> | Visual Example |  <p>A population pyramid for the United Kingdom in 2014. The x-axis represents 'Population (in millions)' for males (left) and females (right), ranging from 0 to 2.4. The y-axis represents 'Age group' from 0-4 to 100+. Annotations include: 'Large number of people living to middle and old age due to good health care and high standards of living' pointing to the top of the pyramid; 'Narrowing base reflects a gradual reduction in birth rate over the years. A small rise in birth rate in the last few years is due in part to the arrival of young migrants to the UK' pointing to the bottom; 'Women living longer than men' pointing to the female side; and 'Bulge' shows large numbers of middle-aged people due to the high birth rate in the 1960s' pointing to a specific age group.</p> |
| Choropleth Map | Use different colours or densities of the same colour to show the distribution of data | Isoline Map | Uses lines of equal value to show patterns (see maps for contours) |
| Data to Use | The base map shows regions or areas Data is divided into groups or categories The intervals are equal and do not overlap The darker the shading the higher the values → easier to interpret and spot patterns Often misleading as colours change abruptly at boundaries → this may not be the case in the area e.g. more blurred boundaries / lines | Data to Use | Isoline maps can be used to represent data points over an area They are plotted onto a map and the lines join up areas of equal value They can be misleading if the lines are drawn onto a map with few data points → the more data points → the more representative Some subjectivity in plotting the data lines |
| Plotting Data | <ol style="list-style-type: none"> Decide on the category that the data fits Shade the area the correct colour of the category | Plotting Data | <ol style="list-style-type: none"> Mark the observed data onto the base map Consider the intervals of the lines The lines pass between values that are higher on one side and lower on the other |
| Visual Example |  <p>A world map where different regions are shaded in various colors of blue and green to represent Human Development Index (HDI) rates. A key in the bottom left corner provides the following categories: 0.813-0.943 (darkest blue), 0.691-0.812 (medium blue), 0.547-0.690 (light blue), 0.408-0.546 (yellow-green), Less than 0.408 (orange), and No data (white).</p> | Visual Example |  <p>A map showing contour lines (isolines) on a grid. The lines are labeled with numerical values such as 25, 50, 75, 100, 125, and 150, representing equal values of a variable like elevation or temperature. The map includes a north arrow and a scale bar from 0 to 100 meters.</p> |
| Dot Maps | Used to represent a particular value or number and are located accurately on a map | Proportional Symbols | Show data on a base map where spatial variations can be seen |
| Data to Use | 1 dot represents 1 value. E.g. one dot could represent 100,000 people in an area or an area that has experienced 5 or more earthquakes in 50 years. | Data to Use | The data represented is one category e.g. the total number of rollercoasters per US state or number of angular pieces of bedload at 5 river sampling sites |
| Plotting Data | <ol style="list-style-type: none"> Locate the area to draw the dot Use the key to add the correct sized dot on the map | Plotting Data | <ol style="list-style-type: none"> The scale will be done for you in the exam Use a compass to draw the correct size circle in the relevant location on the base map |
| Visual Example |  <p>A world map where the size of a dot at each location represents population density. A key in the bottom left corner states: 'Key 1 dot represents 100,000 people'. The map shows a high concentration of dots in Europe and East Asia.</p> | Visual Example |  <p>A map of the United States where the size of a red circle in each state represents the total number of rollercoasters. A key in the bottom left corner provides the following categories: 72 (largest circle), 20, 9, 5, and 1 (smallest circle). The map includes a north arrow and a scale bar from 0 to 1000 km.</p> |

What to do... AQA GCSE (1-9) Graphs and Maps

| | | | |
|--------------------------|--|-------------------|--|
| Desire Lines | Used to show the movement of people or goods between places | Flow Lines | Used to indicate the direction (arrow) and volume (width of arrow) of movement of something. |
| Data to Use | They show direct movement from one location to another, e.g. plane destinations from an airport | Data to Use | The data represented is one category e.g. the total number of rollercoasters per US state or number of angular pieces of bedload at 5 river sampling sites |
| Plotting Data | Each line should be accurately positioned to show its source and destination clearly | Plotting Data | <ol style="list-style-type: none"> 1. Check the scale for the correct flow line width for the value you are representing 2. Draw the arrow from the origin to the destination making sure it is the same thickness all the way along 3. Do not allow arrows to cross over one another |
| Visual Example |  | Visual Example |  |
| Dispersion Graphs | Used to show the spread of data and are a useful way of making comparisons between sites. | | |
| Data to Use | Unlike a scattergraph, dispersion graphs only need one set of numerical data, e.g. bedload size. The data is plotted on the Y axis and the sites or locations are plotted on the X axis. | | |
| Plotting Data | <ol style="list-style-type: none"> 1. Create a suitable scale on the X axis that starts at the lowest value in the data set and goes to the highest value in the data set 2. Plot the data points using a X on one straight line for the site 3. Draw a line to connect the lowest to the highest data value, this represents the range 4. Draw a horizontal line for a specific width where the median value is 5. Draw a horizontal line for the same width where the lower quartile value is 6. Draw a horizontal line for the same width where the upper quartile value is 7. Create a box from the UQ to the LQ, this represents the spread of the central 50% of the data 8. Complete the same for the remaining data sets. If there is no data sets between sites then there is no statistical difference between the data sets | | |
| Visual Example |  <p> R = Range M = Median UQ = Upper quartile LQ = Lower quartile IQR = Inter-quartile range 'Box' indicating the spread of the central 50% of data set </p> <p>(Notice that there is <i>no</i> overlap of the box for site C with sites A and B. This means there is a significant <i>difference</i> between the data for site C and data for sites A and B.)</p> | | |

