Skills 3: Data Presentation

Paper 3: Geographical Applications Question 4: Fieldwork—general

**Pictograms**
- Uses images to represent a quantity of data values. Must have a key
  - ✔ Easy to read
  - ✔ Visually appealing
  - ✗ difficult to draw accurately & consistently
  - ✗ hard to draw partial images
  - ✗ very simplistic

**Line Graphs**
- Shows continuous data eg changes over time
- Can have multiple lines on the same graph
  - ✔ Easy to read & produce
  - ✔ Shows changes
  - ✗ Can compare multiple sets of data easily
  - ✗ Can infer the data between data points on the x axis
  - ✗ Can only be used for continuous data
  - ✗ Makes assumptions about the data between data points on the x axis

**Bar Graphs**
- Compares quantities or frequencies in different categories eg population size in different countries
- Gaps are drawn between them as the data is unconnected
  - ✔ Easy to read & produce
  - ✔ Can compare differences easily
  - ✗ Can only be used for discrete data (data that is not connected)
  - ✗ Can become cluttered and difficult

**Divided Bar Graphs**
- Compares quantities or frequencies in different categories eg the number of 4 different types of plant species found at 5 sites
- Must have a key to show what the sub-divisions represent
  - ✔ Easy to read total scores
  - ✔ Relatively easily to plot
  - ✗ Can be harder to compare different sub-divisions as the start point will vary (not in line)
  - ✗ Mistakes can be made as plotting the second and subsequent categories in each bar will not start at zero

**Pie Charts**
- Shows the percentage (proportion) of a total eg sources of UK energy
- The circle can also be drawn in proportion to the total & subdivided into categories to compare eg types of energy as well as total amount
  - ✔ Easy to read & compare the proportions
  - ✔ The circle can also be drawn in proportion to the total score of the subcategories to allow comparison if the same data was collected at other sites/areas
  - ✗ Difficult to plot accurately
  - ✗ Difficult to calculate as % need to be converted into degrees of a circle
  - ✗ can be difficult to work out precise results unless % are written on the pie

**Histograms**
- Uses bars like a bar graph but there are no gaps as the data is continuous.
  - ✔ Easy to read & produce
  - ✔ Can be used to graph huge sets of data easily
  - ✗ Cannot read exact number as data is grouped in intervals
  - ✗ Difficult to compare two sets of data as it would have to be drawn on a separate graph
  - ✗ Can only be used with continuous data

**Scattergraphs**
- Used to show a relationship between two sets of data eg death rate & birth rate
  - ✔ Includes all the data collected including anomalies
  - ✔ Clearly shows trends/correlation
  - ✗ Can be difficult to accurately draw line of best fit
  - ✗ Can only compare two factors
  - ✗ Needs enough sets of data to see correlation but too much data can be cluttered and difficult

**Dispersion graphs**
- Shows how the data is spread (dispersed) eg size of pebbles across a beach
  - ✔ Shows how spread out the data is
  - ✔ Can display all the data collected and clearly shows anomalies
  - ✔ Show s if the average is representative
  - ✔ Can be used to identify a number of statistical measures—range, interquartile range, median,
  - ✗ Works best with lots of data
  - ✗ Can be time consuming and difficult to construct
### Population Pyramid
- Shows the structure of a population of a place by age and sex
- Can show it by % of population or total numbers
- Age on the y axis, population on x axis, females are always right!
- The shape can shows how a population is structured & factors that affect it eg life expectancy, death rate, birth rate
- Can be used to make future predictions
- Can easily make comparisons between areas
- Only shows age in 5 year cohorts so detail can be lost

### Choropleth Map
- Shows how something varies between different areas using colour or patterns eg population
- The darkest colour or most dense pattern = highest quantity
- Shading should come from the same colour spectrum
- Easy to see differences between many places
- See immediately the location to which the data refers
- Can represent a large range of values
- Assumes the whole area has the same value but could be large variations within it
- Abrupt changes at boundaries not realistic
- Scale difficult to calculate—too big more data is obscured, too small = too many colours make it difficult to read.

### Isoline Map
- Are lines on a map that link up places with the same quantity of something eg height (contour lines), air pressure (isobars), temperature (isotherms)
- The closer together the lines the quicker the thing is changing
- Shows gradual change and patterns over a large area
- Change can be seen easily
- Colour can be added to enhance pattern
- There could be variations in the location between each plot which are not shown
- Requires lots of data to be able to plot
- Very difficult to plot & easy to make mistakes

### Dot maps
- Use identical dots to show how something is distributed across an area eg number of factories
- The closer together the dots the denser/more clustered the distributed (more of them)
- Gives a spatial representation of the density & distribution
- Easy to see patterns
- Clustering can make it very difficult to plot
- Clustering can make it difficult to interpret (count the dots)
- Hard to select the right size dot to clearly show distribution

### Flow lines
- Show how things move from one place to another eg migration
- The lines can be proportional to the size of movement eg the thicker the line the greater the movement eg more people(exports
- Can easily see the location, direction & distance of movement
- Width of line shows the value
- Actual distance and direction can be distorted
- Too many lines can make the map too clustered and difficult to read

### Proportional symbols
- Uses symbols of different sizes to show different quantities eg amount of oil consumption
- The bigger the symbol the larger the amount
- See immediately the location the data refers to
- Easy to see differences between many places
- Quick and easy to see patterns/amounts
- Difficult to calculate scale & time consuming
- Large or lots of symbols can obscure detail on the map
- Data is grouped so exact data for a location

### Desire line map
- Similar to flow lines which shows movement but from one place eg how far people travel to get to a CBD and how far they come from
- They are straight lines and one line shows one journey
- Can easily see the location, direction & distance of movement
- Relatively easy to plot
- Straight lines can distort the distance and direction of movement
- Too many lines can make the map too clustered and difficult to read