

## Data Presentation

### 1. Introduction

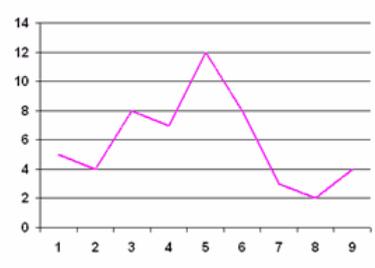
Most of the information we collect for geographical studies will be in the form of basic raw statistics. We shall need, therefore, to learn how to process these basic statistics, so that the facts which they contain may be readily recognized. In common use, four main methods by which the original data set may be summarized:

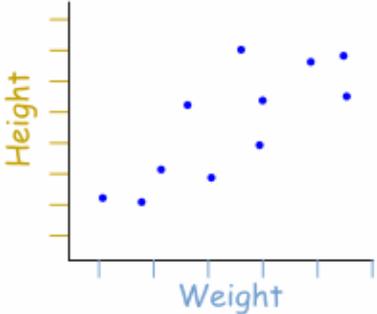
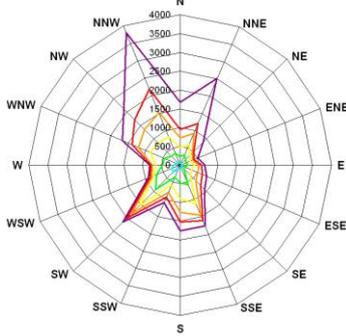
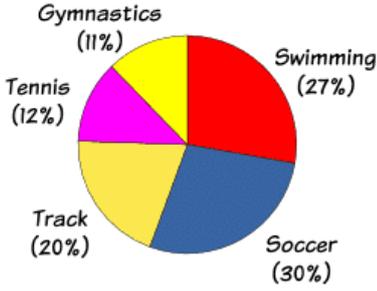
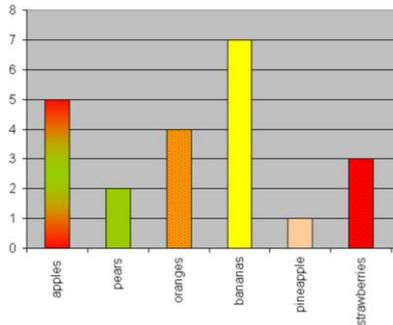
- The data may be processed and presented in graphs;
- Measuring the typical value of the data set to indicate some kind of ‘average’ condition;
- Measuring the deviation of those occurrences which are not typical; and
- Compare the typical and the deviation in order to present the overall picture in one measure.

### 2. Graphical presentation techniques

Whenever we draw graphs, the y-axis is the axis which should be used to show the variable quantity, or the dependent variable; the x-axis is used for the independent variable. The resultant graph must show what it is designed to show effectively, and it is this principle which must be remembered when deciding the size and scale of the graph.

It would be no use, for instance, to present a graph in which the scale was so small that the differences between the frequencies in each class were hardly visible or in which the scale was so large that differences were exaggerated.

<u>Types</u>	<u>Advantages</u>	<u>Remarks/ limitations</u>
<p>Line graph</p> 	<ul style="list-style-type: none"> <li>• Show continuous changes over time</li> <li>• Show trend</li> </ul>	<ul style="list-style-type: none"> <li>• Trend line</li> <li>• Use only with continuous data, e.g. temperature</li> <li>• Inconsistent scales/ different scale start points can distort the data so it is interpreted incorrectly (biased)</li> </ul>
<p>Scatter graph/ scatterplot/ scattergram</p>	<ul style="list-style-type: none"> <li>• How the pattern of distribution/ concentration</li> <li>• Clearly indicates data correlation (positive, negative, strong, weak relationships)</li> <li>• Shows spread of data</li> </ul>	<ul style="list-style-type: none"> <li>• Best-fit line</li> <li>• Cannot show relationship between more than two variables at once</li> </ul>

		
<p>Radar graph</p> 	<ul style="list-style-type: none"> <li>• Primary way of displaying more than two or three values at once</li> <li>• Allow readers to get an impression/ feel for data</li> </ul>	<ul style="list-style-type: none"> <li>• Too many axis makes it difficult to read</li> <li>• Less intuitive than other graph types</li> </ul>
<p>Pie chart</p> 	<ul style="list-style-type: none"> <li>• Show majority/ minority</li> <li>• Provides an excellent visual concept of a whole</li> <li>• Clear comparison of different components</li> <li>• Highlight information by visual separation of a segment</li> </ul>	<ul style="list-style-type: none"> <li>• Does not show absolute values</li> <li>• May be misleading if the sample size is small</li> </ul>
<p>Bar graph/ chart</p> 	<ul style="list-style-type: none"> <li>• Excellent for data comparison</li> </ul>	<ul style="list-style-type: none"> <li>• Variation: Compound bar graph</li> </ul>
<p>Histogram</p>	<ul style="list-style-type: none"> <li>• Excellent for data comparison</li> <li>• Shows also the total amount</li> </ul>	<ul style="list-style-type: none"> <li>• Very similar to bar graphs, except there is no space between bars.</li> <li>• Similar to a bar graph, but each bar represents a range of data.</li> <li>• The data is grouped into ranges</li> </ul>

		<p>(such as “40 to 49”), and then plotted as bars.</p>
<p>Frequency polygon</p>	<ul style="list-style-type: none"> <li>• Show continuous changes over time</li> <li>• Show trend</li> </ul>	<ul style="list-style-type: none"> <li>• A frequency polygon can be made from a line graph by shading in the area beneath the graph.</li> <li>• It can be made from a histogram by joining midpoints of each column.</li> </ul>
<p>Triangular graph</p>	<ul style="list-style-type: none"> <li>• Show distribution and tendency</li> </ul>	<ul style="list-style-type: none"> <li>• Applicable only to three sets of parameters</li> </ul>