Map Types and Properties

A **map** is a **representation** of all or part of the Earth drawn on a **flat surface** at a specific scale. Maps use a variety of symbols and colours to represent selected features of an area. Maps were devised because they are much easier to use, store, and transport than globes, and they facilitated the development of much larger scaled representations than was the case with a globe.

Maps are usually classified according to their use. **General purpose** maps, sometimes referred to as **reference** maps, show both natural and human-made features such as coastlines, lakes, rivers, boundaries, settlements, roads, rail lines, and others. The emphasis in general purpose maps is on location. Wall maps, most maps found in atlases, and road maps are all in this category.

Thematic maps, also referred to as special-purpose maps, illustrate the geographical distribution of a particular theme or phenomenon. **Qualitative** thematic maps simply show the location or spatial distribution of a phenomenon, while **quantitative** maps display aspects of numerical data associated with the phenomenon shown. Landforms, aspects of climate, vegetation and soil types, demographics, industry, manufacturing, and natural resources are examples of common thematic maps.

A third classification is **topographic** maps. As the term suggests, these maps show the topography or surface features of the landscape through the use of **contour lines**. Contours are lines on a map that join places of equal elevation above sea level. This three-dimensional effect allows for detailed study of landscape and drainage features. Topographic maps are usually of a large scale and show many of the features of general purpose maps in considerable detail.

Mental maps can also be thought of as a map classification. These are images stored in our minds, about features and locations in our environment. Unlike other map types, mental maps may not be very accurate in terms of distances and directions. Nevertheless, they are very meaningful and useful to all of us on a daily basis.

With the exception of mental maps, all maps share common properties or **map basics** that provide information to assist the reader in studying and interpreting the map. These include a title, scale, legend, date of publication, direction, borders, and information about the map projection.

By definition all maps are scaled; that is, they are reduced from real-world dimensions to manageable proportions. **Scale** can be defined as the ratio of the distance between two points on the map and the same two points on the Earth's surface. Scale can be expressed as a ratio (e.g., 1:50,000), as a line or graphic with labeled distance gradations, or as a verbal statement (1 cm is equivalent to 0.5 km).

A **large**-scale map is one that represents a small portion of the Earth's surface but shows a great amount of detail. Topographic maps and city street maps are examples of large-scale maps. **Small** scale maps, on the other hand, represent large portions of the Earth's surface but are not able to show much detail. Maps showing continents or the entire world are examples of small-scale maps. Maps showing a province or country could be considered **intermediate scale** maps.