

Map Essentials and Map Reading

The Ball State University Libraries' GIS Research and Map Collection (GRMC) has created geography lessons to use with some of the historic maps available on the Libraries' [Digital Media Repository](#). These historic maps offer unique cartographic resources for teaching and learning. This lesson utilizes maps from the [International Historic Maps](#) Collection.

Almost all maps have certain elements in common. The most important element of a map is the **title**. The title identifies the map area and the type of map. Titles of maps typically appear at the top of the map, but not always.

Most maps include a **scale**. Using the scale of a map allows the user to compare the distance measured on the map to the actual distance on the surface of the earth. For example, with a map scale, the distance from the east coast to the west coast of the United States can be determined.

Scales appear on maps in several forms, but most cartographers draw a line scale as a point of reference. A map displaying the entire surface of the earth with all of the continents and oceans would be drawn at a larger scale. A scale on this type of map would be drawn in thousands of miles or kilometers. A map of the White House, however, may have a scale with distance determined in feet. These two maps may be the same size on paper—only their scales are different.

To determine distance using the scale of a map, mark the distance between two points on the map by putting two dots along the edge of a piece of paper. Then compare the two dots with the line of the map's scale. The process may need to be repeated for distances longer than the scale.

Another feature common to most maps is a **directional indicator**. A directional indicator on a map helps determine the orientation of the map. Some cartographers place an arrow that points to the North Pole on the map. This is a **north arrow**. Other maps indicate direction using a **compass rose**, with arrows pointing to all four cardinal directions—north, south, east, west.

Another important feature on a map is the **legend** or map key. Information about the data on the map can be found in the map legend. Most maps use symbols or colors to represent different geographic features. The map legend helps determine what the symbols and colors mean.

Symbols may stand for capital cities, economic activities, or natural resources. Colors show a variety of information on a map, but the map legend or key will describe if the colors have particular meaning.

Use the Digital Media Repository Collection *International Historic Maps*, specifically the map, [*Map of South America*](#) published by National Geographic Magazine in 1921, to complete this lesson. (Map may be downloaded prior to lesson).

The scales of the map are listed in how many statute miles and how many kilometers? **400 statute miles and 500 kilometers**

Using the key or legend of the main map of South America, what form of transportation is identified on the map with a black line? **Railroads in operation**

What does the symbol of Caracas on the coast of Venezuela and Quito in Ecuador mean? **Capital city**

Use the inset map, *Economic map of South America*:

What mineral is identified with a black triangle? **Diamonds**

What is the color shading of green represent? **Cattle and hides**

Which South American country has the largest area of mutton and wool production? **Argentina**

What is produced along the rivers of Brazil? **Rubber or nuts**

What is produced on the Falkland Islands off the eastern coast of Argentina? **Wool and mutton**

Use the inset map, *Physical Map of South America*:

What does orange represent on the map? **2000 to 5000 feet in elevation**

Which country has a higher average elevation—Uruguay or Peru? **Peru**