

## TCI 9.6 Geography and Navigation

Another subject of study for Muslim scholars was geography. Muslim geographers examined plants and animals in different regions, as well as divided the world into climate zones.

Most educated people in medieval times believed that Earth was round, but they disagreed about Earth's size. Muslim scientists improved on calculations made by the ancient Greeks to reach a measure of Earth's circumference that was close to the correct value.

As with all scholarship, some Muslims studied geography simply out of curiosity, but it had practical uses, too. For example, Muslims were able to create extremely accurate maps due to the study of geography. A scholar in Muslim Spain even produced a world atlas, with dozens of maps of lands in Europe, Africa, and Asia.

A work called *The Book of Roads and Provinces* provided maps and descriptions of the major Muslim trade routes. *The Book of Countries* listed useful facts about the lands under Muslim rule. From this book, travelers could get information about a region's location, physical features, and natural resources.

Travelers were another source of knowledge. Some travelers wrote guidebooks to help pilgrims make the journey to Mecca to fulfill the hajj. Others explored and described foreign lands, such as China and Scandinavia.

As aids to travel, Muslims used navigational instruments. Muslim scientists adapted and perfected the compass and astrolabe. Muslims probably learned about the compass, a device that allows people to identify the direction in which they are traveling, from the Chinese.

The astrolabe is a navigation device for computing time based on the location of the sun or the stars. It was probably invented much earlier by the Greeks. With this instrument, sailors at sea could use the position of objects in the sky, such as the sun or stars, to pinpoint their location by knowing how far they had traveled.

