

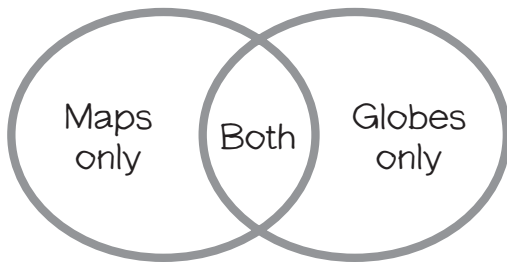
CHAPTER 1 | LESSON 2 How Maps Help Us Study History

Lesson 2 How Maps Help Us Study History**BEFORE YOU READ**

In this lesson, you will learn how globes and maps are used to study Earth and the people who live on it.

AS YOU READ

Use the example of the Venn diagram below to make comparisons in Lesson 2. Draw two different diagrams and use them to compare maps and globes and two kinds of maps. In the middle section of each diagram, include the ways that maps and globes or the two kinds of maps are the same. In the outer circles, list the ways that the two items you are comparing are different.

**TERMS & NAMES**

- **longitude** imaginary lines that measure distances east and west of the prime meridian
- **latitude** imaginary lines that measure distances north and south of the equator
- **hemisphere** half of a globe
- **political map** map that shows features people have created
- **physical map** map that shows the landforms and bodies of water found in particular areas
- **thematic map** map that shows certain information about a place

The Geographer's Tools

(pages 15–18)

What are the geographer's tools?

Geographers use globes and maps to represent Earth. Because a globe is round, it looks more like Earth. A globe shows exactly how continents and oceans look on Earth. It also shows the real shapes, locations, and sizes of the landforms and bodies of water.

A map is a flat representation of Earth. It is not as accurate as a globe because the surface of Earth is distorted when it is flattened to make a map. So a map does not show the surface of Earth as it really looks. However, most people like to use maps. This is because you can measure distances on a map more easily than on a globe. You can see the world all at one time on a map. Also, it is easier to carry a map because it can be folded.

Most maps include nine features that help to understand what is shown on the maps.

- The title tells what the map is about.
- A compass rose shows the directions.
- Symbols represent such things as cities.
- A map legend explains what the symbols and colors on the map mean.
- Lines of **longitude** measure distances east and west of the prime meridian.
- Lines of **latitude** measure distances north and south of the equator.
- A scale is used to figure out distances between places on a map.
- Labels tell the names of landforms and bodies of water.
- Colors show different kinds of information on a map.

READING STUDY GUIDE CONTINUED

Maps distort Earth's surface, so mapmakers try to control the distortion by using different projections. A projection is a way of showing Earth's curved surface on a flat map. The Mercator projection shows the continents as they look on the globe. However it stretches out the lands that are near the north and south poles. The homolosine projection shows the sizes of the landmasses correctly. However, the distances are not accurate. The Robinson projection is often used in textbooks. It shows the true shapes and sizes of the continents and oceans. But landforms near the poles look flat.

To study Earth, geographers divide it into **hemispheres**, or equal halves. The half of Earth north of the equator is the Northern Hemisphere. The half south of the equator is the Southern Hemisphere. The imaginary line that divides Earth east from west is the prime meridian. The half of Earth east of this line is the Eastern Hemisphere. The half west of this line is the Western Hemisphere.

Geographers use lines of latitude and lines of longitude to find points on Earth. The point where a line of latitude crosses a line of longitude is the exact spot on Earth where a place is located. Absolute location is given using the numbers of the latitude and longitude lines. They are measured in degrees. Every place on Earth has only one absolute location.

1. How do symbols and scales help us read and understand maps?

Different Maps for Different Purposes

(pages 19–21)

What different maps do we use to see natural and human-made features and to understand patterns?

There are three kinds of maps. A **political map** shows the features that people make. These features include cities, states, and countries. You can use a political map to find

things such as where a place is located and how many people live in a place.

A **physical map** shows what Earth's surface looks like. It shows landforms and bodies of water. Colors are used to show elevations, or height of the land. You can use a physical map to find out if an area has mountains or to find out which direction rivers flow.

A **thematic map** shows certain information about a place. You can use a thematic map to find such things as the climate of a place, the languages people speak in a region, and the battles that took place during a war.

2. What kind of map would you use to find out what countries are located in Asia?

How Maps Change

(pages 22–23)

How have maps changed to reflect people's increasing understanding of the world?

The oldest maps we have were carved on clay tablets by the Babylonians around 2300 B.C. A Greek astronomer in the second century A.D. wrote a work called *Geography*. It had instructions on how to make maps.

In the Middle Ages, Arab and Chinese mapmakers made accurate maps of parts of the world. They used their knowledge of astronomy and mathematics to make their maps. European maps improved in the mid-1500s. At that time Gerhardus Mercator, a mapmaker, showed the curved surface of Earth on a flat map. This is the Mercator projection.

Maps today are made by using the satellites of the Global Positioning System (GPS). The satellites go around Earth. Receivers identify the satellites' signals and use them to figure out location.

3. How did the ancient Greeks contribute to mapmaking?
