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Lesson 1

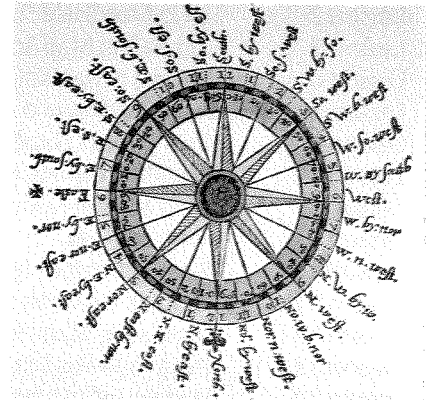
Finding Directions

Objective: to use a compass rose or direction arrow to find directions on a map

As you use this book, you will find that maps can give you many different kinds of information. They can tell you about roads, hills, temperatures, empires, and economics. One kind of information that nearly all maps tell you is direction.

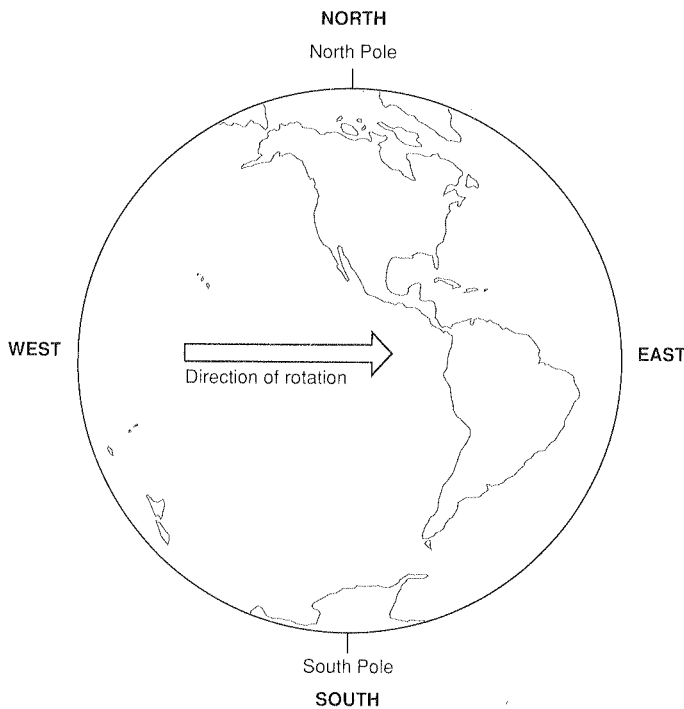
The four most important directions are called the **cardinal directions**. Two of the cardinal directions are **north** and **south**. What are the other two?

1. _____



Compass card charting a ship's course by degrees and compass points.

Earth's Directions

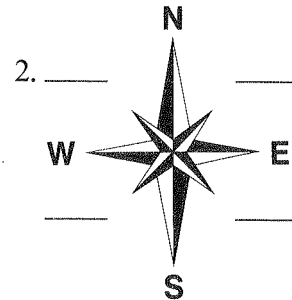


If you know one direction, you can figure out the others. When you face north, south is straight behind you. East is to your right. West is to your left.

To describe directions that are not exactly north, south, east, or west, people combine those words. For example, the direction halfway between north and east is called northeast. The direction halfway between south and west is called southwest. Northeast, southeast, northwest, and southwest are **intermediate directions**.

The diagram that shows all the directions on many maps is called a **compass rose**.

Write the four intermediate directions on the compass rose below.



If you face straight north, you are facing the **North Pole**. The North Pole is the most northern point on Earth. The most southern point on Earth is the **South Pole**. No matter where in the world you are standing, north is toward the North Pole. South is always toward the South Pole.

East is the direction that Earth turns. It is the direction of the sunrise. West is the direction opposite east, the direction of the sunset.

Some maps have a pointer that shows only one direction, usually north. North is often at the top of the map, but not always! To be sure of directions, you should look for a north arrow or a compass rose.



Use the map of the United States to answer the following questions about directions.

3. What direction do you go to travel from Mexico to Canada through the United States?
a. east b. west c. north d. south
4. What lies east of the United States?
a. Atlantic Ocean c. Canada
b. Pacific Ocean d. Mexico
5. Which one of these states extends farthest south?
a. Texas c. Louisiana
b. California d. South Dakota
6. Which state lies southeast of Ohio?
a. Michigan c. Indiana
b. Kentucky d. West Virginia
7. What direction do you go to travel from Colorado to Montana?
a. south b. north c. west d. east
8. What direction do you go to travel from Vermont to New Hampshire?
a. north b. south c. east d. west
9. What direction would you go if you traveled from Kansas to Iowa?
a. northeast c. northwest
b. southeast d. southwest
10. From Wyoming, what direction would you go to reach New Mexico?
a. west b. east c. south d. north
11. Suppose you traveled from Utah to Texas to Wisconsin. What set of directions would describe your trip?
a. southeast, then north
b. southeast, then northeast
c. east, then southwest
d. south, then northeast
12. Suppose you traveled from Pennsylvania to Illinois to Arkansas. Which set of directions would describe your trip?
a. west, then southwest
b. southeast, then south
c. north, then northeast
d. southwest, then northwest

Lesson 2

Using Map Scale

Objective: to use the scale on a map to find and compare distances

Accurate models of cars or airplanes are called **scale** models. Each inch in a scale model stands for a larger number of inches in the life-size car or airplane. If you know what the scale is, you can measure the model and tell how big the real car or airplane is.

Maps are scale drawings. Each inch on the map stands for a certain number of feet or miles on Earth's surface. If the map uses metric measurements, a centimeter stands for a certain number of kilometers.

Most maps give you a scale bar to help you understand the distances shown on the map. Sometimes maps show scale in both miles and kilometers. You must be careful to use the right scale for the distances you want to find.

Use an inch or centimeter ruler to first measure distance on a map and then on the scale bar. Remember that some measurements may fall between even units of measure on the scale bar, and you may have to estimate distances.

Sometimes scale bars have alternating sections of shading to make the divisions easier to read. Notice that Scale B has two bars, one showing miles and the other kilometers. Use the scale bars above to answer the following questions.

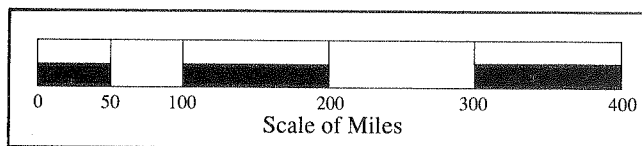
1. How many miles does Scale A measure in all?

- a. 400 mi
- b. 50 mi
- c. 100 mi
- d. 200 mi

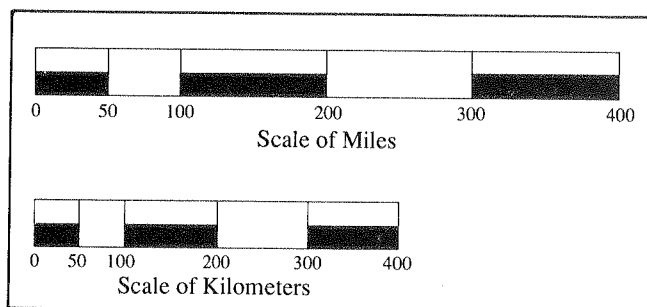
2. What is the shortest distance that Scale A measures exactly?

- a. 25 mi
- b. 100 mi
- c. 400 mi
- d. 50 mi

Scale A



Scale B



3. How are the two scale bars in Scale B alike?
- a. They measure the same total distance.
 - b. Their units of measure are the same size.
 - c. They have the same number of measuring units.
4. About how many miles are there in 300 kilometers?
- a. a little less than 400 miles
 - b. a little less than 200 miles
 - c. a little more than 300 miles
 - d. a little more than 200 miles
5. In Scale B, about how many miles are shown by $1\frac{3}{4}$ inches?
- a. 100 mi
 - b. 425 mi
 - c. 225 mi
 - d. 350 mi
6. In Scale B, about how many kilometers are shown by $1\frac{3}{4}$ inches?
- a. 150 km
 - b. 380 km
 - c. 200 km
 - d. 300 km

Eastern and Southern Asia



7. How many measured miles are shown on the scale on this map?
 - a. 1600 mi
 - b. 500 mi
 - c. 1000 mi
 - d. 100 mi
8. How many measured kilometers are shown on the scale on this map?
 - a. 1000 km
 - b. 500 km
 - c. 5000 km
 - d. 1600 km
9. What is the shortest distance that can be measured accurately using this scale?
 - a. 100 mi
 - b. 500 mi
 - c. 50 mi
 - d. 25 mi
10. Which city is closest to Hanoi, Vietnam?
 - a. Jakarta
 - b. Beijing
 - c. Kathmandu
 - d. Osaka
11. About how many kilometers is it from Mumbai, India, to Shanghai, China?
 - a. 5000 km
 - b. 3050 km
 - c. 1200 km
 - d. 3600 km
12. How many kilometers is it from Yangon, Myanmar, to Colombo, Sri Lanka?
 - a. 1400 km
 - b. 1000 km
 - c. 2500 km
 - d. 2000 km
13. About how many miles would you fly traveling from Tokyo, Japan, to Seoul, South Korea?
 - a. 500 mi
 - b. 600 mi
 - c. 1000 mi
 - d. 800 mi