

Lesson 1 Direction and Distance

OBJECTIVE

Identify direction and distance information from maps

TERMS TO KNOW

compass rose (KAHM-puhs rohzh)—symbol used on a map to show directions

north arrow (north EHR-oh)—symbol used on a map to show directions

scale (skayl)—symbol used on a map to show distance

Have you ever drawn a map in the dirt to show someone where you live? Such drawings were some of the earliest maps. Other early maps were made of sticks tied together, or pieces of wood sewn to a piece of sealskin. People have used maps for thousands of years to show *where* places are, *how far* it is from one place to another, and the *direction* to travel to get from here to there.

Maps are important tools. Maps tell us where to catch a bus and where that bus will take us. Maps help us find a friend's house in a part of town that is new to us. Maps help us plan vacation trips. They help us learn more about the town or state to which we are moving.

Direction

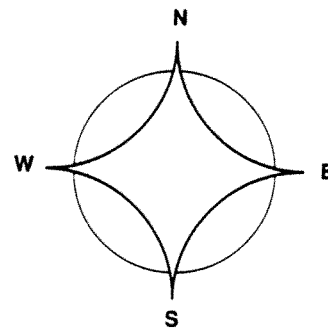
Direction is one of the most important things we can learn from a map. You use direction every day—left, right, forward, back, up, down. But these directions depend on where you are and which way you are facing. Maps use the directions north, south, east, and west. These directions do not change. North is always toward the North Pole of the earth. If you stand facing the North Pole, east will be to your right. West will be to your left. South will be behind you.

Usually, north will be at the top of a map. However, this is not always true. You must check to be sure. Mapmakers use a **compass rose** or a **north arrow** to show directions. If there is no compass rose or north arrow, or other symbol to indicate direction, north should be at the top of the map.

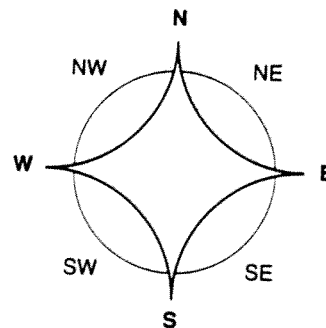
Look at the examples. Find north, south, east, and west on Example 1–1. Turn your book so that north on the compass rose points north. Face north yourself. Now east is to your right, west is to your left, and south is behind you.

Look straight north. Hold your right hand straight out to the side. In what direction are you pointing? You are correct if you said *east*. Now turn your head just halfway toward your right arm. You are no longer looking north. But you are not looking east, either. You are looking *northeast*. Look at Example 1–2. Find northeast, southeast, northwest, and southwest.

Notice that Example 1–3 is just an arrow with its point labeled *N*. The *N* stands for north. The arrow points north. When you see a north arrow, remember that east is to the right, west is to the left, and south is opposite north.



Example 1–1



Example 1–2

N

Example 1–3

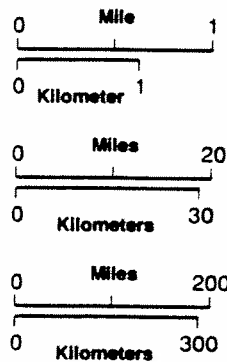
Distance

If you make a drawing of a person, you will probably not make the picture as large as the person. That would take a piece of paper the same size as the person. A map is a drawing of a part of the earth. A map as big as the earth would be too large to put in your pocket and carry with you across Africa! Maps are drawn so that a certain distance on the map represents a much larger distance on the earth. This makes it possible to show the whole earth on a piece of paper the size of this page.

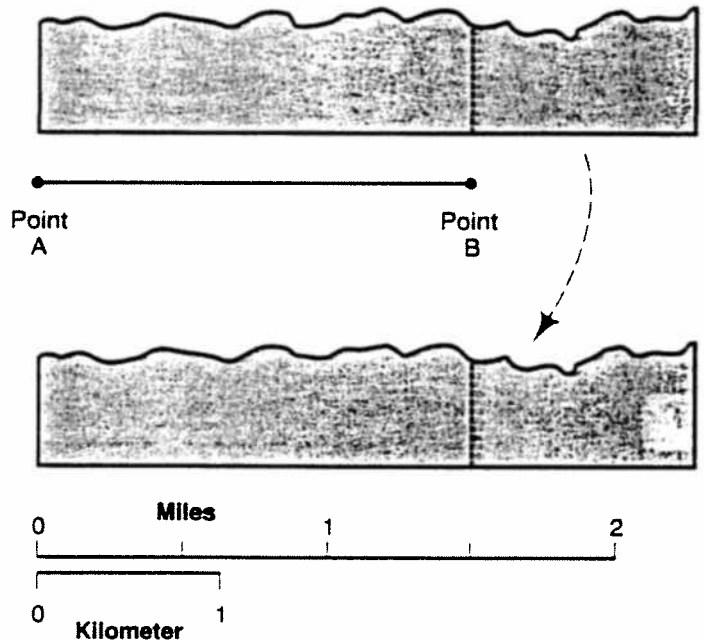
Not all maps are the size of this page, of course. Your classroom may have maps hanging on the wall. These maps are much larger than the ones in your book. But they both show the same earth. Maps have a **scale** to tell you what distance on the earth is represented by a certain distance on the map.

Using Map Scales

Here are some examples of map scales. Notice that all lines are the same length, but that each line represents a different distance on the earth. Also notice that the same scale can tell how many miles *and* how many kilometers each distance on the map stands for.



Using the scale to measure distances between places on a map is easy. Use a piece of paper. Put the edge of the paper between the two points you wish to measure. Make a mark on the paper at each point. Then put the piece of paper on the map scale with one mark at zero. Note where the other point falls on the scale. This gives you the distance.



If the scale is not long enough, mark where it ends on the paper. Then slide the paper to the left to line up the new mark with zero. Do this as many times as necessary. Then multiply the number of spaces between marks times the distance each length of scale represents. For example, if the scale represents 100 miles, and you marked off three spaces, multiply 3 times 100. The distance between the two points on the map is 300 miles.

Using Your Skills

A

Place each phrase in the box under the correct heading.

helps you find directions on a map
can be marked in miles

helps you find distances on a map
may be marked N, S, E, W

Compass Rose

Scale

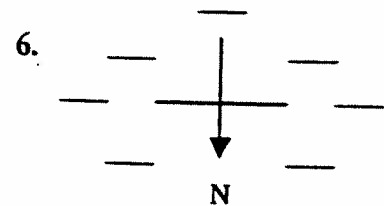
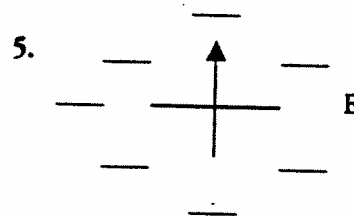
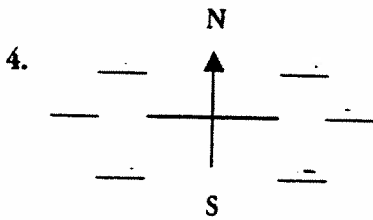
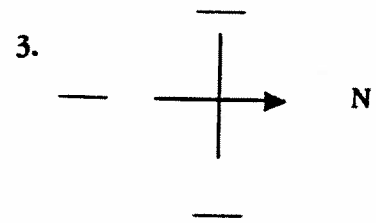
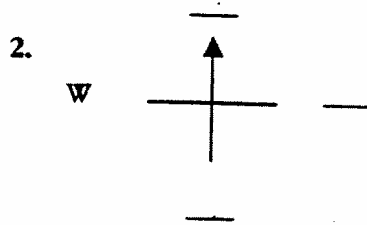
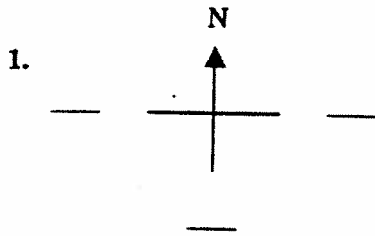
1. _____

3. _____

2. _____

4. _____

B Fill in the missing directions on these compass roses. Notice that north is not always in the same place.



C Use what you have learned about direction and distance to answer the questions about Map 1-1.

1. What part of this map shows direction? _____
2. What part of this map shows distance? _____
3. If you were in Kansas, in which direction would you have to travel to reach each of the states below? Use directions such as *southeast* when necessary.

a. South Dakota _____	b. Virginia _____
c. Utah _____	d. Texas _____
e. Washington _____	f. Florida _____
g. New Mexico _____	h. Michigan _____
4. How many miles does the full length of the scale on the map stand for? _____
5. About how many miles is it from east to west across Colorado? _____
6. How would you measure a distance on the map that is longer than the scale? _____

7. About how many miles is it from north to south across Texas at its widest point? _____

