

Map Skills Toolkit

To the Teacher

Students encounter maps every day inside and outside their classes—in books and on handheld devices, computers, or television screens. Whether they're navigating cities and continents or exploring the world by way of an atlas, students will use map skills throughout their lives.

This Map Skill Toolkit provides support for learning and reviewing the basic skills of reading and interpreting maps of all kinds. It includes handouts for the following:

- oceans and continents
- latitude and longitude
- the global grid
- hemispheres
- compass rose
- map scale
- map titles and symbols

Oceans and Continents

What is it? In order to locate places on our planet, we need to name its largest features. Water covers nearly three-fourths of Earth's surface. The largest bodies of water are **oceans**. The large land areas that cover the rest of the earth are the **continents**.

How to do it. Find the oceans on the map below. This is really just one big body of water, but geographers usually divide it into four oceans. They are the Atlantic, Pacific, Indian, and Arctic oceans.

Now find the continents. Geographers identify seven continents. From largest to smallest, they are Asia, Africa, North America, South America, Antarctica, Europe and Australia. Europe and Asia are actually parts of one huge landmass that is sometimes called Eurasia. But geographers usually think of Europe and Asia as two continents because they have different cultures and histories.

Oceans and Continents



Try it. Use this map to answer the following questions.

1. Which is the most northern ocean on earth?
2. Which is the most southern continent on earth?
3. Which continents border the Atlantic Ocean?
4. Which ocean touches three continents? What are they?
5. Which ocean do you think is the largest? Why?

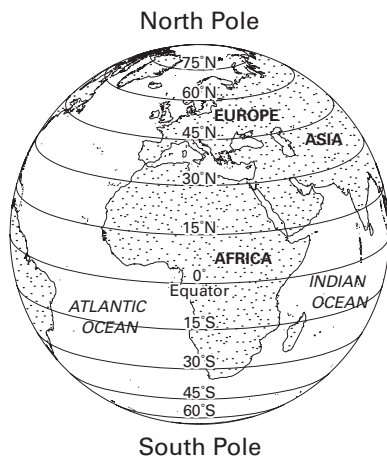
Latitude and Longitude

What is it? Mapmakers draw horizontal and vertical lines around the globe to help us locate places on Earth. The horizontal lines are **parallels of latitude**. The verticals are **meridians of longitude**. Both are measured in degrees.

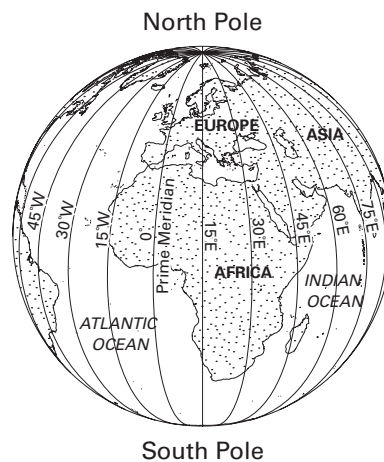
How to do it. The globe on the left shows how parallels of latitude ring the globe horizontally. Find the equator. It is 0° . Now find the South Pole. It is 90° south latitude, written as 90°S . All of the parallels south of the equator are South latitude. Similarly, the North Pole is 90° north latitude, or 90°N , and all parallels north of the equator are North latitude.

The globe on the right shows how meridians of longitude divide the globe in vertical sections between the North and South poles. Find the Prime Meridian. It is 0° longitude. On the opposite side of the globe is the meridian of 180° . East and west of the Prime Meridian are 179° of longitude.

Parallels of Latitude



Meridians of Longitude



Try it. Use these illustrations to help you answer the following questions.

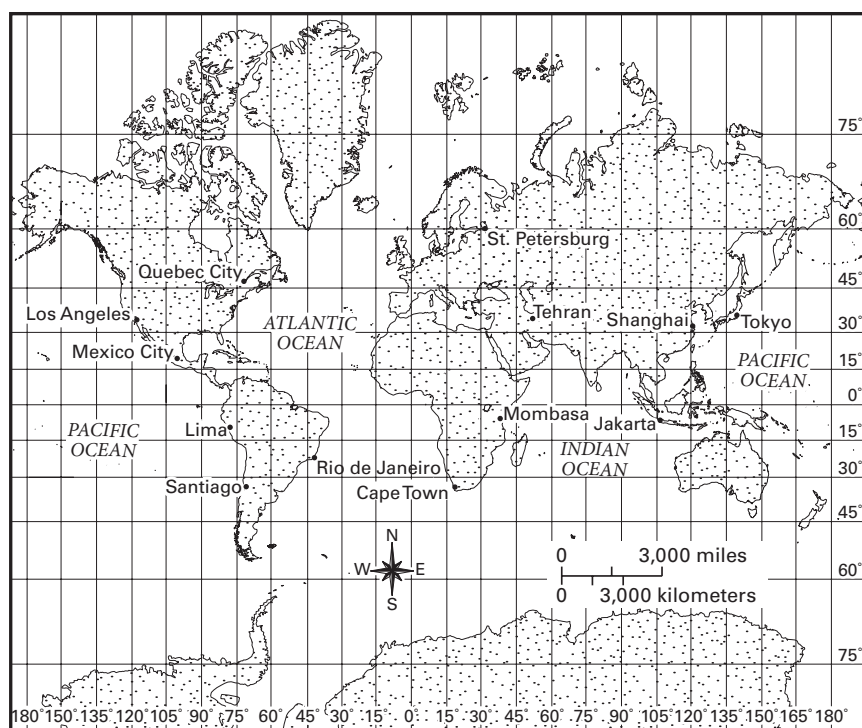
1. Locate the continent of Europe. Which parallels of latitude run through Europe?
2. Locate the prime meridian. Through which continents does it run?
3. Find 30° west longitude. It runs through which ocean?
4. Find the Indian Ocean. Name three meridians of longitude that cross it.

The Global Grid

What is it? The **global grid** shows both lines of latitude and of longitude. You can locate the “global address” or *absolute location* of any place on earth by finding where its degrees of latitude and longitude cross. For example, the location of Rio De Janeiro, Brazil is 23°S, 44°W. These numbers are called **coordinates**. Latitude always comes first.

How to do it. To find the coordinates of a place, first locate it on a map. Next look up and down to find the degree of latitude. You may have to estimate if the place is between two parallels on a map. Then look left and right to find the degree of longitude. Again, you may need to estimate if the place is between two meridians.

The Global Grid



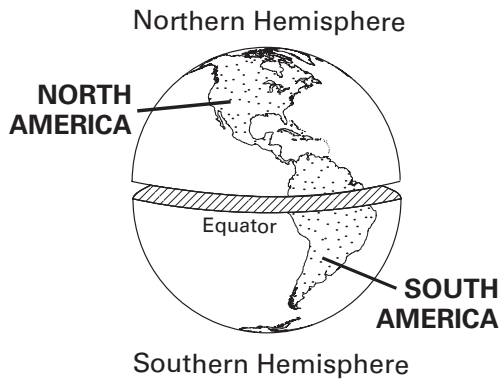
Try it. Use the grid on this map to locate cities around the world.

1. What are the coordinates of St. Petersburg?
2. Which city is located at 47°N, 71°W?
3. What are the coordinates of Shanghai?
4. Estimate the coordinates of Mexico City.
5. Which city is located at 33°N, 118°W?

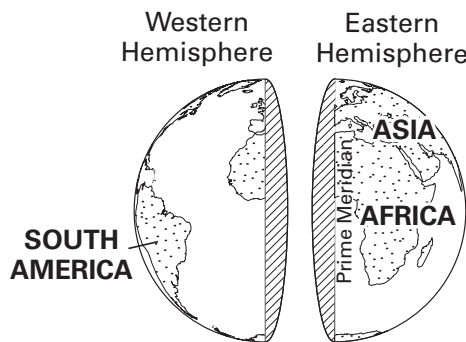
The Hemispheres

What is it? A **hemisphere** is half of a globe or sphere. In geography, a hemisphere is half of planet Earth. Geographers recognize two sets of hemispheres on Earth. One set is the Northern Hemisphere and the Southern Hemisphere. The other set is the Eastern Hemisphere and the Western Hemisphere.

How to do it. Find the equator on the globe below. The equator divides Earth into the Northern and Southern Hemispheres. North of the equator lies the Northern Hemisphere. South of the equator lies the Southern Hemisphere.



Now find the prime meridian on the second globe. It separates the Eastern and Western Hemispheres. To the east of the prime meridian lies the Eastern Hemisphere, while the Western Hemisphere lies to the west of the prime meridian.

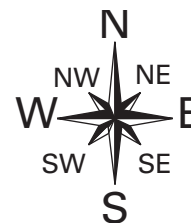


Try it. Answer the following questions, based on the information on these globes.

1. In which hemisphere, Northern or Southern, is the United States?
2. In which hemisphere, Eastern or Western, is Asia?
3. In which two hemispheres is Africa?
4. In which two hemispheres is South America?

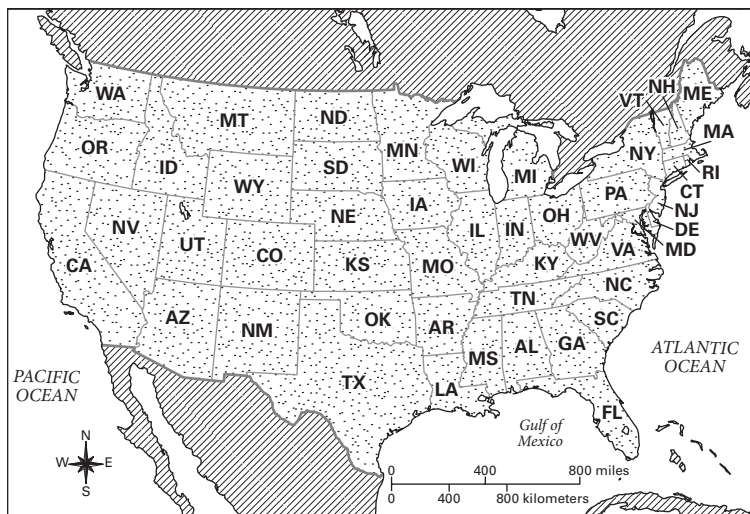
Compass Rose

What is it? Mapmakers use a diagram called a **compass rose** to show directions on a map. A simple compass rose has two short lines that cross at right angles. The ends of the lines are labeled N for north, S for south, E for east, and W for west. These are the **cardinal directions**. A more complex compass rose has lines between the cardinal points to show intermediate directions. These lines are labeled NE for northeast, SE for southeast, SW for southwest, and NW for northwest.



How to do it. Use the compass rose to tell where one place is in relation to another. Find Colorado (CO) and Wyoming (WY) on the map below. The compass rose tells you that Colorado is south of Wyoming. This is one way to state its **relative location**. Now find Wisconsin (WI). From the compass rose, you can see that Minnesota (MN) is west of Wisconsin. You can also see that Indiana (IN) is southeast of Wisconsin.

Continental United States



Try it. Use this map to answer the following questions.

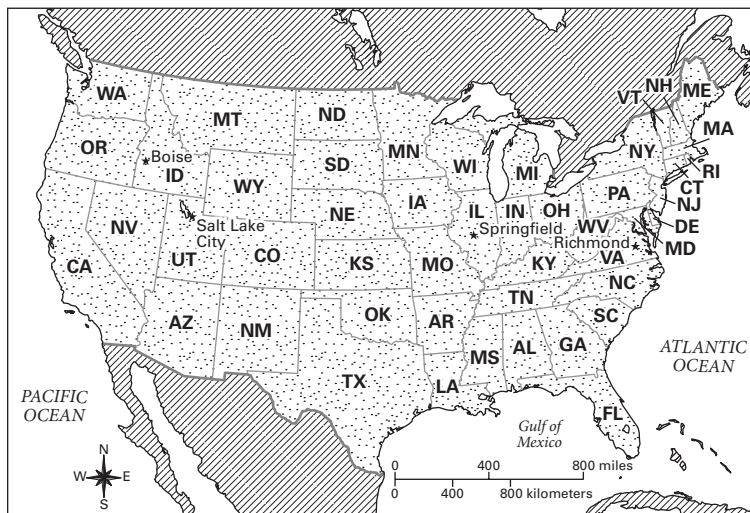
1. Which state borders Oregon (OR) on the east? The north?
2. If you traveled from Georgia (GA) to Missouri (MO), in which direction would you go?
3. Find Colorado (CO) and Nebraska (NE). Where is Nebraska in relation to Colorado?
4. Suppose you go north from Texas (TX) to the next state. Then you go to the state to the west. Where would you be?

Map Scale

What is it? Mapmakers include a **scale** to show the relationship between a unit of measure on a map and the actual distance in the real world. The scale tells you how to read the distances on the map. For instance, an inch on a map might equal 10 miles on earth. A map scale usually has two short lines with notches on them. One line measures distance in miles, the other in kilometers.

How to do it. The easiest way to use a map scale is to make a map strip. Find the scale on the map below. Place a strip of paper under the map scale. Mark the scale's notches on the paper, and label the marks with the number of miles or kilometers. Use a ruler to help you extend the notches on your strip. Then place the strip with the "0" mark at one point on the map. Line up the strip with a second point. Now read the closest number on your strip to this second point. You have just figured out the actual distance between two places.

Continental United States



Try it. Practice reading distances using the scale on this map. Then answer the questions below.

1. What does one inch equal on this map?
2. About how many miles is it between Springfield, Illinois, and Richmond, Virginia?
3. If you start at Boise, Idaho, and go southeast, how many miles is it to Salt Lake City?
4. Plan a trip of 1,000 miles that goes through at least three states. Where would you start? Where would you end? Which states would you pass through?

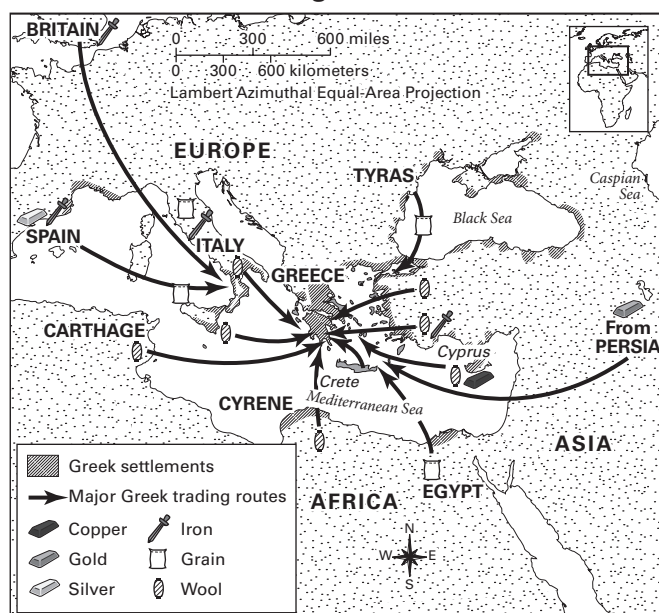
Map Titles and Symbols

What is it? The **title** tells you the subject of a map. **Symbols** on a map represent different types of information. Symbols include shapes, colors, and lines. Shapes such as stars can stand for capital cities. Lines can represent borders, highways, and rivers. Areas of colors symbolize regions, such as green for forests. A **legend** lists the symbols on a map in a box and explains what they mean. A map legend is also called a **map key**.

How to do it. Read the map title first. Ask yourself what part of the world the map shows. The title should also tell what type of information the map shows, such as time period, routes, products, population, or climate.

Now look at the map itself. Match up each symbol with its explanation in the legend. Then look at the map as a whole. In your own words, summarize the information that the map presents.

Ancient Greek Trading Routes, About 500 B.C.E.



Try it. Use the map title and legend to answer the following questions.

1. What is the subject of this map? What period of time does it show?
2. What do the heavy solid lines on the map stand for?
3. What do the shaded areas represent?
4. Which product came from both Egypt and Tyras?
5. Which product came only from Persia?