

World Map Lesson

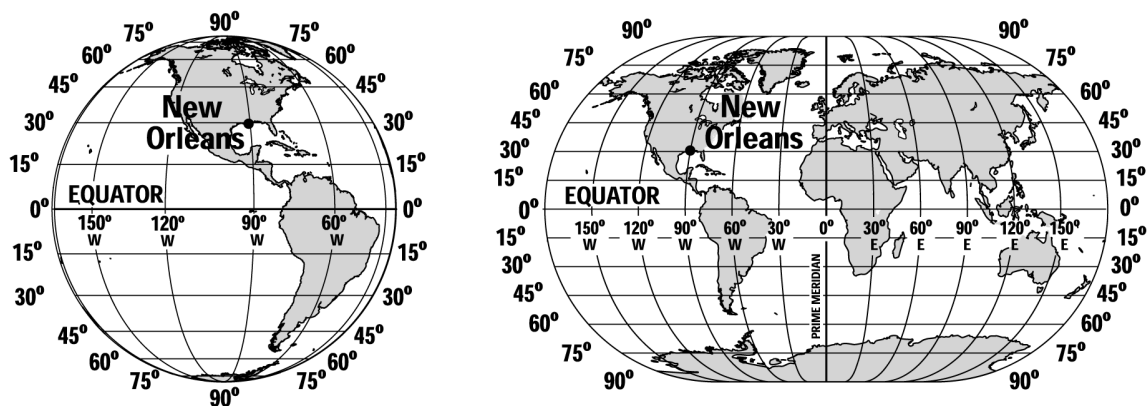
Activity 4: The Global Grid System

Activity Goal To use the global grid system of latitude and longitude to find specific locations on a world map.

Materials needed A pencil, a ruler, and a Cram World map.

Latitude and Longitude Working Together

The **global grid system** uses both the parallels of latitude and the meridian of longitude. When giving a location in latitude and longitude, latitude is always first. As an example, the location for New Orleans is 30° N, 90° W. This is read as 30 degrees north latitude, and 90 degrees west longitude.



The map above shows the New Orleans location. New Orleans is located where the parallel of latitude that is 30 degrees north of the Equator crosses the meridian of longitude that is 90 degrees west of the Prime Meridian.

Where is Timbuktu?

Timbuktu is a city in the country of Mali and was a major trading and learning center of several ancient African empires. How would you locate this city if it is not exactly at the intersection of a latitude and longitude line?

The city of Timbuktu is located by estimating where a place is in relation to the grid lines that do appear on the map. Timbuktu's location is 17° N, 3° W. In order to find Timbuktu on the map of western Africa, you might think to yourself...



A. Start with latitude, which is 17° N. That is a little more than halfway from the latitude lines of 10° N to 20° N. So I'll draw a parallel of latitude a little more than halfway between 10° N and 20° N.

B. Now the longitude, which is 3° W. That is just a little to the west (left) of the Prime Meridian (0°). So I will draw a meridian of longitude a little less than $1/3$ the way from the Prime Meridian (0°) to the 15° W line. I only need to draw this longitude line where it crosses the latitude line I drew before.

C. Timbuktu should be located very close to the intersection of the two lines I drew. There it is, just north of the Niger River in the country of Mali.

??? Use the map above for this exercise. First use your pencil and ruler to draw in the latitude and longitude lines for the locations listed below. Write in the city that is located at the intersection of the lines you have drawn.

1. Name the city located at 1° N, 10° E. _____
2. Name the city located at 13° N, 3° E. _____
3. Name the city located at 7° N, 11° W. _____

??? After a little practice, you can estimate where the line would be without drawing it. Use the world map and write the name of the city or the country in the space provided.

4. Name the city located at 30° N, 31° E. _____

5. If you were lost in the desert at 20° N, 45° E, what country would you be in? _____

6. Name the city located at 9° N, 39° E. _____

7. Name the city located at 34° S, 18° E.

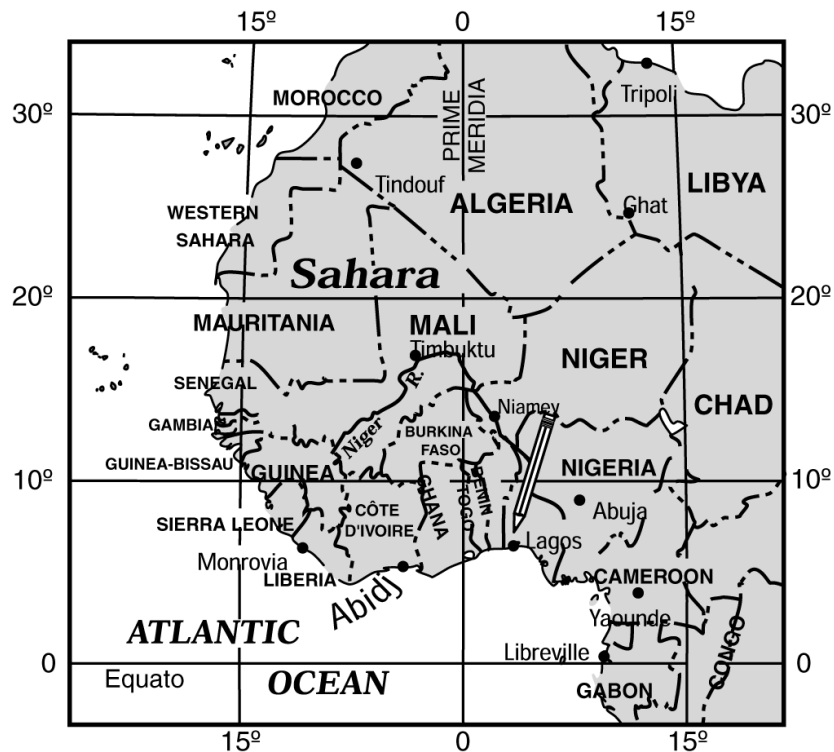
8. If you were sailing in a ship at 57° N, 55° W, what sea would you be on?

9. Name the city located at 3° N, 45° E.

10. If you were part of a mountain climbing team located at 28° N, 86° E, what peak would you be attempting to reach? _____

Using Latitude and Longitude to Report Locations

Sometimes you know where a city is located, but you want to be able to tell someone else how to find it on a map. You can do this by telling them the latitude and longitude of the place. You can use the following procedure to report the approximate locations of places.



Imagine that you need to report the latitude and longitude location of Lagos, Nigeria.

A. Here is Lagos...I want to estimate the latitude first. Lagos is about $2/3$ of the way from the Equator (0°) to the 10° N latitude line. I estimate it to be about 7° N.

B. Now for longitude. Lagos is about $1/3$ the way from the Prime Meridian (0°) to 15° E longitude line. I figure that is about 5° E.

C. My estimate is that Lagos, Nigeria is located at about 7° N, 5° E.

??? Use the Africa map above to locate the listed cities, and write the latitude and longitude in the space provided.

11. Abidjan, Cote d'Ivoire is located at _____
12. Abuja, Nigeria is located at _____
13. Ghat, Libya is located at _____

??? Use the world map to locate the listed cities, and write the latitude and longitude in the space provided.

14. Johannesburg, South Africa is located at _____
15. Los Angeles, western United States is located at _____
16. London, United Kingdom is located at _____
17. Wellington, New Zealand is located at _____
18. Mexico City, Mexico is located at _____
19. Buenos Aires, Argentina is located at _____
20. Tokyo, Japan is located at _____

Additional Information for the Teacher

Note to the Teacher:

The latitude and longitude information listed below can be found on Cram's Explorer World wall maps in the central Atlantic Ocean area;

EQUATOR: (0° latitude) is half way between the North and South poles.

Circumference: 24,902 miles (40,075 km), Diameter: 7,926 miles (12,756 km)

LATITUDE (also called parallels): are lines that run east and west around the Earth.

These lines measure distances north and south of the Equator.

PRIME MERIDIAN: (0° longitude) is also called the Greenwich Meridian.

Circumference: 24,860 miles (40,008 km), Diameter: 7,900 miles (12,714 km).

LONGITUDE (also called meridians): are lines that run from the North Pole to the South Pole. These lines measure distances east and west of the Prime Meridian.

POINT OF ORIGIN: is the intersection of the Equator and the Prime Meridian and is the starting point for the Earth's latitude and longitude grid system.

There are five latitude and longitude location examples shown on the main map. The examples are generally located below the word 'OCEAN'. An example is;

Easter I.

This island's location is 27° S / 109° W, which means
27 degrees of latitude south of the Equator and
109 degrees of longitude west of the Prime Meridian.

The island examples are;

Franz Josef Land in the Arctic Ocean - 81° N / 60° E,
Gough I. in the South Atlantic Ocean - 41° S / 10° W,
St. Paul I. in the South Indian Ocean - 39° S / 77° E,
Nauru in the Western Pacific Ocean - 1° S / 166° E,
Easter I. in the Eastern Pacific Ocean - 27° S / 109° W.