

NATIONAL GEOGRAPHIC LATITUDE AND LONGITUDE LESSON

IN PREPARATION FOR MAPPING HURRICANE LOCATIONS

GRADES 6-8

LATITUDE, LONGITUDE, AND MAPMAKING

Overview:

This lesson requires students to review the concepts of latitude and longitude and to use these concepts to create maps of different countries on the computer. They will conclude by discussing the reasons why it's important to understand latitude and longitude and by creating quizzes in which other students can locate "mystery" places that they map on the computer.

Connections to the Curriculum:

Geography, social studies

Connections to the National Geography Standards:

Standard 1: "How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective"

Time:

Two to three hours

Materials Required:

- Computer with Internet access
- Writing materials
- Atlases or maps, showing latitude and longitude (one per group), or access to the online Xpeditions atlas
- Paper

Objectives:

Students will

- Explore the Xpeditions Crack the Code activity;
- Use an online mapping program to make maps of countries for which they have figured out the latitudes and longitudes;
- Make a map of a "mystery" country, inputting its latitude and longitude coordinates into the computer;
- Discuss the importance of understanding latitude and longitude; and
- Create quizzes for other students to map "mystery" places online.

Geographic Skills:

Asking Geographic Questions

Acquiring Geographic Information

Organizing Geographic Information

Answering Geographic Questions

Analyzing Geographic Information

SUGGESTED PROCEDURE

Opening:

Have students explore the Xpeditions [Crack the Code](#) activity. Discuss whether they thought it was easy or difficult to solve the mystery.

Development:

Review the concepts of latitude and longitude with the class. Make sure they understand how latitude and longitude are recorded (e.g., 110°W or 30°S). They should understand that latitude is measured in relation to the equator (north or south) and longitude is measured in relation to the prime meridian (east or west). [Note: For more basic information about latitude and longitude, try this [NASA page](#).]

Write the following country names on the board, and have students write them down on their own papers: France, India, Australia, and Mexico. Have students use atlases or maps, or the online [Xpeditions atlas](#) to find out the northernmost and southernmost latitudes and the easternmost and westernmost longitudes bordering each country. [Note: If students are using the Xpeditions atlas, make sure they are looking at detailed versions of the maps, where latitude and longitude coordinates are shown.]

Have students use the [Online Map Creation \(OMC\) Input Form](#) to make maps of the countries on the computer. They should enter the latitude and longitude and select "National Boundaries" before clicking "Create Map." It is important that they use negative numbers for latitudes south of the equator and for longitudes west of the prime meridian.

Once the maps appear on the computer, ask students to see if they have accurately mapped the countries; tell them that the computer's maps might look a bit different from the ones they saw in the atlas.

Now have students type in the coordinates 60°N, 50°N, 2°E, and -8°W (making sure to use a negative number to represent West) and look at the map that the computer draws. Have them return to their print atlases or look at National Geographic's [MapMachine](#) to see if they can figure out what this mystery place is. (The answer is the United Kingdom).

Closing:

Hold a class discussion addressing the following questions:

- Why is it important to be able to identify locations on the Earth using latitude and longitude?
- In what types of situations might it be helpful for you to know your latitude and longitude?

Suggested Student Assessment:

Have students create their own quizzes to have classmates locate mystery places using the [OMC Input Form](#).

Extending the Lesson:

Divide the class into small groups, and have each group use an atlas to create an activity similar to [Crack the Code](#) to give to another group. They should make sure that they use real places that can be identified in the atlas. Have them list the coordinates on one page and the place names on another page. The page with the place names will serve as the answer key.

Related Links:

[NASA: Latitude and Longitude](#)

[NIMA: GEONet Names Server](#)

[National Geographic: Xpeditions Activity—Crack the Code](#)

[Online Map Creation \(OMC\) Input Form](#)