

MAPS-GIS Lesson Plan: Using Latitude and Longitude Coordinates

Subject Area: Geography: The Natural Environment

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Lesson Description:

This lesson is designed to familiarize students with the geographic coordinate system. Students will explore two ways to record longitude and latitude and quadrants. Students will change map scale and explore the impact on measurement.

Standards:

ITSE National Technology Standards

- 1) Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 2) Use technology tools to enhance learning, increase productivity, and promote creativity.

Geography for Life: To use maps and other geographic representations, tools, and techniques to acquire, process, and report information from a spatial perspective.

Objectives: The student will be able to:

- 1) Locate places on the earth's surface using latitude and longitude in decimal degrees.
- 2) Understand quadrants to locate and describe the location of places on a map.
- 3) Navigate using specific coordinate and relative location.
- 4) Manipulate layers, find information, and change scale using Web-GIS.

Prerequisites:

1. Students will have finished the MAPS-GIS Tutorial
2. Students will have taken part in a lecture on coordinate systems and an in-class topographic mapping activity

Materials:

Latitude and Longitude Lesson Sheet, computer with Internet connection (preferable PC with explorer). Connect to <http://gis.lanec.edu>

Lesson Estimated Time: Anticipated time to complete the activity is 45 – 60 minutes.

Lesson Procedure:

Students will follow the lesson guide that accompanies MAPS-GIS Coordinates Activity. Students will download or be given a copy of the lesson. This is followed by an in-class group activity using a state-scale map to find latitude and longitude.

Assessment/Evaluation:

Students will determine longitude and latitude for various locations in the companion mapping activity.

References and Citations:

Data layers: 5 minute graticule, lines for Tropic of Cancer, Tropic of Capricorn, Arctic Circle; Antarctic Circle, Equator, Prime Meridian, International Date line; Continents with : major cities, rivers, and lakes, reference points and quadrants; computer with Internet access. All data for this lesson were obtained from ESRI world data files 2005. The map displays as a geographic projection with latitude and longitude in decimal degrees.