Looking for Landmarks: Using Latitude/Longitude and Geometry Coordinates

Students compare and contrast the use of latitude and longitude and coordinates while locating sites around the United States.

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Grade Level: 4-5
Duration: 1-2 class periods

National Geography Standards

ELEMENT ONE: THE WORLD IN SPATIAL TERMS

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

Arizona Geography Strand 4

CONCEPT 1: World in Spatial Terms
GRADE 4
PO 2 Interpret political and physical maps using: g. grid (latitude and longitude)
GRADE 5
PO 2 Locate features in the world on a map using latitude and longitude

Arizona Math Standard

STRAND 4: Geometry and Measurement
CONCEPT 3: Coordinate geometry
GRADE 4
PO 1 Name the coordinates of a point plotted in the first quadrant.
GRADE 5
PO 1 Graph points in the first quadrant on a grid using ordered pairs.

Overview

This lesson allows students to compare the use of longitude and latitude in geography with the use of geometry coordinates in math through a simple search for states.

Purpose

In this lesson students will compare and contrast the use of latitude and longitude and coordinate math while locating sites around the United States.

Materials

- Famous Landmarks of the United States map
- Pencil
- Ruler
- Latitude and longitude worksheets and Answer Key
- Landmark sheets grids #1, #2, #3, #4
- Landmark sheets #1, #2, #3, #4 answer keys
- Quiz and Answer Key (transparency)

Objectives

The student will be able to

1. Accurately locate the given latitude and longitude on a map of the United States.
2. Name the geographical feature that can be found at that location.
3. Complete a coordinate sheet that will show the outline of the state by using XY axes.
4. Name the state that has been draw on the coordinate sheet.
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**Procedures**

Students should have knowledge of latitude and longitude prior to attempting this lesson. On the globe, lines of constant longitude (“meridians”) extend from pole to pole, like the segment boundaries on a peeled orange. On a globe of the Earth, lines of latitude are circles of different size. The longest is the equator. Students should have an understanding of simple XY coordinate procedures ($X =$ horizontal; $Y =$ vertical).

1. Open the lesson with a discussion of what are landmarks (a human or natural feature that is easily recognizable and may have special meaning to a group of people). Have the students discuss the landmarks listed on the Famous Landmarks of the U.S. map.

2. Then ask students to find the latitude and longitude of 4 sites (Carlsbad Caverns, Niagara Fall, Mount Rushmore, and Grand Canyon) on the Famous Landmarks of the U.S. map.

3. When students locate the latitude and longitude, they should identify the geographical landmark that is located at this intersection.

4. Give students a blank coordinate sheet to complete. The coordinates will be listed. The student should sketch the coordinates.

*TEACHER NOTES:*

There are several levels of difficulty on the coordinate worksheets – #1- easiest, #2-moderate, #3-difficult, #4-easy.

5. A picture of the state in which the landmark is found will appear if the student has followed the coordinates correctly. Tell the students to write the name of the state at the top of the page.

6. The four sites are:

1) **GRAND CANYON**
   - City: Grand Canyon
   - State: Arizona
   - Latitude: 35.9°N  Longitude: 112.1°W

2) **MOUNT RUSHMORE**
   - City: Rapid City
   - State: South Dakota
   - Latitude: 43.5°N  Longitude: 103.2°W

3) **NIAGARA FALLS**
   - City: Niagara Falls
   - State: New York
   - Latitude: 43.0°N  Longitude: 79.0°W

4) **CARLSBAD CAVERNS**
   - City: Carlsbad
   - State: New Mexico
   - Latitude: 32.1°N  Longitude: 104.2W

**Assessment**

In this lesson, students will complete a simple coordinate sketch that will reveal the state and location of the landmark that was pinpointed by the latitude and longitude coordinates. Work should be graded in the following manner.

Math: Coordinates done correctly, i.e., state is correctly drawn = 15 points. A score of 12 or higher will be considered mastery.

Geography: Name of state is given = 2 points
Name of the Landmark is given = 2 points.
Quiz = 8 points.
A score of 10 or higher will be considered mastery.

Additional points could be given for naming if the landmark is natural or man-made.
Grand Canyon (natural)
Mount Rushmore (man-made)
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Niagara Falls (natural)
Carlsbad Caverns (natural)

Sources
Definitions of Latitude and Longitude - Glossary p. 64. National Geographic Map Essentials. NGS. 2001