Ocean Maps

Students discuss the information ocean maps can provide, examine a variety of ocean maps, and evaluate the purposes of each.

GRADES
6 - 8

SUBJECTS
Geography, Physical Geography

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OVERVIEW

Students discuss the information ocean maps can provide, examine a variety of ocean maps, and evaluate the purposes of each.

For the complete activity with media resources, visit:
http://www.nationalgeographic.org/activity/ocean-maps/

DIRECTIONS

1. Build background.

Explain to students that marine, or ocean, maps can be used to provide information about a variety of activities, distributions, and earth and ocean features. For example, ocean maps can show areas of fishing activity, climate variation, fish distribution, and currents. Ask: *What information does comparing maps with all of these features give you?* (information about the relationship between these variables and the overall geographic area that has been mapped) Tell students that this type of comparison is one of the fundamental advantages of Geographic Information Systems, or GIS.
2. Examine different ocean maps.
Display for students the MapMaker Interactive. Switch between the different base maps, accessed from the base map tab at the top right. As you display each layer, ask: *What information does this map provide about the ocean? Describe it.* Then add map layers to explore other information related to the ocean and ask the same questions. Find these map layers in the tab at the top right and add them to your map:

- Volcanic Eruptions
- Earthquakes
- Sea Surface Temperatures
- Ocean Surface Currents
- Ocean Chlorophyll
- Plate Tectonics
- Surface Elevation

3. Evaluate the purposes of the different maps.
Have a whole-class discussion. Ask:

- *What is the purpose of these maps?*
- *How do you think maps like these can help you learn about the ocean?*
- *Why is it useful to create maps?*
- *Why is it good to have maps that show information other than just the “basics,” such as the locations of the continents or major islands?*

**OBJECTIVES**

**Subjects & Disciplines**

**Geography**
- **Physical Geography**

**Learning Objectives**

Students will:
• explain the uses of ocean maps
• describe the information shown in different types of ocean maps
• evaluate the purposes of different types of ocean maps

Teaching Approach

• Learning-for-use

Teaching Methods

• Discussions
• Visual instruction

Skills Summary

This activity targets the following skills:

• Critical Thinking Skills
  • Analyzing
  • Understanding
• Geographic Skills
  • Acquiring Geographic Information
  • Analyzing Geographic Information

National Standards, Principles, and Practices

NATIONAL GEOGRAPHY STANDARDS

• **Standard 1:**
  How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

Preparation

What You’ll Need
REQUIRED TECHNOLOGY

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Projector

PHYSICAL SPACE

- Classroom

GROUPING

- Large-group instruction

BACKGROUND & VOCABULARY

Background Information

Maps can be extremely valuable in helping ocean scientists answer their research questions. Marine maps can provide information about a variety of activities, distributions, and earth and ocean features.

Prior Knowledge

Recommended Prior Activities

- Ocean Expeditions and Maps
- Real-World Uses of Ocean Maps

Vocabulary

<table>
<thead>
<tr>
<th>Term</th>
<th>Part of Speech</th>
<th>Definition</th>
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<tbody>
<tr>
<td>geographic information system</td>
<td>noun</td>
<td>any system for capturing, storing, checking, and displaying data related to positions on the Earth's surface.</td>
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<td>GIS</td>
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For Further Exploration

Websites

- NOAA: Ocean

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