

Coastal Observing Systems

A Classroom Activity for the Ocean Gazing Podcast

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Grade Level: 6-12

Lesson Time: 1-2 class periods

Materials Required

Computer lab with Internet access or projection screen, copies of the lesson for each student

Summary

Traditional oceanographic sampling techniques allow scientists to get only “snapshots” of what is taking place in the ocean, rather than a complete continuous picture. In the past, scientists worked independently within their disciplines to answer questions about the ocean. Coastal Ocean Observing Systems create a collaborative environment where biologists, physical oceanographers, engineers, and ocean modelers work together to explore the coastal ocean.

Technology used to gather data enhances accuracy and allows scientists to analyze and quantify results of investigations. In this lesson, we explore the types of ocean sensors and how scientists interpret ocean data collected from sensors to understand the coastal ocean.

Objectives

- ✓ *Describe* the various tools used by researchers to study ocean characteristics
- ✓ *Apply* information found on Web site to answer questions

Key Concepts

- ✓ Technology enables scientists to study coastal ocean characteristics over long periods of time
- ✓ Scientists use technology to help them answer questions about the ocean

Procedure

For this activity you will be using two web sites:

- “Taking the Pulse of Our Changing Planet” movie
<http://coseenow.net/about/ocean-observing-systems/>
- “COOL Tools”
http://coolclassroom.org/cool_windows/controlroom.html

Have students explore the Web sites to help answer the following questions.



1. Oceanographers and Biologists are working together to collect and analyze three different kinds of data. Fill in the chart below to compare these data types:

	Describe how the data is collected	What is this data used for?
Remote Sensing Satellite		
Coastal RADAR (CODAR) (RADAR Towers)		
Meteorological Tower		

2. What instruments do scientists use to study the ocean from space?
3. What instruments do scientists use to study the ocean from the ocean floor?
4. Using the “COOL Tools” feature, click on the yellow SST button at the top left of the window: What does SST stand for?
5. What do the colors of the SST images represent?
6. Now click on the orange Met Tower button at the top left of the window: Why are oceanographers interested in atmospheric conditions?
7. Click on the SeaWIFS lever at the lower left of the window: What does SeaWIFS do?

8. Click on the CTD lever at the lower left of the window: What kind of data does the CTD collect?
9. Click on the upwelling lever at the right of the window: Briefly describe an upwelling event.
10. Click on the CODAR lever at the right of the window: What does CODAR stand for?

Applications Question:

11. If you were a fisherman, what type of data do you think would be helpful to collect to assist you in finding fish?

Assessment

- ✓ *Performance:* Did student participate in discussion and Web investigation sessions and demonstrate an understanding of how scientists use technology to study the coastal ocean?
- ✓ *Product:* Did student accurately describe some of the technology involved in studying the oceans? Did student apply the information he/she found on the Web site to answer his/her questions?

Sources

The related podcast episode for this activity can be found by going to the podcast section of www.oceangazing.org