Discussion Guide for

OCEANS: CHARTING THE VASTNESS

OBJECTIVES

After viewing this program, students will be able to:

- List reasons why the study of the ocean is critical.
- Describe factors that affect the type of life that can exist at different levels of the ocean. Account for the temperature differences found at various levels within the oceans.
- Discuss how temperature differences can affect climate.
- Identify significant geological features on the coasts and on the ocean floor.
- Explain the formation of coral reefs.
- Compare fringing reefs, barrier reefs, and atolls. Explain what causes tides.

This program is part of the AIMS Interactive Science Essentials Series. This twenty-four part series covers four subject areas- Earth Science, Biology, Physics, and Chemistry. There are six programs in each subject area. The individual programs are divided into randomly accessible sections. A glossary provides written definitions of terms used in the program, and in most cases will run a section of the video where the word is used in context.

A script of the narration is accessible, as well as a bulletin board containing a general introduction to the subject. A quiz allows the student to test their knowledge and the results are recorded for you.

In the teacher's section you can view each student's test responses and edit or create your own quiz and test questions.

OVERVIEW

Oceans: Charting the Vastness is part one of the Earth Science Essentials series which examines modern day earth science. The program begins by revealing to students that the oceans cover 70 percent of the Earth's surface. They are responsible for much of the Earth's weather patterns and contain vast quantities of living and mineral resources. The program explains the geology of the ocean floor, the dynamics of ocean currents and tides, and the formation of shoreline features. It also outlines the incredible diversity of marine life living in coral reefs, kelp forests, deep sea vents, tide pools, estuaries, and the open sea. A look at the oil, gas, and other mineral resources found lying below the world's oceans concludes the program.

TEACHER'S PREPARATION

Before the student uses the program set up the computer so that they can easily reach the mouse and the keyboard. Load the CD-ROM into the computer so that it is ready for the student to begin using. While students are able to work at their own pace, some students may benefit from using the program more than once.

SUGGESTED DISCUSSION QUESTIONS

1. List reasons why the study of the ocean is critical.

2. Describe factors that affect the type of life that can exist at different levels of the ocean.

3. In what areas of the ocean is the majority of sea life found?

4. Why is ocean water below 1000 meters continually near the freezing temperature?

5. Specify the factors that affect the flow of ocean currents.

6. Discuss how temperature differences within the ocean can affect climate. Give examples.

7. Illustrate and label the following geologic features of the ocean and coasts: continental shelf, continental slope, abysmal plain, seamounts, guyots, mid-ocean ridges, and trenches.

8. How are the mid-ocean ridges formed?

9. Describe the abysmal plain.

10. What is thought to have caused the flat top of guyots?

11. Discuss the formation of coral reefs and explain why they are only formed in relatively shallow water.

12. Compare fringing reefs, barrier reefs, and atolls.

13. What causes tides?

14. Account for the changes in ocean waves that cause them to break into foamy surf on the shore.

15. List some of the coastal geology features that are a result of incoming ocean waves.

16. Describe careers that involve the study of the ocean and rank the top three in which you would be most interested.

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OCEANS: CHARTING THE VASTNESS

VOCABULARY

abysmal plain
atoll
barrier reefs
continental shelf
coral reefs
fringing reefs
Gulf Stream
guyots
lagoons
Mariana Trench
salt marsh
seamounts
spits
spreading ridges
spring tides
tectonic plates
tide
tide pool
trenches
warm currents
undertow

ADDITIONAL BENEFITS

Students will be able to:

- Describe how waves are created.
- List coastal geological features formed by waves.
- Discuss careers that involve studying oceans.

PROGRAMS DETAILS

LENGTH:
22 minutes

SUBJECT AREAS:
Earth/Science

AUDIENCE LEVELS:
Junior/Senior High

ORDER NUMBER:
1-9081SG

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