

Exploring the Oceans

A Diagram of Ocean Structure

Standard 4 Objective 3

Name _____ Date _____ Period _____

Task: Draw and label a diagram of the ocean showing the different zones and describing each zone's characteristics, including life forms.

Grade: As you work through the activity, keep in mind that you will be earning a grade for the following:

- Quality and neatness of the diagram (33%)
- Accuracy and completeness of the map (33%)
- The map analysis—questions (33%)

Procedures and instructions

1. Sketch an area for the continental margin and deep ocean basin on a sheet of paper.
2. Draw and label the basic parts of the continental margin. Include a shelf, slope, and a rise. Make sure you leave a little coastline.
3. Draw and label the basic parts of the deep-ocean basin. Include a large abyssal plain, mid-ocean ridge, rift valley, seamount, and ocean trench.
4. Label the benthic environment and pelagic environment.
5. Label the following zones of the benthic environment: intertidal, sublittoral, bathyal, abyssal, and hadal. Color each zone a different color. Label the approximate water depth at each zone. Include a description of the characteristics of each zone and the characteristics that an organism would need to possess to live in each zone.
6. Label the neritic and oceanic zones of the pelagic environment. Include the photic and aphotic zones. Color each zone a different color and include the approximate water depth at each boundary. Include a description of the characteristics of each zone.
7. Label where the three main groups of marine life are found in the ocean (plankton, nekton, benthos). Draw and label at least two types of marine life for each group.

Analysis Questions

1. What features on your map occur at tectonic boundaries?
2. At which location would you expect to find the coldest water and the least sunlight? Why?
3. Which would be the best zone for fishing? Why?
4. Describe three features of animals that would help them live in the intertidal zone.
5. How do you think the ecological zones of the ocean would change if the ocean level dropped 300 meters?
6. Why do scientists know so little about the abyssal and hadal zones?
7. Describe the scientific explanation for how the oceans formed.
8. Why are oceans salty?