



Dive into

MARINE BIOLOGY

EXPLORER'S HANDBOOK

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LIFE BENEATH THE WAVES

Dive into the mysterious world beneath the waves, where vibrant coral reefs, giant whales, and glowing creatures fill the ocean with life. In this lesson, we'll explore the vital role the ocean plays in sustaining life on Earth, from regulating our climate to providing food and resources. Get ready for an exciting journey through marine biology as we discover the incredible ecosystems and creatures that call the ocean home!

VOCABULARY

★ Abyss

★ Marine biology

★ Midnight zone

★ Sunlight zone

★ Trenches

★ Twilight zone

OUTLINE & NOTES

LESSON 1: LIFE BENEATH THE WAVES

I. Introduction to Marine Biology

A. _____ biology: the study of _____ in the _____ and _____ environments

B. The ocean covers more than _____ of the earth

1. _____ Ocean
2. _____ Ocean
3. _____ Ocean
4. _____ Ocean
5. _____ Ocean

C. Only about _____ of the ocean has been explored

D. Home to a vast _____

II. Importance of the Oceans

A. _____ : marine organisms

_____ of Earth's oxygen

B. _____ : oceans store and regulate heat, preventing extreme temperature changes and moderating coastal climates

C. _____ : large currents help regulate climate globally, including regions far from the ocean

D. Weather influence

1. _____
2. Fuels _____ like hurricanes and monsoons

E. Provides _____ , _____ , _____

III. Structure of the Ocean

A. Oceans are home to many diverse _____

B. Ocean zones

1. _____ zone (0-200 meters)
 - a. The _____ zone: sunlight can penetrate _____
_____ this zone
 - b. Most _____ part of the ocean
 - c. Base of the _____ is in this zone
2. _____ zone (200-1,000 meters)
 - a. Light is _____
 - b. Ocean _____, helping spread _____ and
_____ throughout the ocean
 - c. A very _____ region
3. _____ zone (1,000-4,000 meters)
 - a. No _____
 - b. Pressure _____ that on land
 - c. Life has _____ to withstand
_____ in this region
 - d. Animals often rely on _____ that _____
from the _____
4. _____ (4,000-6,000 meters)
 - a. Pressure _____ that on land
 - b. Temperature _____
 - c. Life is _____ and _____
 - d. Rely on _____ from above or
_____ from the _____ for food

5. _____ (over 10,900 meters deep)
- The _____ parts of the ocean
 - _____ is the deepest place on Earth
 - How organisms survive
 - Eating _____ from the ocean floor
 - Rely on _____ produced by underwater

 - _____ : conversion of _____ into
energy

NOTES



GUIDELINES FOR SCIENTIFIC SKETCHING

In marine biology, sketching is an important tool for recording observations. It's not about making perfect artwork—it's about accurately capturing what you see. Follow these guidelines to ensure your scientific sketches are clear, useful, and effective.

1. Use the full page.

Avoid drawing too small! Give your subject enough space to show details clearly. If using a worksheet, stay within the designated area but don't cram everything into one tiny portion.

2. Label your drawings.

Labels provide important information and make your sketch more useful. Always include:

- The name of the organism
- If using a microscope, the magnification power
- Clear, straight label lines (using a ruler can help!)

3. Give your sketch a descriptive title.

Every drawing should have a title that clearly explains what it represents. Instead of something vague like “Weird Blob,” go for a specific title such as “Microscopic View of a Diatom at 40x Magnification.”

4. Draw only what you see.

Scientific accuracy is key! Don't assume or add details you think should be there. If the sea star you're observing has four arms instead of five, draw exactly what you see.

5. Focus on what's necessary.

You don't have to draw everything in sight. If viewing a microscope slide full of cells, sketch just one or two as a representative sample rather than every single one. Scientists focus on what's important—so should you!

Pro tip:

Sketching is a skill that improves with practice. It helps train your eyes to notice details and deepens your understanding of what you're studying. Don't stress about perfection—just aim for clarity and accuracy!



EXPLORATION ACTIVITY

EXPLORING OCEAN ZONES

Dive into the ocean to explore life beneath the waves! In this assignment, you'll create a visual representation of the ocean zone highlighting key features of each zone, like temperature, light, depth, and the creatures that live there, to help you remember the unique characteristics of each deep-sea environment. Are you ready to let your creativity flow?

Supplies

 Colored pencils or markers

Instructions

1. Create a drawing or visual diagram of the ocean showing each of the five ocean zones. Your drawing should clearly show the zones and include key characteristics or facts to help you remember them.
 - Highlight the important characteristics of each zone, such as temperature, pressure, depth range, and light.
 - Highlight the types of animals or plants that live in each zone and include any unique adaptations of animals to survive in each zone.
 - Be imaginative and have fun with your descriptions and visuals.
2. The more details you include, the better you'll remember the characteristics of each zone!

Questions

1. Which ocean zone do you find most fascinating and why?

2. How do the organisms in the different ocean zones help you understand the importance of the ocean's environment?

NOTES





Title
