Robot Collects Data 4,000 Meters Below Ocean Surface

Discussion > Advanced 7

Exercise 1 – Vocabulary

pressure	The force produced by gas or liquid in an area, container, etc.
[noun]	*Ex: I always check my car's oil level and tire **pressure** before going on a long road trip.*

debris	Parts that remain after something has been broken down or destroyed.
[noun]	*Ex: Investigators say they will study any **debris** they can find in order to figure out what caused the plane crash.*

consumption	The act of using food, energy, etc.; the amount of something used.
[noun]	*Ex: The government is trying to reduce the **consumption** of electricity on a national level.*

organism	An individual living thing.
[noun]	*Ex: Most single-celled **organisms** can only be seen under a microscope.*

matter	Substances that everything in the universe is made of.
[noun]	*Ex: An atom is the smallest unit of **matter**.*

specialist	A person with expert knowledge of a particular topic or subject.
[noun]	*Ex: He works as a **specialist** in tax law.*

Exercise 2 – Reading

Read the text aloud with your tutor and discuss the key points.

Robot Collects Data 4,000 Meters Below Ocean Surface

It's said that we know more about space than the bottom of the ocean. But researchers at the Monterey Bay Aquarium Research Institute (MBARI) are trying to change that.

The group designed the Benthic Rover II, a 2.6-meter-long, 1.5-meter-high robot — about the size of a small car — that can explore the bottom of the ocean by itself. The robot can survive depths of 6,000 meters, as well as the extreme cold and pressure of the deep sea.

The Benthic Rover II has been collecting data from the ocean for seven years now.

The robot is lowered into the ocean, where it sinks for two and a half hours before landing on the seafloor at a research center 4,000 meters below the surface, and about 225 kilometers off the coast of California.

Once there, the robot measures things like the water temperature, oxygen levels and the amount of fallen phytoplankton and plant debris. It also measures the oxygen consumption — and therefore carbon dioxide production — of organisms living in the mud on the seafloor.

Organic matter — such as waste, dead plants and animals — sinks down to the seafloor, where it may be eaten by animals or trapped in the mud for thousands of years. Researchers are using the robot to learn more about how carbon from this matter is cycled through the ocean, and how the ocean is affected by climate change.

MBARI Senior Research Specialist Crissy Huffard said that data from the rover has helped the researchers find out when, how much and which types of carbon might be stored in the seafloor. Data collected by Benthic Rover II has been published in Science Robotics.

After about a year of moving around the seafloor collecting data, the robot returns to the surface, where the data is downloaded and its batteries are changed before it goes back down for another year.

Exercise 3 – Discussion

Discuss the following questions with your tutor.

1. What are your thoughts on the Benthic Rover II?
2. Do you think it's more important to explore space or the world's oceans?
3. Have you ever been in a submarine? If not, do you think you'd enjoy it?
4. What's the coolest robot you've recently heard or read about?
5. Have you ever been diving? If so, what's the deepest you've ever been?
6. When was the last time you visited an aquarium? What animals did you see?
7. What marine animals would you most like to see in person?
8. Do you think you'd enjoy studying marine biology at university?