Roots Below Waves

Use word parts to unlock science vocabulary.

CCSS.ELA-Literacy.L.6.4b "Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB As you read, underline at least five words that contain a familiar Greek or Latin root or affix. Circle the root or affix in each word, then write a short meaning clue in the margin.

A Robot on the Ocean Floor

1. Before sunrise, a research ship stopped above an undersea mountain near Hawaii. The crew lowered an autonomous submersible, a robot that can travel without a pilot inside. Its cameras sent images to the ship through a long cable. On the dark ocean floor, the robot found pale coral, sea stars, and rocks shaped by old lava flows. Scientists watched the video and recorded each observation. They hoped the expedition would reveal how animals survive where sunlight never reaches.

2. The submersible moved along a ridge marked on a map as a geothermal area. Deep below the surface, warm water seeped from cracks in the rock. This water carried minerals that formed tall chimneys. The temperature near a chimney changed quickly, so the robot measured it often. A technician checked the data for unusual patterns. If a sensor failed, the crew could replace it after the robot returned to the ship. No one touched the fragile habitat.

3. At one site, the cameras filmed a bioluminescent shrimp flashing blue-green light. Biologists think such flashes may help some animals communicate, confuse predators, or attract prey. The crew also collected water in sterile containers for later analysis. Back in a laboratory, researchers would compare the samples with water from other sites. Their work could help people understand this ecosystem and decide how to protect it. The mission showed that even a silent, remote place can hold many discoveries.

2 ANSWER WITH EVIDENCE

Use the passage

1. The prefix auto- means “self.” What does autonomous tell you about the submersible?

2. The prefix sub- means “under” or “below.” What does submersible tell you about where the robot can travel?

3. The roots geo means “Earth” and therm means “heat.” What does geothermal suggest about the warm area in paragraph 2?

4. The roots bio means “life” and lumin means “light.” What does bioluminescent mean in paragraph 3?

3 YOUR TURN

Your own words

Write a two-sentence field note about an imaginary exploration. Use two words not used in the passage that contain Greek or Latin roots or affixes, underline each word, and add a parenthetical clue that tells what its root or affix means.

ANSWER KEY

Roots Below Waves

GRADE 6 · L.6.4b

PART 1 · READ AND MARK

As you read, underline at least five words that contain a familiar Greek or Latin root or affix. Circle the root or affix in each word, then write a short meaning clue in the margin. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	The prefix auto- means "self." What does autonomous tell you about the submersible?	**It can operate by itself, without a pilot inside.**
2	The prefix sub- means "under" or "below." What does submersible tell you about where the robot can travel?	**It can travel under water.**
3	The roots geo means "Earth" and therm means "heat." What does geothermal suggest about the warm area in paragraph 2?	**It is an area warmed by heat from Earth.**
4	The roots bio means "life" and lumin means "light." What does bioluminescent mean in paragraph 3?	**Producing light from a living organism.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The _subterranean_ (sub = under) tunnel led beneath the hill. A _portable_ (port = carry) lamp helped the explorers see the cave walls.

Accept accurate word-part clues and reasonable meanings supported by the roots or affixes. For the field note, accept any two sentences that use two new root or affix words correctly and include clear parenthetical clues.