Secrets Below

Use Greek and Latin word parts to unlock scientific vocabulary.

7.RV.1.C "Apply knowledge of Greek and Latin roots and affixes to predict the meaning of unfamiliar words."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline words that contain Greek or Latin roots or affixes you recognize. In the margin, write a predicted meaning for at least five underlined words by using their word parts.

Life at Deep-Sea Vents

1. Far below the ocean's surface, scientists explore a subterranean world beneath the seafloor. At hydrothermal vents, seawater enters cracks in Earth's crust, becomes heated by hot rock, and rises again. The water carries dissolved minerals that can build chimney-shaped structures. Researchers use a remotely operated vehicle to collect samples and photograph the dim habitat. Its cameras reveal animals living where sunlight cannot reach. Some creatures shelter near the warm flow, but water beyond a vent is cold and dark.

2. The vent community depends on chemosynthesis, a process that uses chemical energy rather than light. Certain bacteria combine substances from vent fluids with oxygen in seawater and make food. Tiny grazers eat the bacteria, and larger animals eat the grazers. This energy transfer supports a complex ecosystem. Scientists examine microscopic bacteria to learn how life can grow in extreme environments. They also measure temperature, pressure, and mineral levels before comparing results from different nearby vents.

3. Because the deep ocean is difficult to visit, teams rely on technology. A submersible can descend to great depths while scientists guide it from a ship. Its robotic arm may place samples in sterile containers, preventing contamination from outside organisms. Back in a laboratory, researchers use a microscope and other instruments to study the samples. Each expedition adds information about ocean geology, chemistry, and biodiversity at sites that have not been explored in detail before.

2 ANSWER WITH EVIDENCE

Use the passage

1. The Latin prefix sub- means “under.” What does subterranean most likely mean in paragraph 1?

2. The Greek root hydr means “water,” and thermal relates to “heat.” What does hydrothermal tell you about the vents in paragraph 1?

3. The Greek root micro means “small.” What does microscopic tell you about the bacteria in paragraph 2?

4. The Latin prefix sub- means “under,” and the Latin root merg means “dip.” What does submersible most likely mean in paragraph 3?

3 YOUR TURN

Your own words

Choose two words in the passage with Greek or Latin parts that are not named in Questions 1 through 4. Write exactly two sentences, one for each word. In each sentence, name a word part, tell its meaning, and predict the whole word's meaning.

Secrets Below

PART 1 · READ AND MARK

Underline words that contain Greek or Latin roots or affixes you recognize. In the margin, write a predicted meaning for at least five underlined words by using their word parts. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	The Latin prefix sub- means "under." What does subterranean most likely mean in paragraph 1?	**Below Earth's surface, or underground.**
2	The Greek root hydr means "water," and thermal relates to "heat." What does hydrothermal tell you about the vents in paragraph 1?	**They involve heated water.**
3	The Greek root micro means "small." What does microscopic tell you about the bacteria in paragraph 2?	**The bacteria are extremely small.**
4	The Latin prefix sub- means "under," and the Latin root merg means "dip." What does submersible most likely mean in paragraph 3?	**A vehicle able to go or operate under water.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

In geology, geo means Earth and -logy means study of, so geology means the study of Earth. In biodiversity, bio means life and diversity means variety, so biodiversity means the variety of living things in an area.

Accept equivalent predictions that accurately combine the named Greek or Latin word parts. For Part 3, accept any two eligible passage words not used in Questions 1 through 4 when each sentence correctly explains a word part and gives a reasonable whole-word meaning.