Hidden Lake Clues

Use word parts and origins to unlock scientific vocabulary.

10.RV.1.C "Use structural analysis of roots, affixes, and etymology to clarify the meanings of unfamiliar and complex words."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle these four complex words: subglacial, geological, international, and microbial. Draw a slash between meaningful parts in each word, then write a brief meaning you infer from the parts and the surrounding sentence.

Beneath Antarctica's Ice

1 Far below Antarctica's East Antarctic Ice Sheet, Lake Vostok remains sealed beneath almost four kilometers of ice. Scientists identified the lake in 1996 after combining radar data with seismic measurements. The discovery changed how researchers viewed the continent's hidden landscape. Instead of treating the ice sheet as a solid, featureless mass, they began to investigate a subglacial environment that may have been isolated for millions of years. The enormous ice cover insulates the lake and creates pressure that lowers water's freezing point near its base.

2 Lake Vostok is not the only Antarctic lake, but it is one of the largest. Radar surveys have revealed hundreds of subglacial lakes, some linked by slow-moving water routes. At Lake Vostok, scientists think energy from deep within the planet may contribute to conditions at the lake floor. The region also has a complicated geological history, including changes in ice movement over long periods. Because the lake is inaccessible by ordinary travel, researchers depend on remote instruments, careful drilling plans, and evidence gathered from ice above the water.

3 Working in Antarctica requires international cooperation. Nations share aircraft, field camps, and specialized laboratories, although each research program follows strict rules for handling samples. Scientists must also distinguish strong evidence from contamination introduced during drilling or testing. A microbial trace found in an ice sample, for example, does not automatically prove that the lake contains an active ecosystem. By examining samples repeatedly and reporting limits clearly, researchers can build a more reliable picture of this concealed world. Such caution matters when evidence comes from a place no person has entered.

2 ANSWER WITH EVIDENCE

Use the passage

1. The prefix sub- means "under," and glacial relates to ice. What does subglacial mean as it is used in the passage?

2. The Greek root geo means "earth." What does geological suggest about the kind of history scientists are studying?

3. The prefix inter- means "between," and nation refers to a country. What does international cooperation mean in paragraph 3?

4. The Greek roots micro and bio mean "small" and "life." What is a microbial trace?

3 YOUR TURN

Your own words

Choose a complex science word that does not appear in the passage. Write exactly two sentences: In the first, split the word into meaningful parts and explain its meaning. In the second, use the word accurately in a sentence about science.

ANSWER KEY

Hidden Lake Clues

GRADE 10 · 10.RV.1.C

PART 1 · READ AND MARK

Circle these four complex words: subglacial, geological, international, and microbial. Draw a slash between meaningful parts in each word, then write a brief meaning you infer from the parts and the surrounding sentence. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	The prefix sub- means "under," and glacial relates to ice. What does subglacial mean as it is used in the passage?	**Located or occurring beneath ice.**
2	The Greek root geo means "earth." What does geological suggest about the kind of history scientists are studying?	**It relates to the Earth's physical features and processes, such as changes in the ice and land.**
3	The prefix inter- means "between," and nation refers to a country. What does international cooperation mean in paragraph 3?	**Cooperation between different countries.**
4	The Greek roots micro and bio mean "small" and "life." What is a microbial trace?	**Evidence of a tiny living thing, or material connected to tiny living things.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Photosynthesis contains photo, meaning light, and synthesis, meaning putting together. Plants use photosynthesis to make sugars from carbon dioxide and water using light energy.

Accept equivalent explanations of the four target words when students use accurate word-part analysis and passage context. For Part 3, accept any science word not used in the passage if its parts and inferred meaning are accurate and the response has exactly two sentences.