Ice Words Unpacked

Use word parts and context to trace meaning in scientific language.

ELA.11.V.1.2 "Apply knowledge of etymology and derivations to determine meanings of words and phrases in grade-level content."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline paleoclimate, subglacial, interdisciplinary, and deglaciation. Circle the meaningful word parts you recognize, then number a nearby context clue that helps you infer each word's meaning.

What Antarctic Ice Reveals

1. Antarctic ice is more than a frozen landscape, it is an archive of Earth's past atmosphere. Each winter, snow settles in layers, trapping tiny bubbles of air. Over thousands of years, pressure turns the snow into ice. Scientists drill deep cores and compare the gases in older and newer layers. This work helps them reconstruct paleoclimate, then examine how temperature and carbon dioxide changed together. Because the oldest layers lie far below the surface, researchers must interpret evidence carefully rather than treat any single layer as a complete record.

2. Beneath some ice sheets, researchers also investigate subglacial lakes. Lake Vostok, in East Antarctica, has been isolated from the surface for millions of years. To avoid contaminating such environments, engineers design drills that collect samples without opening a direct path from the surface. The project is interdisciplinary: glaciologists study ice movement, microbiologists consider possible life, and engineers test equipment. Their shared work shows why a difficult scientific question may require knowledge that crosses the boundaries of one field by itself. Each specialty supplies evidence the others cannot gather alone.

3. As global temperatures rise, some regions experience deglaciation as glaciers retreat over decades. This process can uncover land, alter river flow, and raise sea level when land-based ice enters the ocean. Researchers distinguish this change from the seasonal melting that occurs at a glacier's surface each summer. They use satellite images, field measurements, and historical maps to calculate how quickly a glacier changes. Accurate conclusions depend on comparing many observations over time, since weather in one year can sometimes temporarily obscure the larger regional trend.

2 ANSWER WITH EVIDENCE

Use the passage

1. Break subglacial into sub- and glacial. What does the word mean, and which detail in the paragraph confirms your inference?

2. The prefix paleo- is often used for ancient things. What does it add to paleoclimate, and what evidence in paragraph 1 supports that meaning?

3. The prefix de- can signal removal or reversal. Use that clue and paragraph 3 to explain deglaciation.

4. Inter- means between or among, and a discipline can be a field of study. What does interdisciplinary mean in this passage? Name two fields that show this meaning.

3 YOUR TURN

Your own words

Choose a grade-level word not used in the passage that contains a Greek or Latin root. In exactly two sentences, name a root and its meaning, infer the whole word's meaning, then use the word in a context sentence that confirms your inference.

ANSWER KEY

Ice Words Unpacked

GRADE 11 · ELA.11.V.1.2

PART 1 · READ AND MARK

Underline paleoclimate, subglacial, interdisciplinary, and deglaciation. Circle the meaningful word parts you recognize, then number a nearby context clue that helps you infer each word's meaning. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Break subglacial into sub- and glacial. What does the word mean, and which detail in the paragraph confirms your inference?	**Subglacial means beneath glacier ice. The paragraph says researchers investigate these lakes beneath ice sheets.**
2	The prefix paleo- is often used for ancient things. What does it add to paleoclimate, and what evidence in paragraph 1 supports that meaning?	**Paleo- adds the meaning ancient or earlier. The paragraph describes past atmosphere and compares gases in older and newer ice layers.**
3	The prefix de- can signal removal or reversal. Use that clue and paragraph 3 to explain deglaciation.	**Deglaciation is the retreat or loss of glacier ice over time. The paragraph says glaciers retreat over decades and describes effects such as uncovered land or altered river flow.**
4	Inter- means between or among, and a discipline can be a field of study. What does interdisciplinary mean in this passage? Name two fields that show this meaning.	**It means involving work among several fields of study. The project includes glaciology, microbiology, and engineering.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The Latin root bene means "good," and vol comes from a word meaning "wish," so benevolent means wishing good for others. The benevolent donor funded a community library because she wanted her neighbors to benefit.

Accept equivalent meanings supported by both word parts and passage context. For the open task, accept any accurate root analysis, reasonable inferred meaning, and context sentence that clearly supports that meaning.