

Roots Below Waves

Use Greek and Latin roots to uncover technical meanings.

ELA.10.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 the four terms whose Greek or Latin origins are explained in the passage. Circle each root and write the meaning suggested by its roots in the margin.

Mapping an Underwater Canyon

- ① Before scientists can protect an underwater canyon, they must map its shape. On a research vessel, a team studies bathymetry, the measurement of ocean depth and seafloor form. The term joins Greek bathys, meaning “deep,” with metron, meaning “measure.” A multibeam sonar sends sound pulses toward the bottom and records their return. The resulting map may reveal steep walls, sediment fans, and routes used by deep-water animals. Because a map turns thousands of echoes into visible patterns, researchers can compare the canyon’s features over time and notice changes caused by currents or landslides.
- ② Some areas are too narrow or dangerous for a crewed craft. Engineers therefore use an autonomous submersible, a vehicle that travels below the surface without a pilot aboard. Autonomous comes from Greek autos, “self,” and nomos, “law” or “rule.” Its parts suggest a machine that follows its own programmed rules. Submersible grows from the Latin prefix sub-, “under,” and mergere, “to dip or plunge.” Cameras and sensors on the vehicle collect images and water data close to the canyon floor. Those observations can supplement the broad map made by sonar.
- ③ Back in the lab, analysts examine the data with careful skepticism. A map is not a photograph of the seafloor, it is an interpretation built from measurements. Before trusting results, the team calibrates equipment by checking and adjusting it against a known standard. Analysts also classify each seafloor feature. Classify combines the Latin classis, meaning “group” or “division,” with facere, meaning “make.” By making ordered groups, scientists can recognize which habitats may need closer study.

2 ANSWER WITH EVIDENCE Use the passage

1 Use bathys and metron to infer the meaning of bathymetry. What does the word mean in this passage?

2 How do the roots autos and nomos help you determine the meaning of autonomous?

3 Why is submersible an accurate name for the vehicle described in paragraph 2?

4 Use classis and facere to explain what scientists do when they classify seafloor features.

3 YOUR TURN Your own words

Choose a grade-level word that does not appear in the passage and that contains a Greek or Latin root. In exactly two sentences, state the root's meaning, infer the word's definition, and use the word correctly in context.

PART 1 • READ AND MARK

Underline the four terms whose Greek or Latin origins are explained in the passage. Circle each root and write the meaning suggested by its roots in the margin. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Use bathys and metron to infer the meaning of bathymetry. What does the word mean in this passage?	Bathymetry means measuring ocean depth and the shape or form of the seafloor.
2	How do the roots autos and nomos help you determine the meaning of autonomous?	Autos means self and nomos means law or rule, so autonomous means self-governing or able to follow its own programmed rules.
3	Why is submersible an accurate name for the vehicle described in paragraph 2?	Sub- means under and mergere means to dip or plunge, so a submersible is a vehicle that goes under the water's surface.
4	Use classis and facere to explain what scientists do when they classify seafloor features.	They make ordered groups or divisions of the seafloor features.

PART 3 • YOUR TURN (SAMPLE ANSWER)

The Greek root chronos means time, so chronological means arranged in time order. The museum displayed the artifacts in chronological order, from the oldest to the newest.

Accept equivalent definitions supported by the stated roots and the passage context. For Part 3, accept any accurate root analysis, reasonable inferred definition, and correctly used context sentence in exactly two sentences.