Inside Three Bodies

Compare visible features with organs revealed by dissection

ZOO.9.14 "Dissect representative taxa and compare their internal and external anatomy and complexity."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB For each animal, underline two visible body features and circle one internal organ or system. Number each animal's oxygen-absorbing surface 1, 2, or 3 in passage order.

Three Animals on the Dissection Tray

1 A dissection tray holds an earthworm, a crayfish, and a perch, three animals with different body plans. Begin with what you can see before cutting. The earthworm has repeated body segments and tiny bristles called setae. As muscles contract, the setae grip the ground and help the worm crawl. Inside, a crop stores food, and a muscular gizzard grinds it. Blood stays within vessels, so its circulation is closed. Oxygen passes through its moist skin into the blood. These observations link external form to movement and internal anatomy to feeding and gas exchange.

2 The crayfish has a hard outer skeleton and jointed walking legs, unlike the worm's flexible, segmented surface. Its legs push against the bottom of a stream, while its claws grasp food. During a dissection, you can find gills beneath the carapace along the sides of the body. Water flowing over these gills supplies oxygen. Food enters a stomach with hard structures that crush it before digestion continues. A heart pumps hemolymph into body spaces rather than keeping it entirely inside vessels. This is an open circulatory system. Both animals crush food, but they use different internal structures.

3 A perch brings a third pattern into view. Its scales cover the body, and its fins steer and propel it through water. Under a bony gill cover, gills take oxygen from water. The perch has a stomach that processes food and a swim bladder that helps control its depth. Its two-chambered heart drives blood through vessels to the gills and the rest of the body, so its circulation is closed. Comparing these dissections does not rank animals as better or worse. Instead, their different sets of external and internal structures show how each body is organized for life in its surroundings.

2 ANSWER WITH EVIDENCE

Use the passage

1. Compare the earthworm's and crayfish's external structures used in movement. How does each animal move?

2. How does circulation inside the crayfish differ from circulation inside the earthworm and perch?

3. Compare the structures that take in oxygen in all three animals. Which two share a structure?

4. What internal structures crush food in the earthworm and crayfish? What function do these structures share?

3 YOUR TURN

Your own words

Imagine you dissect an aquatic animal with a soft, unsegmented body, a hard shell, and a muscular foot. In one paragraph, compare its visible structures with two animals in the passage, name one internal system you would inspect in all three, and explain why dissection is needed before claiming those systems are alike or different.

ANSWER KEY

Inside Three Bodies

PART 1 · READ AND MARK

For each animal, underline two visible body features and circle one internal organ or system. Number each animal's oxygen-absorbing surface 1, 2, or 3 in passage order. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Compare the earthworm's and crayfish's external structures used in movement. How does each animal move?	**The earthworm has a segmented body and setae. Muscular contractions move its body while the setae grip the ground. The crayfish has jointed walking legs and a hard outer skeleton; its legs push against the stream bottom.**
2	How does circulation inside the crayfish differ from circulation inside the earthworm and perch?	**The crayfish has an open circulatory system: its heart pumps hemolymph into body spaces. The earthworm and perch have closed systems that keep blood within vessels.**
3	Compare the structures that take in oxygen in all three animals. Which two share a structure?	**The earthworm absorbs oxygen through moist skin. The crayfish and perch both take in oxygen from water using gills.**
4	What internal structures crush food in the earthworm and crayfish? What function do these structures share?	**The earthworm's muscular gizzard and hard structures in the crayfish's stomach both crush food before further digestion.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The new animal and the crayfish both have hard coverings, but the new animal has a muscular foot instead of jointed walking legs. Its unsegmented body also differs from the earthworm's segmented body and setae. I would inspect the circulatory system in all three animals and trace where the circulating fluid travels. The earthworm's blood stays in vessels, while the crayfish's hemolymph enters body spaces. The new animal's shell and foot cannot tell me which pattern its circulation follows.

Accept accurate comparisons of visible structures and any internal system described in the passage. The student should identify an observation a dissection could test rather than infer the new animal's internal anatomy from its shell or foot alone.