Inside the Body

Compare anatomy revealed by dissection

ZOO.7.7 "Dissect representative taxa and compare their internal and external anatomy and complexity."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline external features and circle internal structures in the passage. Number each structure and its matching function with the same number so you can compare how the two animals meet similar needs.

Beneath Skin and Shell

1. An earthworm glides through damp soil without jointed limbs. Its long body is divided into repeated segments, and tiny bristles grip the ground as muscles contract. A dissection reveals a tube-shaped digestive tract: food enters the mouth, passes through a storage crop, is ground in a muscular gizzard, and moves into the intestine. Blood stays inside vessels as it circulates, helped by muscular vessels near the front. Oxygen crosses the thin, moist body wall and enters small blood vessels beneath it. If the skin dries, gas exchange becomes difficult. External features and hidden organs work together in this soil habitat.

2. A crayfish moves along a streambed on jointed walking legs; its segmented body is covered by a hard exoskeleton. In a dissection, a rigid carapace must be lifted to expose organs beneath it. Feathery gills lie in chambers along the sides of the body, where moving water supplies oxygen. Food reaches a stomach containing a gastric mill, hard parts that crush it before digestion continues. A heart pumps blood out into spaces around organs, and the blood eventually returns to the heart. Unlike the worm's bristles, jointed legs and the outer skeleton provide firm points for muscle action.

3. Before comparing specimens, separate what you can see on the outside from what a dissection reveals inside. The worm's smooth outline might hide its crop and gizzard; the crayfish's shell might hide its gills and stomach. Note the path materials take, not just the names of parts. One animal moves oxygen through moist skin into blood held in vessels; the other draws water past gills while its blood travels through body spaces. These are different solutions to shared needs. More specialized visible parts do not automatically mean an animal is better adapted in every habitat.

2 ANSWER WITH EVIDENCE

Use the passage

1. Both animals have segmented bodies. How do their external structures help them move in different ways?

2. Compare where oxygen enters each animal. How does each gas-exchange surface relate to the animal's surroundings?

3. How does the path of blood differ between the two animals?

4. Which internal structure grinds food in each animal? What function do the two structures share?

3 YOUR TURN

Your own words

A marine snail specimen has a hard shell, one muscular foot, a radula that rasps food, a gill inside a mantle cavity, and a heart that pumps blood into body spaces. In exactly four sentences, compare its external and internal anatomy with both animals in the passage, connect one structure to its function, and explain why anatomical complexity is not a ranking of fitness.

ANSWER KEY

Inside the Body

PART 1 · READ AND MARK

Underline external features and circle internal structures in the passage. Number each structure and its matching function with the same number so you can compare how the two animals meet similar needs. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Both animals have segmented bodies. How do their external structures help them move in different ways?	**Earthworm bristles grip the ground as its muscles contract. A crayfish moves on jointed legs supported by its hard exoskeleton.**
2	Compare where oxygen enters each animal. How does each gas-exchange surface relate to the animal's surroundings?	**Oxygen crosses the earthworm's moist body wall in damp soil. Water moves past the crayfish's gills and supplies oxygen.**
3	How does the path of blood differ between the two animals?	**An earthworm's blood stays inside vessels. A crayfish's heart pumps blood into spaces around its organs before the blood returns to the heart.**
4	Which internal structure grinds food in each animal? What function do the two structures share?	**The earthworm's muscular gizzard and the crayfish's gastric mill both crush food.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Unlike the earthworm's bristles and the crayfish's jointed legs, the snail moves on one muscular foot beneath its shell. Its radula rasps food, while the worm uses a gizzard and the crayfish uses a gastric mill to grind food. The snail's gill lies inside a mantle cavity, and its heart pumps blood into body spaces, as the crayfish's heart does, unlike the worm's vessel-bound circulation. These differences show distinct ways to survive, not a ranking of which animal is best adapted everywhere.

Accept accurate comparisons that distinguish visible structures from organs revealed by dissection. The four-sentence response should compare the snail with both passage animals, link a structure to its function, and avoid treating anatomical complexity as a universal measure of fitness.