Inside Three Bodies

Compare what dissections reveal about animal body plans

ZOO.4.6 "Dissect representative taxa and compare their internal and external anatomy and complexity."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two external structures and circle two internal structures for each animal. Number matching structures that serve the same function so you can compare how the animals are built.

What the Dissection Tray Reveals

1. On a dissection tray, an earthworm looks like a tube made of repeating rings. Its moist skin allows gas exchange, so it has no lungs or gills. Beneath the skin, muscles and fluid-filled compartments help it crawl and burrow. Open the body carefully and the digestive tract runs from mouth to anus. A muscular gizzard grinds food, while a longer intestine absorbs nutrients. Blood stays inside vessels in this closed circulatory system. Repeated body segments organize movement, but the digestive organs do not simply repeat in every segment. Notice how an outward pattern can hide specialized organs inside.

2. A crayfish also has a segmented body, but its firm outer skeleton is a covering made of chitin. Jointed legs carry it along the bottom, and claws grasp food or defend it. Feathery gills sit beneath the sides of its shell and take oxygen from water. In a dissection, the stomach contains a gastric mill that crushes food. Its heart pumps hemolymph into body spaces rather than keeping it entirely in vessels, an open circulatory system. The crayfish and earthworm both have segments and food-grinding structures, yet their coverings, breathing surfaces, and routes of circulation differ.

3. A perch presents a third body plan. Scales cover its skin, paired fins help it steer, and a backbone supports its body from within. During dissection, gills appear behind the gill covers, where water passes across thin surfaces for gas exchange. A heart pumps blood through vessels in a closed circulatory system. Its stomach starts breaking down food before nutrients are absorbed in the intestine. Unlike the earthworm and crayfish, the perch has an internal skeleton with a backbone. These three animals differ in how structures support movement, feeding, and gas exchange. Complexity means specialized, coordinated parts, not a ranking of which animal is better.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do the earthworm's and crayfish's body coverings and movement structures differ?

2. Both the earthworm and crayfish crush food. Which internal structure does this job in each animal?

3. Compare where gas exchange occurs in all three animals. How does each surface meet air or water?

4. Which two animals have closed circulatory systems? How is circulation different in the third?

3 YOUR TURN

Your own words

Plan how you would identify an unlabeled earthworm or crayfish during a dissection. Describe two external checks to make before opening the specimen and two internal checks to make afterward, predict what each animal would show, and explain why these differences do not make one animal better than the other.

ANSWER KEY

Inside Three Bodies

PART 1 · READ AND MARK

Underline two external structures and circle two internal structures for each animal. Number matching structures that serve the same function so you can compare how the animals are built. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do the earthworm's and crayfish's body coverings and movement structures differ?	**The earthworm has moist skin and uses muscles and fluid-filled compartments to crawl. The crayfish has a firm outer skeleton and moves on jointed legs.**
2	Both the earthworm and crayfish crush food. Which internal structure does this job in each animal?	**The earthworm uses a muscular gizzard. The crayfish uses a gastric mill in its stomach.**
3	Compare where gas exchange occurs in all three animals. How does each surface meet air or water?	**The earthworm exchanges gases through moist skin exposed to air. The crayfish takes oxygen from water with gills beneath its shell. Water passes over the perch's gills behind its gill covers.**
4	Which two animals have closed circulatory systems? How is circulation different in the third?	**The earthworm and perch keep blood inside vessels. The crayfish has an open system in which the heart pumps hemolymph into body spaces.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

First, I would check whether the specimen has moist skin or a firm outer skeleton. Next, I would look for jointed legs, which would identify a crayfish; an earthworm would lack them. After opening it, I would look for an earthworm's gizzard or a crayfish's gastric mill. I would also check whether blood stays in vessels, as it does in an earthworm, or hemolymph enters body spaces, as it does in a crayfish. Each animal has structures suited to its way of life, so these differences do not show that one is better.

Accept accurate comparisons stated in different words. For the plan, look for two observable external checks, two internal checks with correct predictions, and a reasoned statement that anatomical differences are not a ranking.