Inside Two Fish

Use dissection evidence to compare anatomy and explain function.

MAQ.7.5 "Dissect representative taxa (e.g., shark, fish); collect data; compare their internal and external anatomy; and analyze, explain, and communicate results."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the observations made during the dissection, and circle the explanations of what a structure does. This will help you separate evidence from interpretation.

A Dogfish and a Bass

1. At a lab station, a class examines two preserved specimens: a spiny dogfish, which is a shark, and a striped bass, which is a bony fish. Before cutting, students record what they can see rather than guessing from the animals' names. On each side of the dogfish's head, they count five separate gill slits. On each side of the bass's head, they find one movable bony flap, the operculum, covering the gills. Both animals have paired fins, but the openings that let water leave their gills look different. The students sketch each feature and note which specimen it belongs to.

2. With their teacher supervising, the students open the body cavities and record structures they can identify. The dogfish has a skeleton made of cartilage and a large, oil-rich liver. The bass has a bony skeleton and a gas-filled swim bladder. In both specimens, the students find a heart near the gills and a digestive tract that runs from the mouth toward the anus. A student first calls a pale sac in the bass a liver, but the group checks its position and finds that it is the swim bladder. Careful labels matter because a mistaken label could produce a false comparison.

3. The class now asks what the observations suggest. Gill slits and an operculum are different external structures, yet both allow water to pass the gills, where oxygen enters the blood. The bass can adjust gas in its swim bladder to help control buoyancy. The dogfish has no swim bladder; oil in its liver helps reduce its overall density, though swimming also helps it stay at a useful depth. The students report these explanations separately from their observations. Because they examined only one of each animal, they do not claim that every shark and every bony fish has exactly the features they recorded.

2 ANSWER WITH EVIDENCE

Use the passage

1. Compare what the students observed on the outside of each animal's head near the gills.

2. Name one internal structure found in both specimens and one internal difference the students recorded.

3. How does the passage explain a buoyancy-related function of one internal structure in each animal?

4. Why did the group check the position of the pale sac before recording its comparison?

3 YOUR TURN

Your own words

Another lab group finds a small fish in a dogfish's stomach and several shrimp in a bass's stomach. Write a four- or five-sentence lab note that compares these findings, offers one cautious explanation, and explains why the findings cannot show what either species always eats.

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PART 1 · READ AND MARK

Underline the observations made during the dissection, and circle the explanations of what a structure does. This will help you separate evidence from interpretation. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Compare what the students observed on the outside of each animal's head near the gills.	**The dogfish had five separate gill slits on each side. The bass had an operculum covering the gills on each side.**
2	Name one internal structure found in both specimens and one internal difference the students recorded.	**Both had a heart near the gills. The dogfish had a cartilage skeleton, while the bass had a bony skeleton.**
3	How does the passage explain a buoyancy-related function of one internal structure in each animal?	**The bass adjusts gas in its swim bladder to help control buoyancy. Oil in the dogfish's liver helps reduce its overall density.**
4	Why did the group check the position of the pale sac before recording its comparison?	**They needed to identify it correctly as the bass's swim bladder. Calling it a liver could lead to a false comparison.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The dogfish's stomach contained a small fish, while the bass's stomach contained several shrimp. These are different kinds of prey. The findings suggest that these two animals had eaten different food before they were preserved. One stomach from each species cannot show what either species always eats.

Accept accurate comparisons stated in the student's own words. For Part 3, the explanation must be presented as an inference, not as a proven rule about either species.