Follow the Clues

Identify aquatic vertebrates with a dichotomous key

MAQ.7.3 "Utilize a dichotomous key to identify select aquatic vertebrates."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the trait in each key choice, then write the matching choice numbers beside specimens A-D to trace each identification.

Field Notes at the Coastal Station

1. At a coastal field station, researchers record unfamiliar vertebrates before they attach names to their notes. A dichotomous key helps them compare one pair of traits at a time. Each choice either gives a name or points to another pair. Start at pair 1, even when a familiar shape tempts you to skip ahead. Look for traits you can verify, such as breathing structures or body shape, rather than color, which may change with light. This short key covers only six aquatic vertebrate groups. It cannot reliably identify every animal in the sea.

2. Follow each numbered choice in order. 1a: Breathes air with lungs; go to 2. 1b: Uses gills to take oxygen from water; go to 3. 2a: Has a hard shell; sea turtle. 2b: Lacks a shell; dolphin. 3a: Has a broad, flat disc-shaped body; ray. 3b: Body is not disc-shaped; go to 4. 4a: Has several visible gill slits on each side; shark. 4b: Has one visible gill opening on each side; go to 5. 5a: Has a long, snakelike body; eel. 5b: Has a streamlined body with a forked tail; tuna. Each choice sends you onward or names an animal.

3. Four field notes are waiting for identification. Specimen A repeatedly rises for air; its rigid shell protects the body, and it moves through the water with broad flippers. Specimen B takes oxygen from water and has a flattened body spread into a broad disc. Specimen C also takes oxygen from water, but its body is not a disc; several separate gill slits are visible on each side. Specimen D takes oxygen from water and has a narrow, snakelike body rather than a disc; only one outer gill opening is visible on each side. Record the entire route, not just the final name.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which choices identify specimen A? Write its route and final name.

2. Which choices identify specimen B? Write its route and final name.

3. Which choices identify specimen C? Write its route and final name.

4. Which choices identify specimen D? Write its route and final name.

3 YOUR TURN

Your own words

Create two original field notes for two different animals in the key that are not specimens A-D. Do not name the animals in your notes; after each note, give the complete key route and identification.

Follow the Clues

PART 1 · READ AND MARK

Underline the trait in each key choice, then write the matching choice numbers beside specimens A-D to trace each identification. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which choices identify specimen A? Write its route and final name.	**1a, 2a: sea turtle. It breathes air and has a hard shell.**
2	Which choices identify specimen B? Write its route and final name.	**1b, 3a: ray. It uses gills and has a broad, flat disc-shaped body.**
3	Which choices identify specimen C? Write its route and final name.	**1b, 3b, 4a: shark. It uses gills, is not disc-shaped, and has several visible gill slits on each side.**
4	Which choices identify specimen D? Write its route and final name.	**1b, 3b, 4b, 5a: eel. It uses gills, is not disc-shaped, has one outer gill opening on each side, and has a long, snakelike body.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Note 1: This animal surfaces to breathe air. It has no shell, and a blowhole sits on top of its head. Route: 1a, 2b. Identification: dolphin.
Note 2: This animal uses gills and is not disc-shaped. It has one visible gill opening on each side, a streamlined body, and a forked tail. Route: 1b, 3b, 4b, 5b. Identification: tuna.

For Part 3, accept other accurate field notes that lead to dolphin and tuna through the complete routes shown. The notes must include traits that support each choice in the route.