

Sorting Life

Use shared characteristics as evidence for classification.

LS.3.c "similar characteristics determine the classification of organisms."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each body or life-process characteristic used as classification evidence, and circle each habitat clue, so you can distinguish strong evidence from location alone.

Evidence for Organism Groups

- ① Biologists classify organisms by comparing characteristics that are inherited and shared. A characteristic may be a body structure, a way of getting energy, or a pattern of development. For example, oak trees, grasses, and ferns all make their own food, but only oak trees and grasses produce seeds. Scientists use several characteristics together because one trait alone can place unrelated organisms in the same group. Classification organizes biodiversity and helps scientists communicate about living things accurately.
- ② Consider a crab and a lobster. Both have hard outer coverings, jointed legs, and segmented bodies. These shared characteristics place them in the arthropod group. More specifically, both have two pairs of antennae and five pairs of walking legs, so they are crustaceans. A sea star may live in the same ocean water, yet it lacks jointed legs and antennae. Its habitat does not make it a crustacean. Scientists classify it with organisms that share its own set of body traits.
- ③ Similarity can be misleading when it is based only on a visible feature or location. Dolphins and sharks both have streamlined bodies and swim, but dolphins breathe air with lungs and feed milk to their young. Sharks use gills and do not feed milk. These differences show that dolphins are mammals, while sharks are fish. A sound classification claim names shared characteristics and explains how those traits support membership in a group instead of guessing from habitat.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Which three shared characteristics place crabs and lobsters in the arthropod group?

2 What two characteristics support classifying crabs and lobsters as crustaceans?

3 Why is a sea star not classified as a crustacean, even if it lives in the same ocean water as a crab?

4 Use two differences from the passage to explain why dolphins and sharks are placed in different groups.

3 YOUR TURN _____ Your own words

Choose two organisms that belong to the same broad group. Write a classification claim that names the group, gives at least three shared characteristics, and explains how the characteristics support your claim.

PART 1 • READ AND MARK

Underline each body or life-process characteristic used as classification evidence, and circle each habitat clue, so you can distinguish strong evidence from location alone. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which three shared characteristics place crabs and lobsters in the arthropod group?	They have hard outer coverings, jointed legs, and segmented bodies.
2	What two characteristics support classifying crabs and lobsters as crustaceans?	They have two pairs of antennae and five pairs of walking legs.
3	Why is a sea star not classified as a crustacean, even if it lives in the same ocean water as a crab?	A sea star lacks jointed legs and antennae. Living in the same habitat is not classification evidence by itself.
4	Use two differences from the passage to explain why dolphins and sharks are placed in different groups.	Dolphins breathe air with lungs and feed milk to their young, so they are mammals. Sharks use gills and do not feed milk, so they are fish.

PART 3 • YOUR TURN (SAMPLE ANSWER)

A robin and a hawk are both birds. They have feathers, beaks, wings, and lay hard-shelled eggs. These shared traits support classifying both organisms as birds.

Accept any accurate broad group and three or more shared characteristics that support membership in that group. Students should use traits rather than habitat or a single superficial similarity as their main evidence.