

Lesson 4

ANSWER KEYS

Reading Checks

READING CHECK Summarize Text Why are plants and animals placed in different kingdoms?

They are placed in different kingdoms because of their differences, such as how they obtain energy and move around.


READING CHECK Cite Textual Evidence What is the function of the stem on a plant?

The stem stores food and provides support for leaves, flowers, cones, and buds.

READING CHECK Determine Central Ideas Name three characteristics of vascular plants that make them different from nonvascular plants.

Vascular plants have vascular tissue, they can gain height and their cells have strong cell walls.

Reading Checks

 **READING CHECK** Determine Meaning

What is the difference between an exoskeleton and an endoskeleton?

Sample: An exoskeleton provides protection outside the body, while an endoskeleton provides support from within the body.

 **READING CHECK**

Draw Evidence What adaptations does the octopus have that would help it open a jar?

Sample: Brain, muscles in their arms/tentacles, and suction cups on arms/tentacles.

Figure 2

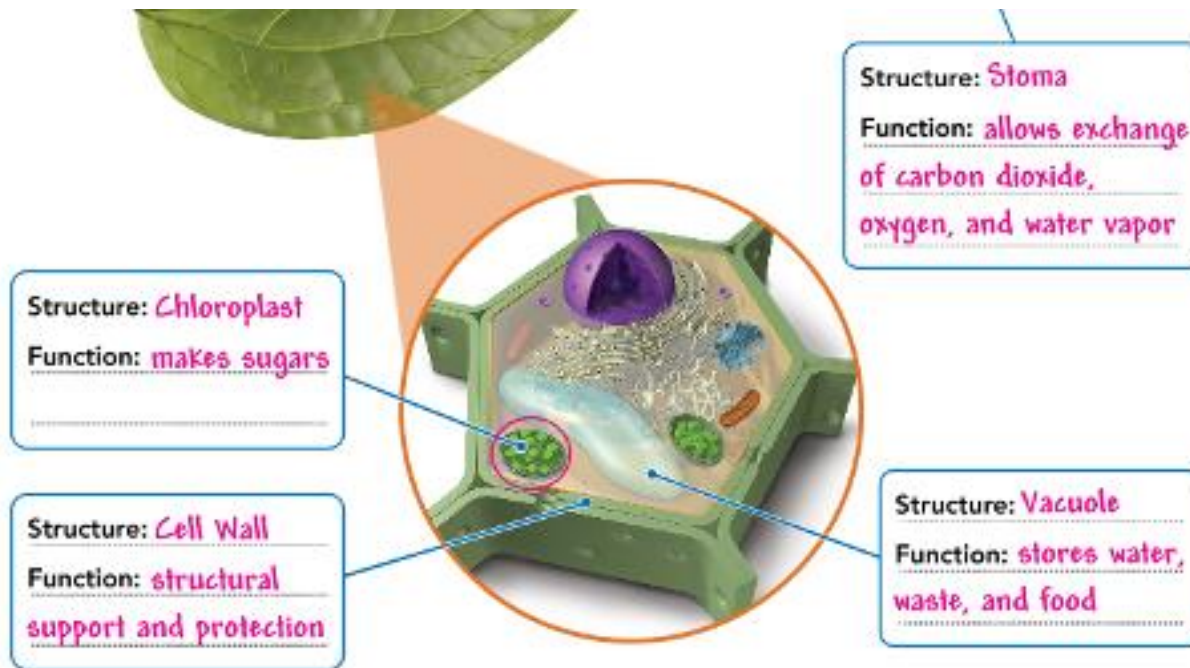


Figure 3



Tree Structure Differences

Figure 3 Leaves, stems, and roots are all adaptations that help land plants survive.

1. **Identify** ✎ Label the roots, stem, and leaves in the diagram.
2. **CCC Structure and Function** Explain any differences in the trees' structures.

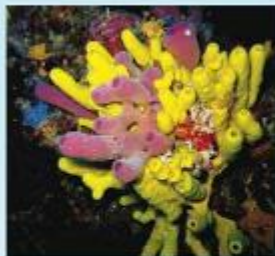
Sample: The leaves of the red pine are needles, which are thin to avoid water loss. The maple has wide leaves to capture more sunlight.

Figures 4 & 5



Types of Symmetry

Figure 5 Symmetry occurs when the organism can be divided into two or more similar parts. Draw the lines of symmetry on the animals that have radial and bilateral symmetry.



Asymmetrical Animals without symmetry, such as this sea sponge, are asymmetrical.



Radial Symmetry Animals with radial symmetry, such as this jellyfish, live in water and have complex body plans with tissues and usually have organ systems. An animal has radial symmetry if many imaginary lines drawn through a central point divide the body into two mirror images.



Bilateral Symmetry Most animals, such as this horseshoe crab, have bilateral symmetry. Only one line can be drawn to divide the body into halves that are mirror images.

Figures 6 & 8

Invertebrates

Figure 6 This diagram shows how scientists believe invertebrates evolved, starting with sponges and ending with echinoderms. Consider other characteristics that separate invertebrates into different groups.

CCC Relate Structure and Function Starting at sponges and moving to echinoderms, what happens to the body structures of the invertebrates?

Sample: The body structure gets more complex, moving from animals made of cells, to animals made of tissues, to animals made of organ systems, to animals with endoskeletons.

Vertebrates

Figure 8 This diagram shows how scientists believe vertebrates evolved, starting with fish and ending with mammals. Consider other differences among these five groups of vertebrates.

1. **CCC Patterns** What is one characteristic that amphibians, reptiles, birds, and mammals share?

Sample: They all have legs.

2. **SEP Determine Differences** How are amphibians different from fish?

Sample: Amphibians have four limbs.

Figure 7

Animals Control Their Body Temperature

Figure 7 Animals control their body temperature one of two ways.

1. **SEP Apply Scientific Reasoning** Hypothesize whether each animal is an endotherm or ectotherm.

2. **SEP Construct Explanations** Would it be more difficult for a hare to live in a tropical rainforest or a frog to live in the Arctic? Explain.

Frog, because it can not regulate its temperature and would get too cold.



ectotherm



endotherm



ectotherm



ectotherm



endotherm

Figure 9

Movement Adaptations

Figure 9 Animals display a wide range of adaptations for movement. Rate each movement adaptation from 1 (fastest) to 5 (slowest) in the circles. Explain your highest rank.

Sample: Wings allow for fast movement and quick changes in direction.



1
Wings Birds and insects have wings that allow them to fly, hover, dive, and soar.



3
Fins Fish and whales have fins, and their bodies are streamlined to help them move through water.



4
Tube Feet Echinoderms have several tiny tube feet under their



5
Muscular Foot Mollusks have a foot that is made of several



2
Jet Propulsion Octopuses take water into a muscular