



S4.B BIOLOGICAL SCIENCES

On Level

S4.B.2 Continuity of Life

Assessment Anchors
S4.B.2.1

Eligible Content
S4.B.2.1.1
S4.B.2.1.2

Assessments

Adapting to Survive

Print pages 20–22 of this PDF for the assessments.

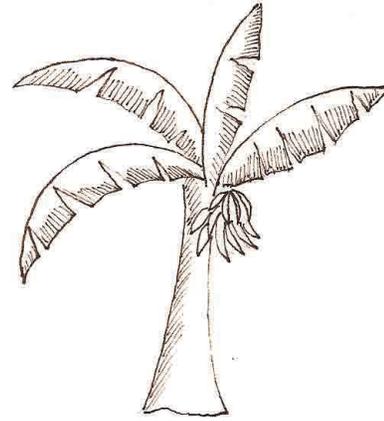
Check Understanding

Shade the circle next to the correct answer.

1. Horses graze in pastures and eat grass. Grass is tough and stringy. What characteristics would you expect a horse's teeth to have?

- Ⓐ long and sharp for biting
- Ⓑ strong and flat for grinding
- Ⓒ super sharp for ripping
- Ⓓ extra hard for cracking and chewing

2. The plant shown below has adapted to its rain forest environment by developing very wide leaves.

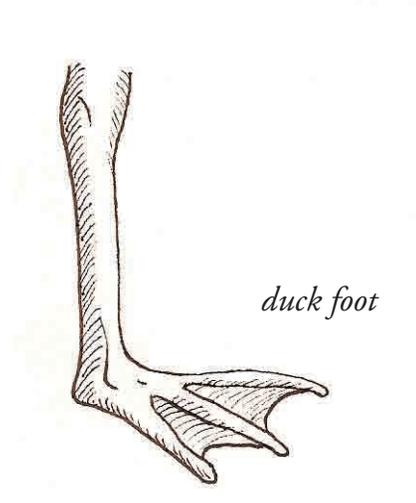
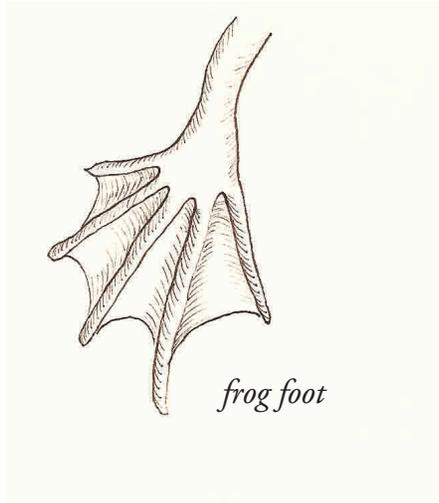


Which statement best explains why this plant needs wide leaves?

- Ⓐ Daily rains wash nutrients out of the soil.
- Ⓑ The soil in a rain forest holds little water.
- Ⓒ The leaves become part of the canopy that supports animal and other plant life.
- Ⓓ Little light filters down to smaller trees in a crowded rain forest.

Check Understanding

3. Frogs and ducks both live in water. Look at the pictures of their feet below.



Part A: What is similar about the feet of frogs and ducks?

Part B: How does this similar characteristic help them?

Assessment Scoring Guidelines

1. **S4.B.2.1.1** Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).

- A *Meat-eaters tend to have long, sharp teeth.*
- B *Key: Horses have strong, flat teeth to grind grasses as they graze.*
- C *Super sharp teeth help sharks as they rip apart their prey.*
- D *Animals that eat nuts and break bones need extra hard teeth.*

2. **S4.B.2.1.2** Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).

- A *Wide leaves don't help a plant because of this.*
- B *Wide leaves don't help a plant because of this.*
- C *Wide leaves don't help a plant because of this.*
- D *Key: Wide leaves help a plant collect filtered sunlight in a crowded forest.*

3. **S4.B.2.1.2** Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).

Score 2 if the student demonstrates a thorough understanding of why webbed feet help frogs and ducks swim in ponds.

Score 1 if the student demonstrates a partial understanding of why webbed feet are an advantage for pond swimmers.

Score 0 if the student provides insufficient evidence to demonstrate understanding of the content being tested.



S4.D EARTH AND SPACE SCIENCES

On Level

S4.D.3 Composition and Structure of the Universe

Assessment Anchor
S4.D.3.1

Eligible Content
S4.D.3.1.1
S4.D.3.1.2
S4.D.3.1.3

Assessments

The Earth in Space

Print pages 20–22 of this PDF for the assessments.

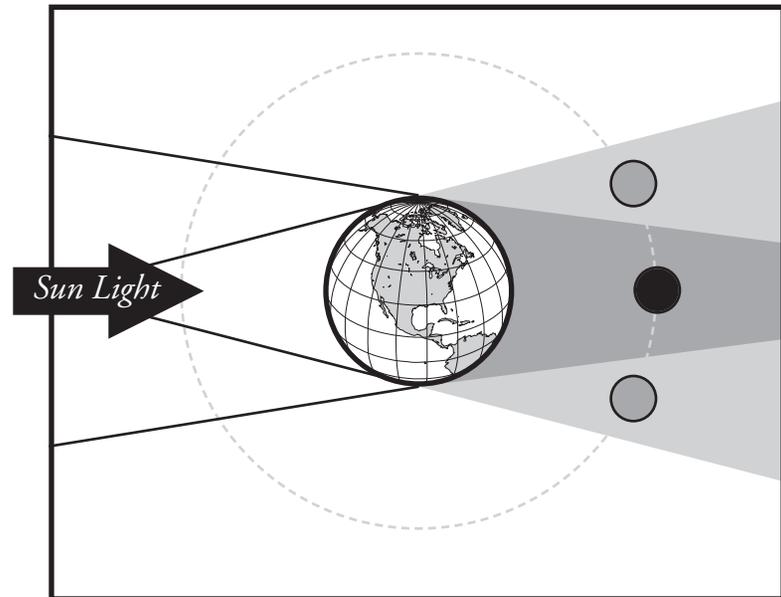
Check Understanding

Shade the circle next to the correct answer.

1. When the North Pole is pointed most directly toward the sun, what season is it in the northern hemisphere?

- Ⓐ spring
- Ⓑ summer
- Ⓒ autumn
- Ⓓ winter

2. Study the illustration below.



Which term best identifies what is shown in the illustration?

- Ⓐ full moon
- Ⓑ crescent moon
- Ⓒ lunar eclipse
- Ⓓ solar eclipse

Check Understanding

3. It is 3 a.m. on October 4, and very dark in Scranton, Pennsylvania. At the same moment in London, England, the streets and stores are bustling with people in the daylight.

Part A: Identify the date and time of day in London.

Part B: Describe how the rotation of Earth causes this difference in light and dark periods in different places.

Assessment Scoring Guidelines

1. **S4.D.3.1.3** Describe the causes of seasonal change as they relate to the revolution of Earth and the tilt of Earth's axis.
 - A *When spring begins, the pole is beginning to point toward the sun.*
 - B *Key: The tilt of Earth's axis changes the angle at which the poles point toward the sun. When the North Pole points most directly toward the sun, it is summer in the northern hemisphere.*
 - C *When autumn begins, the pole begins to point away from the sun.*
 - D *When winter begins, the pole is pointed at its maximum angle away from the sun.*
2. **S4.D.3.1.1** Describe motions of the Sun - Earth - Moon system.
 - A *A full moon occurs when the full face of the moon is seen to be illuminated by the sun.*
 - B *A crescent moon occurs when part of the face of the moon is seen to be illuminated by the sun.*
 - C *Key: A lunar eclipse occurs when the shadow of the Earth obscures covers the face of the moon that is visible from your vantage point on Earth.*
 - D *A solar eclipse occurs when the moon blocks our view of the face of the sun we can see form our vantage point on Earth.*

3. **S4.D.3.1.2** Explain how the motion of the Sun - Earth - Moon system relates to time (e.g., days, months, years).

Score 2 if the student demonstrates a thorough understanding that, when it is 3 a.m. in Scranton, it is later in the morning and already light in London. Night and day occur when Earth rotates on its axis causing the sun to be visible for only part of the day from any given point.

Score 1 if the student demonstrates a partial understanding of how the time of day around the globe differs at any given moment and how Earth's rotation causes night and day.

Score 0 if the student provides insufficient evidence to demonstrate understanding of the content being tested.



S4.B BIOLOGICAL SCIENCES

On Level

S4.B.3 Ecological Behavior and Systems

Assessment Anchors
S4.B.3.1

Eligible Content
S4.B.3.1.1
S4.B.3.1.2

Assessments

Looking at Ecosystems

Print pages 20–22 of this PDF for the assessments.

Check Understanding

Shade the circle next to the correct answer.

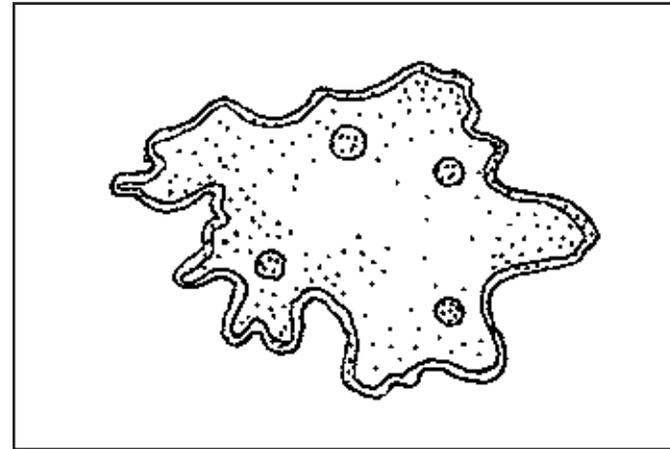
1. Look at the picture of the cornfield below.



Which statement best tells about the crows flying in the sky?

- Ⓐ They want to avoid contact with humans.
- Ⓑ They are afraid of the deer.
- Ⓒ Corn kernels are a major part of their diet.
- Ⓓ Crows eat the fungus on corn plant leaves.

2. Which statement best tells about amoebas like the one shown in the picture below?



- Ⓐ They might be found in the swiftly-moving water of a stream.
- Ⓑ They can be seen without a microscope.
- Ⓒ They might be found in the still surface water of a marsh.
- Ⓓ They prey on worms and insects.

Check Understanding

3. The picture below shows a rocky beach by the ocean.



Part A: Describe two living and two nonliving things you would find in this ecosystem.

Part B: Describe how these living and nonliving things interact.

Assessment Scoring Guidelines

1. **S4.B.3.1.2** Describe interactions between living and nonliving components (e.g., plants—water, soil, sunlight, carbon dioxide, temperature; animals—food, water, shelter, oxygen, temperature) of a local ecosystem.

A *Key: The crows think the scarecrow is real and are staying away.*

B *The deer offers no danger to the crows.*

C *Crows eat young corn plants, not corn kernels.*

D *Crows eat young corn plants, not corn fungus.*

2. **S4.B.3.1.1** Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park, playground).

A *Amoebas are unlikely to be found in the swiftly-moving water of lotic systems.*

B *Amoebas are one-celled creatures and require a microscope to be seen.*

C *Key: Amoebas are found floating on the surface of lentic ponds and marshes.*

D *Amoebas get their energy by consuming micro-organisms.*

3. **S4.B.3.1.2** Describe interactions between living and nonliving components (e.g., plants—water, soil, sunlight, carbon dioxide, temperature; animals—food, water, shelter, oxygen, temperature) of a local ecosystem.

Score 2 if the student demonstrates a thorough understanding that a rocky ocean beach ecosystem includes sun, sand, rocks, air, and saltwater. Living things found there include fish, aquatic birds such as seagulls, insects, and mollusks. Interactions involve hiding from predators and hunting prey, getting oxygen from air or water, etc.

Score 1 if the student demonstrates a partial understanding of the components of a beach ecosystem and living and nonliving interactions.

Score 0 if the student provides insufficient evidence to demonstrate understanding of the content being tested.