



SCIENCE • GRADE 4

Science Assessments

FOCUScurriculum

Curriculum materials for **your** content standards

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Introduction

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Check Understanding Assessments

The following assessments are designed to assist you in evaluating your students' knowledge of Indiana's Academic Standards in Science. Check Understanding assesses the content of each *Focus on Indiana Standards* book. You will find multiple choice and open response that assess literal and interpretive comprehension of each book's content.

In addition, these assessments will evaluate your students' ability to synthesize and apply the content and concepts identified in the Indiana's Academic Standards in Science. Students will obtain valuable practice in answering multiple choice questions and open response items they will encounter on the ISTEP+ in Science.

The following pages are examples of assessments found in *Focus on Indiana Standards*.



ACADEMIC STANDARDS FOR SCIENCE

STANDARD 3: Life Science

Grade 4	4.3.1
Core Standard	4.3.2
	4.3.4

Assessments

Adapting to Survive

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

Check Understanding

Shade the circle next to the correct answer or write your answer on the lines provided.

1. Why do some animals hibernate in the winter?

- Ⓐ to attract a mate
- Ⓑ to avoid predators
- Ⓒ to find food
- Ⓓ to adapt to the environment

2. Which characteristic helps a hawk find food?

- Ⓐ sense of sight
- Ⓑ thick feathers
- Ⓒ sharp beak
- Ⓓ sense of taste

3. Shedding thick fur in the summer helps some animals

- Ⓐ keep warm
- Ⓑ attract a mate
- Ⓒ stay cool
- Ⓓ hide from danger

4. Animals have adapted behaviors that help them meet their need for food. Identify ONE adaptation of behavior.

Explain how the adaptation meets an animals need for food.

Check Understanding

Shade the circle next to the correct answer or write your answer on the lines provided.

5. Some animals escape their predators by using mimicry. Which statement is an example of mimicry?

- (A) Many female birds are brown.
- (B) The viceroy butterfly looks like a monarch butterfly.
- (C) The arctic fox and polar bear are white.
- (D) Chameleons change color to match their surroundings.

6. Scientists observed that the peppered moths in England changed their color. They recorded their observations.

Over time, scientists discovered that the moths color changed back. They kept recording their observations.

They wondered why the moths changed color. Why did the scientists record details about their scientific observations?

7. Polar bears have adapted to their cold, snowy environment. They have thick fur and layers of fat to keep them warm. Their fur is white allowing them to blend in with their environment. This makes it easier for them to catch prey. A polar bear would have a difficult time adapting to a desert environment.

Identify TWO reasons why a polar bear's adaptations would make it difficult to live in a desert.

Explain why each adaptation would make it difficult.

Assessment Scoring Guidelines

1. Answer D is correct.
2. Answer A is correct.
3. Answer C is correct.
4. Possible answer may include:
 - Hyenas hunt in packs.
They work together to separate a weak animal from its herd.
 - Bats make sounds that echo back
Bats can't see, so they use these echos like radar to find food.
 - Tickbirds stand on grazing animals.
They eat the ticks found on the animal's skin.
 - Squirrels gather and bury nuts
They store food for when non is available.
5. Answer B is correct.
6. Scientists recorded their observations to provide evidence that supports their conclusions.

7. Possible answers include:

Thick fur
Would hold in too much body heat

Layers of fat.
Would hold in too much body heat

Small ears
Would not allow enough heat to escape

White fur
Would not blend in with the desert environment making it difficult to hide from prey



ACADEMIC STANDARDS FOR SCIENCE

On Level

STANDARD 2: Earth Science

Grade 4
Core Standard

4.2.1
4.2.2

Assessments

Slow Earth-Changing Processes

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

Check Understanding

Shade the circle next to the correct answer or write your answer on the lines provided.

1. A scientist has been studying a site of physical weathering for five years. He has concluded that the river carved into a hill. The hill showed signs of erosion but it was still intact. Now, he can see where one side of the hill has collapsed into the river.

Give the MOST LIKELY explanation of the recent collapse of the hillside?

2. Deposition creates new landforms. Which natural process is an example of deposition?

- Ⓐ iron turning to rust
- Ⓑ plant roots wedging a rock apart
- Ⓒ two large pieces of crust colliding
- Ⓓ glaciers moving a pile of rock and dirt

3. What is the force that erodes deserts?

Explain how this force creates new landforms.

4. The movement of soil by wind or water is called

- Ⓐ gravity
- Ⓑ friction
- Ⓒ erosion
- Ⓓ energy

Check Understanding

Shade the circle next to the correct answer or write your answer on the lines provided.

5. What are TWO ways that water can erode soil and rocks?

Explain how each is a slow or rapid process.

6. The diagram below shows an area of land that changed after many years.



Which process caused the valley to form?

- (A) evaporation
- (B) erosion
- (C) gravity
- (D) deposition

Assessment Scoring Guidelines

1. Gravity caused the hillside to collapse.
2. Answer D is correct.
3. Wind
Wind transports the sand and deposits it in piles, which become sand dunes.
4. Answer C is correct.
5. Rain
Rain falling on a cliff can slowly erode the rock.

River
A river can slowly carve out the land.

Flood
A flood can quickly carry away soil and rocks.
6. Answer B is correct.



ACADEMIC STANDARDS FOR SCIENCE

On Level

STANDARD 4: Physical Science	
Grade 4	4.1.1
Core Standard	4.1.2

Assessments

Heat Is Energy

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

Check Understanding

Write your answer on the lines provided.

1. Define the term *heat*.

Explain how heat affects the movement of particles in matter.

2. A student put a pot of water on a hot stove. He also put a thermos filled with water on a hot stove. After several minutes, the temperature of the water was greater in the pot than in the thermos.

Explain what caused the temperature to be different in each container.

1) _____

2) _____

Check Understanding

Write your answer on the lines provided.

3. A student conducted an experiment by placing a metal spoon in a cup of hot tea. She recorded the temperature of the spoon before placing it in the hot tea. After five minutes she took the spoon out and recorded the temperature again. The temperature of the spoon was higher on the second reading.

What process of heat transfer occurred?

Explain how the temperature of a metal spoon was raised when placed in a hot cup of tea.

4. The diagram below shows ice melting in a hot metal pan. The handle of the pan is made of wood.



Explain why the handle of the pan is made of wood and not metal.

Assessment Scoring Guidelines

1. Heat is a form of energy caused by the movement of tiny particles in matter.

When tiny particles of matter move quickly, they generate heat. The faster they move, the more heat is generated.

2. The temperature of the water in the pot increased because heat from the stove was able to pass through the pot and into the water. The pot was a good conductor of heat.

The water in the thermos did not increase as much because a thermos has a vacuum inside it. Heat does not transfer well in a vacuum. A vacuum is a good insulator of heat.

3. Conduction was the process of heat transfer.

Heat from the water was transferred to the spoon. The particles of matter in the spoon then began to move. This caused heat to be generated in the spoon.

4. The handle is made of wood because wood does not conduct heat as well as metal. It is safer to hold the pan by the wood handle because it will not be as hot.