

Student Name: _____

Posttest

Grade 4 • Science



Student Test Booklet

FOCUScurriculum

Curriculum materials for **your** content standards

101 Manor Drive, Hudson, OH 44236

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Published by FOCUScurriculum

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Order Number: OHSC12-POST4

Created by Kent Publishing Services, Inc.

Designed by Signature Design Group, Inc.

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Directions:

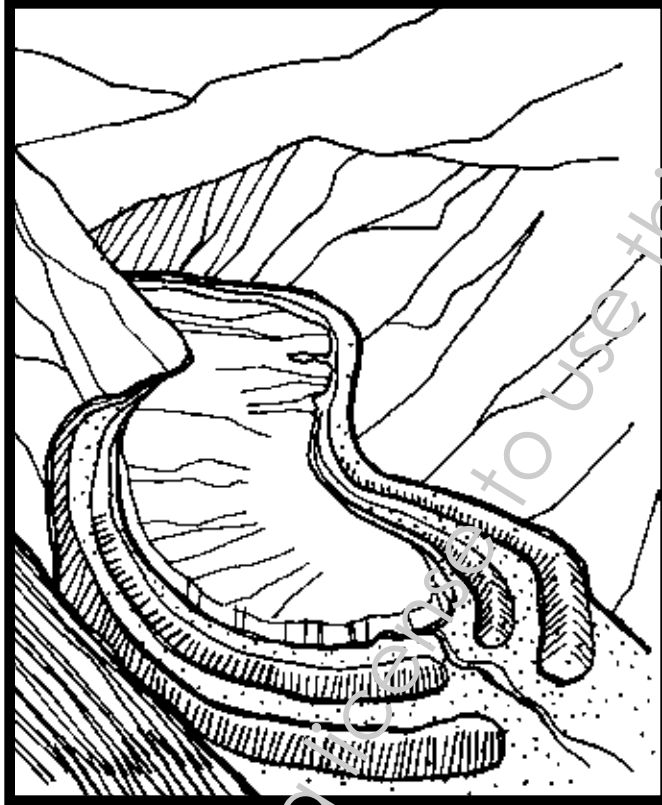
Today you will be taking a test about science topics. It will help your teacher determine what you have learned about these topics. Three different types of questions appear on this test—multiple choice, short answer, and extended response.

When you take this test, remember these important things:

1. Read each question carefully. Think about what is being asked. Look carefully at illustrations, graphs, or diagrams. They provide important information for the questions.
2. When questions ask you to write an answer, use a pencil. Write neatly and clearly in the space provided in the Answer Document. Do not write any answers in the Student Test Booklet as they will not be counted toward your score.
3. Multiple-choice questions are worth one point. Short-answer questions are worth two points. Extended-response questions are worth four points.
4. For multiple-choice questions, completely shade in the circle next to your choice in the Answer Document. Shade only one answer choice for each question. If you change an answer, erase it completely.
5. If you are stuck on a question, go on to the next question. Return to that question after answering the remaining questions.
6. Check over your work when you are finished.

Science

1. The diagram below shows a landform.



What type of landform is shown?

- A. glacial moraines
- B. sand dunes
- C. a delta
- D. a sink hole

2. What is the majority of Earth's surface covered in?
- A. plains
 - B. mountains
 - C. sand
 - D. water
3. Weathering is a process that changes rock at or near Earth's surface. Sometimes it happens slowly over a long period of time. Other times it happens rapidly.
- Identify one cause of slow weathering and explain how it weathers Earth's surface. (2 points)
4. Which is NOT a process that can change the surface of Earth?
- A. erosion
 - B. deposition
 - C. evaporation
 - D. weathering

Science

5. Sometimes rock, soil, and sediment are transported to a different location and create a new land form.

What is this process called?

- A. erosion
- B. deposition
- C. conservation
- D. weathering

6. Northeastern Ohio's land features include deep lakes and canyons carved out of rock. Southwestern Ohio land is mostly flat.

What caused Ohio to have such different land features?

- A. There was no erosion in northeastern Ohio.
- B. The inland sea created a delta in southeastern Ohio.
- C. Glaciers did not cover the southwestern part of Ohio.
- D. Deposition filled in the lakes and canyons in southwestern Ohio.

7. Which might be a cause of a decrease in the number of birds, fish, and frogs born in a particular area?
- A. plenty of rain and snow filling rivers and streams
 - B. a drought drying up wetlands
 - C. seeds traveling on the wind
 - D. a decrease in pollution
8. A forest fire can have both a negative and positive impact on plants. Which is NOT a positive impact of a forest fire on plants?
- A. adding nutrients to the soil
 - B. adding nutrients to the air
 - C. making room for new growth
 - D. allowing more sunlight to reach the soil
9. An ecosystem is a natural place where many organisms live together. Ecosystems can change.

In your Answer Document, identify one thing humans can do to cause an ecosystem to change. Then explain what can happen to living things when this change occurs. (2 points)

Science

10. Theresa lives in Medina, Ohio. She has a collection of trilobite fossils that she found around her neighborhood.

What do trilobite fossils suggest about Theresa's neighborhood.

- A. Her neighborhood was a dry desert.
 - B. Her neighborhood was once a large swamp.
 - C. Her neighborhood was once covered by a sea.
 - D. Her neighborhood was once covered by a glacier.
11. Sanja purchased a stained glass window from a catalog. Based on the weight of the window, she had to pay \$7.50 in postage to have it shipped to her. When the window arrived, it was broken into several pieces, so she had to ship it back for another one.

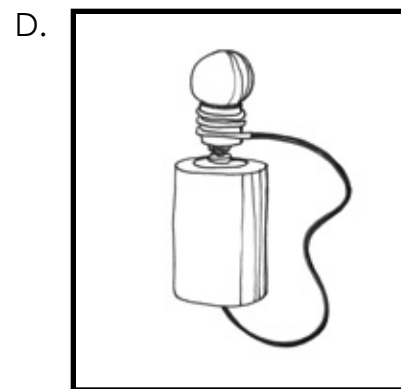
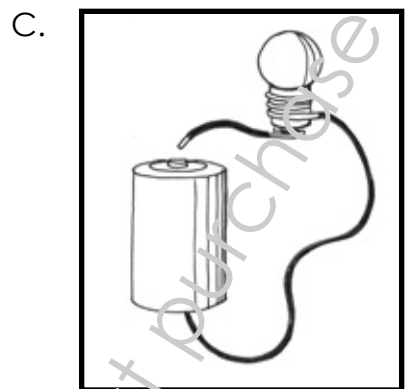
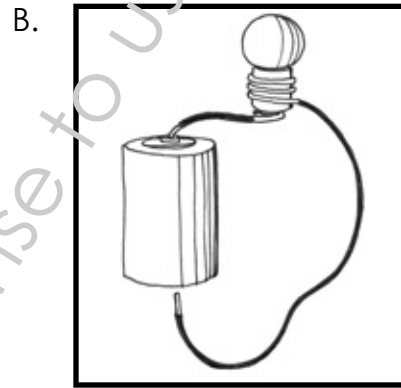
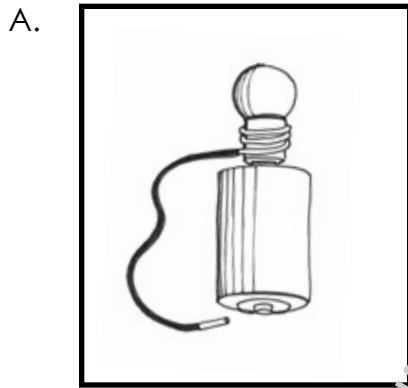
How much was the postage to ship back the broken window?

- A. The postage was less because it now weighed less.
- B. The postage was less because it now weighed more.
- C. The postage was more because it now weighed more.
- D. The postage was the same because it weighed the same.

12. Some materials allow electricity to easily flow through them. Other materials do not allow electricity to flow through them.

Identify the terms used to describe these two types of materials.
Provide an example of each.
(4 points)

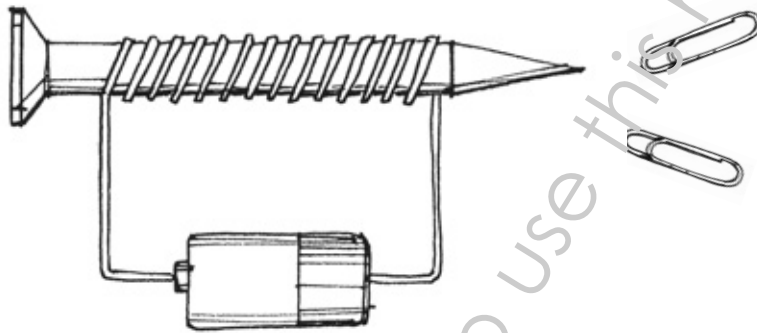
13. Which electric circuit produces light?



Science

14. Which material is the best conductor of electricity?
- A. metal spoon
 - B. plastic fork
 - C. rubber ball
 - D. wooden spool
15. Which of the following would NOT cause temperature to increase?
- A. burning wood
 - B. closing an electrical circuit
 - C. opening an electrical circuit
 - D. rubbing two materials together

16. Chris made an electromagnet by wrapping copper wire around an iron nail. He then connected one end of the wire to a battery. He wanted to see if the electromagnet could attract paper clips. The illustration below shows the electromagnet and two metal paper clips.



Which statement describes the result of Chris's experiment.

- A. The electromagnet repelled the paper clips because they are metal.
 - B. The electromagnet repelled the paper clips because they are not metal.
 - C. The electromagnet attracted the paper clips because he completed the electrical circuit.
 - D. The electromagnet did not attract the paper clips because he did not complete the electrical circuit.
17. When you place a metal pot filled with soup on a hot stove, heat energy transfers to the pot. Many pots have a wooden handle.

Identify the property of wood that makes it useful as a handle for a pot. Explain why. (2 points)

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Answer Document

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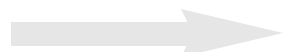
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1. Ⓐ Ⓑ Ⓒ Ⓓ

2. Ⓐ Ⓑ Ⓒ Ⓓ

3. Write your response to question 3 in the space below.



4. (A) (B) (C) (D)

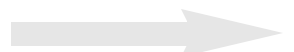
5. (A) (B) (C) (D)

6. (A) (B) (C) (D)

7. (A) (B) (C) (D)

8. (A) (B) (C) (D)

9. Write your response to question 9 in the space below.

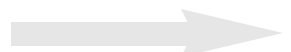


Science

10. (A) (B) (C) (D)

11. (A) (B) (C) (D)

12. Write your response to question 12 in the space below.



13. (A) (B) (C) (D)

14. (A) (B) (C) (D)

15. (A) (B) (C) (D)

16. (A) (B) (C) (D)

17. Write your response to question 17 in the space below.



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Answer Key and Content Statements Covered

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Question 1 • Grade 4: Earth and Space Science
Multiple Choice

Content Statement: Earth's surface has specific characteristics and landforms that can be identified.

Correct Response: A. glacial moraines

Question 2 • Grade 4: Earth and Space Science
Multiple Choice

Content Statement: Earth's surface has specific characteristics and landforms that can be identified.

Correct Response: D. water

Question 3 • Grade 4: Earth and Space Science
Short Answer

Content Statement: The surface of Earth changes due to weathering.

Scoring Guidelines

| Points | Student Response |
|--------|---|
| 2 pts | Answer correctly identifies one cause of slow weathering and explains how it changes rock. Exemplar Responses Wind is a cause of slow weathering. Wind can wear down rock on the top of a mountain, slowly breaking the rock down. -OR- Water can cause rock to weather. Waves in the ocean can slowly break rock apart creating sand. |
| 1 pt | Answer correctly identifies a cause of slow weathering but does not explain how it changes the surface of Earth. |
| 0 pts | Neither correctly identifies or explains; leaves blank or states, "I don't know." |



Question 4 • Grade 4: Earth and Space Science

Content Statement: The surface of Earth changes due to weathering.

Correct Response: C. evaporation

Question 5 • Grade 4: Earth and Space Science

Content Statement: The surface of Earth changes due to erosion and deposition.

Correct Response: B. deposition

Question 6 • Grade 4: Earth and Space Science

Content Statement: The surface of Earth changes due to weathering.

Correct Response: C. Glaciers did not cover the southwestern part of Ohio.

Question 7 • Grade 4: Life Science

Content Statement: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.

Correct Response: B. a drought drying up wetlands



Question 8 • Grade 4: Life Science

Content Statement: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.

Correct Response: B. adding nutrients to the air

Question 9 • Grade 4: Life Science

Short Answer

Content Statement: Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.

Scoring Guidelines

| Points | Student Response |
|--------|---|
| 2 pts | Answer correctly identifies one human cause of an ecosystem change and explains what can happen to living things as a result of the change. Exemplar Responses Humans can create air or water pollution. Pollution can cause an ecosystem to change. Pollution can contaminate the air or water causing illness to plants and animals. The living things will have to find a new place to live or they will die. |
| 1 pt | Answer correctly identifies a human cause of an ecosystem change but does not explain the effect of the change. |
| 0 pts | Neither correctly identifies or explains; leaves blank or states, "I don't know." |



Question 10 • Grade 4: Life Science
Multiple Choice

Content Statement: Fossils can be compared to one another and to present day organisms according to their similarities and differences.

Correct Response: C. Her neighborhood was once covered by a sea.

Question 11 • Grade 4: Physical Science
Multiple Choice

Content Statement: The total amount of matter is conserved when it undergoes a change.

Correct Response: D. The postage was the same because it weighed the same.



Question 12 • Grade 4: Physical Science
Extended Response

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

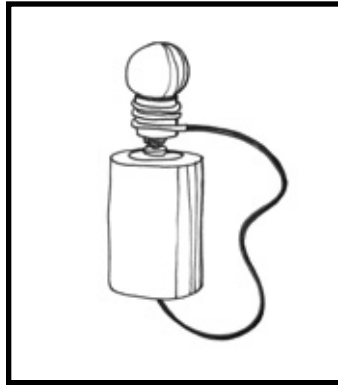
Scoring Guidelines

| Points | Student Response |
|--------|--|
| 4 pts | The answer identifies a conductor and insulator and provides an example of each. Exemplar Response Conductors are materials that allow electricity to flow through them. Cooper is an example. Insulators are materials that do not allow electricity to flow through them. Rubber is an example. |
| 3 pts | The answer identifies the term conductor and insulator but only accurately provides an example for one. |
| 2 pts | The answer identifies the terms conductor and insulator but does not give an example of either -OR- only identifies one with an example. |
| 1 pt | The answer identifies only one term with no example. |
| 0 pts | Neither correctly identifies or explains an energy conversion; leaves blank or states, "I don't know." |

Question 13 • Grade 4: Physical Science
Multiple Choice

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

Correct Response: D.



Question 14 • Grade 4: Physical Science
Multiple Choice

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

Correct Response: A. metal spoon

Question 15 • Grade 4: Physical Science
Multiple Choice

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

Correct Response: C. opening an electrical circuit



Question 16 • Grade 4: Physical Science
Multiple Choice

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

Correct Response: C. The electromagnet attracted the paper clips because he completed the electrical circuit.

Question 17 • Grade 4: Physical Science
Short Answer

Content Statement: Heat results when substances burn, when certain kinds of materials rub against each other, and when electricity flows through wires.

Scoring Guidelines

| Points | Student Response |
|--------|---|
| 2 pts | Answer correctly identifies wood as an insulator and explains that heat does not easily pass through insulators. Exemplar Responses Wood is an insulator. Insulators do not allow heat to easily pass through them. The wood handle protects you from touching a hot pan and burning yourself. |
| 1 pt | Answer correctly identifies wood as an insulator but does not explain that heat does not pass easily through wood -OR- explains the lack of heat transfer but does not identify wood as an insulator. |
| 0 pts | Neither correctly identifies or explains; leaves blank or states, "I don't know." |



Answer Key—Grade 4 Posttest

Multiple choice answers are 1 point

1. A B C D
2. A B C D
3. Short Answer (2 Points)
4. A B C D
5. A B C D
6. A B C D
7. A B C D
8. A B C D
9. Short Answer (2 Points)
10. A B C D
11. A B C D
12. Extended Response (4 points)
13. A B C D
14. A B C D
15. A B C D
16. A B C D
17. Short Answer (2 Points)

