

Student Name: \_\_\_\_\_

# Pretest

## Grade 4 • Science



## Student Test Booklet

**FOCUS**curriculum

Curriculum materials for **your** content standards

*101 Manor Drive, Hudson, OH 44236*

*866-315-7880 • [www.focuscurriculum.com](http://www.focuscurriculum.com)*

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**Directions:**

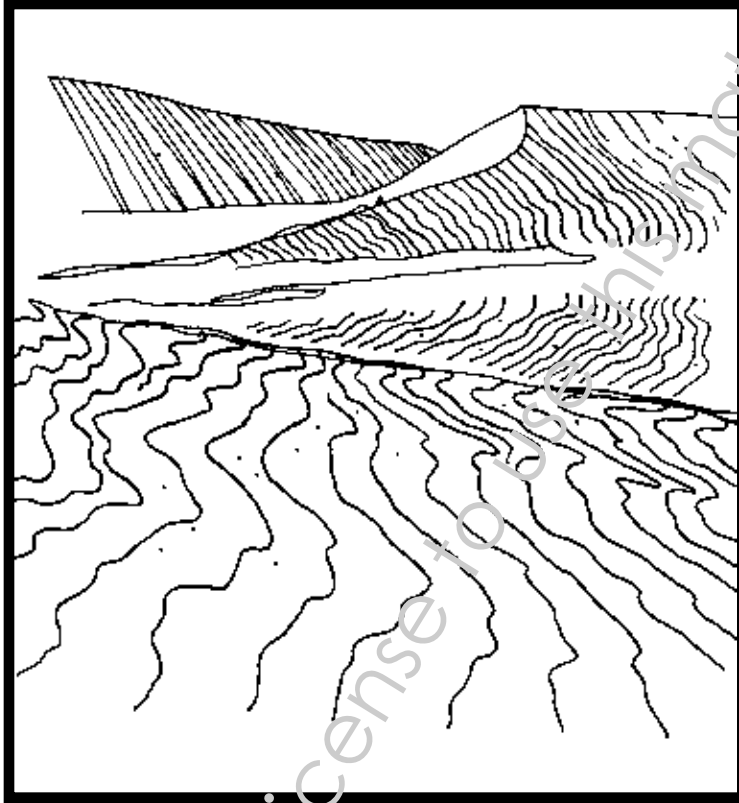
Today you will be taking a test about science topics. It will help your teacher determine what you already know about these topics. Three different types of questions appear on this test—multiple choice, short answer, and extended response.

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. Identify one cause of weathering and explain how it weathers rock. (2 points)
4. Weathering can occur at different rates. Which statement below describes slow weathering?
- A. an avalanche on a hillside
  - B. a volcano erupting under the sea
  - C. a glacier moving across land
  - D. an earthquake cracking the surface of Earth

## Science

5. Sometimes rock, soil, and sediment are transported to a different location.

What is this movement called?

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

6. Ohio's land features include deep lakes and canyons carved out of rock.

What caused these land features in Ohio?

- A. earthquakes
- B. volcanoes
- C. glaciers
- D. avalanches

7. A forest fire can destroy thousands of acres of habitats.

What is likely to happen to the animals living in a habitat after a forest fire?

- A. They will move to another place.
- B. They will die and become extinct.
- C. They will begin to eat different food.
- D. They will make their own food.

8. The climate and land structure has changed several times in Ohio's history.

Which statement does NOT describe Ohio in the past?

- A. Ohio was once an inland sea.
- B. Ohio was once a hot, dry desert.
- C. Ohio was once covered by a glacier.
- D. Ohio was a warm, swampy area.

9. An ecosystem is a natural place where many organisms live together. Ecosystems can change.

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

## Science

10. Mastodons once lived in Ohio, however these giant creatures are now extinct.

How do we know that mastodons once lived here?

- A. The animals that mastodons ate are still living in Ohio today.
  - B. Fossils of mastodon skeletons have been found in Ohio.
  - C. Mastodons lived in cold weather and Ohio was once very cold.
  - D. There are written records from people who lived here during that time.
11. Kathy went outside in the winter and made a snowball. She took the snowball inside, placed it in a pan and weighed it. The snowball and pan weighed 2 pounds and 3 ounces. Several hours later, she noticed that the snowball melted and only liquid water was in the pan. She weighed both again.

How did the weight change after the snowball melted?

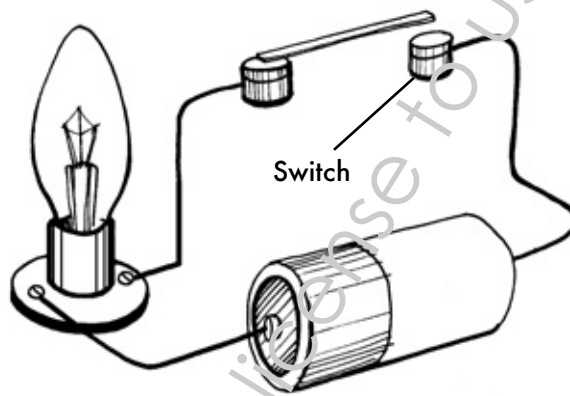
- A. The weight was the same.
- B. The weight was slightly less.
- C. The weight was slightly more.
- D. The weight was much more.



12. Electricity flowing through an electrical circuit can be changed into other forms of energy.

In your Answer Document, identify two forms of energy that can be converted from electricity. Explain how each one is converted.  
(4 points)

13. The diagram below shows an electrical circuit.

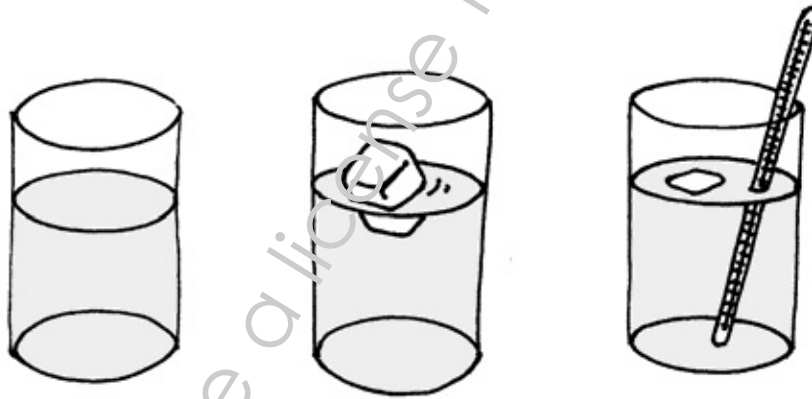


What must occur for the light bulb to light up?

- A. The switch must be closed.
- B. There must be a second battery.
- C. The switch must be replaced with a wire.
- D. There must be a parallel circuit.

## Science

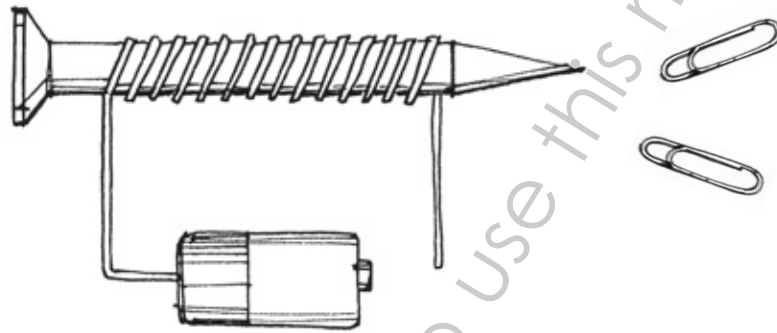
14. Which material is the best conductor of electricity?
- A. plastic
  - B. copper
  - C. rubber
  - D. wood
15. A student measures and records the temperature of a glass of water. She then places an ice cube in the glass. The ice cube melts. She then measures and records the temperature of the water again.



Why does the ice cube melt?

- A. Cold flows out of the ice cube and into the water.
- B. The water transfers its heat energy to the ice.
- C. The ice transfers its heat energy to the water.
- D. The water transfers cold through the thermometer.

16. Emily made an electromagnet by wrapping copper wire around an iron nail. She then connected one end of the wire to a battery. She 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 Emily's experiment.

- A. The electromagnet attracted the paper clips because they are metal.
  - B. The electromagnet repelled the clips because they are not metal.
  - C. The electromagnet attracted the paper clips because she completed the electrical circuit.
  - D. The electromagnet did not attract the paper clips because she 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. The temperature of the pot and food increases.

In your answer document, identify the property of metal that makes it good for heating soup. Then explain how the food is able to become warm. (2 points)

Student Name: \_\_\_\_\_

# Pretest

## Grade 4 • Science



## Answer Document

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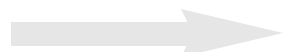
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## Science

1.   Ⓐ   Ⓑ   Ⓒ   Ⓓ

2.   Ⓐ   Ⓑ   Ⓒ   Ⓓ

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



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

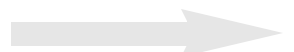
5. (A) (B) (C) (D)

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.

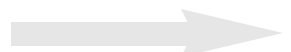


## Science

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.





# Pretest

Grade 4 • Science



## 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: B. sand dunes

**Question 2** • Grade 4: Earth and Space Sciences  
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 weathering and explains how it changes rock.  <b>Exemplar Response</b> Water is a cause of weathering. Flowing water can wear down rock along a river bank, slowly breaking the rock down. -OR- Freezing and thawing can cause rock to weather. When rock freezes it expands. This can cause rock to crack into smaller pieces.
1 pt	Answer correctly identifies a cause of 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. a glacier moving across land

**Question 5** • Grade 4: Earth and Space Science

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

Correct Response: A. erosion

**Question 6** • Grade 4: Earth and Space Science

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

Correct Response: C. glaciers

**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: A. They will move to another place.



**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. Ohio was once a hot, dry desert.

**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	<p>Answer correctly identifies one cause of an ecosystem change and explains what can happen to living things as a result of the change.</p> <p><b>Exemplar Response</b> Pollution can cause an ecosystem to change. Pollution can contaminate the water causing illness to plants and animals. The living things will have to find a new place to live or they will die.</p>
1 pt	<p>Answer correctly identifies a cause of an ecosystem change but does not explain the effect of the change.</p>
0 pts	<p>Neither correctly identifies or explains; leaves blank or states, "I don't know."</p>



**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: B. Fossils of mastodon skeletons have been found in Ohio.

**Question 11** • Grade 4: Physical Science  
Multiple Choice

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

Correct Response: A. The weight was 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	<p>The answer identifies two forms of energy that can be converted from electricity and explains how each one is converted.</p> <p><b>Exemplar Response</b> Electricity can be converted to heat energy. A hair dryer is an example. Electricity flows through a coiled wire. The electricity causes the wire to become hot. Electricity can be converted to magnetic energy. When electricity passes through a coiled wire wrapped around an iron bar, a magnetic field is created. The iron bar can attract metal like a magnet.</p>
3 pts	<p>The answer identifies two ways electricity can be converted to another form of energy, but only correctly explains one way energy is converted.</p>
2 pts	<p>The answer identifies two ways electricity can be converted to other forms of energy, but does not explain how the energy is converted -OR- only identifies and explains one way.</p>
1 pt	<p>The answer identifies one conversion correctly but does not explain the conversion.</p>
0 pts	<p>Neither correctly identifies or explains an energy conversion; leaves blank or states, "I don't know."</p>



**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: A. The switch must be closed.

**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: B. copper.

**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: B. The water transfers its heat energy to the ice.



**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: D. The electromagnet did not attract the paper clips because she did not complete 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	<p>Answer correctly identifies conductivity as the property of metal and explains how heat transfers from the stove to the pan and then to the soup.</p> <p><b>Exemplar Response</b> Metal is a good conductor of heat. It easily allows heat to pass through it. Heat is conducted and transferred from the hot stove to the metal pan. The heat is then transferred again from the metal pan to the soup because the water in the soup is also a good conductor of heat.</p>
1 pt	<p>Answer correctly identifies metal as a conductor but does not explain the heat transfer -OR- explains the heat transfer but does not identify metal as a conductor.</p>
0 pts	<p>Neither correctly identifies or explains; leaves blank or states, "I don't know."</p>





## Answer Key—Grade 4 Pretest

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)



**Student Record—Grade 4 Pretest**

Student Name	Total Points	Student Score	Notes
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Limited = 0-6; Basic = 7-11; Proficient = 12-15; Accelerated = 16-19; Advanced = 20-23  
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points