Posttest

Grade 4 • Science

Student Test Booklet

FOCUScurriculum

Publishing to Indiana's Content Standards

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Grade 4 Science Posttest

Indiana's Academic Standards for Science Tested with Answers

Item	Standard	Answer
1	4.1.1	heat
	4.1.1	metal pan
	4.1.2	The heat energy from the stove is being transfered to the metal pan which is transfering the heat to the ice cube.
2	4.1.3	D
3	4.1.5	Electricity can be turned into light energy through a light bulb.
		Electricity can be turned into heat through a furnace to heat a home.
		Electricity can be turned into sound to play music on an MP3 player.
4	4.1.4	insulator
5	4.2.1	Weathering from wind, water, and ice break down rocks over time. The tiny particles of rock collect to form soil.
6	4.2.2	Glaciers move and push a huge pile of rock and dirt in front of it. When the glacier stops moving, it melts and starts moving backwards. As the glacier retreats, the rock and dirt is left behind.
7	4.2.3	When a volcano erupts, hot rocks, lava, ash, and mud fly up from the top of the mountain and fall to surrounding areas. The trees and buildings for miles around can be knocked down.
8	4.2.4	Answers include minerals and fossil fuels.
9	4.2.5	B
10	4.2.6	Answers will vary.
11	4.3.1	C
12	4.3.2	C
13	4.3.3	D
14	4.3.4	B
15	4.4.1	friction
16	4.4.2	stopwatch and measuring tape
17	4.4.3	The larger marble will have a greater effect because it has more mass.
18	4.4.4	Robin should Identify possible solutions to the problem
	4.4.4	Robin should design an experiment to test his possible solutions.
	4.4.4	Robin should measure and record the speed of the skateboard before she tries a solution. Then measure and record the speed after the change.
	4.4.4	Robin should reevaluate and try another solution.

Print Pages 4 through 12 for the Students Test Booklet.

GRADE 4

4

SCIENCE POSTTEST

Student Name _____

School Name _____

Print your name and the name of your school on the lines above.

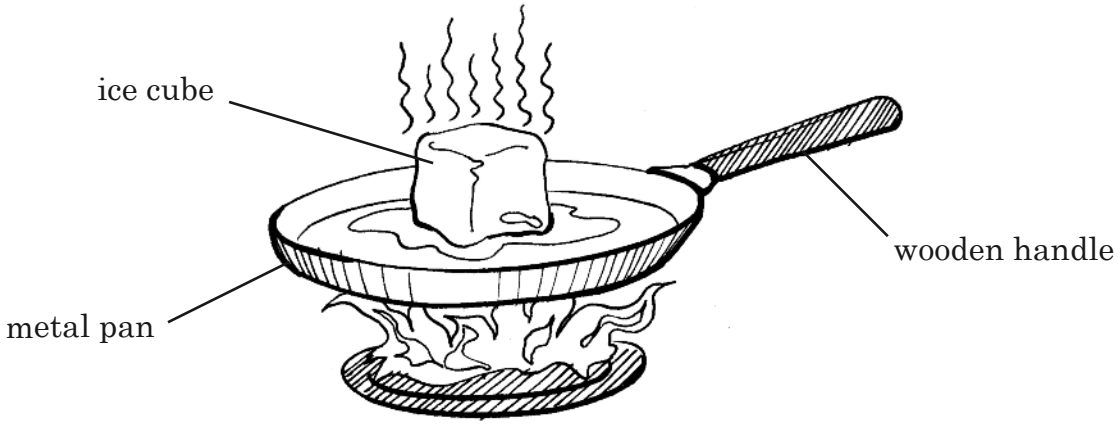
This test contains 6 multiple-choice questions. Record your answers to these questions on the separate answer sheet. Use only a No. 2 pencil on your answer sheet.

This test consists of 12 extended response items. Write your answers to these on the lines provided in the test booklet.

You will have as much time as you need to answer the questions.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

1. The illustration below shows an ice cube melting in a pan over a stove burner.



What is the stove burner a source of?

_____

Which of the three parts labeled in the diagram heated up first after the burner was turned on?

_____

Explain why the ice cube is melting. 4.1.2

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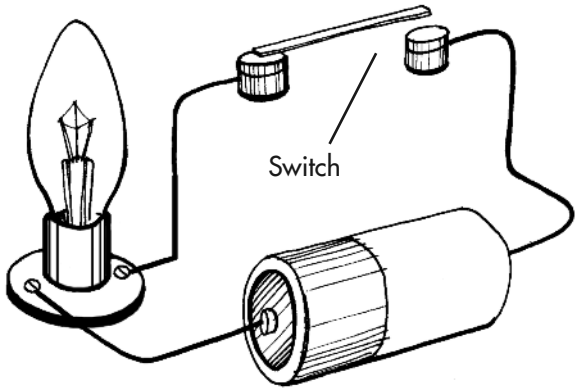

2. The diagram above shows an electrical circuit. The open switch

A. recharges the battery.
B. turns the light bulb on.
C. conducts electricity.
D. stops the flow of electricity.

3. Energy from wind is able to turn a windmill which can generate electricity. This electricity can then be transformed into other forms of energy such as heat, light, and sound. Describe how electricity can be changed into two of these forms of energy and explain how these forms of energy can be used.

4. Rubber is often used to cover copper in electrical wires. Rubber prevents the flow of electricity. Because of this, what is rubber considered?

_____

5. Soil is created from a process that occurs over a long period of time. Explain the process that forms soil. 4.2.1

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_____

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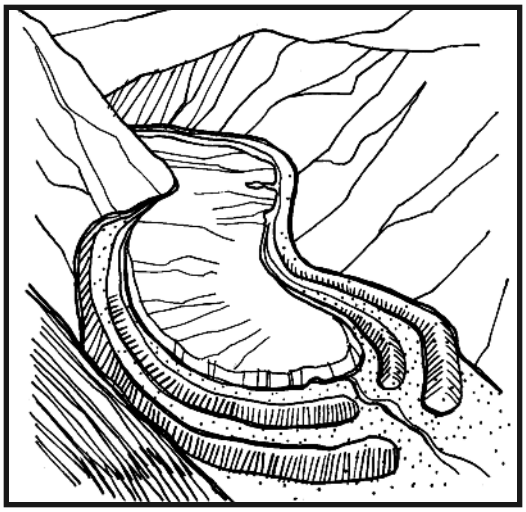
_____

6. Below is an illustration of a glacial moraine. Explain how these mounds formed.



_____

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_____

7. Explain how a volcano suddenly changes the shape of land.

_____

_____

_____

_____

_____

8. Earth provides us with many natural resources. Identify one natural resource that is non-renewable.

_____

9. Which of the following is an example of how people extend the use of natural resources?

A. Adding fertilizer to grass lawns.
B. Recycling glass and paper.
C. Building electric power plants.
D. Drilling for more oil in the ocean.

10. Describe ONE way that humans have changed the natural environment. Explain if this change was good or bad for the environment.

_____

_____

_____

_____

_____

_____

11. Woodpeckers have long, pointed beaks which allow them to reach insects under tree bark for food. The offspring of woodpeckers are likely to have

A. short, curved beaks.
B. long, curved beaks.
C. long, pointed beaks.
D. short, pointed beaks.

12. Which change would most likely help an animal survive the winter in Indiana?

A. shivering
B. losing weight
C. growing thicker fur
D. breathing more quickly

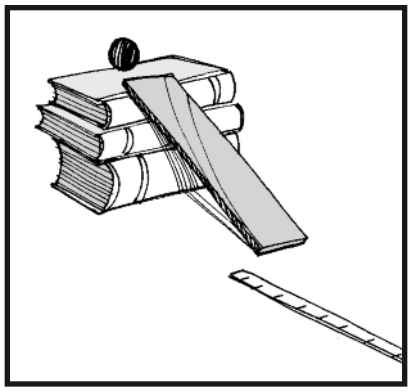
13. An environmental condition that causes some animals to hibernate is

A. lack of space
B. loss of habitat
C. increased number of predators
D. change in season

14. If people cut down the forest and animals can no longer find enough food to eat, they will most likely

A. become extinct
B. move to another place
C. begin to eat different food
D. make their own food

15. The illustration below shows a ball about to roll down an inclined plane onto a table.



Identify the force that will slow and stop the ball as it rolls along the table.

_____

16. What are TWO tools you would use to determine the speed of a moving object?

_____

_____

17. A large, rolling marble collides with a small rolling marble. Which marble will have a greater affect on the other? Explain why.

_____

_____

18. Robin wants to teach her younger brother how to ride a skateboard. However, her brother falls of the skateboard because it moves too fast. She is trying to determine a way to make the skateboard move slower. What would be a good first step to help Robin solve the problem?

_____

_____

What should Robin do next?

_____

_____

How could Robin determine if the skateboard was slower than before?

_____

_____

Robin tried one approach to making the skateboard go slower, but it did not work. What should she do next?

_____

_____

Answer Sheet

1. Extended Response
2. Ⓐ Ⓑ Ⓒ Ⓓ
3. Extended Response
4. Extended Response

5. Extended Response
6. Extended Response
7. Extended Response
8. Extended Response

9. Ⓐ Ⓑ Ⓒ Ⓓ
10. Extended Response
11. Ⓐ Ⓑ Ⓒ Ⓓ
12. Ⓐ Ⓑ Ⓒ Ⓓ

13. Ⓐ Ⓑ Ⓒ Ⓓ
14. Ⓐ Ⓑ Ⓒ Ⓓ
15. Extended Response
16. Extended Response
17. Extended Response
18. Extended Response