

Student Name: _____

Ohio Achievement Tests



Science

Student Test Booklet

Half-Length Practice Tests

The Ohio Department of Education does not discriminate on the basis of race, color, national origin, sex, religion, age, or disability in employment or the provision of services.

Directions:

Today you will be taking the Ohio Grade 5 Science Practice Test. Three different types of questions appear on this test: multiple choice, short answer and extended response.

There are several important things to remember:

1. Read each question carefully. Think about what is being asked. Look carefully at graphs or diagrams because they will help you understand the question.
2. For short-answer and extended-response questions, use a pencil to write your answers neatly and clearly in the space provided in the answer document. Any answers you write in the Student Test Booklet will not be scored.
3. Short-answer questions are worth two points. Extended-response questions are worth four points. Point values are printed near each question in your Student Test Booklet. The amount of space provided for your answers is the same for two- and four-point questions.
4. For multiple-choice questions, shade in the circle next to your choice in the answer document for the test question. Mark only one choice for each question. Darken completely the circles on the answer document. If you change an answer, make sure that you erase your old answer completely.
5. Do not spend too much time on one question. Go on to the next question and return to the question skipped after answering the remaining questions.
6. Check over your work when you are finished.

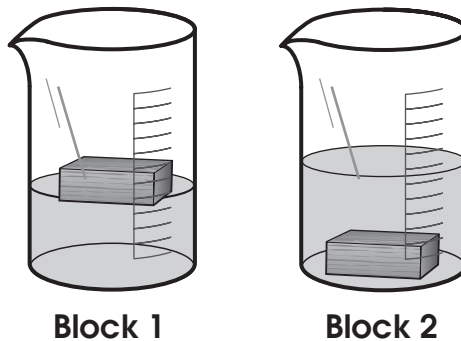
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1. It rained early in the morning. A student sees a puddle of water on the sidewalk when she travels to school. The water in the puddle is gone when she travels home.

What happened to the water in the puddle?

- A. It froze.
 - B. It melted.
 - C. It condensed.
 - D. It evaporated.
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2. Students have two blocks the same size. They drop each block into a beaker of water.

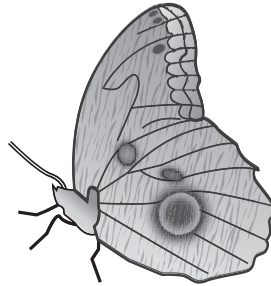


Why does block 1 float and block 2 sink?

- A. Block 1 is a different material than block 2.
- B. Block 1 absorbs more light than block 2.
- C. Block 2 repels more water than block 1.
- D. Block 2 weighs less than block 1.

Use the picture to answer question 3.

Owl Butterfly



3. The owl butterfly has patterns on its wings that look like large eyes.

How does this help the butterfly survive?

- A. It helps the butterfly fly faster.
- B. It helps the butterfly see better.
- C. It helps the butterfly scare enemies.
- D. It helps the butterfly absorb sunlight.

4. Butterflies get food from the flowers of a plant. They also lay their eggs on the leaves of the plant. As the caterpillars develop, they eat the leaves of the plant.

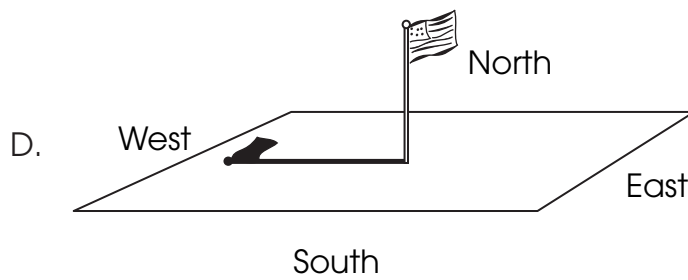
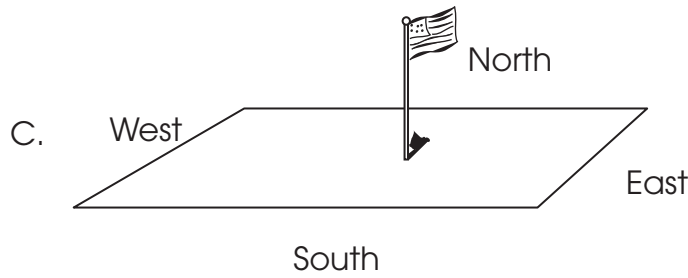
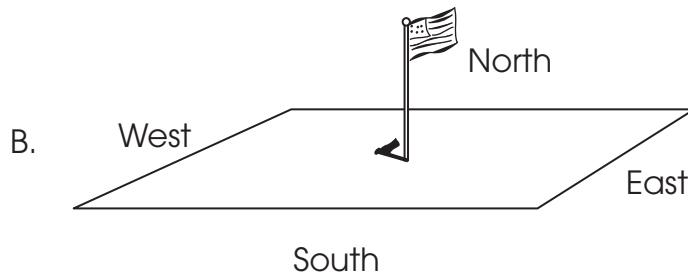
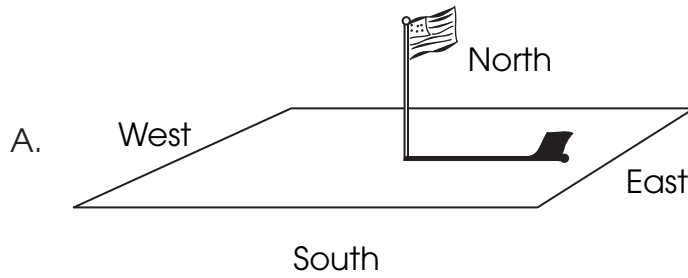
How does the plant benefit from butterflies?

- A. Butterflies help the plant grow larger flowers.
- B. Butterflies' eggs help the leaves to fall off the plant.
- C. Butterflies help pollinate flowers so that seeds can form.
- D. Butterflies help add nutrients to the nectar of the flowers.

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5. Which diagram shows the flagpole at 5:00 p.m. on a summer day?



6. People wear hats when outside in the winter.

How do hats help people stay warm?

- A. Hats stop thermal energy from leaving their heads.
 - B. Hats slow down the thermal energy leaving their heads.
 - C. Hats stop cold from entering their bodies through their heads.
 - D. Hats slow down cold from entering their bodies through their heads.
7. A student asks, "Does the size of the wheels affect how far toy cars roll on the floor?"

The student hypothesizes that toy cars with large wheels roll farther. The student wants to make sure that the force that starts the cars moving is always the same.

In your **Answer Document**, describe or draw how the student can set up an investigation of his hypothesis.

Then, describe or draw how the student can collect data to support his hypothesis. (2 points)

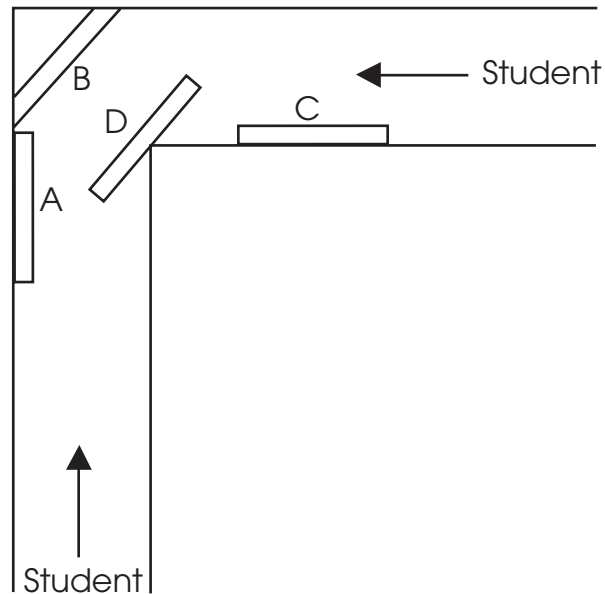


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8. Students bump into each other when they turn the corner in the hallway shown. They plan to place a mirror in the hall so that they can see one another before reaching the corner.

Overhead View of Hallway

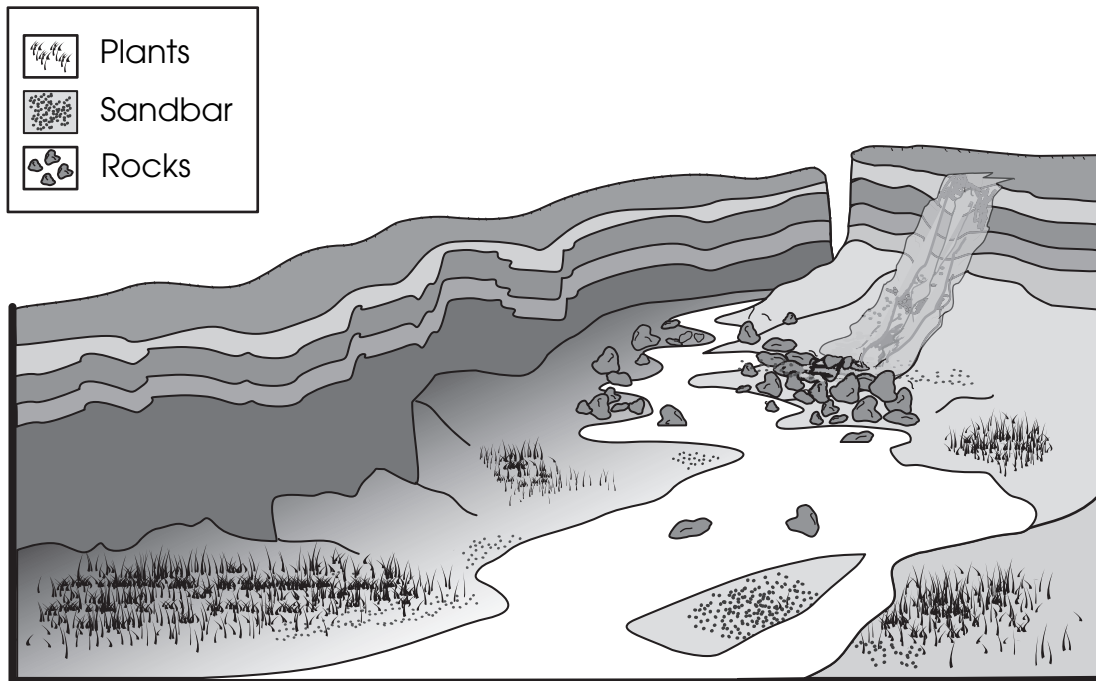


Where should they place the mirror?

- A. position A
- B. position B
- C. position C
- D. position D

Use the following picture to answer questions 9–11.

Canyon and River



9. Some students plan to learn more about the soil found near the river. Students collect soil samples from several spots.

Which tool would help them investigate the ability of the soil to hold water?

- A. thermometer
- B. rock hammer
- C. magnifying glass
- D. graduated cylinder

10. A geologist wrote many books on how rivers affect land. The geologist described detailed observations made over a long time.

Why do scientists record details about scientific observations?

- A. to prove that scientists work hard
 - B. to make science books more interesting
 - C. to make people want to read about science
 - D. to provide evidence that supports conclusions
11. The picture shows evidence that different natural processes shape the canyon over time.

In your **Answer Document**, identify one natural process that could have helped shape the canyon in the picture and describe evidence of this process. (2 points)







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12. A student sets up an investigation with two identical plants. He uses containers and soil that are the same. On day 1, he adds fertilizer to plant B. Each plant gets 10 mL of water every day.

The student provides the pictures of the plants that he took on day 1 and day 10.

	Day 1	Day 10
Plant A		
Plant B		

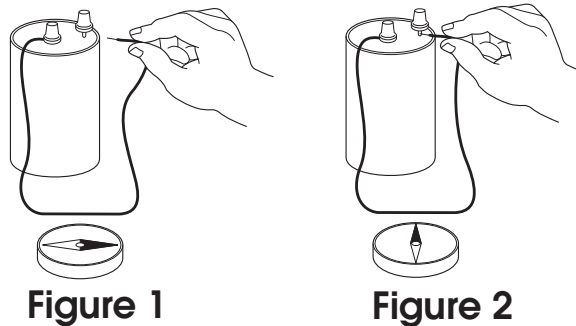
Which question does his investigation answer?

- A. How does water affect plant growth?
- B. How do soil types affect plant growth?
- C. How does fertilizer affect plant growth?
- D. How fast do different types of plants grow?

13. A student took three ice cubes from the freezer and put them in a glass of freshly squeezed orange juice. After 10 minutes, the student tried to take the ice cubes out of the juice. There was no ice left.

What type of change took place?

- A. physical, because the ice cubes evaporated
 - B. physical, because the ice cubes changed into liquid
 - C. chemical, because the ice cubes' energy became heat
 - D. chemical, because the ice cubes became a new substance
14. A copper wire with a plastic coating is placed near a compass, as shown in figure 1. When both ends of the wire are connected to a battery as shown in figure 2, the compass needle moves.



Why does the compass needle move?

- A. Electricity flows from the wire to the compass.
- B. Magnetic force flows from the battery to the wire.
- C. Thermal energy flows through the wire to the compass.
- D. Electricity flows through the wire, producing magnetic force.

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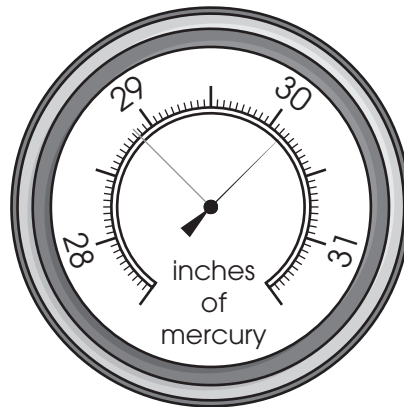
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15. Soil in an empty field blows away during a strong wind.

Which activity slows the erosion of this field over time?

- A. watering the field
- B. plowing the field in rows
- C. planting grass in the field
- D. building an electric fence

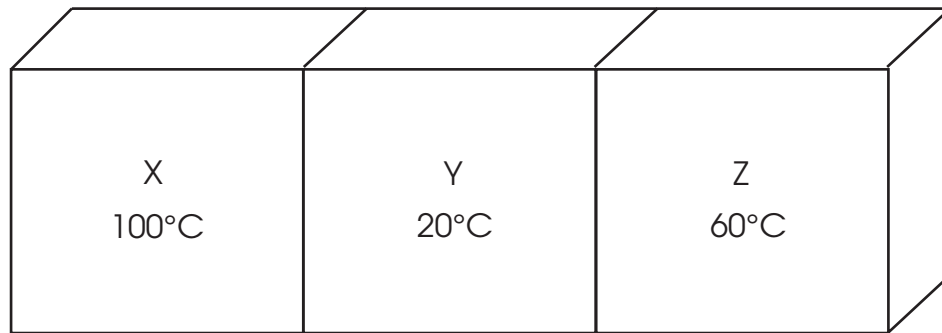
16. Measurements from a barometer help predict changes in weather.



What does a barometer measure?

- A. humidity
- B. air pressure
- C. wind speed
- D. temperature

17. Three identical blocks are pushed together. The starting temperature of each is shown.



Which traces the transfer of thermal energy among the blocks?

- A. $X \leftarrow Y \rightarrow Z$
 - B. $X \rightarrow Y \rightarrow Z$
 - C. $X \rightarrow Y \leftarrow Z$
 - D. $X \leftarrow Y \leftarrow Z$
18. In many ways, Earth is like other planets in the solar system.

In which way is Earth different?

- A. Earth has a moon.
- B. Earth orbits the sun.
- C. Earth has mountains.
- D. Earth has lots of water.

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19. A class observed grasshoppers, frogs, mice, snakes, and owls in a grassy field. They are all part of the same food web.

Students combined their observations of what the organisms eat in the table.

What Eats What

Organism	Food Eaten
grasshopper	grass
mouse	grass, grasshoppers
frog	grasshoppers
snake	grasshoppers, mice, frogs
owl	grasshoppers, mice, frogs, snakes

In your **Answer Document**, draw a food web with four of these organisms.

When drawing the food web, be sure to use the names of the four organisms and draw arrows to trace the energy flow among the organisms.
(4 points)

