



Washington Office of Superintendent of
PUBLIC INSTRUCTION

Washington Comprehensive Assessment of Science Paper-Pencil Booklet

Grade 5

Training Test

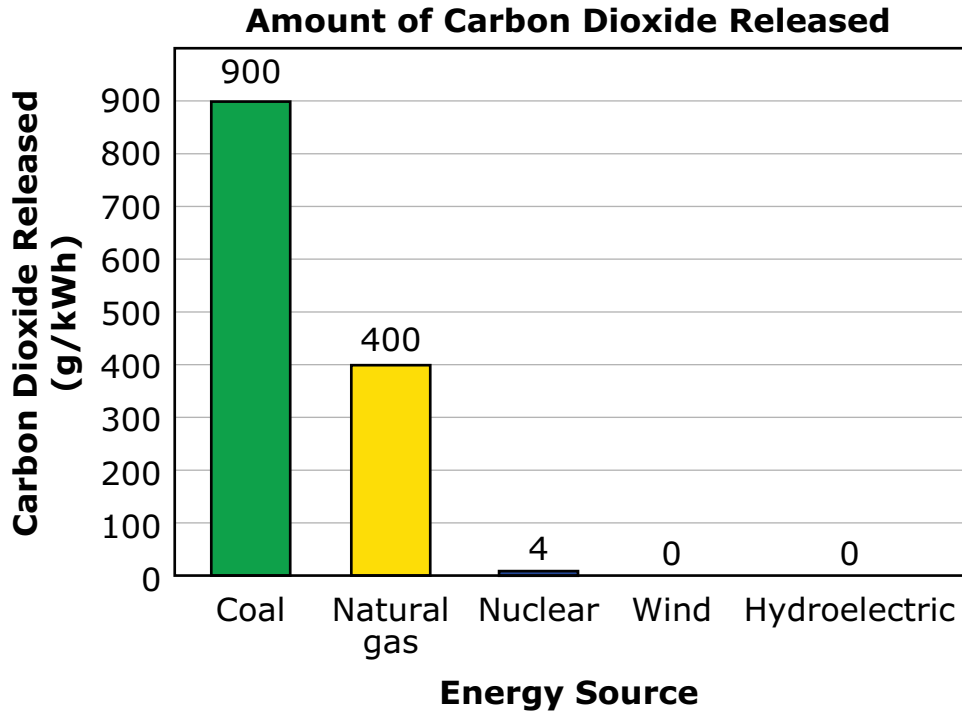
This training test paper-pencil booklet is intended to provide students who are administered paper-pencil versions of the Washington Comprehensive Assessment of Science (WCAS) with the opportunity to become familiar with the format of the assessment.

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Question 1

Many different energy sources are used to produce electricity. The Amount of Carbon Dioxide Released graph shows the amount of carbon dioxide gas released by some energy sources, in grams per kilowatt hour (g/kWh).



Which change in energy sources would cause the greatest **decrease** in the amount of carbon dioxide released?

- Ⓐ replacing natural gas with coal
- Ⓑ replacing nuclear with natural gas
- Ⓒ increasing wind and reducing nuclear
- Ⓓ increasing hydroelectric and reducing coal

Question 2

A student stood quietly in a field observing a rabbit eating grass. The student moved and stepped on a twig. The twig broke, which made a loud sound, and the rabbit ran away.

Fill in a circle for rows 2 through 4 to identify the order of statements that shows how a rabbit processes information after hearing a twig break. Fill in **one** circle for each row.

Order	Statement
1	The rabbit hears a twig break.
2	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C
3	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C
4	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C

Statement:

- A The rabbit acts.
- B The rabbit’s brain processes information.
- C The rabbit’s brain sends a message to act.

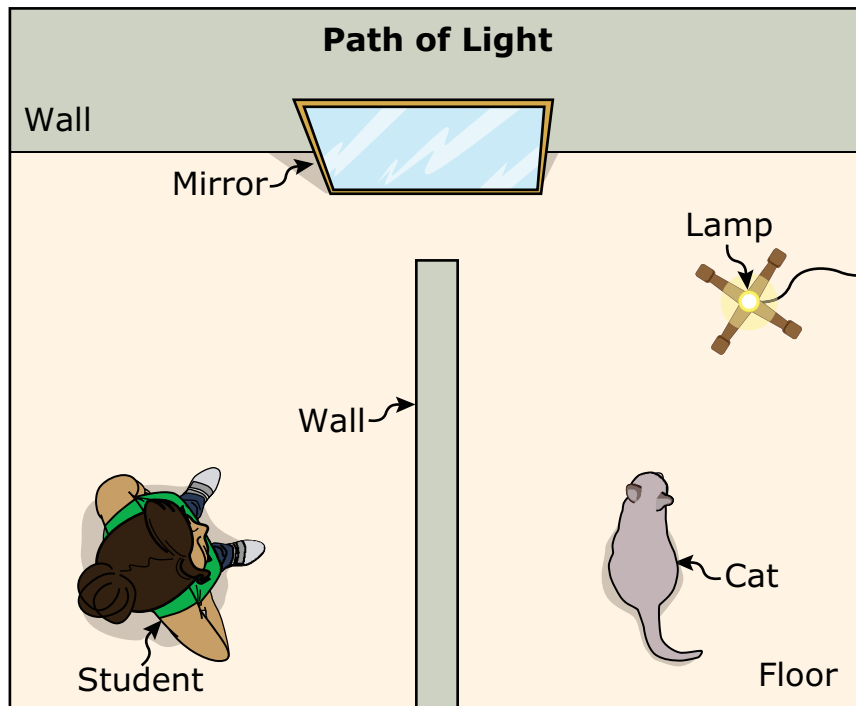
Question 3

The following question has two parts. First, answer part A. Then, answer part B.

Part A

A student uses a mirror to see a cat on the other side of a wall as shown in the Path of Light model. The model shows the view from above the wall.

Draw arrows to show the path of light when the student sees the cat.



Part B

Select **two** changes that could prevent the student from seeing the cat. Fill in **only** two circles.

- removing the wall
- removing all light from the room
- adding a second lamp behind the student
- switching the current mirror with a larger mirror
- hanging the mirror on the wall between the student and the cat

Question 4

The following question has two parts. First, answer part A. Then, answer part B.

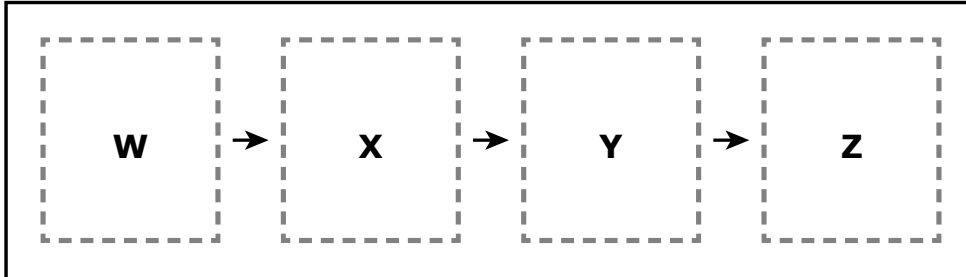
Part A





Goldfinches are small birds that eat the seeds of sunflower plants. Sunflower seeds provide goldfinches with the energy they need to survive.

The Energy Transfer Model can be used to show one way energy transfers to allow goldfinches to survive.

Fill in circles in the table to identify the object represented by each letter in the model. Fill in **one** circle for each object.

Energy Transfer Model



Object	W	X	Y	Z
 Goldfinch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 Sunflower seed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 Sun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
 Sunflower	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part B

Select **two** statements that are supported by the answer to part A. Fill in **only** two circles.

- Goldfinches use energy from the sun to make sunflower seeds.
- Energy transfers to goldfinches when goldfinches eat sunflower seeds.
- Sunflower plants use energy from the sun to produce sunflower seeds.
- Energy from sunflower plants transfers to the sun to make sunflower seeds.
- Energy from the sun transfers to sunflower plants when goldfinches eat sunflower seeds.

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Soggy Solutions—Section 1

Read the information and answer the questions.

There is a ditch next to a school. On one side of the ditch is a playfield. After a heavy rainfall, water from the ditch flows onto the playfield.

Students researched different ways to solve the problem of water flowing out of the ditch and onto the playfield after a heavy rainfall. The Student Solutions diagram shows the three solutions the students proposed, based on their research.

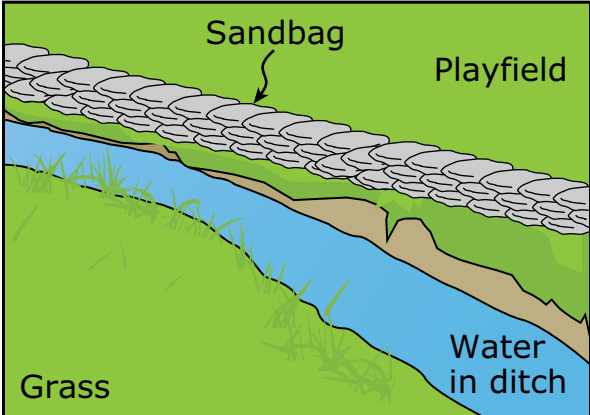
Student Solutions

Solution 1



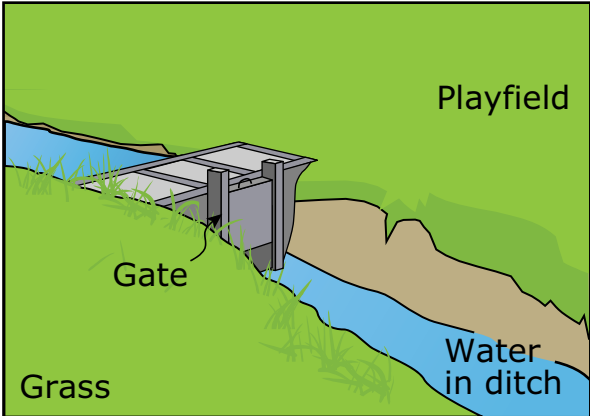
Dig the ditch deeper.

Solution 2



Place sandbags along the side of the ditch nearest the playfield.

Solution 3



Add a gate across the ditch before the ditch reaches the playfield.



Question 5

Which statement describes how a heavy rainfall causes the water from the ditch to flow onto the playfield?

- Ⓐ The playfield absorbs extra water during a heavy rainfall.
- Ⓑ The water flows through the ditch very fast during a heavy rainfall.
- Ⓒ The water volume is larger than the ditch can hold during a heavy rainfall.
- Ⓓ The grass near the ditch grows quickly because of the extra water during a heavy rainfall.

Question 6

Based on the Student Solutions diagram, fill in a circle to predict the effect of each solution. Fill in **one** circle for each row.

Effect	Solution 1: Dig the ditch deeper	Solution 2: Place sandbags	Solution 3: Add a gate
Provides more space in the ditch for water to flow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prevents water in the ditch from flowing past the playfield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blocks water flowing out of the ditch from reaching the playfield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Soggy Solutions—Section 2

The students used a stream table to model the ditch and the playfield. The stream table is shown in the Ditch and Playfield Model diagram.

Ditch and Playfield Model

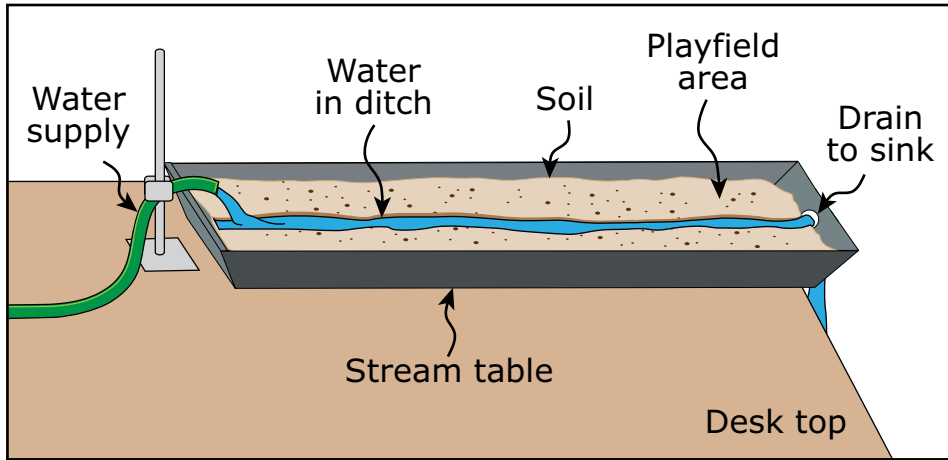


Diagram not to scale

The students used the stream table to test each solution. All three solutions kept water from flowing out of the ditch onto the playfield.

Question 7

Select **three** statements that describe reasons to use a stream table to test possible solutions during the design process. Fill in **only** three circles.

- The stream table conditions are exactly the same as the conditions in the real ditch.
- The stream table shows the time needed for water to soak in to the playground soil.
- The stream table allows all three solutions to be tested without waiting for heavy rainfall.
- The stream table tests all three solutions without affecting the environment around the ditch.
- The stream table allows students to collect data more quickly than testing with the real ditch.

Soggy Solutions—Section 3

The teacher gave the students three criteria for choosing one of the solutions.

- The cost of the solution should be low.
- The time to install the solution should be fast.
- The solution should last a long time.

The students made the Criteria Information table to compare how well each solution meets the criteria.

Criteria Information

Criteria	Solution		
	Dig a Ditch Deeper	Place Sandbags	Add a Gate
Cost	Medium	Low	High
Time to install	Slow	Fast	Medium
How long solution lasts	10 years	1 year	100 years

Question 8

None of the solutions meet all three criteria. However, the school principal asks the students to recommend one solution that could keep water from flowing onto the playfield.

Describe a solution that best meets the criteria to recommend to the school principal.

Choose **one** solution by filling in a circle:

- Dig a ditch deeper
- Place sandbags
- Add a gate

Describe how well **that** solution meets the three criteria for the solution.



Rock Pocket Mice

Read the information and answer the questions.

Rock pocket mice live in deserts. Some mice have light-colored fur and some have dark-colored fur. The mice dig into the desert soil to find seeds from grasses or shrubs to eat. Hawks are a predator of the mice. The Desert Ecosystem diagram shows some of the organisms that live in the desert ecosystem.

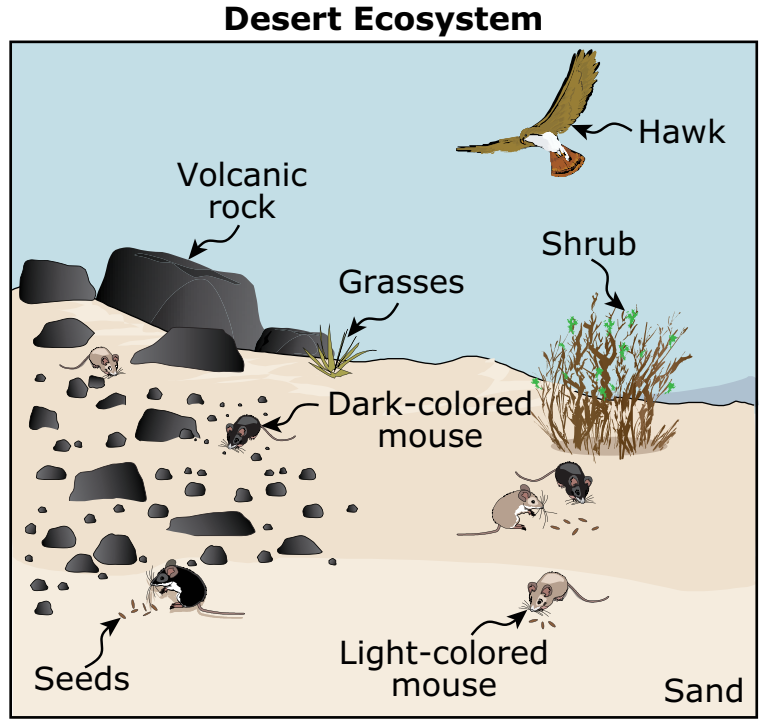
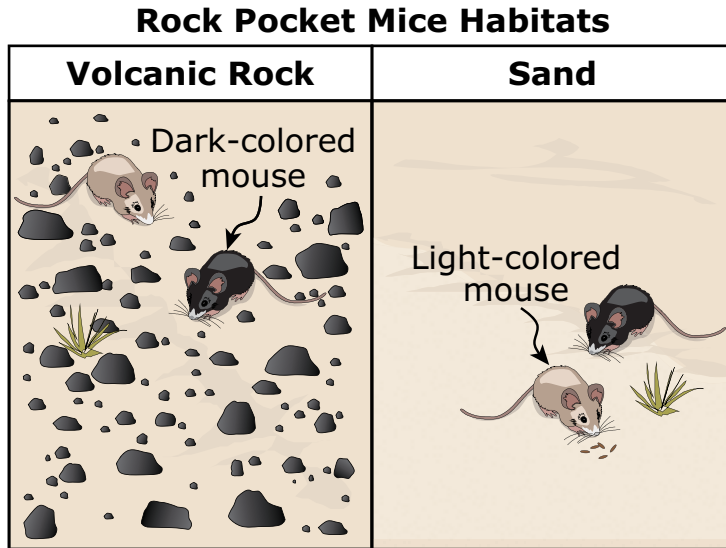


Diagram not to scale

The desert ecosystem was covered with light-colored sand until about 1000 years ago. Volcanic eruptions produced lava that spread and cooled, making large areas of black rock in some parts of the sandy desert.

Rock pocket mice can live in both desert habitats as shown in the Rock Pocket Mice Habitats diagram.



Scientists counted the number of light-colored mice and dark-colored mice in the two different desert habitats once a year for ten years. The Number of Mice in Desert Habitats table shows the average number of mice the scientists counted.

Number of Mice in Desert Habitats

Habitat	Fur Color	Average Number of Mice
Sand	Light	11
	Dark	1
Volcanic rock	Light	2
	Dark	10



Question 9

The Number of Mice in Desert Habitats table shows the average number of light-colored mice and dark-colored mice counted in each habitat during the ten years.

Describe what might have caused the difference in the numbers of light-colored mice and dark-colored mice in one of the habitats.

Choose **one** habitat by filling in a circle:

- Sand
- Volcanic rock

In your description, be sure to:

- Describe how the number of light-colored mice is different from the number of dark-colored mice in **that** habitat.
- Describe what might have caused the difference.

THIS QUESTION WILL BE LOCKED AFTER COMPLETION.
You must answer this question before moving on to the next question.
After you move to the next question, you cannot change your answer to this question.



Question 10

The following question has two parts. First, answer part A. Then, answer part B.

Part A

Which evidence from the Number of Mice in Desert Habitats table supports a claim that fur color affects the survival of mice?

- Ⓐ The number of mice in each habitat is the same.
- Ⓑ The number of mice in each habitat was counted for 10 years.
- Ⓒ The number of dark-colored mice is highest in the volcanic rock habitat.
- Ⓓ The number of dark-colored mice and light-colored mice in each habitat is an average.

Part B

Which statement provides a reason for the answer to part A?

- Ⓐ Light-colored mice in the volcanic rock habitat are eaten more often by predators than dark-colored mice are eaten.
- Ⓑ Dark-colored mice have a harder time finding food in the sand than light-colored mice have finding food.
- Ⓒ The mice dig holes in the sand to find seeds from grasses or shrubs to eat.
- Ⓓ The mice have the same number of babies in each of the habitats.

THIS QUESTION WILL BE LOCKED AFTER COMPLETION.

You must answer this question before moving on to the next question.
After you move to the next question, you cannot change your answer to this question.

Question 11

The following question has two parts. First, answer part A. Then, answer part B.

Part A

Predict what could happen to the number of mice if a windstorm causes all of the volcanic rock in the desert to be covered with sand for many years.

Choose a word or phrase in **each** box to complete the sentences.

The population of the light-colored mice would

- increase
- decrease
- remain the same

over time.

The population of the dark-colored mice would

- increase
- decrease
- remain the same

over time.

Part B

Which statement gives a reason for the answer to part A?

- Ⓐ More dark-colored mice will be able to find seeds in the sand.
- Ⓑ Both light-colored mice and dark-colored mice will need volcanic rock to survive.
- Ⓒ Both light-colored mice and dark-colored mice will dig in the sand to hide from predators.
- Ⓓ More light-colored mice will survive and reproduce because they cannot be seen well on sand.

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**You have reached the end
of the test.**

