

2023–2024 Gr6 Science Benchmark Unit 4

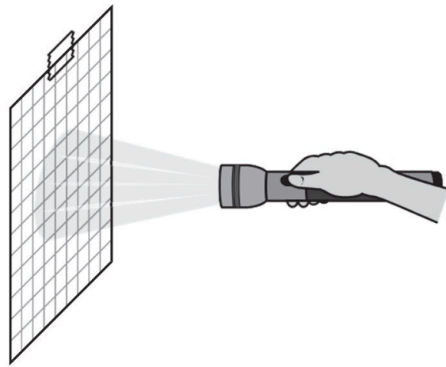
Question 1.

What provides the energy that powers the water cycle?

- A. the Sun
- B. Earth's rotation
- C. the Moon
- D. Earth's revolution

Question 2.

Julie and Devon are modeling how the Sun heats Earth. Julie hand a sheet of graph paper on a wall. Devon holds a flashlight and shines it in a straight line toward the graph paper while Julie dims the lights in the classroom. The diagram shows their model of the Sun heating Earth at the equator.

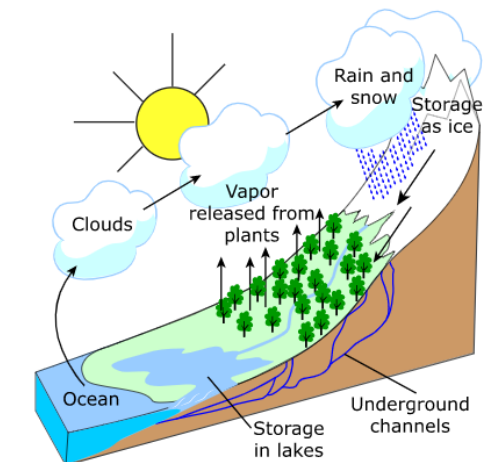


How can the students change their model to represent how the Sun heats Earth in places where the climate is cold all year?

- A. They can tilt the angle of the graph paper.
- B. The can use graph paper with larger squares.
- C. They can use a flashlight with a narrower beam of light.
- D. They can move the flashlight farther away from the graph paper.

Question 3.

Use the figure below to answer the question.

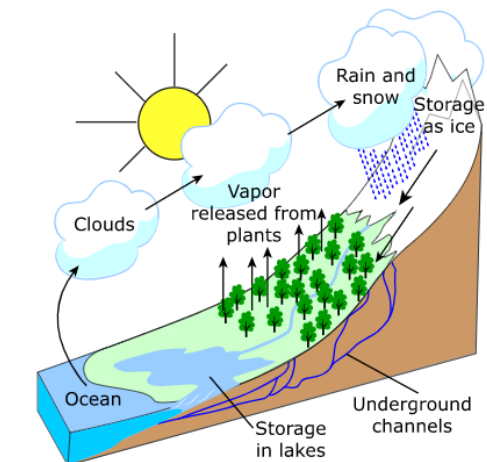


The figure shows that, at sea level, where air temperatures are the highest, _____ of water occurs.

- A. condensation
- B. evaporation
- C. runoff

Question 4.

Use the image below to answer the question.

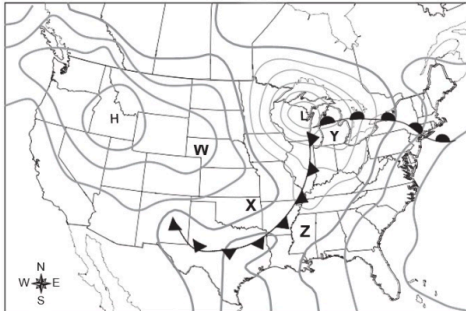


The figure shows that freezing temperatures can cause _____, which with gravity, often leads to water falling to the ground as solid precipitation.

- A. crystallization
- B. runoff
- C. transpiration
- D. Answer 4

Question 5.

This map shows four locations, W, X, Y, and Z, and the weather systems across the United States.



Key	
Warm front	Pressure isobar
Cold front	H High pressure
	L Low pressure

What prediction about the weather is accurate, based on the evidence in the map?

- A. Location W will have cooler temperatures, because a cold front is moving toward it.
- B. Location X will have cloudy skies, because it is positioned within a high-pressure system.
- C. Location Y will be stormy, because it is positioned where a cold front meets a warm front.
- D. Location Z will be calm, because it is far away from both the high- and low-pressure systems.

Question 6.

Which procedure should a student follow to model the role of gravity in the water cycle?

- A. Fill a cup halfway with water and place under a lamp for 24 hours
- B. Place a bowl of crushed ice on a counter at room temperature for 12 hours.
- C. Use an eye dropper to drop water onto a pile of soil.
- D. Put a bowl full of water on a table and allow a fan to blow across the surface of the water.

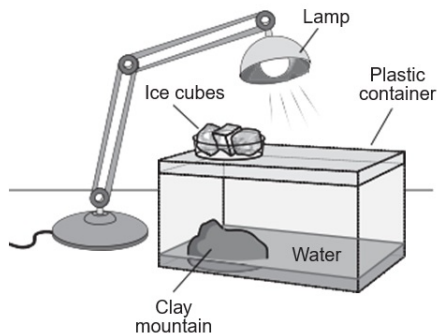
Question 7.

What is the cause of the Coriolis Effect?

- A. Earth's rotation
- B. the tilt of Earth's axis
- C. the distance of Earth from the Sun
- D. Earth's position in its orbit

Question 8.

Jackson creates the model shown in the diagram. He forms a clay mountain at the bottom of a plastic container and adds water to the container. Jackson then places a lid on top of the container and a petri dish filled with ice cubes on top of the lid. Next, he places a lamp over the container and turns it on.



a. What observation would indicate to Jackson that water is being cycled within the model?

b. Explain why the observation is evidence that water is being cycled within the model.

Question 9.

Describe the water cycle. Use the terms *gravity*, *energy from the Sun*, *evaporation*, *condensation*, *precipitation*, *runoff*, and *storage* in your explanation.

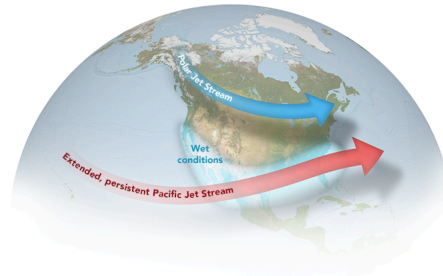
Question 10.

A meteorologist is tracking a weather system that is moving from the West Coast to the East Coast of the United States. She wants to make a prediction about what the weather will be a few days later along the East Coast. Which types of data could the meteorologist collect to help her make her prediction. Select ALL that apply.

- A. Barometric (air) pressure
- B. Wind speed
- C. Time of day
- D. Humidity
- E. Temperature

Question 11.

The weather at a particular place can change depending on how the wind systems work together. This illustration shows a particular set of conditions when two parts of the westerly winds blow across North America. In these conditions, most of the United States is warm and rainy.

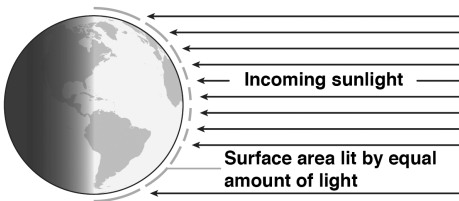


How would the weather in the United States likely change if the winds shifted so that both jet streams were much farther south?

- A. The weather would not likely change.
- B. The weather would become cooler and drier.
- C. The weather would become very hot and dry.
- D. The weather would be even warmer and more rainy.

Question 12.

Energy from sunlight, or solar radiation, is shown spreading over Earth in the diagram below. The lit side is Earth's day side. The dark side is Earth's night side. The arrows show the Sun's rays. The dashed lines show areas lit by equal amounts of sunlight.



How is Earth's surface heated by the Sun?

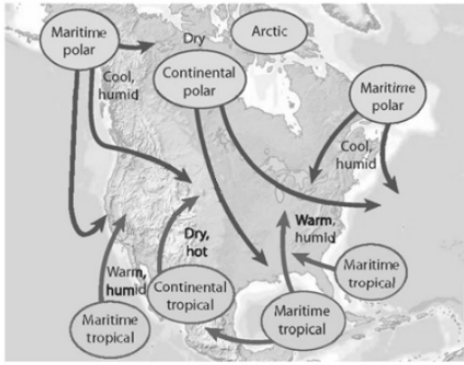
- A. evenly on both sides
- B. evenly on day side only
- C. unevenly on day side, with poles getting more heat
- D. unevenly on day side, with poles getting less heat

Question 13.

Explain why it is colder at the north and south poles than at the equator.

Question 14.

The map describes and shows the movement of air masses over North America. Which does not describe these air masses?



- A. They move from cooler areas to warmer areas.
- B. They are consistent in temperature, humidity, and pressure.
- C. They take on the characteristics of the Earth's surface below them as they form.
- D. They can affect the weather of an area when they meet.

Question 15.

What happens to the parts of food molecules as matter moves through an organism?

- A. The parts of food molecules are rearranged to make new molecules or release energy.
- B. The parts of the food molecules do not change.
- C. The food molecules are broken apart and expelled by the body.
- D. The parts of the food molecules disappear.

Question 16.

Which of the following best describes how food is used for energy in the human body?

- A. Food is broken down into small pieces by our teeth and stomach acid, and then transported to our cells to be used as energy.
- B. Our body stores food in our fat cells until we need it for energy.
- C. Our body absorbs food directly into our bloodstream, which then goes to our muscles to be used as energy.
- D. Food is transformed into new molecules through chemical reactions in our body, which are then used to support growth and release energy.