

Multiple Choice

1. Where is most water found on Earth?
 - A. in glaciers
 - B. in lakes
 - C. in rivers
 - D. in oceans

2. What source of energy evaporates the most water from Earth's surface?
 - A. volcanoes
 - B. the sun
 - C. lightning
 - D. wind

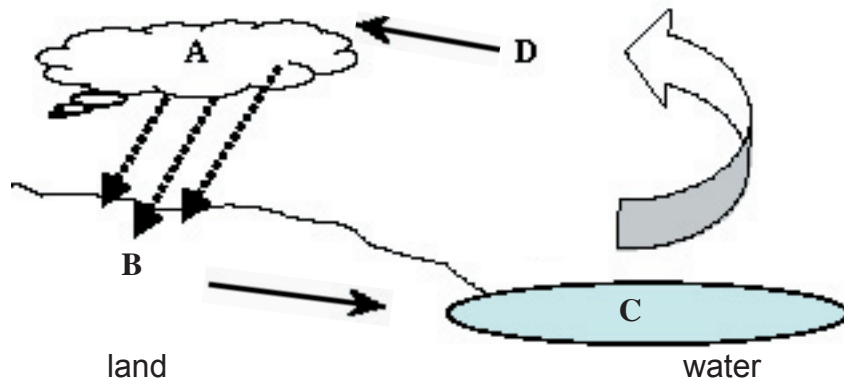
3. What is water doing when it is changed to water vapor?
 - A. evaporating
 - B. condensing
 - C. precipitating
 - D. freezing

4. What is water vapor doing when it changes to water?
 - A. evaporating
 - B. condensing
 - C. precipitating
 - D. freezing

5. What controls whether water is a gas, liquid or solid ice?
 - A. the shape or size of the cup
 - B. where it has been stored
 - C. if it is being used for irrigation
 - D. what its temperature is

6. Where does condensation occur in the water cycle?
- A. clouds forming
 - B. ocean water changing to water vapor
 - C. water flowing down a river
 - D. underground water soaking into rocks and soil
7. How can water vapor in the air return to Earth?
- A. it evaporates and is blown by the wind
 - B. it evaporates and forms clouds
 - C. it condenses then precipitates
 - D. it sticks to any warm surface it comes in contact with
8. Many Utah towns use water from wells for drinking. How does water get into wells?
- A. it has to be poured into them from water tanks
 - B. rain sinks down through the soil into them
 - C. it is pumped by large engines into the well
 - D. it evaporates from the inside of Earth
9. On which kind of day would you expect the most evaporation from the surface of a pond?
- A. cold, rainy
 - B. cold, sunny
 - C. warm, rainy
 - D. warm, sunny

Use this model of the water cycle to answer the next three questions.



10. Where is water evaporating into the air?

- A. from A to B
- B. from B to C
- C. from C to D
- D. from D to A

11. Where is water condensing?

- A. from A to B
- B. from B to C
- C. from C to D
- D. from D to A

12. Where is precipitation occurring?

- A. from A to B
- B. from B to C
- C. from C to D
- D. from D to A

13. What does heat from the sun cause liquid water to do?

- A. evaporate into the air
- B. travel deeper into the soil
- C. change into a solid
- D. fall from clouds as rain

14. Which type of rainfall would be most helpful to farmers?

- A. rainfall that evaporates quickly
- B. rainfall that runs off the land quickly
- C. rainfall that soaks into the soil slowly
- D. very little rainfall

Constructed Response

1. How does the sun affect water on Earth?

2. Explain why evaporation would occur more quickly in St. George during the summer than in Salt Lake during the winter.

3. How might water from an ocean end up on a field in Utah?

4. Give three examples of what can happen to a drop of water after it falls as rain on the ground.

5. List five ways water is stored as it passes through the water cycle.

Answers to Standard 1 Unit Test:

Multiple Choice

1. D
2. B
3. A
4. B
5. D
6. A
7. C
8. B
9. D
10. C
11. D
12. A
13. A
14. C

Constructed Response

1. *The sun evaporates water off of oceans, evaporated water condenses to form clouds and rain.*
2. *The temperature is different; it is hot in St. George in summer and cold in Salt Lake in winter.*
3. *Water evaporates from the ocean, is carried by wind as water vapor to Utah and condenses and falls as rain.*
4. *It may become runoff and flow to the nearest stream or river. It may soak into the soil until it gets to rock it cannot get through. It may find its way to the surface as a spring.*
5. *oceans, atmosphere, lakes, streams, snow, icecaps, groundwater, glaciers*

Performance Test 1

Title: Puddle Jumping

Activity Description

Students will observe water evaporating from a puddle and predict and record the evaporation rate during 30 minute intervals for several hours. Ideally this would be repeated at another time in the year at approximately the same time of day.

Materials Needed

water
cup container
chalk
paper and pencil
string
meter stick

Prior to Assessment

Students should have experience measuring in centimeters. Students should be grouped in teams of 4.

Time Needed for Assessment

30 minutes for initial directions and set-up of experiment. Students will then need 10 minutes during the 30 minute intervals to record data.

Procedure

Each group will select a spot on the blacktop to pour their cup container of water. They will draw around the puddle with chalk. Using the string they will measure how many centimeters their puddle is at the widest distance. They will record the time of day and size at the beginning. At each 30 minute interval students will predict and record the prediction and then measure the puddle size, recording time and actual size. Students will write summary sentences. Students will discuss, compare, and chart measurement results as a whole class activity.

Suggested Scoring Guide:

1. Recording initial measurement with time of day..... 1 pt
2. Recorded prediction with time of day (up to 8 points)..... 1 pt each
3. Recorded actual measurement with time of day (up to 8 points)..... 1 pt each
4. Writing a comparison sentence stating similarities in group's experiments..... 1 pt
5. Writing a contrasting sentence stating a difference in group's experiments..... 1 pt
6. Writing a summarizing sentence telling what was learned during the process..... 1 pt
possible 20 pts

(Total points should be adjusted if fewer observation intervals are used.)

(Formal Hypothesis writing and testing are part of 5th and 6th grade curriculum. This performance assessment could be helpful for science fair preparation and as a preliminary test for next year.)

Title: Water Evaporation

Performance Test 2

Activity Description

Students will observe the effect of the sun on the evaporation rate of water.

Materials Needed:

Water, sunshine, 2 small paper or plastic cups per group, marker

Prior to Assessment

Students should be familiar with the process of evaporation. They should be able to perform a simple experiment with a hypothesis, data and conclusion. They should be able to identify a control for their experiment.

Time Needed-1/2 hour to set up experiment, 1-2 hours for it to “work,” 1/2 hour to finish the write-up.

Procedure:

1. Students should be in groups of 3-4. They should be introduced to the question “What determines how quickly water evaporates?”
2. Explain the lab procedure to students. Two cups should have an equal amount of water placed in them and a line drawn on the outside to indicate the level.
3. Students should decide where they want to place the cups. One cup should be the control and kept in the classroom. If needed, a single control can be made for the whole class so that each group doesn’t have to make one. Students can decide where they want to place the other.
4. A hypothesis should be made. Example: If I place a cup in the light then the water will evaporate more quickly than the one in the dark.
5. Time should be allowed for the water to evaporate. Students should record data on worksheet.
6. Students should finish the worksheet (see next page) and questions.

Suggested Scoring Guide:

1. *Students participate and set up an experimental jar..... 5 pts*
2. *Students collect data and answer questions..... 10 pts*
answers to questions:
 1. *Probably the one in the light.*
 2. *It had the most energy available for evaporation.*
 3. *Water evaporated into the air as a gas.*
 4. *Water vapor*
 5. *Sunlight causes water to evaporate because it is a high energy source.*
 6. *The jar in the classroom was the control because it was left alone and not changed.*

Student worksheet

Name _____

Question: What affects the evaporation of water?

Procedure:

1. Place an equal amount of water in two cups and draw a line with a marker where the top of the water is in each.
2. One cup should stay in the classroom as a control; you decide where to put the other one.
3. Check each cup after several hours go by. If possible, leave overnight, or for an additional day or two. Draw the level of the water in the cup in the data table.

Hypothesis: If I place a cup in _____ then _____

Data:

Time Checked	Control cup in classroom	Test cup

Questions:

1. Compare your results to your classmates'. Whose cup had the most water evaporate?
2. Why do you think that cup had the most evaporation?
3. Where did the water go?
4. What is it now called?
5. How does sunlight affect how water evaporates?
6. Which cup was the control? Why?