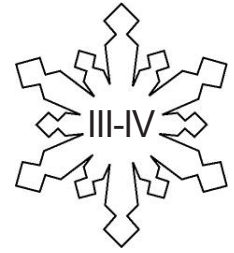


Evaporation

Levels



Grades 5-8

Overview:

During this activity, students learn about the evaporation stage of the water cycle.

Objectives:

The student will:

- conduct an experiment to show the process of evaporation; and
- understand that water changes between liquid and vapor by evaporation.

GLEs Addressed:

Science

- [5-8] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [5] SB1.1 The student demonstrates an understanding of the structure and properties of matter by comparing models that represent matter as solids, liquids, or gases and the changes from one state to another.
- [6] SB1.1 The student demonstrates an understanding of the structure and properties of matter by using models to represent matter as it changes from one state to another.

Materials:

- Wide-mouth, pint-sized canning jars (2 per group)
- Wide-mouth canning jar lids and rings (1 per group)
- Pitcher of water
- Black permanent markers (1 per group)
- Red permanent markers (1 per group)
- STUDENT WORKSHEET: "Evaporation"
- STUDENT LAB PACKET: "Evaporation"

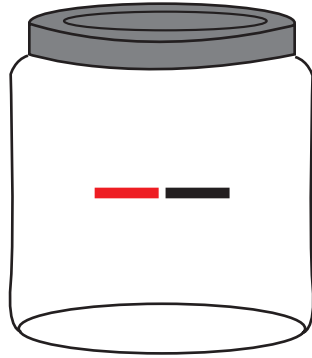
Activity Procedure:

1. Ask students what will happen to water left in an open jar overnight. Ask students what will happen to water left in a closed jar overnight. Explain that students will perform an experiment to find out.
2. Divide students into groups and give each group two jars, one lid, one ring and a black marker.
3. Ask each group to set their jars on a counter or table, then fill the jars about half full with water. The jars do not need to be filled to exactly the same level. Ask students to wait for the water to stop moving inside their jars, then mark the water level on the side of each jar with the black marker.
4. Ask each group to place the lid on one jar and firmly screw on the ring. Students will leave their jars on the counter/table overnight then check them to see what, if anything, changed about the water in the jars. One jar will have a lid, and one jar will remain open.
5. The next day, ask students to look at their jars. Distribute red markers and ask students to mark the water level in their jars. Did the water level in the jars change? How? Teacher Note: Depending upon the climate of your classroom, students may need to wait more than one day between measurements.
6. Discuss what happened to the water in the open jar. Why is there less water today than there was yesterday? Why did the water level in the closed jar remain the same?

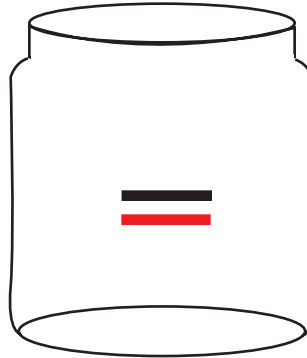
7. Explain that some water in the open jar moved into the air. This process is called evaporation. Water in oceans, lakes and rivers moves into the air in the same way, through a process called evaporation. As the sun warms bodies of water, the water evaporates and moves into the air as a vapor. This vapor rises into the atmosphere, where it cools, forming the droplets that make up clouds. Since the jar with a lid was closed, the water could not escape into the air, so the water level remained the same in the closed jar.

Answers to Student Worksheet:

On the closed jar with a lid, the red and black lines should be even.



On the open jar with no lid, the red line should be below the black line.



Answers to Student Lab Packets:

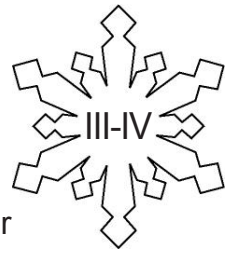
Answers will vary, but students should understand that the water in the open jar evaporated and went into the air.

Name: _____

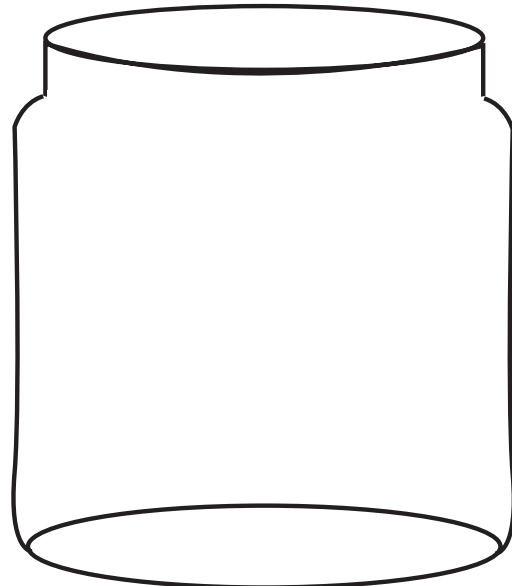
Evaporation

Student Worksheet

Levels



1. Using a black marker, draw a black line on the jar to show how much water was in each jar the first day.
2. Using a red marker, draw a red line on the jar to show how much water was in each jar the second day.

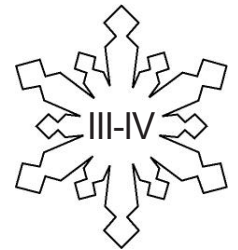


Name: _____

Evaporation

Student Lab Packet (page 1 of 3)

Levels



Testable Question:

What will happen to water left in an open jar overnight? What will happen to water left in a closed jar overnight?

Hypothesis (or Guess):

1. Make an educated guess and check one:

The water level in an open jar with no lid will

____ stay the same overnight

____ go down overnight

____ go up overnight

2. Make an educated guess and check one:

The water level in a closed jar with a lid will

____ stay the same overnight

____ go down overnight

____ go up overnight

Experiment:

Materials:

- Wide-mouth, pint-sized canning jars (2 per group)
- Wide mouth canning jar lids and rings (1 per group)
- Pitcher of water
- Black permanent markers (1 per group)
- Red permanent markers (1 per group)

Name: _____

Evaporation

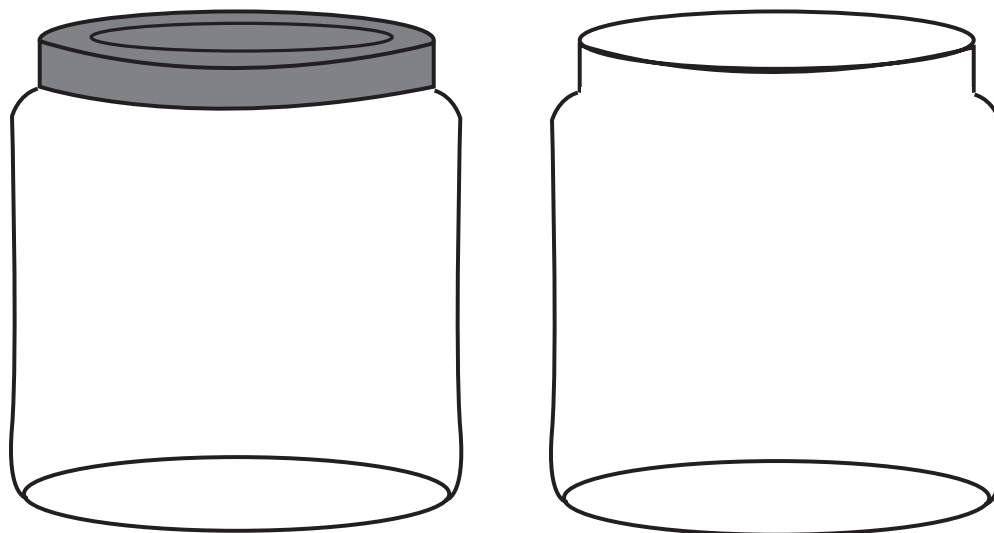
Student Lab Packet (page 2 of 3)

Procedure:

1. Day 1: Set two jars on a counter or table. Fill the jars about half full with water.
2. Wait for the water to stop moving inside the jars. Mark the water level on the side of each jar with the black marker.
3. Place the lid on one jar and firmly screw on the ring. Leave the other jar open.
4. Leave the jars on the counter/table overnight, then check them tomorrow to see if the water level changes in either jar.
5. Day 2: look at the jars. Mark the water level in both jars with a red permanent marker.

Data:

Using red and black markers, copy the black and red lines from your jars on to the diagrams below.



Data Analysis:

Did the closed jar with the lid show any change in water level? _____

Did the open jar with no lid show any change in water level? _____

Name: _____

Evaporation

Student Lab Packet (page 3 of 3)

Conclusion:

1. The water level in the jar with a lid:

_____ stayed the same overnight

_____ went up overnight

_____ went down overnight

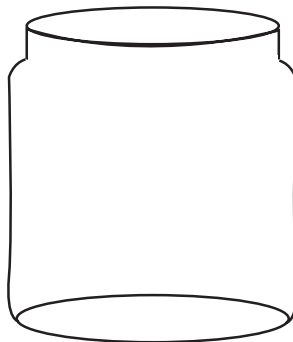
2. The water level in the jar without a lid:

_____ stayed the same overnight

_____ went up overnight

_____ went down overnight

3. On the jar below, draw arrows to show where the water from the open jar went. Describe your drawing to your group.



4. Where did the water from the open jar go? _____

5. How do you know? (Hint: compare the differences between the two jars)
