

The Water Cycle

Activity Book, pages 6-8

KEY CONCEPTS:

The water cycle is the continual circulation of water from the earth to the atmosphere and back through such processes as evaporation, condensation, precipitation, and runoff. Water moves through this cycle in the forms of gas, liquid, and solid states.

When rainwater hits the ground it becomes stormwater, flowing downhill towards washes and rivers.

CORRELATED ADE STANDARDS:

Science: SC06-S1C1-02, SC06-S1C2-03, SC06-S1C2-05, SC06-S1C3-02, SC06-S1C3-06, SC06-S2C2-03, SC06-S6C2-01, SC07-S1C1-01, SC07-S1C2-03, SC07-S1C2-05, SC07-S1C3-03, SC07-S1C3-05, SC07-S1C3-07, SC07-S2C2-03, SC08-S1C1-01, SC08-S1C1-03, SC08-S1C2-03, SC08-S1C2-05

ELA: 6.SL.1, 6.SL.2, 6.W.7, 7.SL.1, 7.SL.2, 8.SL.1, 8.SL.2 (NOTE: Reading Standards for Informational Text [RI] are incorporated throughout each section of **STORMWATER IN THE DESERT.**)

Educational Technology: ET06-S1C1-01, ET06-S3C2-02, ET06-S3C2-04, ET07-S1C1-01, ET07-S3C2-02, ET07-S3C2-04, ET08-S1C1-01, ET08-S3C2-02, ET08-S3C2-04

ACTIVITY

Test Your Water Cycle Knowledge (pages 6-7)

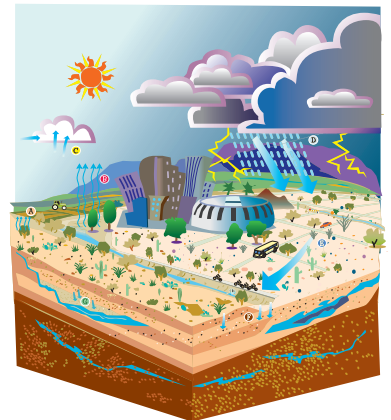
MATERIALS: None

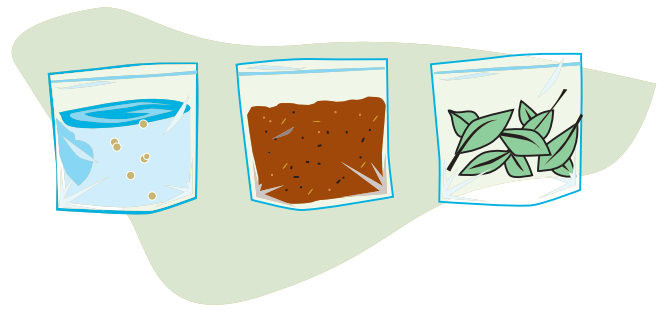
SUGGESTED PROCEDURES:

Students use the text and glossary to determine the correct vocabulary words for a list of definitions describing water cycle processes. Next, they identify the processes that are occurring throughout the water cycle over a graphic of Phoenix.

EXTENSIONS:

Students write a characterization narrative from the view point of a water droplet as it travels through the environment. Challenge your students' droplet characters to all have a slightly different journey! (from the CAP/SRP Arizona Water Story teacher workshop)



TRY THIS**Water Cycle in a Bag! (page 8)****MATERIALS:**

- Sealable plastic bags
- Soil
- Fresh leaves
- Water
- Strong tape
- Window to the outdoors that receives partial to full sun
- *Water Cycle in a Bag - Student Data Sheet* (below)

SUGGESTED PROCEDURES:

Before conducting this activity, be sure your students have read *The Water Cycle* in the activity book and have completed *Test Your Water Cycle Knowledge* (pages 6 and 7). Review the water cycle with the class as you go over the answers on page 7.

This activity may be conducted as: 1) a class demonstration (with one set of bags set up by the teacher); 2) as a student activity (in which students work alone or in teams to prepare and place their own bags); or 3) as a homework assignment.

Hand out copies of the *Water Cycle in a Bag - Student Data Sheet*, either to individuals or teams of students.

Prepare the bags as described on page 8 of the activity book. Be sure that the bags are hung in windows that receive some sunlight. Have students write their predictions on their data sheets. They should make and record daily observations for a week and then complete their data sheets.

The processes of the water cycle demonstrated in this activity are evaporation, condensation, precipitation, and (in the bag with the leaves) transpiration. Each bag will show condensation on the sides of the bags in about a day. As the condensation builds up, the droplets get larger and they eventually run down the sides of the bag (precipitation). The leaves transpire water, the water in the soil evaporates, and water evaporates from the bag of water. The process continually repeats itself – a “water cycle in a bag!”

NOTE: Although subtle, the water cycle processes are readily observed in each of these bags. The observable processes are actually very similar in each bag – students will likely not notice much of a difference between them. The point of including bags with soil and leaves is to demonstrate that both plants and soil contain water and are a part of the water cycle.

EXTENSIONS:

Add some variables to this experiment: teams of students can collect soil from different places, collect different kinds of leaves, or place their bags in different locations.

Water Cycle in a Bag

Student Data Sheet (page 1)

Name _____

Class _____

Prepare your bags according to the instructions on page 8 of the activity book. It is best to put your bags in a location that receives some sun. What do you think will happen? Develop a hypothesis and describe it below. Make daily observations of your bags for at least a week and record your observations. At the end of a week, complete the rest of this data sheet.

1. Hypothesis:

From what you know about the water cycle, what do you think will happen in each of the bags?

2. Describe your daily observations in the table below:

Day	Observations

3. What processes of the water cycle do you observe in this activity?

4. What processes do you know occurred but didn't actually see happen?

5. Were there any differences between the three bags? Explain.

Water Cycle in a Bag
Student Data Sheet (page 2)

Name _____

Class _____

6. What were the similarities between the bags?

7. Where is water held in the soil?

8. How does water escape from the leaves?

9. Was your hypothesis correct? Explain.

10. After viewing the results, what new questions do you have or would like to explore?

11. Why do you think this activity is called “Water Cycle in a Bag?”

12. On the back of this page, make labeled drawings of your three bags.