

# WATERDROPS

## Water Cycle

## Teacher's Guide

Welcome to the water cycle issue of WaterDrops! As part of the Splash! Water Resources Education program, the Southwest Florida Water Management District (SWFWMD) offers this water resources newsletter for elementary students. The newsletter is correlated to grades 3–5 of the Sunshine State Standards and provides an interesting way for students to increase their awareness and respect for our precious water resources. To help you prepare your students for testing, we have included WaterDrops Challenge, which contains items similar to those that may appear on the Florida Comprehensive Assessment Test (FCAT).

This issue of WaterDrops focuses on the water cycle. It includes fiction, nonfiction, writing, drawing and problem-solving activities, games, and web sites to explore. You may also contact us for a free hydrologic cycle poster to display. Let WaterDrops make a splash in your classroom today!

Many other free materials are available from the SWFWMD and can be ordered online at [WaterMatters.org/publications/](http://WaterMatters.org/publications/). We also offer water resources workshops for teachers. Please contact us if you have any questions or suggestions about our water resources education programs.

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### Page 1

### Hello Readers!

Water is one of our most important resources. Discuss the need to use water wisely. Ask students to list ways to conserve water. Examples might include: take shorter showers, turn the water off when washing your face or brushing your teeth, don't toss into the toilet what can go into a wastebasket, check for leaks or drips in faucets or toilets, etc.

Sunshine State Standard: SC.D.2.2.1

### Page 1

### Water Drips & Drops

It's fun to learn facts about water. Discuss the concept of water going through a never-ending cycle since the beginning of time.

Sunshine State Standard: SC.H.2.2.1

### Pages 2 & 3

### Feature Story

Read the story together and discuss the different parts of the water cycle. Point out how each part relates to other parts in the cycle. Discuss solar energy, evaporation, condensation, precipitation, transpiration and percolation. Explain the importance of each part to the continuous cycle. Ask students to complete the writing assignment. Share a few of the stories with the class.

Sunshine State Standards: LA.A.2.2.5, LA.B.2.2.3, LA.B.2.2.5, SC.B.1.2.1, SC.D.1.2.3

### Page 4

### Take It Home

Prepare your students for the activity they will do at home. You may want to perform a demonstration of the experiment in the classroom. Make sure students have the materials they need to complete the experiment. Ask students to read the directions for making the miniature water cycle. Encourage students to try the experiment at home. Ask students to share their notes and draw conclusions about what they learned about the water cycle.

Sunshine State Standards: SC.D.1.2.3, SC.G.1.2.3, SC.H.1.2.5

### Page 4

### Ask Water Cycle Wanda

Select two students to play the roles of Sherita and Water Cycle Wanda. Ask these students to read their parts. Identify places where students may be able to locate additional information about trees and the process of transpiration. Sources of information may include books, pamphlets, the Internet, etc.

Sunshine State Standard: SC.A.1.2.2

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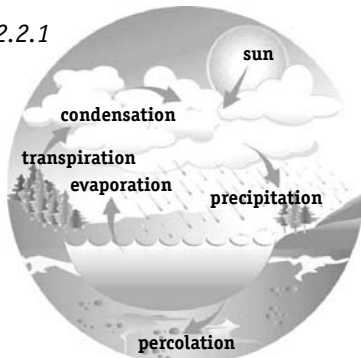


Using the terms and definitions, discuss the different parts of the water cycle. Help students complete the labeling activity. For an additional activity, ask students to make up sentences using each of the terms.

Sunshine State Standard: SC.H.2.2.1

**Parts of the Hydrologic Cycle**

**Answer Key:**

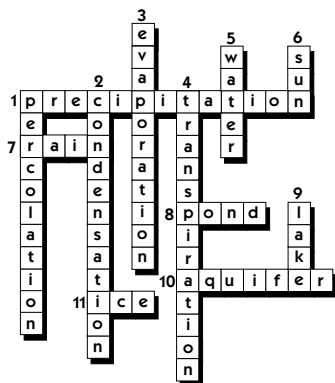


Before reading the article, ask students to describe the meaning of condensation. Read the article together and ask students to complete the sentences at the bottom of the page.

Sunshine State Standard: SC.D.1.2.3

**Fill-in-the-Blank Answer Key:** rains, cools, hydrologic or water

**Water Cycle Crossword Puzzle**  
**Answer Key:**



Surf Bill Nye's web site, [nyelabs.com](http://nyelabs.com), for interesting topics about water. Enter the site and click on "Episode Guides" on the top of the page. Click "Shows By Number." Enter Episode Number 47 and hit "Go." As an extended activity, ask students to prepare research questions and search for answers on the Internet.

**Answer Key:** We need clean, fresh water to keep us alive and healthy.

This closing activity can be submitted by an individual student or as a classroom set.

**WATERDROPS Extended Activities**

(See page 3 of this Teacher's Guide)

**Number 1: The Flight of Water**

Results will vary.

**Number 2: A Water Cycle Everywhere**

A large bulletin board could be made to include the students' pictures or photos.

**Number 3: Sharing the Water**

Be sure to point out that the water we use has gone through an extensive cleaning process to make sure it is clean and healthy.

**Number 4: Water Cycle Matching Game**

For a variation of the game, have students play the game with a partner.

**WATERDROPS Challenge**

(See page 7 of this Teacher's Guide)

Items included in the Challenge are similar to those presented on the Florida Comprehensive Assessment Test (FCAT). Make copies of the Challenge and distribute them to students. Emphasize that taking the Challenge will provide good practice for preparing for the FCAT. Students should be allowed to use the *WaterDrops* issue, if necessary.

**Answers to multiple-choice items:** 1-c, 2-a, 3-c, 4-b

**Answers to extended-response items:**

**Question 1.** Responses will vary. Students should be able to demonstrate a basic understanding of a few of the different parts of the water cycle as described on page 5 of the newsletter.

**Score 2 points if . . .** The response indicates that the student has a basic understanding of the different parts of the water cycle. The student has provided a response that is accurate and complete.

**Score 1 point if . . .** The response indicates that the student has a partial understanding of the different parts of the water cycle. The student has provided a response that includes information that is essentially correct, but the information is too general or too simplistic.

**Score 0 points if . . .** The response is inaccurate, confused, and/or irrelevant.

**Question 2.** Responses will vary. Students should understand that an aquifer is an underground area where water is held and released and our drinking water is pumped out of an aquifer through a well.

**Score 2 points if . . .** The response indicates that the student understands what an aquifer is and how our drinking water comes from an aquifer. The student has provided a response that is accurate and complete.

**Score 1 point if . . .** The response indicates that the student partially understands what an aquifer is and how our drinking water comes from an aquifer. The student has provided a response that includes information that is essentially correct, but the information is too general or too simplistic.

**Score 0 points if . . .** The response is inaccurate, confused, and/or irrelevant.

Sunshine State Standards: LA.A.2.2.5, LA.B.2.2.3, LA.B.2.2.6, SC.D.1.2.3, SC.G.1.2.3, SC.H.2.2.1

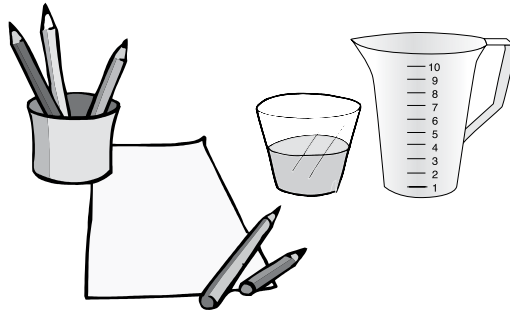
# WATERDROPS Extended Activity Number 1

## The Flight of Water

You learned that evaporation is part of the water cycle. It happens outdoors when the sun heats the water in our lakes, streams, rivers and oceans. Water actually rises into the air. It also happens indoors in our homes. Do you think water evaporates faster indoors or outdoors? Try this experiment and find out!

### Materials:

- 2 plastic cups
- water
- pencil



- measuring cup
- colored permanent marker
- paper

### Directions:

1. Pour 1/2 cup of water into each plastic cup. Use a permanent marker to draw a line around the cup at the water level.
2. Place one cup outdoors in a safe place where pets won't drink it. Label this cup OUTDOORS.
3. Place the other cup in a safe place somewhere in your home. Then label this cup INDOORS.
4. Make a chart like the one below. At the same time each day, make a small mark to show the water level on each cup. Decide whether or not the water level changed. Write *Yes* or *No* under each numbered day on the chart. Record your observations for 10 days.
5. Place the two cups next to each other and compare the markings. Discuss your chart with the rest of your class. Did your water take flight faster indoors or outdoors?

The Flight of Water										
<i>Water Level Changes (Write YES or NO under each numbered day)</i>										
	1	2	3	4	5	6	7	8	9	10
<b>Cup Outdoors</b>										
<b>Cup Indoors</b>										

### Think About It

1. In which cup did the water evaporate faster? Why do you think this is so?
2. What changes could cause the water to evaporate faster or slower?

### *A Water Cycle Everywhere*

**Directions:**

The water cycle is happening all around us. In this activity, you will select a place near your home or school. Use your artistic skills and draw a picture of the area. If you like to take photos, you could use a camera to take a picture of the area instead. You may want to design a frame for your picture like the one shown below. Be sure to label the parts of the water cycle using the correct terms.

**Water Cycle Terms**

sun	evaporation	transpiration	condensation	precipitation	percolation
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**Extra Challenge**

Draw or take photos of several different areas. Create a booklet with them to show that the water cycle is happening everywhere!

# WATERDROPS Extended Activity Number 3

## Sharing the Water

You learned in the story that the water we have today is the same water from ages ago. Dinosaurs drank our water. Pioneers drank our water. In fact, all living things have used the same water for millions of years.

Over time, we have shared our water resources with all kinds of plants, animals and people. Make a list of the living things that may have had a taste of your water in the past. Write them in each of the categories below. For extra fun, ask some friends to make a list too. Then compare the lists.

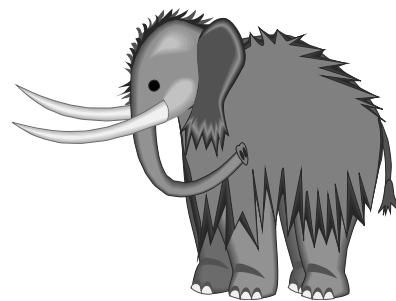
### Famous People From the Past

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



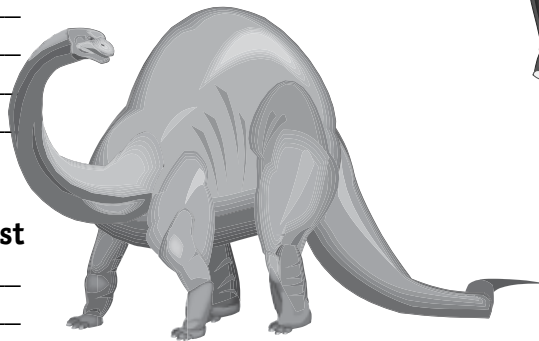
### Relatives From the Past

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



### Creatures From the Past

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



### Trees and Plants From the Past

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



# WATERDROPS Extended Activity Number 4

## Water Cycle Matching Game

Let's create a matching game! Be sure to review the parts of the water cycle described on page 5 of the newsletter.

### Directions:

1. Cut out the cards below or make a set of your own.
2. On the back of each card, write the words *Water Cycle*.
3. Spread out the cards so that only the words *Water Cycle* are showing.
4. Look at the clock and write down the time. Use page 5 of the newsletter so that you know the correct matches.
5. Turn over two cards. If the term matches the definition, set the pair aside. If they don't match, turn them over again.
6. Repeat step 5 until all the matches have been made.
7. Look at the clock and write down the time. Figure out how long it took you to make all six matches.

<b>evaporation</b>	<b>sun</b>	<b>percolation</b>
<b>precipitation</b>	<b>condensation</b>	<b>transpiration</b>
tiny droplets of water formed when water vapor rises into the air and cools	moisture released from clouds in the form of rain, snow, hail, etc.	vapor created when the sun heats water in lakes, streams, rivers or oceans
vapor created when plants and trees give off moisture	movement of the water through the ground	provides energy for the never-ending cycle

### Extra Challenge

Play the game a few times to improve your time.

# **WATERDROPS** Challenge

**Directions:**

Let's see how much you have learned about water resources and the water cycle. Do your best and meet the challenge!

*Choose the best answer.*

1. The earth has the same amount of water now as it did millions of years ago. How is this possible?

- a. because we have many lakes, rivers and streams
- b. because plants and trees give off moisture
- c. because water keeps moving throughout our environment
- d. because it rains a lot in our area

2. What is another term for the water cycle?

- a. hydrologic cycle
- b. transpiration
- c. life cycle
- d. evaporation

3. What is the source of energy for the water cycle?

- a. large clouds
- b. rain droplets
- c. the sun
- d. the earth

4. Which part of the water cycle describes what happens when rising water vapor cools and changes from a gas to a liquid?

- a. percolation
- b. condensation
- c. solar energy
- d. aquifer

