

WATERDROPS

Watersheds

Teacher's Guide

Welcome to the watersheds 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 better 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 watersheds. It includes fiction, nonfiction, writing, drawing and problem-solving activities, games and web sites to explore. All information and activities are designed to teach students about watersheds. 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/. We also offer water resources workshops for teachers. Please contact us if you have any questions or suggestions about our water resources education programs.

Youth Education
Communications Department
Southwest Florida Water Management District
(352) 796-7211, ext. 4757
1-800-423-1476, ext. 4757 (FL only)
WaterEducation@WaterMatters.org

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Hello Readers!

A watershed can be defined as an area of land that water flows across as it moves toward a common body of water, such as a stream, lake, river or coast. A watershed is a collection site for all the water in an area. The water, solids, sediments and dissolved materials within a watershed drain toward the water body in that area. Water always flows downhill, so an area's elevation determines watershed boundaries. Be sure to read all parts of the newsletter before you use it with your students.

Sunshine State Standards: SC.D.1.2.4, SC.D.1.2.5

This information will be made available in accessible formats upon request. Please contact the Communications Department at (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4757; TDD only at 1-800-231-6103 (FL only).

Page 1

Water Drips & Drops

It's fun to learn facts about water. On a map of North America, ask students to locate the Mississippi River. Use a pointer or your finger to trace the main part of the river, as well as the different tributaries. Ask students to identify different cities located near the river.

Sunshine State Standards: SS.B.1.2.1, SS.B.2.2.2, SC.G.2.2.2

Pages 2 & 3

Feature Story

Read the story together. Emphasize the fact that a healthy watershed is vital for a healthy environment and economy. Discuss the importance of keeping a watershed clean and healthy. Ask students to describe their ideas about a watershed cleanup. Then ask students to complete the writing activity.

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

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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 for completing the experiment at home. Ask students to read the directions for making a watershed. Encourage them to try the experiment at home. Ask students to share their notes and draw conclusions about what they learned about watersheds. For an extended activity, organize a contest for the most interesting watershed.

Sunshine State Standards: SC.D.1.2.3, SC.D.1.2.4, SC.D.1.2.5, VA.A.1.2.1

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Ask students to give examples of different watersheds. Then select two students to play the roles of Terry and Water Cycle Wanda. Ask the students to read their parts. Emphasize that watersheds exist in many forms and that we all live in a watershed.

Sunshine State Standards: SC.D.1.2.4, SC.H.2.2.1

Ask students to think about the different types of fresh-water bodies. Discuss their different characteristics based on shape and size. Read the descriptions together and ask students to complete the activity.

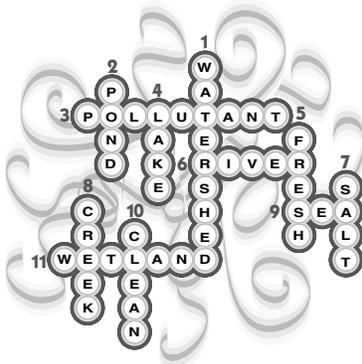
Answers: river = 4, creek = 1, wetlands = 5, pond = 2, lake = 3

Sunshine State Standards: SC.D.1.2.4, SS.B.1.2.1

Discuss the concept of pollution with your students. Ask students to describe several different types of pollution that can harm the environment. Read about how pollutants affect the quality of our water. Ask students to complete the fill-in-the-blank exercises.

Fill-in-the-Blank Answer Key:
pollutants, we (humans, people), many

Sunshine State Standards: SC.D.2.2.1, SC.G.1.2.2, SC.G.2.2.1



Surf this web site for additional information about watersheds.
epa.gov/owow/watershed

Discuss the importance of protecting our watersheds. Then ask students to decode the hidden message. This closing activity can be submitted by an individual student or as a classroom set.

**Hidden message: Watersheds are like neighborhoods.
Let's keep them clean!**

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WATERDROPS Extended Activities

(See Page 3 of this Teacher's Guide)

Number 1: Watersheds on the Web

Encourage your students to take several of the tours.

Number 2: Watersheds of All Sizes

Discuss several examples of watersheds.

Number 3: Mapping a Trail of Water

Make a sample map that shows how water from a storm can take different paths.

Number 4: Pollutants Indoors and Outdoors

You may want to combine the lists and make a bulletin board display.

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 explain to students that this provides good practice for preparing for the FCAT. Students should be allowed to use the *WaterDrops* issue, if necessary.

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

Answers to extended-response items:

Question 1. Responses will vary. Students should be able to demonstrate a basic understanding of watershed protection.

Score 2 points if . . . The response indicates that the student has a basic understanding of watershed protection. 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 watershed protection. 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 be able to demonstrate logical reasoning associated with the importance of watersheds and their protection.

Score 2 points if . . . The response indicates that the student has demonstrated logical reasoning associated with the importance of watersheds and their protection. The student has provided a response that is accurate and complete.

Score 1 point if . . . The response indicates that the student has partially demonstrated logical reasoning associated with the importance of watersheds and their protection. 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.2.2.1, SC.G.2.2.1



Extended Activity Number 1

Watersheds on the Web

Here is your chance to visit a few of the watersheds in our area! Watershed tours are on our web site at WaterMatters.org/watersheds/. We are developing new tours each year, so be sure to check the site regularly.

You may want to ask a teacher or parent to help you take the tours. Some of the words may be difficult, so have someone read them aloud to you. You will discover all kinds of things about each watershed. There are also lots of maps, pictures and photographs included in each tour. Try to take at least two of the tours and fill out the survey below.

Web Site #1

Name of the watershed tour: _____

What are two interesting facts you learned at this site?

1. _____
2. _____

How would you grade this site (circle one)? A B C D

Why? _____

Web Site #2

Name of the watershed tour: _____

What are two interesting facts you learned at this site?

1. _____
2. _____

How would you grade this site (circle one)? A B C D

Why? _____

Extra Challenge

Now share your reviews with others and compare your ideas about these tours!

WATERDROPS Extended Activity Number 2

Watersheds of All Sizes

You learned that watersheds can exist in all sizes and shapes. Smaller watersheds make up parts of bigger watersheds. The smallest watershed you can probably think of is a puddle. The water collects there. Then the water either flows to a bigger water area, soaks into the ground or evaporates. For example, a puddle watershed may be part of a neighborhood watershed. The neighborhood watershed may be part of a lake watershed.

Think about how your tiny watershed is part of a bigger watershed, which is part of an even bigger watershed, and so on. Use the illustration below or draw your own watersheds on a separate sheet of paper. Decide which watersheds become parts of larger watersheds. Then label and color each of your watersheds.

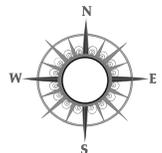


WATERDROPS Extended Activity Number 3

Mapping a Trail of Water

When water falls from a rain shower or storm, it can take many paths. Some of the water may move to a larger area where it collects. Some of it may seep into the ground. Some of it may evaporate into the air. Select an area near your home. Notice what happens to the rainwater runoff in the area after a heavy shower. Then use what you have learned to map a trail of the water!

In this activity, you will make a map that shows different paths the water can take. Draw your map using the space below. Then use arrows or various colors to show where the water may travel on its journey through the watershed.



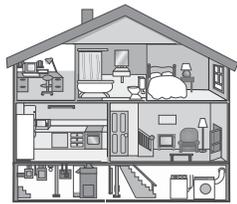
Extra Challenge

Find another area to map that is located near a body of water. Then compare your two maps.

Pollutants Indoors and Outdoors

You learned that polluted watersheds can create polluted rivers, lakes and streams. Most pollutants get into our lakes, rivers and streams because of things we do. Some pollutants come from activities and materials inside our homes. Other pollutants cause problems because of our actions outdoors. Make a list of pollutants under each heading below. Use the information on page 6 of the newsletter to help you.

Pollutants Indoors



Pollutants Outdoors



Think About It

What is a good way to keep our watershed clean and healthy?

WATERDROPS Challenge

Directions:

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

Choose the best answer.

1. No matter where we live, we all live in a watershed. What can be part of a watershed?
 - a. a land area where water moves across and drains into a water body
 - b. a neighborhood
 - c. a pond, creek or stream
 - d. all of the above
2. All of the following are true statements about watersheds EXCEPT one. Which one does NOT belong in the list?
 - a. Watersheds can exist in all shapes and sizes.
 - b. The sun, stars and clouds are part of a watershed.
 - c. To protect our watershed, we must keep it clean and healthy.
 - d. Many different bodies of fresh water can be part of a watershed.
3. Many kinds of pollutants can cause damage to a watershed. What are pollutants?
 - a. materials that can cause our water to become unclean or impure
 - b. materials that help clean and purify the water
 - c. materials that are added to improve our drinking water
 - d. none of the above
4. There are many ways people can help to protect the health and quality of a watershed. Which tip does NOT belong in the list?
 - a. Help organize a neighborhood cleanup.
 - b. Teach others about what pollutants can do to our water.
 - c. Encourage people to learn more about protecting our environment.
 - d. Do nothing.

