

WATERDROPS

Growth and Development

Teacher's Guide

Welcome to the growth and development 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 watersheds and the water resources within them. 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 population growth and development. It includes fiction, nonfiction, writing, problem-solving activities, a crossword puzzle and web sites to explore. All the information and activities are designed to teach students about the effects of growth and development on our water resources. 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.

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Page 1

Hello Readers!

Most people don't realize how much our state has grown and developed during the past few decades. Ask how many students were born in the area. Then ask the others when they moved here. Discuss some of the changes that may have occurred in the area within the past few years.

Sunshine State Standards: SC.D.2.2, SC.G.2.2, SS.B.2.2

Page 1

Water Drips & Drops

Emphasize the fact that we have limited water resources. When many people live in an area, the resources need to be shared. Ask students to explain how saving water today can provide us with water later.

Sunshine State Standards: SC.D.2.2, SC.G.2.2, SS.B.2.2

Pages 2 & 3

Feature Story

Read the story together. Discuss how students feel when they move to a new area or go to a new school. Have them explain why it is important for neighbors to help each other. Ask students if they have seen Florida-friendly landscape areas in their neighborhoods and have them describe the areas.

Sunshine State Standards: LA.A.2.2, LA.B.2.2, SC.A.1.2, SC.D.2.2, SC.G.2.2, SS.B.2.2

Page 4

Take It Home

Prepare your students for the activity that they will do either at home or at school. Ask students to read the directions and encourage them to try the experiment at home. Ask students to share their comments and draw conclusions about what they learned for each method of watering a plant area.

Sunshine State Standards: LA.A.2.2, SC.D.2.2, SC.G.2.2, SC.H.1.2

Page 4

Ask Water Cycle Wanda

Ask students if they have noticed how quickly Florida's population is growing and land is being developed. Then select two students to play the roles of Callihan and Water Cycle Wanda. Ask the students to read their parts. Then have students explain how the increased population can affect our water resources.

Sunshine State Standards: SC.D.2.2, SC.G.2.2, SS.B.2.2

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Read the survey instructions together. Discuss each of the statements and have students explain their answers. For extra reinforcement, let small groups of students play the Water-Saver Game.

Answers: 1-agree, 2-disagree, 3-agree, 4-agree, 5-agree, 6-agree, 7-agree, 8-agree, 9-agree, 10-disagree

Sunshine State Standards: LA.A.2.2, SC.D.2.2, SC.G.2.2

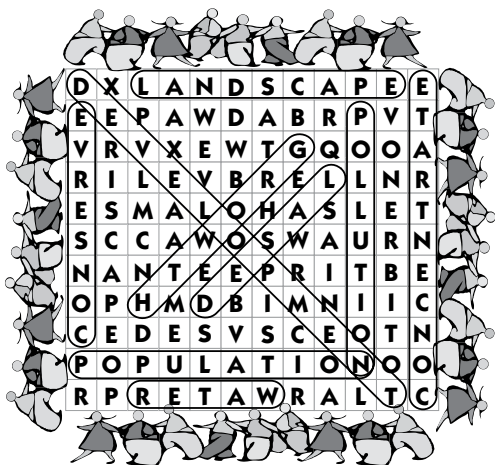
Ask students if they have heard about desalination or "desal." Read the article about desal. Then ask students to complete the quiz by reading the questions aloud.

Answer Key: Yes, Yes, No, Yes

Sunshine State Standards: SC.D.2.2, SC.G.2.2, SC.H.3.2, SS.D.1.2

Word Search

Answer Key:



Word Scramble

Answer Key: growth, population, desal, water, neighborhoods, landscape

A lot of information about water is available on the Internet. Visit the sites listed as a launching point in order to help your students learn more about water resources.

Discuss the importance of learning about our water resources. Then ask students to decode the hidden water message.

Answer: As our population grows, we need to share and save our water resources.

WATERDROPS Extended Activities

(See page 3 of this Teacher's Guide)

Number 1: My Neighborhood

Discuss changes that have occurred in many neighborhoods.

Number 2: Saving Water in Our Growing Neighborhoods

Discuss several ways of saving water.

Number 3: Vote For Me!

Have students read their speeches aloud to other classmates.

Number 4: A Billboard for Desal

Brainstorm several ideas for the billboard.

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-b, 2-d, 3-a, 4-c

Answers to extended response items:

Question 1. Responses will vary. Students should be able to demonstrate a basic understanding of Florida-friendly landscaping.

Score 2 points if. . . The response indicates that the student has a basic understanding of Florida-friendly landscaping. 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 Florida-friendly landscaping. 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 a community working together to conserve water.

Score 2 points if. . . The response indicates that the student has demonstrated logical reasoning associated with the importance of a community working together to conserve water. 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 a community working together to conserve water. 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, LA.B.2.2, SC.D.2.2, SC.G.1.2, SC.G.2.2, SS.B.2.2

My Neighborhood

A lot of changes can happen to a place over time. As more people move to an area, new homes, buildings and roads appear. Think about the home you live in and the neighborhood that surrounds it. Answer the questions below to help you learn more about where you live. Ask members of your family to help you with this activity.

How long have you lived in this home? _____

Do you know the year when your home was built? _____

How would you describe your home?

___ an apartment

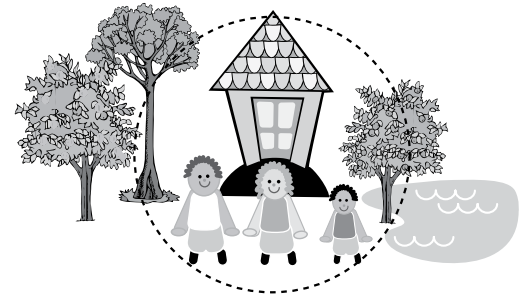
___ a town home

___ a house

___ a condo

___ a mobile home

___ other



Describe your neighborhood. Does it have a lot of homes? Does it have a park? Are there a lot of busy streets? Are there natural areas? _____

Describe any bodies of water that are near your home (pond, lake, river, wetlands, etc.).

Has your neighborhood been there for very long?

What do you think your neighborhood looked like 50 years ago?

What do you think your neighborhood will look like in 50 years?



Extra Challenge

Try to learn about other neighborhoods. Compare your answers with classmates.

Saving Water in Our Growing Neighborhoods

You learned that when more people move into an area, many changes take place. Read the list of 10 statements on page 5 of the newsletter. All the statements are about saving water indoors and outdoors. Select one statement that you agree with and give reasons for your answer. Then select one statement that you disagree with and give reasons for your answer.

I agree with the following statement: _____

I agree with the statement because... _____

I disagree with the following statement: _____

I disagree with the statement because... _____



Extra Challenge

Discuss your answers with other classmates.



Extended Activity Number 3

Vote for Me!

Pretend that your town council is having an election. Your town is going through a big growth spurt. You want to be on the council because you care very much about your community. You know that with more people living in the area it is very important to protect our natural resources.

Why do you want to be on the council? _____

Developments can cause wooded areas and wetlands to shrink in size. How would you help protect some of these natural areas?

1. _____

2. _____

We all need to share our water resources. How would you help to encourage people to save water?

1. _____

2. _____



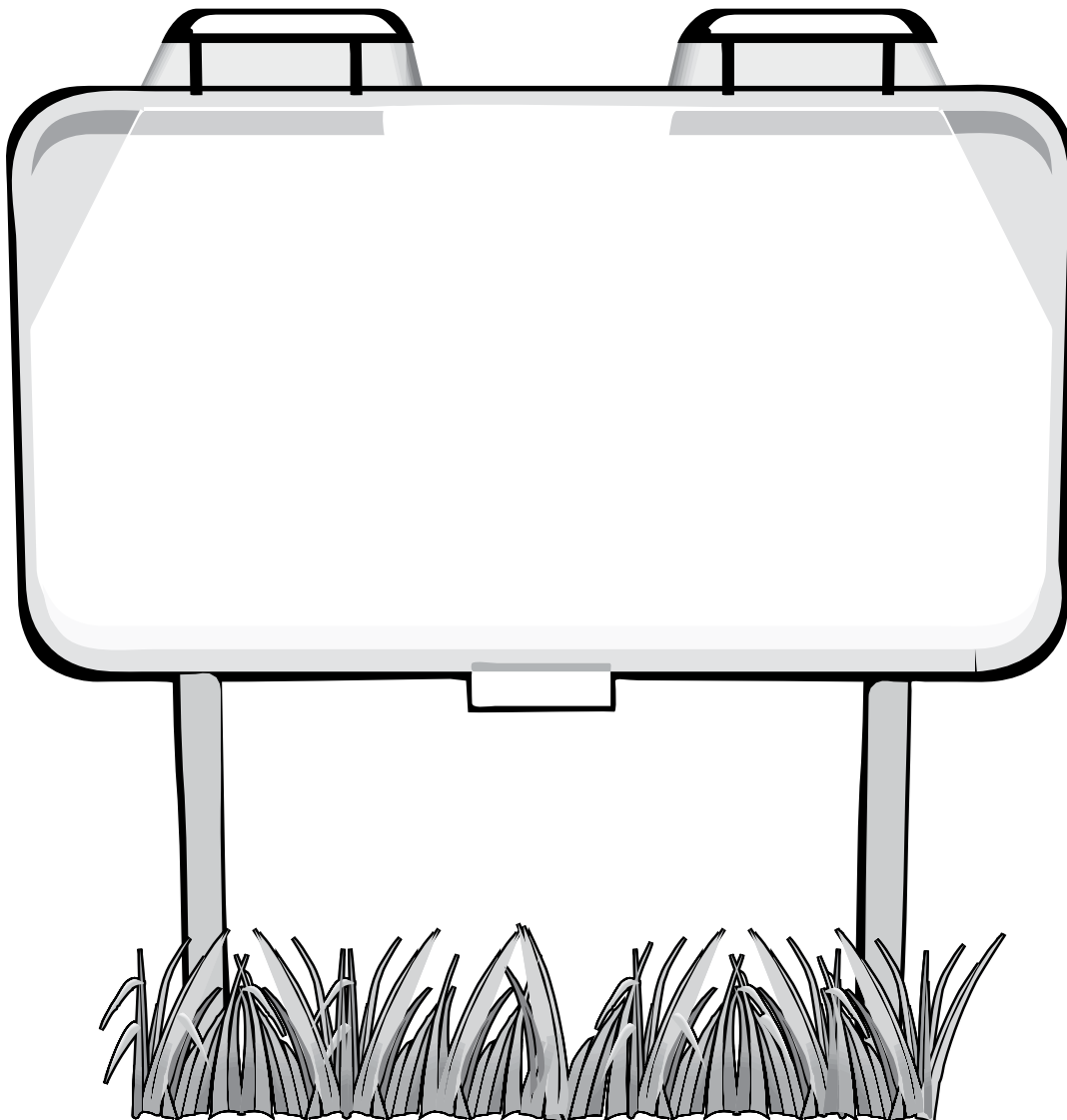
Extra Challenge

Develop a short speech that explains why people should vote for you!

A Billboard for Desal

In the newsletter, you discovered that desalination is also called *desal*. Page 6 of the newsletter told you all about what happens at a desal facility. Since many people have never heard of desal, you are going to have the opportunity to share what you know!

For this activity, create a billboard that will help people learn more about desal.



WATERDROPS Challenge

Directions:

Let's see how much you have learned about water resources and how they are impacted by growth and development. Do your best and meet the challenge!

Choose the best answer.

1. Our population has grown quickly. About how many people live in Florida?

- a. 7 million**
- b. 17 million**
- c. 3 million**
- d. 10 million**

2. Which one below describes a way of landscaping that uses less water.

- a. drip watering**
- b. spray watering**
- c. desalination**
- d. Florida-friendly**

3. What kind of water is changed into drinking water by a process called "desal"?

- a. salty water**
- b. storm water**
- c. carbonated water**
- d. bottled water**

4. What can we do to protect our water resources while our population grows and land becomes developed?

- a. Water our lawns every day.**
- b. Drink more bottled water.**
- c. Find ways to share and conserve water.**
- d. Use more water inside our homes.**

WATERDROPS Challenge

1

READ
THINK
EXPLAIN

Describe three things you learned about Florida-friendly landscaping in this issue.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

2

READ
THINK
EXPLAIN

People can work together to conserve water in their neighborhoods. Why is that important?

[illegible]