

# WATERDROPS

## Teacher's Guide

### Wetlands

Welcome to the wetlands 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 Next Generation Sunshine State Standards and the Common Core State Standards and provides an interesting way for students to increase their awareness and respect for water resources and our environment. 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 wetlands. It includes fiction, nonfiction, writing, problem-solving activities, a word search and word puzzle, and websites to explore. All information and activities are designed to teach students about the importance of protecting and maintaining our wetlands and 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/](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!

Explain the concept of a wetland. Discuss reasons for protecting and restoring wetlands.

#### Page 1

#### Water Drips & Drops

It's fun to learn facts about water. If possible, display a map of the United States while the students learn about the vast amount of wetlands in Alaska.

#### Pages 2 & 3

#### Feature Story

Read the story together. Have students describe any visits they may have taken to a wetland area. Emphasize the important role they can play in keeping our wetlands clean and healthy. Have students complete the activity following the story and share their lists with the class.

#### Page 4

#### Take It Home

Prepare your students for the activity by collecting all the materials that will be needed. You may also want to look through books that show various wetland environments. Ask students to read the directions and encourage them to complete the activity at home. After a few weeks, have students share their wetland journals with other classmates.

#### Page 4

#### Ask Water Cycle Wanda

Before reading this section, ask students if they can think of words to describe clean water versus cloudy water. Then select two students to play the roles of Charlotte and Water Cycle Wanda. Ask the students to read their parts.

Emphasize that there are many different kinds of wetlands. Some are completely flooded throughout the year and others may only contain moist soils. The wildlife attracted to wetlands will also vary. Read about the different wetlands and then ask students to answer the questions that follow.

**Answer Key: No, No, Yes**

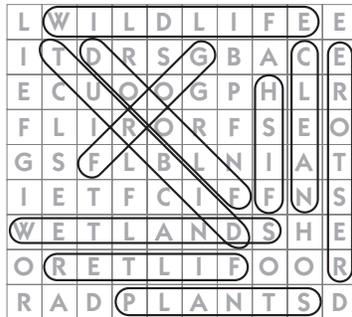
Read the introduction about Freddy the Frog. Then have students identify the stages of a frog's life by using the pictures and the clues.

**Answers: Stage #1** (the egg mass), **Stage #2** (a little tadpole), **Stage #3** (hind legs have developed and front legs are appearing), **Stage #4** (bigger body with shorter tail), **Stage #5** (no tail and feet are webbed), **Stage #6** (adult frog on lily pad)

Although these activities are meant to be fun, they are designed to reinforce important concepts and vocabulary related to wetlands.

### Wetlands Word Search

**Answer Key:**



### Water Word Puzzle

**Answer Key: Trees, birds, plants and insects live in our wetlands.**

A lot of information about wetlands is available on the Internet. Use the sites listed as a launching point to help students learn more about these subjects.

Discuss the importance of protecting our wetlands. Read the pledge together and encourage students to send us a signed copy.

## WATERDROPS Extended Activities

(See page 3 of this Teacher's Guide)

### Number 1: Wetlands Alphabet Cards

Encourage students to serve as role models for younger children.

### Number 2: A Letter to the Mayor

Discuss the importance of environmental citizenship.

### Number 3: Features of Wetlands

Help students sort out the various features of different types of wetlands.

### Number 4: Wetlands Bookmark

Brainstorm a list of ideas that could be used for making the bookmarks.

## 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-b**

### Answers to extended-response items:

**Question 1.** Responses will vary. Student should be able to demonstrate a basic understanding of the growth stages in a frog's life cycle (information presented on page 6 of the newsletter).

**Score 2 Points if...** The response indicates the student has a solid understanding of growing from an egg to a tadpole and then to an adult frog. The student has provided a response that is accurate and complete.

**Score 1 Point if...** The response indicates the student has a partial understanding of the growth stages of a frog. The student has provided a response that is incomplete and the information is too general or too simplistic.

**Score 0 Points if...** The response is inaccurate, confused or irrelevant.

**Question 2.** The response should demonstrate an understanding of the functions of wetlands (information presented on page 1 of the newsletter). Wetlands prevent areas from flooding. Wetlands help clean and filter water passing through them.

**Score 2 Points if...** The response indicates the student has a good understanding of the functions of wetlands. The student has provided a response that is accurate and complete.

**Score 1 Point if...** The response indicates the student has a partial understanding of the functions of wetlands. The student has provided a response that is essentially correct, but the information is too general or too simplistic.

**Score 0 Points if...** The response is inaccurate, confused or irrelevant.

# WATERDROPS Extended Activity Number 1

## Wetlands Alphabet Cards

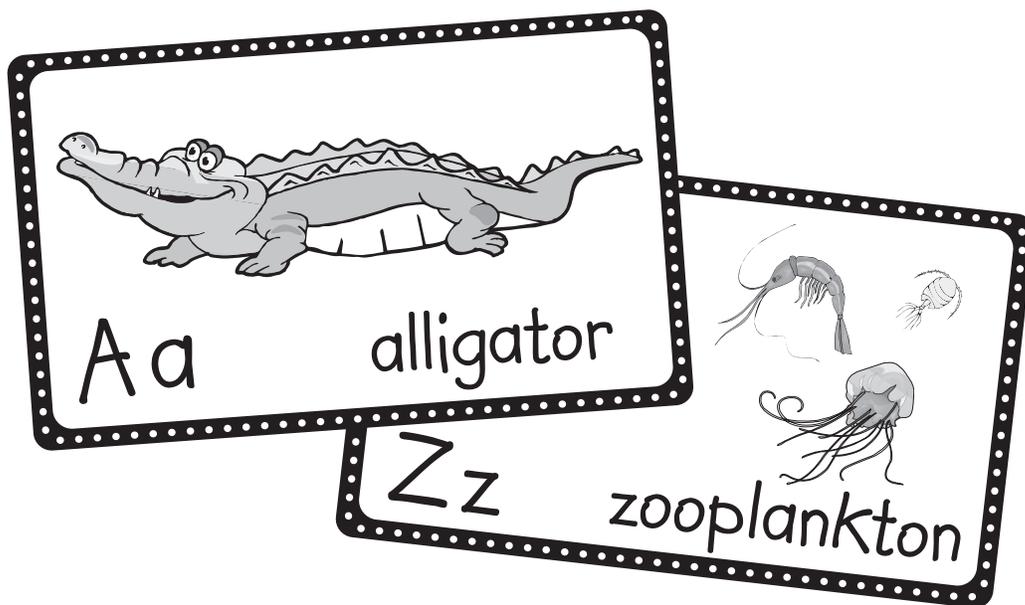
You have discovered that a variety of trees, plants and animals live in wetland environments. Now it is time to pass along your knowledge about these interesting places in nature. In this activity, you will teach young children about wetlands while they are learning the letters of the alphabet. You may be really surprised to find out how much fun it is teaching others!

### Materials:

- 26 index cards
- pencil
- colored markers, crayons or paints
- eraser

### Directions:

1. For each letter of the alphabet, think of something that begins with that letter and belongs in a wetland. Use the illustration to help you.
2. On an index card, print the capital and lowercase letter. Include a picture of the thing that begins with that letter and write the name of it on the card.
3. Make one card for each letter of the alphabet.
4. Find a younger person who is learning the letters of the alphabet. Help teach the letters of the alphabet to this child by using your wetlands cards.



### Extra Challenge

Get your whole class to select a younger class at your school. Meet as a group and help the younger students learn the letters of the alphabet. They will also learn about wetlands!

# WATERDROPS Extended Activity Number 2

## *A Letter to the Mayor*

Since wetlands are so important to our environment, they need to be protected. Sometimes people want to build homes, schools or businesses on wetlands.

Pretend the mayor of your town has asked people to write a letter to the town council. The council is thinking about building a big shopping mall where wetlands exist. The mayor wants the council to know how much people care about protecting the wetlands in their area. Do you think the mall should be built in this location? Let the council know what you think. Be sure to give reasons for your opinion.



# WATERDROPS Extended Activity Number 3

## Features of Wetlands

You learned that there are two main kinds of wetlands. Some wetlands contain salt water. Other wetlands contain fresh water. Write a fact about each wetland described on page 5 of the newsletter. Then draw an arrow from each wetland to Saltwater Wetlands or Freshwater Wetlands. This activity will help you discover that all wetlands are NOT the same!

Saltwater forested wetlands

Fact: \_\_\_\_\_  
 \_\_\_\_\_



Hardwood swamp

Fact: \_\_\_\_\_  
 \_\_\_\_\_

**Saltwater Wetlands**

Cypress swamp

Fact: \_\_\_\_\_  
 \_\_\_\_\_



Hydric hammock

Fact: \_\_\_\_\_  
 \_\_\_\_\_

**Freshwater Wetlands**

Coastal marsh

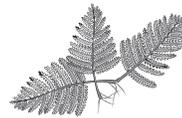
Fact: \_\_\_\_\_  
 \_\_\_\_\_

Wet prairie

Fact: \_\_\_\_\_  
 \_\_\_\_\_

Freshwater marsh

Fact: \_\_\_\_\_  
 \_\_\_\_\_



### Extra Challenge

Create a picture of your favorite wetland.

### Wetlands Bookmark

Wetlands are important to our environment. Create a bookmark and write a message about wetlands on it. You may want to begin your message with "Wetlands are special because . . ."

#### Materials:

- heavy construction paper
- pencil
- ruler
- scissors
- colored crayons or markers

#### Directions:

1. Cut a strip of construction paper so it measures 1 inch by 4 inches.
2. Draw part of a wetland on the top of the bookmark.
3. Use colored crayons or markers to complete the picture.
4. Write your special message neatly on the strip.



#### Extra Challenge

For extra fun, try writing a short poem about wetlands!

# **WATERDROPS** Challenge

**Directions:**

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

*Choose the best answer.*

1. You have read a lot about wetlands in this issue. What is a wetland?

- a. a wasteland used for dumping trash
- b. a natural area that has wet soils or is covered by water at times
- c. an area constructed by humans for only recreational activities
- d. a naturally dry area that contains very little wildlife

2. Which term below describes cloudy water found in a wetland?

- a. secchi
- b. filtered
- c. shiny
- d. turbid

3. What are the two main categories of wetlands?

- a. saltwater wetlands and freshwater wetlands
- b. hardwood swamps and freshwater marshes
- c. hydric hammocks and coastal saltwater marshes
- d. dry wetlands and flooded wetlands

4. What caused many of Florida's wetlands to disappear?

- a. unusual weather patterns
- b. development of land by humans
- c. an increase in wildlife populations
- d. a decrease in the human population



Activities in *WaterDrops Water Cycle* address the following Common Core State Standards and Next Generation Sunshine State Standards for grades 3–5:

## **Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects**

### **College and Career Readiness Anchor Standards**

#### **Writing: Text Type and Purposes**

W.CCR.2: Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

#### **Writing: Research to Build and Present Knowledge**

W.CCR.7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

#### **Writing: Range of Writing**

W.CCR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

## **Next Generation Sunshine State Standards for Science**

SC.3.L.17.2: Recognize that plants use energy from the sun, air, and water to make their own food.

SC.3.N.1.1: Raise questions about the natural world, investigate them individually and in teams through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.

SC.4.L.17.2: Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.

SC.4.L.17.3: Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers.

SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment.

SC.4.N.1.1: Raise questions about the natural world, use appropriate reference materials that support understanding to obtain information (identifying the source), conduct both individual and team investigations through free exploration and systematic investigations, and generate appropriate explanations based on those explorations.

SC.5.L.15.1: Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.5.N.1.1: Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.