

# Water Smart Citizens

Learning to Protect  
our Water Resources



**TOPIC: Water Management  
Teacher's Guide**

Southwest Florida  
*Water Management District*

WaterMatters.org • 1-800-423-1476





# Dear Teacher:

Welcome to the Water Smart Citizens program! The goal of the program is to educate students about Florida's valuable water resources and to help students gain a greater understanding of the local and state system of water management protection. The Water Smart Citizens program is targeted for students in grades 4–7, but may be used effectively with younger and older students to increase their awareness and respect for Florida's water resources. The program is correlated to grades 3–5, 6–8 and 9–12 of the Sunshine State Standards. It includes a variety of nonfiction articles, citizen action assignments, citizen activities, games, puzzles and Web sites to explore. All the information and activities contained in the booklet and the teacher's guide are designed to teach students about how and why water resources are managed and encourage them to become involved in water resources protection. Also, we have included a "Citizen's Challenge," which contains items similar to those students could expect to find on the Florida Comprehensive Assessment Test (FCAT).

Many other free materials are available from the Southwest Florida Water Management District (SWFWMD). We also offer water resources workshops for teachers. For additional information, please contact the Communications Department of the Southwest Florida Water Management District at (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4757. Visit our Web site at [WaterMatters.org](http://WaterMatters.org).

## Use these tips to help your students become Water Smart Citizens:

- Read the booklet and teacher's guide before using it with your students.
- Make copies of the "Citizen Activity" pages found in the teacher's guide.
- Use the vocabulary listed on page 14 of the student booklet.
- Encourage students to surf Web sites on water resources.
- Display the center-spread poster, "How Water is Managed for You."
- Make copies and administer the "Citizens Challenge" found on page 10 and the back cover of this teacher's guide. Discuss the results with students.

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The SWFWMD does not discriminate upon the basis of any individual's disability status. Anyone requiring reasonable accommodation under the ADA should contact the Communications Department at (352) 796-7211 or 1-800-423-1476 (FL only), TDD only 1-800-231-6103 (FL only).

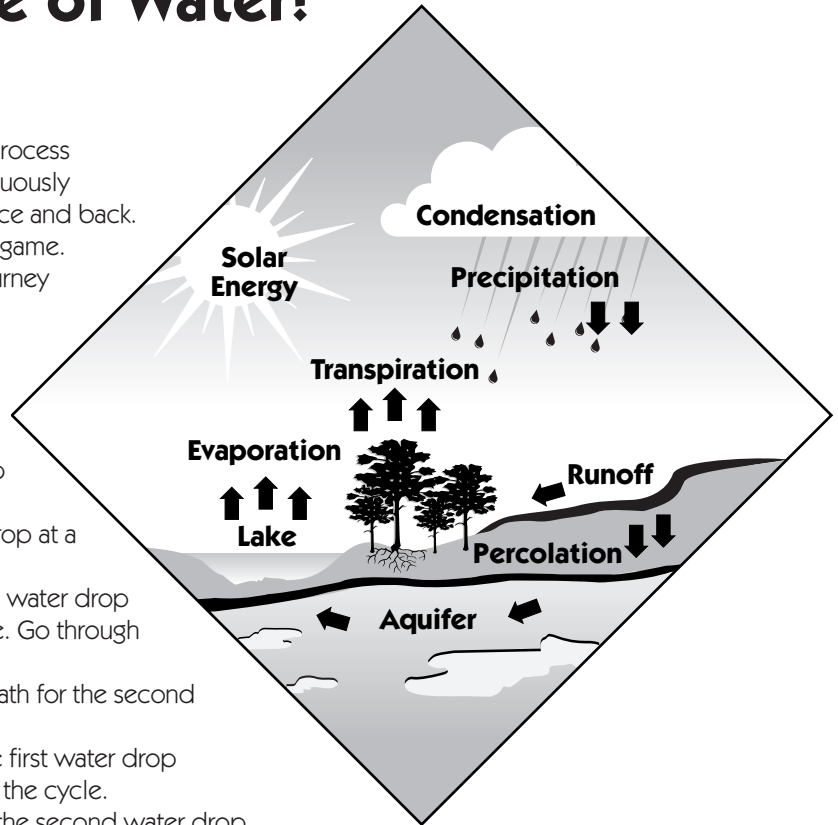
# Unit 1: Why Water Matters

## Citizen Activity: The Wondrous Cycle of Water!

### Directions:

The hydrologic cycle or water cycle is a never-ending process within our environment. The Earth's water supply continuously moves from the atmosphere down into the Earth's surface and back. Now it's your turn to play the Wondrous Cycle of Water game. Just follow these directions and you will be on your journey through the water cycle.

1. Select a partner to do this activity.
2. Each player should use a different colored pen, crayon or pencil.
3. The first player should draw a small water drop anywhere on the illustration.
4. The second player then draws a small water drop at a different location on the illustration.
5. The first player should trace a path that the first water drop may take on its journey through the water cycle. Go through several parts of the cycle.
6. The second player then takes a turn tracing a path for the second water drop to take through the cycle.
7. The first player should describe the path of the first water drop and include the terms for the different parts of the cycle.
8. The second player then describes the path of the second water drop.
9. Compare the two paths of the water drops and answer the questions below.



### Questions:

1. How were the paths of the two water drops alike?
  
  
  
  
  
  
  
  
  
  
2. How were the paths of the two water drops different?
  
  
  
  
  
  
  
  
  
  
3. Try adding two more water drops and repeat the activity.

# Unit 2: Why is Water Managed?

## Citizen Activity: The Many Users and Uses of Water!

### Directions:

You have learned that water is essential to life. Think about five ways that your family (don't forget about your pets) uses water for basic needs and recreation. List them in the column under Family. Do the same for Businesses and Farms & Ranches. Respond to the questions at the bottom. When you finish, you will understand why water needs to be managed!

| Family | Businesses | Farms & Ranches |
|--------|------------|-----------------|
| _____  | _____      | _____           |
| _____  | _____      | _____           |
| _____  | _____      | _____           |
| _____  | _____      | _____           |
| _____  | _____      | _____           |
| _____  | _____      | _____           |
| _____  | _____      | _____           |

Describe one problem that could occur if too much water is taken from our environment.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Give a possible solution to the problem you described above.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# Unit 3: How is Water Managed?

## Citizen Activity: Florida's Water Management Districts

### Directions:

Using the map on the following page, highlight in different colors the five water management districts and their boundaries on the map. Then color the rivers. Study the information presented on the map and use this information to complete the chart below.

| Water Management District | Southwest Florida | Northwest Florida | South Florida | St. Johns River | Suwannee River |
|---------------------------|-------------------|-------------------|---------------|-----------------|----------------|
| Number of Counties        |                   |                   |               |                 |                |
| Number of People          |                   |                   |               |                 |                |
| Major Rivers              |                   |                   |               |                 |                |

Which district serves the most people?

Which district covers the largest geographical area?

Which district has the most counties?

Which districts have six major rivers?

Which district do you live in?

How many people are served in your district?

Which county do you live in?

What is one fact you learned by doing this activity?



# Unit 4: How You Can Get Involved

## Citizen Activity: Water Smart Citizen Survey

As part of becoming a water smart citizen, you need to let us know how you feel about southwest Florida's water resources. Please complete the following survey and mail it to us. If we receive your response soon, we will send you a free prize! We need feedback from citizens like you!

I care about my water because \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To make sure that we have enough healthy water for our future, I think we need to \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I think our biggest challenge is \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I will try to protect our precious water resources by \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Student's name: \_\_\_\_\_

Home address: \_\_\_\_\_

City: \_\_\_\_\_ ZIP Code: \_\_\_\_\_

County: \_\_\_\_\_

School name: \_\_\_\_\_ Grade level: \_\_\_\_\_

**Send to:**

Youth Education  
Communications Department  
Southwest Florida Water Management District  
2379 Broad Street  
Brooksville, FL 34604-6899

# Unit 5: Being a Water Smart Citizen

## Citizen Activity: Surfing Water Conservation Sites

A lot of information is available to help you learn more about how to conserve water at home or at school. Visit Water Conservation for Kids at one of our Web sites at [www.swfwmd.state.fl.us/waterkids/index.htm](http://www.swfwmd.state.fl.us/waterkids/index.htm).

Try surfing several of the cool links and then answer these questions.

1. Which link did you like the most? Why?
2. Visit the link called "Water By the Numbers" and describe one new fact you learned.
3. Solve the mystery of how much water is used in your home by visiting the "Showerlock Holmes" link.
4. Visit the link that gives 15 simple and fun ways to save water. Describe three ways that you plan to conserve water in the future.
5. How would you rate this site? Circle one and give reasons for your rating. A B C D F

### Answers to Questions from Page 4

|                           |   |   |  |  |   |
|---------------------------|---|---|--|--|---|
| Water Management District | Southwest Florida   | Northwest Florida   | South Florida  | St. Johns River  | Suwannee River  |
| Number of Counties        | <b>16</b>   | <b>16</b>   | <b>16</b>  | <b>19</b>  | <b>15</b>   |
| Number of People          | <b>3.9 million</b>  | <b>1.1 million</b>  | <b>6 million</b>   | <b>4 million</b>   | <b>285,000</b>  |
| Major Rivers              | <b>Peace<br/>Hillsborough<br/>Withlacoochee<br/>Myakka<br/>Alafia<br/>Manatee</b> | <b>Apalachicola<br/>Choctawhatchee<br/>Escambia<br/>Ochlockonee<br/>Chipola</b> | <b>Kissimmee<br/>Lake<br/>Okeechobee<br/>St. Lucie Canal</b> | <b>St. Johns<br/>St. Marys<br/>Indian River<br/>Ocklawaha<br/>Nassau<br/>Halifax</b> | <b>Suwannee<br/>Santa Fe<br/>Withlacoochee<br/>Alapaha<br/>Waccasassa<br/>Aucilla</b> |

Which district serves the most people? **South Florida**

Which district covers the largest geographical area? **South Florida**

Which district has the most counties? **St. Johns**

Which districts have six major rivers? **Southwest Florida, St. Johns, Suwannee**

# Correlation with Sunshine State Standards

The following activities presented in the Water Smart Citizens program have been correlated to the Sunshine State Standards.

## Unit 1: Why Water Matters

**Citizen Action** (Page 2 of Student Booklet)

- **Elementary School (3-5).** *Science:* SC.A.1.2, SC.D.1.2; *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2.
- **Middle School (6-8).** *Science:* SC.A.1.3, SC.D.1.3; *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3.
- **High School (9-12).** *Science:* SC.A.1.4, SC.D.1.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4.

**Citizen Activity** (Page 2 of Teacher's Guide)

- **Elementary School (3-5).** *Science:* SC.A.1.2, SC.D.1.2.
- **Middle School (6-8).** *Science:* SC.A.1.3, SC.D.1.3.
- **High School (9-12).** *Science:* SC.A.1.4, SC.D.1.4.

## Unit 2: Why is Water Managed?

**Citizen Action** (Page 4 of Student Booklet)

- **Elementary School (3-5).** *Science:* SC.D.2.2, SC.G.2.2; *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2, LA.D.2.2; *Social Studies:* SS.B.2.2.
- **Middle School (6-8).** *Science:* SC.D.2.3, SC.G.2.3; *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3, LA.D.2.3; *Social Studies:* SS.B.2.3.
- **High School (9-12).** *Science:* SC.D.2.4, SC.G.2.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4, LA.D.2.4; *Social Studies:* SS.B.2.4.

**Citizen Activity** (Page 3 of Teacher's Guide)

- **Elementary School (3-5).** *Science:* SC.D.2.2, SC.G.2.2; *Language Arts:* LA.A.1.2, LA.A.2.2; *Social Studies:* SS.B.2.2, SS.D.1.2.
- **Middle School (6-8).** *Science:* SC.D.2.3, SC.G.2.3; *Language Arts:* LA.A.1.3, LA.A.2.3; *Social Studies:* SS.B.2.3, SS.D.1.3.
- **High School (9-12).** *Science:* SC.D.2.4, SC.G.2.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4; *Social Studies:* SS.B.2.4, SS.D.1.4.

## Unit 3: How is Water Managed?

**Citizen Action** (Page 6 of Student Booklet)

- **Elementary School (3-5).** *Science:* SC.D.2.2, SC.G.1.2, SC.G.2.2; *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2, LA.D.2.2; *Social Studies:* SS.B.1.2, SS.D.1.2.
- **Middle School (6-8).** *Science:* SC.D.2.3, SC.G.1.3, SC.G.2.3; *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3, LA.D.2.3; *Social Studies:* SS.B.1.3, SS.D.1.3.
- **High School (9-12).** *Science:* SC.D.2.4, SC.G.1.4, SC.G.2.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4, LA.D.2.4; *Social Studies:* SS.B.1.4, SS.D.1.4.

**Citizen Activity** (Page 4 of Teacher's Guide)

- **Elementary School (3-5).** *Language Arts:* LA.A.1.2, LA.A.2.2; *Social Studies:* SS.B.1.2, SS.B.2.2.
- **Middle School (6-8).** *Language Arts:* LA.A.1.3, LA.A.2.3; *Social Studies:* SS.B.1.3, SS.B.2.3.
- **High School (9-12).** *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4; *Social Studies:* SS.B.1.4, SS.B.2.4.

## Unit 4: How You Can Get Involved

**Citizen Action** (Page 10 of Student Booklet)

- **Elementary School (3-5).** *Science:* SC.D.2.2, SC.G.2.2; *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2; *Social Studies:* SS.C.2.2, SS.D.1.2.
- **Middle School (6-8).** *Science:* SC.D.2.3, SC.G.2.3; *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3; *Social Studies:* SS.C.2.3, SS.D.1.3.
- **High School (9-12).** *Science:* SC.D.2.4, SC.G.2.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4; *Social Studies:* SS.C.2.4, SS.D.1.4.

**Citizen Activity** (Page 6 of Teacher's Guide)

- **Elementary School (3-5).** *Science:* SC.D.2.2, SC.G.2.2; *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2; *Social Studies:* SS.C.1.2, SS.C.2.2, SS.D.1.2.
- **Middle School (6-8).** *Science:* SC.D.2.3, SC.G.2.3; *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3; *Social Studies:* SS.C.1.3, SS.C.2.3, SS.D.1.3.
- **High School (9-12).** *Science:* SC.D.2.4, SC.G.2.4; *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4; *Social Studies:* SS.C.1.4, SS.C.2.4, SS.D.1.4.

## Unit 5: Being a Water Smart Citizen

**Citizen Action** (Page 12 of Student Booklet)

- **Elementary School (3-5).** *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2, LA.D.2.2; *Social Studies:* SS.C.2.2, SS.D.1.2, SS.D.2.2.
- **Middle School (6-8).** *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3, LA.D.2.3; *Social Studies:* SS.C.2.3, SS.D.1.3, SS.D.2.3.
- **High School (9-12).** *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4, LA.D.2.4; *Social Studies:* SS.C.2.4, SS.D.1.4, SS.D.2.4.

**Citizen Activity** (Page 7 of Teacher's Guide)

- **Elementary School (3-5).** *Language Arts:* LA.A.1.2, LA.A.2.2, LA.B.1.2, LA.B.2.2.
- **Middle School (6-8).** *Language Arts:* LA.A.1.3, LA.A.2.3, LA.B.1.3, LA.B.2.3.
- **High School (9-12).** *Language Arts:* LA.A.1.4, LA.A.2.4, LA.B.1.4, LA.B.2.4.

# Citizen's Challenge

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 in preparing for the FCAT.

**Answers to multiple-choice items:** 1-d, 2-a, 3-c, 4-a, 5-c, 6-b, 7-b, 8-b, 9-c, 10-d

## Answers to extended-response items:

**Question 1.** Responses will vary. Students should use a persuasive style to stress the importance of protecting water resources.

**Score 2 points if...** The response indicates that the student has a thorough understanding of the importance of protecting water resources.

**Score 1 point if...** The response indicates that the student has a partial understanding of the importance of protecting water resources.

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

**Question 2.** Responses will vary. Students should be able to demonstrate an understanding of water conservation and list several ways to conserve water.

**Score 2 points if...** The response indicates that the student has a thorough understanding of the importance of protecting water resources.

**Score 1 point if...** The response indicates that the student has a partial understanding of the importance of protecting water resources.

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

# Citizen's Challenge

## Directions:

This is your opportunity to demonstrate what you have learned about being a water smart citizen. It is also an opportunity for you to practice answering questions similar to those found on the FCAT. Do your best and meet the challenge!

**For each multiple-choice item, select the best answer.**

- Sometimes we don't realize how important water is in our lives. Why does water matter?
  - because animals need water to survive
  - because humans need water to survive
  - because plants need water to survive
  - all of the above
- What is the hydrologic cycle?
  - It is the process in which water travels through the environment.
  - It is the process in which water travels through pipes to our faucet.
  - It is the process in which air moves through the environment.
  - It is another name for the rinse cycle on dishwashers and washing machines.
- Which one below is NOT part of the hydrologic cycle?
  - condensation
  - evaporation
  - transportation
  - precipitation
- In Florida, there are five water management districts that are responsible for managing and protecting our water resources. Why is water managed?
  - to ensure that there is enough clean water available without damaging the environment
  - to prevent citizens from getting involved in managing water resources
  - to encourage citizens to use more water in their homes
  - to ensure that the cost of water continues to increase
- The following problems can occur when too much water is taken out of the environment. Which one below does NOT belong in the list?
  - a loss of habitat for plants and animals
  - lowered lake levels
  - an increase in habitat for animals
  - lowered groundwater levels
- Many groups are involved in the water supply process. Which one below does NOT belong in the list?
  - the Department of Environmental Protection (DEP)
  - neighborhood cats and dogs
  - the Southwest Florida Water Management District (SWFWMD)
  - water supply authorities and water utilities
- The Southwest Florida Water Management District is a unique system that is divided into nine hydrologic areas called basins. Each basin has its own Basin Board. Choose the best reason why Basin Boards are helpful?
  - Basin Boards can focus on water issues in other states.
  - Basin Boards can focus on water issues within a smaller, local area.
  - Basin Boards only focus on water issues outside their local area.
  - Basin Boards can focus on water issues throughout Florida.
- Water management districts determine how much water can be withdrawn from lakes, rivers or underground. The districts issue permits for withdrawing water. What is a permit?
  - a document that prevents someone from doing something
  - a document that gives permission to do something
  - a check for a specific amount of money
  - a certificate of achievement
- Under the Florida Sunshine Law, all government meetings are open to the public. What does this mean?
  - The public may not attend government meetings unless they are held in public buildings.
  - All government meetings must be held on sunny days.
  - Anybody can go to one of these meetings and comment on the decisions being made.
  - Citizens must receive invitations in order to attend meetings.
- On your adventure, you have learned a lot about how important it is to protect our water resources. As a citizen, how can you get involved?
  - Participate in the decisions that are made about water resources.
  - Communicate your feelings about water resources issues to your local newspaper.
  - Practice water conservation habits.
  - All of the above.

