



current water info for schools

A publication of the Southwest Florida Water Management District

Sustainability Issue

Teacher's Guide

Welcome to the sustainability issue of WaterWeb! As part of the Splash! Water Resources Education program, the Southwest Florida Water Management District offers the WaterWeb water resources newsletter for middle and high school students. The newsletter is correlated to grades 6–8 and 9–12 of the Sunshine State Standards and provides an interesting way for students to increase their awareness and respect for Florida's precious water resources.

This issue of WaterWeb focuses on sustainability. It includes an introduction to the concept of sustainability, a media reprint about new water conservation measures, a sustainability survey, a crossword puzzle and word scramble, and suggestions for learning more about sustainability using the Internet. All of the information and activities are designed to teach students about sustainability. In addition, we have included WaterWeb Challenge, which contains items similar to those students could expect to find on the Florida Comprehensive Assessment Test (FCAT). Let WaterWeb make a splash in your classroom today!

Many other free materials are available from the District. We also offer water resources workshops for teachers. Please contact us if you have any questions or suggestions about our water resources education programs.

Sincerely,

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Southwest Florida
Water Management District



Visit our Web site at WaterMatters.org

Introduction

Page 1

Ask students if they have ever heard the term *sustainability* and have them define what they think it means. Then read the article together. Discuss the example of a refrigerator as a closed environment and have students provide other examples of environments that depend on sustainability.

Sunshine State Standards

Science (6-8): Processes that Shape the Earth, SC.D.1.3., SC.D.2.3;
How Living Things Interact with Their Environment, SC.G.1.3.

Science (9-12): Processes that Shape the Earth, SC.D.1.4., SC.D.2.4;
How Living Things Interact with Their Environment, SC.G.1.4.

WaterWeb Query

Page 1

Use a model of the world to show the vast amount of water covering the Earth's surface. Then ask two students to read the parts of Question and Answer.

Sunshine State Standards

Science (6-8): The Nature of Matter, SC.A.1.3; Processes that Shape the Earth, SC.D.1.3, SC.D.2.3.

Science (9-12): The Nature of Matter, SC.A.1.4; Processes that Shape the Earth, SC.D.1.4, SC.D.2.4.

Media Reprint

Pages 2 & 3

Read the article together. Have students discuss the questions based on information they learned from the article. Answers: 1. Restrictions help communities conserve water in a systematic and (wide-based) manner. 2. Responses will vary. 3. Answers may include talking to neighbors, explaining to others the importance of water conservation, etc. Read the list of tips for saving water outdoors and ask students to add to the list.

Sunshine State Standards

Science (6-8): Processes that Shape the Earth, SC.D.2.3; How Living Things Interact with Their Environment, SC.G.1.3., SC.G.2.3.

Social Studies (6-8): People, Places and Environments. SS.B.2.3.

Science (9-12): Processes that Shape the Earth, SC.D.2.4; How Living Things Interact with Their Environment, SC.G.1.4., SC.G.2.4.

Social Studies (9-12): People, Places and Environments. SS.B.2.4.

Career Focus

Page 4

Read the interview with your students. Ask them if they know someone who works for the Florida Department of Environmental Protection (DEP). Then ask your students if they would be interested in this type of career and have them give reasons for their responses.

Administering surveys is a way to collect information about a subject. Read the introduction together. Make several copies of the survey and have students complete the activity. Compile the results from all of the surveys and ask students to draw conclusions based on the collected information.

Sunshine State Standards

Science (6-8): How Living Things Interact with Their Environment, SC.G.1.3; The Nature of Science, SC.H.1.3.
Science (9-12): How Living Things Interact with Their Environment, SC.G.1.4; The Nature of Science, SC.H.1.4.

Classroom Activity

Land Use My Way

Before beginning this activity, discuss some of the effects development can have on the environment. The activity has been designed so that it can be completed in three sessions.

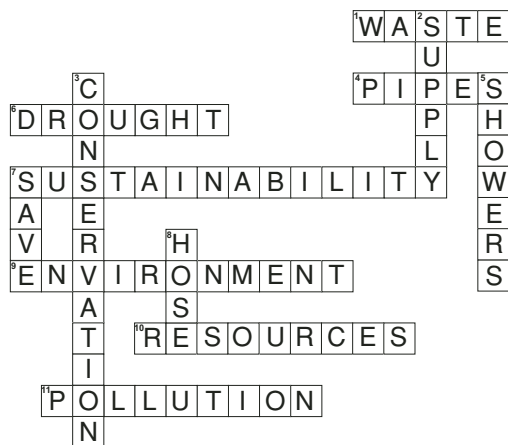
Sunshine State Standards

Science (6-8): Processes that Shape the Earth, SC.D.1.3; How Living Things Interact with Their Environment, SC.G.1.3, SC.G.2.3.
Visual Arts (6-8): Skills and Techniques, VA.A.1.3; Creation and Communication, VA.B.1.3.
Science (9-12): Processes that Shape the Earth, SC.D.1.4; How Living Things Interact with Their Environment, SC.G.1.4, SC.G.2.4.
Visual Arts (9-12): Skills and Techniques, VA.A.1.4; Creation and Communication, VA.B.1.4.

Activities

Although these activities are meant to be fun, they are designed to reinforce important vocabulary and concepts associated with understanding sustainability.

Crossword Puzzle Answers



Word Scramble Answers:

sustainability, development, community, wetlands, nature

Sunshine State Standards

Language Arts (6-8): Reading, LA.A.1.3, LA.A.2.3.
Language Arts (9-12): Reading, LA.A.1.4, LA.A.2.4.



A lot of information is available on the subject of sustainability and related issues. Be sure to visit the District's Web site listed in this section. Printed copies of the publications listed at this site are also available by calling 1-800-423-1476, ext. 4757.

Sunshine State Standards

Science (6-8): Processes that Shape the Earth, SC.D.2.3; How Living Things Interact with Their Environment, SC.G.1.3; The Nature of Science, SC.H.2.3, SC.H.3.3.
Language Arts (6-8): Reading, LA.A.2.3.
Science (9-12): Processes that Shape the Earth, SC.D.2.4; How Living Things Interact with Their Environment, SC.G.1.4; The Nature of Science, SC.H.2.4, SC.H.3.4.
Language Arts (9-12): Reading, LA.A.2.4.

WaterWeb Challenge

WaterWeb 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 for preparing for FCAT. Students should be allowed to use the *WaterWeb* issue as they complete the Challenge.

Answers to multiple-choice items:

1-a, 2-c, 3-c, 4-d, 5-c, 6-d, 7-a, 8-a, 9-b, 10-d

Extended Response Items

Responses will vary. Students should be able to demonstrate an understanding of the environmental activities occurring in their neighborhoods.

Responses will vary. Students should be able to generate a creative message about sustainability.

Sunshine State Standards

Science (6-8): The Nature of Matter, SC.A.1.3, SC.B.2.3; Processes that Shape the Earth, SC.D.1.3, SC.D.2.3; How Living Things Interact with Their Environment, SC.G.1.3.
Language Arts (6-8): Reading, LA.A.2.3; Writing, LA.B.2.3.
Science (9-12): The Nature of Matter, SC.A.1.4, SC.B.2.4; Processes that Shape the Earth, SC.D.1.4, SC.D.2.4; How Living Things Interact with Their Environment, SC.G.1.4.
Language Arts (9-12): Reading, LA.A.2.4; Writing, LA.B.2.4.



WaterWeb Challenge



Directions: *This is your opportunity to demonstrate what you have learned about sustainability. 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.

- In this issue of *WaterWeb*, you have learned a lot about sustainability. What does this word mean?
 - to keep up, carry or withstand
 - to use up
 - to conserve
 - to put down
- One of our most precious resources is water. What is the most important role the hydrologic cycle plays in sustaining this resource?
 - It causes clouds to form in the Earth's atmosphere.
 - It creates water droplets on the Earth's surface.
 - It cleans and replenishes the Earth's surface water bodies and aquifers.
 - It prevents the sun from heating the Earth's surface.
- Approximately how much of the world's water can be used for drinking?
 - 97%
 - 75%
 - 1%
 - 2%
- Which one below does NOT belong in a list of resources that we depend on in our daily lives?
 - water for drinking and personal uses
 - clean air
 - energy for heating and cooling
 - pollution
- What did we learn from the article that discussed new water conservation measures?
 - Water conservation measures rarely produce positive results.
 - Water restrictions should only be used during periods of droughts.
 - Year-round water restrictions can serve as a baseline for conservation.
 - Water restrictions should be followed only on a seasonal basis.
- What is a good tip for helping to sustain a healthy lawn?
 - Mow your lawn so that the grass is a maximum of 1 inch in height.
 - Water your lawn every day.
 - Water your lawn only when it is sunny.
 - Keep the grass on lawns at least 3 to 4 inches high.
- Xeriscape™ is becoming more popular each year. What is the purpose of Xeriscape?
 - To create landscape areas that don't require a lot of water.
 - To avoid the practice of water conservation.
 - To keep garden centers in business.
 - To increase the size of outdoor areas that depend on water.
- Why should we be concerned about the increased future growth and development of our area?
 - People are using water faster than it can be replaced.
 - People are using less water than in previous years.
 - New development of an area causes a decrease in demand for water.
 - The cost of water decreases as more people move to our area.
- How could the concept of sustainability be most easily described?
 - an empty refrigerator
 - a balancing act between our current resources and our future resources
 - a globe showing the amount of water covering the Earth's surface
 - a survey with a list of questions
- What can YOU do to help sustain our resources?
 - Practice water conservation indoors and outdoors.
 - Teach others about the importance of sustainability.
 - Participate in activities that promote environmental citizenship.
 - All of the above.

