Clean Water Volunteers *Handout*

Students practice for the FCAT and learn about volunteer watershed clean-up and monitoring programs

JOIN A STREAM TEAM!
Dive into a Clean Water Project

1. To find the reading segment, go to www.Pinellas.WaterAtlas.org > Digital Library
2. Search “EPA Surf Your Watershed”. And click on the resulting Link to the EPA website.
3. Once you are on that page, look at the topics in small print at the top of the page. Click on “Wetlands, Oceans & Watersheds.”
4. Under “Protecting Our Resources” click on “Polluted Runoff Control”.”
5. Click on “Education Resources” Scroll down to “Articles and Activities for Middle school Students” > “Join a Stream Team.”
6. Read the article.

FCAT-FRIENDLY READING QUESTIONS: (circle the correct responses.)

1. The author included several photographs, illustrations, and information boxes in this article. Which of these was intended to motivate students to become volunteer water quality monitors?

a. Drawings of bugs that live in the water.
b. Definitions of water quality careers.
c. Photographs of students taking water samples.
d. Photographs of people collecting trash.

2. Based on your reading of the article and the illustration titled “What’s Buggin’ You?”, which of the following would you expect to find in greatest number in a very polluted lake?

a. Hellgrammite, Beetle Larvae, Aquatic Worm
b. Aquatic Worm, Midge, Leech
c. Hellgrammite, Mayfly, Stonefly
d. Beetle Larvae, Scud, Damselfly

3. What is the author’s main purpose for including two websites in this article?

a. To encourage students to become computer literate.
b. To encourage students to spend more time out in nature.
c. To encourage students to participate in water quality programs.
d. To encourage students to better utilize recreational water activities.

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4. The article describes three ways individuals can volunteer to improve environmental water quality. Use details and information from the article to explain how you could implement ONE of these projects in your community.

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FCAT-FRIENDLY WRITING PROMPTS:

1. A variety of volunteer activities are available for middle and high school students. Think about a volunteer activity that a group of students could work on together. Write to explain why you would choose this volunteer experience.

2. Some professions that deal with water quality include analyzing water, studying the way insects react to polluted environments, and recruiting volunteers to test water quality. Think about which of these careers would be most appropriate for you. Write to persuade your guidance counselor that this career choice is right for you.

3. During the 1998 International Coastal Cleanup, more than 40,000 cigarette butts were picked up by volunteers. Think about the trash you see regularly near your school, home, or recreation area. Write to persuade your principal to sponsor a cleanup event at one of these sites.

4. Baby mayflies usually die when their habitat becomes polluted, while other creatures, like leeches, thrive in poor quality water. Imagine that your science project detects 50% fewer mayflies in your school's lake in 2006 than a previous study found in 2005. Write to explain how this shift in aquatic life could cause problems for your school.

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FCAT-FRIENDLY MATH QUESTIONS:

Assume that you've recently been hired to manage the volunteer program for water quality sampling in Pinellas County. Use the data in the following table, gathered from the Pinellas Water Atlas Website, to help you find answers needed in creating a regional volunteer plan.

Volunteer Watershed Data

Watershed Name	*# Volunteers in Watershed*	*Watershed Area in Square Miles*	*Volunteer Coverage #Volunteers / Square Mile*	*% Agricultural Land in Watershed*	*% Built Lands (Residential & Commercial) in Watershed*	*% Conservation Land*
Boca Ciega Bay	0	19.8		0	94	1
Clearwater Harbor	2	13.9		0	96	0
Lake Tarpon	0	35.1		3	48	23
Lower Tampa Bay	1	16		0	89	6
Narrows	2	15.3		1	90	5
Old Tampa Bay	1	61		1	75	8
Riviera Bay	0	24.2		0	82	3

1. Start your assessment by figuring out how strong your volunteer coverage is in each watershed. For the purposes of your study, the best coverage is 1 volunteer per square mile. The worst coverage is 0 volunteers per square mile. Compute the volunteer coverage for each watershed and enter it in the table above.

[Note: In this study, volunteer coverage is equivalent to # of volunteers ÷ square miles. Obviously, in real life you can't have 1/3 of a volunteer. However, since we're dealing here with volunteer coverage, {not the specific # of volunteers} your answers for question 1 and your calculations for questions 2 and 3 may include values that are not whole numbers.]

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On the lines below, write the names of the two watersheds with the best volunteer coverage.

a._____

b._____

2. The next step is finding out where improvement is needed. In the area below, write the names of the watersheds that have less than average volunteer coverage for Pinellas County. Be sure to show your work. [Note: As before, volunteer coverage is equivalent to # of volunteers ÷ square miles.]

3. You hope to find out why some areas have below-average volunteer levels. Based on the information in the table, is there any correlation between the volunteer coverage and the way this land is being used by the community? [Note: As before, volunteer coverage is equivalent to # of volunteer's ÷ square miles.] Circle the correct answer.

a. The highest % of Conservation Lands correlates strongly with the best volunteer coverage.
b. The highest % of Built Lands correlates weakly with the best volunteer coverage.
c. The lowest % of Agricultural lands correlates strongly with the lowest volunteer coverage.
d. There is no correlation between Land Use and volunteer coverage.

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4) You are planning to recruit additional volunteers in watersheds with poor water quality. What is the minimum ADDITIONAL number of volunteers you would need to recruit in the Old Tampa Bay watershed so that the total volunteer coverage in that watershed surpasses the county average? Be sure to show your work or explain your thought process. [Note: Remember, while volunteer coverage can be a fraction or decimal, real people do not come in halves or thirds. Be sure that your answer for question # 4 is a whole number.]

Name: Date: