

What's a Watershed? *Teacher's Guide*

Students practice for the FCAT while learning about watersheds.

GRADE LEVEL: Upper Elementary

SUBJECT AREA/COURSE: Reading, Writing (Language Arts) and Math

SUNSHINE STATE STANDARDS:

- The student reads text and determines the main idea or essential message, identifies relevant supporting details and facts, and arranges events in chronological order. (LA.A.2.2.1)
- The student determines the author's purpose in a simple text. (LA.A.2.2.2)
- The student reads and organizes information for a variety of purposes, including making a report, conducting interviews, taking a test, and performing an authentic task. (LA.B.2.2.5)
- The student recognizes the difference between fact and opinion presented in a text. (LA.B.2.2.6)
- The student selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fraction, and division of whole numbers. (MA.A.3.2.2)
- The student adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator. (MA.A.3.2.3)
- The student determines range, mean, median, and mode from sets of data. (MA.E.1.2.2)

ACADEMIC OUTCOMES/LESSON OBJECTIVES:

- Students will read a selection adapted from the Seminole Watershed Atlas, written in FCAT practice form.
- Students will respond to FCAT-type questions or prompts in Reading, Writing, and Math.

DURATION: One instructional period

TEACHER BACKGROUND INFORMATION: A watershed (or drainage basin) is the area of land that drains into a particular river or lake. Storm water contributes to the flow in any watershed and is analyzed for flood control as well as movement of pollutants like oil, pesticides, and fertilizers. The amount of storm water in an area varies greatly, due to Florida's "scattered showers" which leave one watershed with below-average water levels, and another with above-average levels. These waters always flow towards the lowest water body in a drainage basin. Each small Seminole County drainage basin flows into the larger St. Johns River watershed. The St. Johns River eventually flows into the Atlantic Ocean near Jacksonville.

Scientists collect data to measure the health of watersheds and their waterbodies. All available scientific information (historical and recent) for Seminole County waterbodies has been placed in a database and is available through the Seminole WaterAtlas website.

To access this information, go online to www.Seminole.WaterAtlas.org. Click on "The Atlas" and then on Interactive Map. To find your watershed, click on the button for "an address," click in the text

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block and then type your address or the school's address (no city). A map will come up with that address marked by a red star. The name of your watershed is highlighted in yellow. If you want to see more of the map, click on the zoom out tool (on the top left), and then click on the star. There are many interesting map features you can explore on this page; however for this activity, we are interested in the watershed. Type the name of the watershed in the text block at the upper right and press enter.

Explore your watershed site, then lead your students on a virtual tour of their watershed as part of the preparation for this activity. Note that the school and student's homes might be in different watersheds, because school zones aren't based on watersheds!

The hands-on watershed activity described in the student reading is from a Project WET workshop. For more information on Project WET and more activities on water, contact the St. Johns River Water Management District, <http://www.sjrwmd.com/>.

MATERIALS NEEDED: Internet access with www.Seminole.WaterAtlas.org bookmarked, student pages for "What Is a Watershed?" To do the hands-on activity described in the student reading section: scrap copy paper clean on one side, water-based markers, water-filled spray bottles, newspapers to protect desks, sponges for clean-up

SAFETY: N/A

VOCABULARY: watershed, basin, swale, storm drain, contour map, pollution

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KEY:

Reading

1. Use the rubric for Short Response Reading Questions – 2 points

LA.A.2.2.1, Bloom's Taxonomy Level One

Example of a Top-Score Response:

If there's a pollution event, scientists can look at contour maps of the watershed to see which areas are higher than the polluted spot. This will give them some clues about where the pollution is coming from. They know the pollution is coming from inside the watershed, because if it started out outside the watershed, it couldn't have flowed down to where they found it. Then they can look at the kinds of pollution they're seeing and try to match them up with the people or companies who might be adding the pollution to the environment.

2. c. LA.A.2.2.1, Bloom's Taxonomy Level One
3. b. LA.A.2.2.1, Bloom's Taxonomy Level One
4. b. LA.A.1.2.2, Bloom's Taxonomy Level Two

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Writing

For All – Use the rubric for Florida Writes! – 6 points

1. LA.B.2.2.5
2. LA.B.2.2.5
3. LA.B.2.2.6
4. LA.B.2.2.6

Math

1. d. MA.E.1.2.2
 2. a. MA.A.1.2.3
 3. b. MA.A.3.2.2, MA.A.3.2.3
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