UF|CPET

FFL Principle 8- Reduce Stormwater Runoff
Stormwater Aquifer Activity- High School

Jeneane Maddaloni, Pasco High School

Program Type: In-class Activity	**Duration:** 3 class periods

Standards:

SC.912.L.17.19: Describe how different natural resources are used to make products and how their availability can influence human activity.

SC.912.N.1.1: Define a problem based on a specific body of knowledge and do the following: pose questions about the natural world, conduct systematic observations, examine books and other sources of information to see what is already known, review what is known in light of empirical evidence, plan investigations, use tools to gather, analyze, and interpret data, pose answers, explanations, or descriptions of events, generate explanations that explicate or describe natural phenomena (inferences), use appropriate evidence and reasoning to justify these explanations to others, and communicate results of scientific investigations.

SC.912.L.17.11: Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.

SC.912.L.17.16: Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and habitat destruction.

Learning Objectives: Understand how we protect our aquifer and other water bodies from stormwaters.

Guiding Questions: What is an aquifer? What type of aquifer does Florida have? How do stormwaters move into an aquifer?

Intended Outcomes

As a result of the program, what I want my audience to LEARN…	**As a result of the program, I want my audience to ACT by…**	**Assessment: (*How will you know* your audience has reached your intended outcomes)**
What is stormwater What is an aquifer and groundwater Parts of an aquifer Florida has a large aquifer	Explain the terms stormwater, aquifer, and groundwater Describe parts of an aquifer how water travels through it Plan for protection of groundwater	Review of students' notes, map, article foldables Evaluation of groups' plans and presentations

Schedule Layout:	**Items Needed:**
Part 1: Introduction to Aquifers and Completion of Diagram Use three or four Film Clips with note taking. Review each film before moving to the next film. Students will label an aquifer with all of the processes/parts of an aquifer	Notetaking can be on notebook paper or a teacher prepared handout Unlabelled aquifer diagram. A word bank can be provided *(optional)*
<u>Part 2: Article Reading and Notetaking</u> Students will read the article and create an 8 box foldable. They will use the headings from the article for the topics of each box and fill in the main ideas. Near the end of the class, the teacher will review the foldable and the class will discuss what they put in each box.	***Article:*** edis.ifas.ufl.edu/publication/FR440 "Water Quality in the Floridian Aquifer Region" Colored paper for the foldable
Part 3: Create Plans to Reduce Water Pollution into Florida Aquifer Using handout, students will work in a small group or with a partner to create a plan. The plan should have explanations as to why parts are included. Students will present their plans to the class.	Aquifer Plan Handout

Edited by Morgan Nielsen, Center for Precollegiate Education and Training, University of Florida

Details:

Activity Set-Up:

Part 1 Teacher directions: Teacher will need to set up which You-Tube film clips they want to use. Three or four would be good. This is an introduction on aquifers and needs to have the Florida aquifer discussed too. The map needs to be altered for the students to use; word bank also needs to be created.

Part 2 Teacher directions: Teachers can modify the article to reading level or length. Remember to site the article's source on your modified copies. The discussion part is very important to making sure every student took out what was important to the article. Questions are welcomed.

Part 3 Teacher directions: Plan directions are included on supplementary handout. Groups can be shoulder-partners, groups of three or other configurations. Option to prepare a rubric and give to students to set expectations. Recommended presentations be 3-5 minutes, but can be extended based on class time and expectations of detail.