UF|CPET

FFL Principle 2- Water Efficiently
High School

Jennifer Troy, Newberry High School

Program Type: Outreach Activity	**Duration:** 100 minutes

Standards:
SC.912.L.17.20: Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.
SC.912.L.17.11: Evaluate the costs and benefits of renewable and nonrenewable resources, such as water.
SC.912.L.17.16: Discuss the large-scale environmental impacts resulting from human activity.
SC.912.N.1.1: Define a problem based on a specific need and propose a solution using scientific principles.

Learning Objectives:
1. Recognize how human choices impact natural resources and the environment.
2. Describe strategies that promote sustainability in outdoor spaces.
3. Analyze the relationship between landscape practices and environmental health.
4. Apply scientific reasoning to propose environmentally responsible solutions.

Guiding Question: ***Why is water efficiency critical to Florida's ecosystems and population?***
Consider: Florida's unique climate and water table, overwatering and runoff and local environmental pressures like red tide and algal blooms

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)**
Identify and describe the 9 Florida-Friendly Landscaping™ Principles. Explain how water-efficient landscaping supports environmental sustainability. Evaluate how different landscaping choices affect water use, runoff, and ecosystems. Design a landscaping solution that prioritizes water efficiency.	Identify and describe key FFL principles related to water efficiency. Distinguish between water-efficient and water-wasting landscaping practices. Analyze a landscape (real or imagined) for water efficiency and environmental impact. Justify landscaping choices using scientific reasoning and environmental knowledge. Recommend changes to local or school landscaping to improve water efficiency.	Completed group project Students have presented their project and demonstrated understanding Completed student worksheet/ exit ticket

Schedule Layout:	**Items Needed:**
<u>Day 1: (50 min)</u> ***5 min:*** Students complete a bell work question- where their water comes from. ***20 min:*** Lecture on Florida's water • Sources of Water in Florida: aquifers (especially the Floridan aquifer), springs, rivers, lakes, wetlands, rainfall • Uses: drinking water, agriculture, landscaping, tourism, industry • Threats: pollution (nitrates, runoff), over-extraction, saltwater intrusion, climate change • Conservation Solutions: Florida-Friendly Landscaping™, rainwater harvesting, water restrictions, public policy	-Lecture -Printed articles and discussion questions

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

• Visual Aids: Use maps, photos of springs, aquifers, and pollution examples; possibly include a short video clip from Florida DEP or SWFWMD. ***20 min:*** Article Reading & Discussion "Water, Water, Everywhere, But Not Enough to Drink?" by Dana L. Crosby, Florida State University Journal of Land Use & Environmental Law (2018); provided for free and open access by Scholarship Repository *https://ir.law.fsu.edu/cgi/viewcontent.cgi?article=1162&context=jluel* Students read individually or in pairs, highlighting or annotating key points about water sources, problems, and solutions. ***Student Discussion/Reflection Questions*** 1. What are the main threats to Florida's freshwater supply mentioned in the article? 2. How does over-irrigation or poor landscaping design contribute to water waste? 3. What role does groundwater (aquifers) play in Florida's ecosystem and daily life? 4. Which water conservation method do you think is most effective in Florida and why? 5. Based on what you've learned, what is one action you or your community could take to improve water efficiency? ***5 min:*** Exit Ticket: What is one change Florida needs to make to protect its water, and how would it help?	
<u>Day 2: (50 Minutes)</u> ***5 min:*** Bell Work: Why is water efficiency critical to Florida's ecosystems and population? ***30 min:*** Group Activity • Divide students into 9 groups, each assigned one of the FFL principles. • Groups will research their principle using IFAS website • Groups will present a quick 1-2 min presentation answering the following questions: ○ How does this principle reduce water use or improve water quality? ○ What's one specific landscaping practice that demonstrates this principle? ○ How does it protect or benefit local ecosystems? ***20 min:*** Water efficient design challenge • Scenario: Your school plans to replace part of the lawn with a sustainable, water-efficient landscape. Using what you've learned, design a plan based on at least 5 of the 9 FFL principles with a strong focus on water efficiency. • Your design must include: ○ 3 native/drought-tolerant Florida plants ○ A strategy for irrigation that reduces water waste ○ A method for reducing runoff (e.g., rain garden, swales, mulch) ○ Labels showing how the selected FFL principles are applied ○ 2–3 sentence explanation of how the design protects Florida's ecosystems ○ Students can sketch their design by hand or use digital tools. ***5 min****:* Exit ticket: Describe one change you would recommend to make your school's landscaping more water efficient.	