FFL Principle 2- Water Efficiently: To Water or Not To Water Elementary School

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Program Type: 5th grade Lab-investigation	**Duration:** 60 minutes

Standards:
SC.4.E.6.6: Identifies resources available in Florida, such as water, phosphate, oil, limestone, silicon, wind, and solar energy
SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment, emphasizing interactions, dependencies, and both natural and human-induced environmental changes
SC.5.E.7.6: Describe characteristics (temperature and precipitation) of different climate zones as they relate to latitude, elevation, and proximity to bodies of water

Learning Objectives: Students will explain how water efficient landscaping practices support sustainability by conserving water in Florida's climate and relate this to local weather and seasonal rainfall.

Guiding Questions: How can we use what we know about Florida's climate to water our landscape in a way that saves water and protects the environment.

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)**
Students will learn how Florida's climate (including temperature and rainfall patterns) impacts water use and plant selection. They will also be able to identify water efficient landscaping techniques such as using Florida Friendly plants, landscaping best practices, water as needed and installing/monitoring rain gauges/sensors.	Students will demonstrate environmental responsibility by making informed decisions when designing a landscape that conserves water and by suggesting water conserving actions at home such as turning off automatic timer sprinklers, choosing native plants, etc.	1. Completion of station activities. 2. Design a landscape that includes water-efficient strategies and Florida friendly plants. 3. An exit ticket that can be a short reflection, comic strip, short story, a very detailed sketch that shows understanding of concepts learned.

Schedule Layout:	**Items Needed:**
Engage (10 minutes) ***Activity:*** Begin with a short video or image slideshow showing examples of lawns with sprinklers running during a rainstorm vs. efficient landscapes with rain sensors and mulch. Ask: "What's wrong with this picture?" "Why does it matter how we water our yards?" ***Discussion Prompt:*** Have students brainstorm ways people use water outside and why conserving water is important in Florida.	Pictures of examples of lawn with sprinklers running during the rain, sprinkler heads facing the sidewalk or street, and broken sprinkler heads as well as efficient ways of watering lawns in addition to rain sensors, mulching, and location.
Explore (15 minutes) ***Activity:*** Students rotate through stations (or small group discussion) • **Station 1:** Match Florida native/drought-tolerant plants with their water needs • **Station 2:** Compare photos of overwatered vs. efficiently watered landscapes.	Photos, rain gauge/participation maps of local areas, plant cards and worksheet for students to take notes

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• **Station 3:** Use rain gauge data or a precipitation map to observe Florida's seasonal rainfall patterns.	
Explain (10 minutes) ***Mini-Lesson & Vocabulary:*** Using a chart or slides, teach key concepts- why Florida's climate leads to specific water challenges and how humans impact water challenges What it means to "Water Efficiently": water only when needed, early morning/late evening, use mulch, group plants by water needs. ***Introduce terms:*** irrigation, drought-tolerant, mulch, rain sensor, runoff. ***Tie to Standard SC.5.E.7.6:*** Discuss how climate (temperature, rainfall) affects watering needs in different regions of Florida.	PowerPoint slides prepared ahead of time. Chart paper to record student responses.
Elaborate (15 minutes) ***Activity:*** Have an Extension Agent come out to share with students about watering efficiently as well as landscape design with Florida Friendly plants. ***Project:*** In pairs or small groups, students design a simple Florida-Friendly landscape for a model backyard using pictures, plant choices, and notes on watering practices. They mustChoose appropriate plants based on Florida's climate and Include at least two water-saving strategies.	Paper, colored pencils or tablet apps, Florida friendly plant guide sheets.
Evaluate (10 minutes) ***Exit Ticket:*** "What is one way you can help your family use water efficiently outdoors?" ***Student Presentations:*** Share and explain their landscape design, emphasizing how it conserves water.	

Details:

Differentiation Suggestions:

ESE (Exceptional Student Education):

- Provide visual aids (e.g., diagrams of landscapes, labeled plant cards, icons for water-saving tools).
- Use sentence frames for discussions and written responses (e.g., "One way to save water is…").
- Offer additional time to complete design projects or allow oral explanations
- Pair students with peer buddies during group tasks and rotate through stations with support.

ELL (English Language Learners):

- Pre-teach vocabulary using images and real-life examples (e.g., show a rain sensor or mulch).
- Provide bilingual plant guides or vocabulary cards when possible.
- Use gestures, visuals, and demonstrations to support comprehension during the Explain phase.
- Allow students to sketch their ideas during the Elaborate phase before writing or presenting in English.

Gifted Students:

- Encourage deeper analysis by asking students to compare water use in different climate zones (e.g., Florida vs. Arizona).
- Invite them to design a full backyard plan that includes water budgeting or integrates renewable energy features like rain barrels or solar lighting.
- Offer opportunities for independent research on water-saving technologies or policies.
- Ask them to present their landscape design to the class as a "consultant" to simulate real-world application