

<b>Program Type:</b> FFL Protect the Waterfront		<b>Duration:</b> End of quarter project
<b>Standards:</b> <b>SC.7.L.17.1:</b> Investigate and describe how environmental changes affect ecosystems. <b>SC.7.E.6.6:</b> Describe effects of pollution on water quality and aquatic ecosystems. <b>SC.7.E.6.3:</b> Explain how human activities affect water quality. <b>SC.7.N.1.5:</b> Describe importance of accurate data collection and analysis.		
<b>Learning Objectives:</b> Explain how waterfront areas are affected by stormwater runoff and pollution. Identify key principles of Florida-Friendly Landscaping that help protect water quality. Describe specific landscaping practices that reduce pollution entering waterways. Propose landscaping solutions to protect local waterfront environments.		
<b>Guiding Questions:</b> How can landscape be developed to protect the environment? How does wind and water affect the landscape?		
<b>Intended Outcomes</b>		
<b>As a result of the program, what I want my audience to LEARN...</b> Recognize that all land in Florida is in a watershed  Understand the value of vegetation along shorelines that include areas for shelter, nesting and food for species  Gather knowledge about the impact of shoreline erosion to prevent damage to areas  Determine the similarities and differences between living shorelines, seawalls, and rip rap	<b>As a result of the program, I want my audience to ACT by...</b> Research the local area watershed  Observe examples and non-examples of shorelines that are effective  Research which plants would be most effective to use to develop a landscape  Design a template to create a FFL landscape	<b>Assessment: (How will you know your audience has reached your intended outcomes)</b> Exit tickets  Lab Notebook with research  Physical model in a plastic tub of the landscape design
<b>Schedule Layout:</b>		<b>Items Needed:</b>
<b>Engage (10 minutes):</b> Introduce the topic of water pollution protection with images of FFL presentation  Ask: "What happens to rainwater when it falls near homes or waterfronts?" Discuss stormwater runoff and its potential to carry pollutants to water bodies.  Show pictures comparing waterfront areas with traditional landscaping vs. Florida-Friendly Landscaping		Presentation
<b>Explore (15 minutes):</b> Introduce Florida-Friendly Landscaping principles: <ul style="list-style-type: none"> <li>• Use of native plants</li> <li>• Minimizing fertilizer and pesticide use</li> <li>• Creating buffer zones near waterways</li> </ul>		Presentation from Summer Workshop

<ul style="list-style-type: none"> <li>Managing irrigation efficiently</li> </ul> <p>Discuss how these practices reduce pollution and protect aquatic habitats.</p>	
<p><b>Elaborate (10 minutes):</b> Students will create a model landscape using a river, lake, pond or coastal shoreline.</p> <p>In small groups, students design a simple landscaping plan for a waterfront property using Florida-Friendly principles by drawing the outline of the waterway and surrounding land here (use graph paper or draw to scale), including:</p> <ul style="list-style-type: none"> <li>Waterway (river, lake, pond)</li> <li>Shoreline or bank</li> <li>Existing trees and plants</li> <li>Pathways or walkways</li> <li>Structures (docks, benches, fences)</li> </ul> <p>Indicate where you will place:</p> <ul style="list-style-type: none"> <li>Native plants (list specific species if known)</li> <li>Buffer zones (areas to filter runoff near water)</li> <li>Rain gardens or bioswales (areas to collect stormwater)</li> <li>Mulch or ground cover areas</li> <li>Irrigation points (if any)</li> </ul>	<p>Plastic Tubs, Clay, Newspaper, Rocks, Sand, Water</p>
Students will test the models for water and wind erosion	Fan and Wavemaker
Students will create a lab report to discuss the results	
Students will develop a landscaping plan to determine how to make a FFL area	Landscape template
<p><b>Evaluate (5 minutes):</b></p> <p><b>Exit ticket:</b> Students write one way Florida-Friendly Landscaping protects water quality and one practice they would recommend for their community</p>	