

UF/IFAS Florida-Friendly Landscaping™ Program

UF CPET FFL Curriculum

K-12th grade Curricula with
Science Standards



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Teachers are shown fossils from a UF exhibit.



The Environmental Science Program kicks off with a introductory presentation from FFL's Suzanna Browning.

FFL Overview

This curriculum was developed by a group of dedicated Florida educators who teach in Basins Management Action Plan (BMAP) districts—areas where water quality and land management are of critical concern. In these regions, the Florida Department of Environmental Protection, along with community leaders, actively manages action plans to mitigate the harmful effects of pollutants on the state’s natural water resources. To support these efforts, the educators participated in a one-week workshop focused on water conservation in Florida and the role of Florida-Friendly Landscaping™ (FFL) practices in achieving these goals. Florida-Friendly Landscaping is a University of Florida IFAS Extension program designed to educate homeowners, landscape professionals, and communities on sustainable practices that enhance land and water quality. The program is built around nine core principles:

Right Plant, Right Place
Water Efficiently
Fertilize Appropriately
Mulch
Attract Wildlife
Manage Yard Pests Responsibly
Recycle Yard Waste
Reduce Stormwater Runoff
Protect the Waterfront

These principles help reduce water waste, support biodiversity, and prevent pollution—all of which align with the goals of BMAP. Through this curriculum, students explore each of these principles in depth, gaining the knowledge and skills needed to become responsible stewards of Florida’s natural resources, while also understanding how their everyday actions can positively impact their local environment.

About this Curriculum

The purpose of this curriculum is to provide educators with a flexible, engaging set of lesson plans that align with age-appropriate Florida State Standards in science and environmental education. Developed by Florida teachers for elementary, middle, and high school students, the curriculum simplifies the nine Florida-Friendly Landscaping™ (FFL) principles and structures them into targeted lessons for each grade level. These lessons not only meet key educational objectives but also help students understand the importance of caring for Florida's landscapes and how to apply sustainable practices at school, at home, and in their communities. By strengthening real-world connections in science education, this curriculum empowers students to become active caretakers of their environment.



Click on the education level below to see the lesson plans.

[Elementary Lesson Plans](#)

[Middle School Lesson Plans](#)

[High School Lesson Plans](#)

Overarching Objectives:

Teachers should be able to effectively communicate, educate, and inspire students to implement practices that improve Florida's landscape. Through a lesson and activity for each Florida Friendly Landscaping principle, teachers will show students how ordinary citizens can take better care of Florida land and water resources.



Content Knowledge:

Students will understand unique environmental conditions and concerns that Florida faces, and the impact that Florida-Friendly Landscaping can have in maintaining and supporting sustainability.

Application of Florida-Friendly Principles:

The lessons aim to integrate the principles into a broader environmental education framework, which will allow students and educators to address the real-world challenges present in Florida such as water conservation, pollution reduction and biodiversity protection.

Behavioral and Civic Engagement: Beyond the content knowledge and standards addressed, these lessons aim to foster responsible citizenship by teaching students how their actions can contribute to sustainable management of land and water resources. By engaging with these lessons, students are not only gaining real-world scientific knowledge, but will also become empowered to take action or educate others within their own communities.

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Right Plant, Right Place

Principle 1 of Florida Friendly Landscaping is focused on placing plants in their optimal environment so they will thrive with little human interference.

What to consider when choosing the right plants for your landscape (FFL Crash Course video):

- soil type
- hardiness zone
- sunlight
- making sure to plant native plants instead of non-native/invasive plants
- mature plant size

Importance:

Applying the appropriate plants to your landscape reduces the amount of pesticides, fertilizers, and water to be used on your landscape (FFL Handbook for Home Landscapes).

Helpful Resources:

Plant reference guides, the UF/IFAS Florida-Friendly Plant List, and other online sources are great tools to use to check to see if a plant that you want to implement into your Florida landscape is Florida friendly (FFL Crash Course video).



Water Efficiently

Principle 2 of Florida Friendly Landscaping teaches to only water our landscapes when it is needed and where it is needed.

Irrigation systems account for about **60%** of a residential water bill (FFL Crash Course video).

- We can combat this by turning off our automatic irrigation systems, and only watering our lawns when about half of the lawn is observed to be wilting.
- **Overwatering** is one of the major reasons why our landscapes suffer and why certain unwanted plants, pests, and diseases survive.

When irrigating your landscape efficiently, it is important to note the...
(FFL Crash Course video)

- season
- temperature
- time of day
- amount of water
- which water management district you are in, as Florida has 5 districts with different water restrictions (FFL Handbook for Home Landscapes)



Fertilize Appropriately

Principle 3 of Florida Friendly Landscaping discusses how over fertilizing is an issue many landscapers deal with.



Getting the right fertilizer:

- test the pH and nutrient levels of your soil
 - This test will inform you of what is lacking in your soil and what needs to be supplemented (FFL Crash Course video).
- use slow release fertilizer
- follow the fertilization directions on the bag

Main fertilizer nutrients- Nitrogen and Phosphorus

- These nutrients need to be administered to our soils cautiously as they have many adverse effects on our groundwater and other waterbodies.
- Using slow-release fertilizer can help reduce the amount of nutrients that could leach into waterbodies (FFL Handbook for Home Landscapes).

Important note:

Make sure to apply fertilizer at the right rate per plant/turf. Each plant differs in their nutrient uptake, so certain plants in your landscape may need fertilizer applied at a higher or lower rate (FFL Crash Course video).

Mulch

Florida Friendly Landscaping principle 4 focuses on the variety of mulches that can be used, and why and how applying mulch to our landscapes is beneficial.

Applying 2 to 3 inches of mulch to our landscapes...

- adds organic matter into the soil as the mulch decomposes
- helps reduce the growth of weeds and other unwanted plants
- helps reduce moisture lost in the soil (FFL Crash Course video)

Before purchasing and applying mulch to a landscape it is important to note what characteristics of mulch you want or that may be helpful for your landscape. Make sure to use mulch that is appropriate.

Mulch characteristics to consider:

- cost
- nutrient content
- origins of the mulch
- durability

Bad Mulch:

- Cedar mulch and cypress mulch are not recommended as they are not harvested sustainably, making it not Florida Friendly (FFL Crash Course video).
- Colored mulch is also not Florida Friendly as it has a potential arsenic content that is harmful to the environment (FFL Handbook for Home Landscapes).



Attract Wildlife

As Florida's population grows, so do the urban areas. To help mitigate the loss of wildlife habitats, Florida Friendly Landscaping principle 5 suggests attracting wildlife to our landscapes.



A variety of plants can provide food and a home to many organisms. Attracting wildlife to our landscapes makes it Florida friendly as it helps these species to have a space for reproduction, gives different species a food source, and invites pollinators for your plants (FFL Crash Course video).

How we can attract wildlife:

- Add feeders
- Provide water sources
- Build little shelters in our landscapes
- Design our landscapes with local birds, squirrels, bees and butterflies in mind
- Reducing our insecticide use
- Reducing the areas of our landscapes that we mow (FFL Handbook for Home Landscapes)

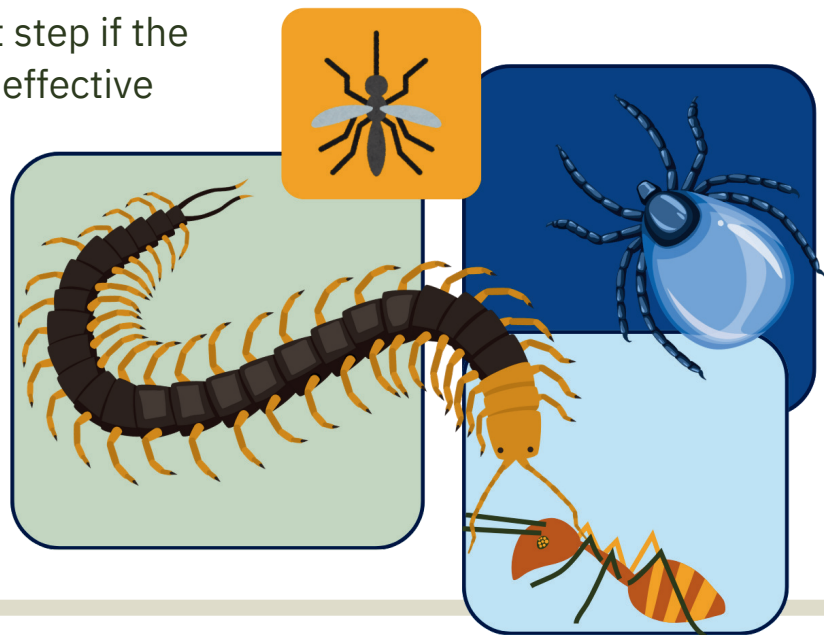
Manage Yard Pests

FFL principle 6 teaches to use preventative techniques first and then intervene if the pest issue persists.

With only about **1%** of insects actually being a pest in our landscape it is necessary to address the impact that pesticides have on the beneficial insects (FFL Crash Course video). The insects that eat other damaging insects or invasive plants are being harmed when we rely on a general pesticide to get rid of any harmful insects.

Insects are going to be found in our landscapes, but we can use **integrated pest management, or IMP**, techniques to manage the insects that we don't want. The different controls of ipm include (FFL Crash Course video)...

- cultural
- mechanical
- biological
- chemical, with the chemical control being the last step if the other controls aren't effective



Recycle Yard Waste

FFL principle 7 is all about reusing the yard waste that we get from pruning, mowing, leaf litter, etc, and incorporating it into our landscapes. Yard waste can be used as mulch or compost.



When using yard waste for composting it is important to

- aerate the compost pile by mixing up the materials weekly
- use different materials that offer different nutrients
- keep the compost pile moist (FFL Handbook for Home Landscapes)

Why we recycle yard waste:

- Yard waste offers nutrients to your landscapes as it breaks down into the soil (FFL Crash Course video). This lowers our need for extra nutrients or fertilizers being used.
- Recycling our yard waste and ensuring that it doesn't go down storm drains or into bodies of water reduces our nutrient input into our water sources and the pollution of these water sources.
- Composting is helpful to the soil as it can improve the texture and structure of the soil, breaks up packed down parts of soil, and allows for more water retention by the soil.

Reduce Stormwater Runoff

FFL Principle 8 discusses how to lessen stormwater runoff and why it is important.



Stormwater runoff can pick up all types of pollutants, including fertilizers and pesticides, before reaching a water body. **We don't want these nutrients polluting our waters as it can:**

- lead to the death of aquatic plants and animals
- promote the growth of invasive plant species (FFL Handbook for Home Landscapes)
- contaminate the water that we use for everyday activities

How to reduce stormwater runoff:

- direct the downspouts of our homes onto our lawns
- collect our rainwater in barrels (FFL Crash Course video). As we redirect our stormwater away from unabsorbable grounds we allow for any pollutants in the water to be taken up by the landscape
- make sure that our landscapes are Florida friendly as this can help filter the excess nutrients, keeping it from getting into our water sources
- creating rain gardens
- using porous material when making our walkways or driveways (FFL Handbook for Home Landscapes)

Protect Waterfront

Principle 9 of Florida Friendly Landscaping is directed to mainly those that live on a body of water, but those that don't reside on the water can do their part to protect waterfronts.

How to protect our waterfronts:

- maintaining a Florida friendly landscape
- keeping a 10 foot barrier between waterbodies and yard management
- incorporate shoreline vegetation or maintain a living shoreline to establish a space that wildlife can enjoy, absorbs excess nutrients, and helps reduce erosion (FFL Handbook for Home Landscapes)
- build seawalls and rip raps which also help reduce erosion

It is important to have little to no maintenance in this 10 foot buffer so that the plants and grass can absorb nutrients from water runoff before it reaches the water (FFL Crash Course video).



More Resources

Florida-Friendly Landscapes: The Nine Principles – Gardening Solutions. (2025). UF IFAS Extension Gardening Solutions.

<https://gardeningsolutions.ifas.ufl.edu/care/florida-friendly/the-nine-principles/>

This UF site goes over the 9 FFL principles, giving a concise overview of each principle, and providing links for helpful gardening solutions.

Nine Principles Of Florida-Friendly Landscaping. (2023). Seminolecountyfl.gov. <https://www.seminolecountyfl.gov/departments-services/parks-recreation/extension-services/florida-friendly-landscape/nine-principles-of-florida-friendly-landscaping>

This Seminole County FFL site gives a short description of each FFL principle, the ways to put each principle to action, and a video that goes more in depth describing each principle and how to implement it.

Pipoly, J., Toomey, A., Hensley, S., Momol, E., Marvin, J. W., & Perez, K. (2021, September). View of 4-H Florida-Friendly Landscaping™ Leader Guide | EDIS. Flvc.org. <https://journals.flvc.org/edis/article/view/124854/131228>

This source is filled with activities focused on students learning and practicing the FFL principles. The background information section is especially helpful as it describes the key topics of each principle.

UF IFAS Extension Nassau County. (2023, January 31). FFL Crash Course - The 9 Principles. YouTube. <https://www.youtube.com/watch?v=AftHVitaqfI>

This hour and a half long video thoroughly explains each FFL principle.

UF/IFAS Florida-Friendly Landscaping™ Program. (2025). 9 Principles - Florida-Friendly Landscaping™ Program - University of Florida, Institute of Food and Agricultural Sciences - UF/IFAS. Ufl.edu. <https://ffl.ifas.ufl.edu/about-ffl/9-principles/>

This site has a descriptive page per FFL principle for those improving their home or community landscapes, and for those that are landscape professionals. This site gives the benefits for each principle, a summary of each principle, and a guidance step by step of how to pursue each principle.

Program Participants

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