UF|CPET

FFL Principle 6- Managing Yard Pests
High School

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Program Type: In- Class Activity **Duration:** ~90 instructional minutes

Standards:

SC.912.N.1.1: Define a problem in a scientific field; pose investigable questions; conduct systematic observations; consult reference materials; plan and carry out investigations; gather, analyze, and interpret data; generate and justify explanations; communicate findings; and evaluate others' explanations

SC.912.N.1.4: Identify sources of information and assess their reliability according to the strict standards of scientific investigation

SC.912.L.17.4: Describe changes in ecosystems resulting from seasonal variations, climate change, and ecological succession

SC.912.L.17.8: Recognize the consequences of losses of biodiversity due to catastrophic events, climate change, human activity, and introduction of invasive, non-native species

Learning Objectives- Students will:

Identify common Florida landscape pests and diagnose plant damage using observation and research.

Explain the principles of Integrated Pest Management and distinguish between chemical and non-chemical control strategies.

Develop and justify a pest treatment plan using the least toxic, most environmentally responsible method available.

Guiding Questions: What is IPM? How do we identify common pests? What methods can we use to treat pests? What is the least toxic method? What are the environmental impacts of pesticides?

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)**
How to identify pest damage and the pest responsible. How to use IPM to treat pests.	Being able to identify pest damage and common pests. Being able to apply IPM appropriately.	Exit ticket, multiple-choice quiz, short writing prompts

Schedule Layout:

Bellringer (5 minutes): Show an example of a damaged plant. *"What is your first instinct of what happened? How would you try to fix it?"* Encourage them to think about both immediate actions and long-term solutions.

Engagement & Introduction (15 minutes):

Share Bellringer Responses: Ask a few students to share their reactions. Guide the discussion towards common "quick fixes" (like spraying chemicals) and the potential downsides.

Introduce the Challenge: *"Today, we're going to explore a more environmentally responsible way to deal with those pesky plant problems called Integrated Pest Management."*

Items Needed:

Whiteboard or projector

Markers or pens

Access to computers/internet for video and research

Handout: "IPM Strategy Worksheet"

Handout: "Common Florida Landscape Pests & Diseases" (simplified from FFL Handbook or similar resource)

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

Introductory Video: Show a short (3-5 minute) introductory video on Integrated Pest Management (IPM). Focus on videos that explain the concept, its benefits, and the tiered approach. **Unpack the Video:** After the video, ask: *"What were some key ideas or strategies mentioned in the video? How is this different from just spraying a pesticide?"* **Exploration & Explanation (30 minutes):** **Defining IPM & Its Pillars:** Introduce IPM formally, referring to FFL Handbook, page 44, discussing the three main pillars and connecting to other FFL principles **Detecting Pest Problems (Monitoring & Identification):** *"You can't solve a problem if you don't know what it is."* Refer to FFL handbook page 46 Importance of regular monitoring and correct identification of pests- mention county extension offices as resources for identification **Treating Pest Problems (Action & Least Toxic First):** *"Chemicals are a last resort, not a first line of defense."* Review non-chemical methods, less toxic pesticides and chemical pesticides as a last resort- consider targeting specific organisms and water quality **Hands-On Activity: "Pest Detective" (20 minutes)-** details on supplemental document. **Group Share:** Bring the class together. Have each group share their findings for one plant sample, explaining their diagnosis and proposed IPM strategies. Facilitate discussion and provide feedback. **Elaboration (10 minutes)** **Connecting IPM to Environmental Science Standards:** **SC.912.L.17 (Interdependence):** "How does IPM protect biodiversity in our landscapes?" (Protecting beneficial insects, reducing harm to non-target organisms like birds and pollinators). "How does reducing pesticide use impact water quality and habitat destruction?" (Preventing runoff of harmful chemicals into waterways, protecting aquatic life). "Why is it important to tolerate some 'bad guys' in an ecosystem?" (Maintaining food sources for beneficials, understanding natural population dynamics). **SC.912.N.1 (Practice of Science):** "How does IPM exemplify scientific inquiry?" (Observation, identification, hypothesis testing through different treatment methods, data collection on effectiveness). "Why is reliable information (like from the Extension office) crucial in pest management?" (Avoiding misdiagnosis, ensuring effective and safe solutions). "How does IPM encourage critical thinking and problem-solving over a 'one-size-fits-all' approach?"	Various plant samples (some healthy, some with visible pest damage like aphids, leaf miners, fungal spots – collect locally or use images/simulated samples) Magnifying glasses (optional, for closer inspection) Gloves (optional, for handling samples) Quiz handout Writing prompt handout (Optional) Small spray bottles with water for simulating "treatment"