# FFL Principle 4- Mulch Matters UF CPETUF CPET

# Middle School

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| **Program Type: Introduction** | | **Duration:** 1-2 classes, 75 minutes |
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| **Standards:**  **SC.6.E.7.6:** Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through Earth's system. *(linked when discussing how mulch affects soil temperature)*  **SC.7.L.17.3:** Describe and investigate various limiting factors in ecosystems and their impact on native populations. *(linked to mulch as it relates to water retention and plant health)*  **SC.8.L.18.4:** Cite evidence that living systems follow the Laws of Conservation of Mass and Energy. *(linked when discussing nutrient cycling in mulched vs. bare soil systems)* | | |
| **Learning Objectives:**  Students will understand the ecological and practical importance of mulching by examining how mulch:   * Conserves soil moisture * Regulates soil temperature * Reduces weed growth * Adds organic matter * Prevents erosion | | |
| **Guiding Questions:** Why is it important to apply mulch? | | |
| **Intended Outcomes** | | |
| **As a result of the program, what I want my audience to LEARN…**  The importance and ecological benefits of mulch application in a Florida-friendly landscaping context. | **As a result of the program, I want my audience to ACT by…**  Walk school grounds and sample mulched areas. | **Assessment: (*How will you know* your audience has reached your intended outcomes)**  Present their findings to the class |
| **Schedule Layout:** | | **Items Needed:** |
| ***Introduction 5-7 min***  Ask: *“Have you ever seen wood chips or straw around trees and plants? Why do you think they’re there?”* Show a quick time-lapse video of mulched vs. non-mulched soil drying out. | | Time lapse video of mulched vs. non-mulched soil drying out. |
| Student Handout: [What Is Mulch and Why Is It Important?](https://docs.google.com/document/u/0/d/10nmGYSFMjZCxFwJsKQl6d8ULOsgZ3WKl4qSSYwwJWMA/edit)  Principle #4 Mulch Florida Friendly Landscaping Program | | Free FFL Principle #4 Mulch  *https://ffl.ifas.ufl.edu/media/fflifasufledu/docs/FFL-Handbook\_revisio* |
| Look at school map and assign students different areas to observe ***(5-10 minutes)*** | | Worksheet , school map, moisture meter (optional), thermometer , clip board |
| ***Complete data collection ( 25 minutes):*** Place students into groups with pre-assigned tasks (scribe, data collector, artist, etc) and location determined before activity begins- set a time limit and monitor students. | | Data Collection Worksheet |
| **Details:** | |  |
| Scaffolding and Support For Struggling Learners or ELLs:   * Provide **sentence starters** and **word banks** (e.g., “Mulch helps plants by…” or “I observed that...”). * Offer **visual vocabulary cards** (e.g., erosion, mulch, temperature). Allow oral instead of written reflection if needed. * Use **peer support or buddy system**.   **Extension for Advanced Learners**   * Have students research different types of mulch (pine bark, straw, compost) and their pros/cons. * Ask them to **design an experiment** to test mulch types or long-term effects on plant growth * Integrate **data graphing** and analysis (e.g., line graphs of soil temperature or moisture). * Connect with SC.8.L.18.4 by mapping nutrient cycles with and without mulch.   **Assessment Suggestions:**  **Formative:**   * Observe group work, participation in discussion. * Use student worksheet as informal check for understanding.   **Summative:**   * Student **presentations** (can be visual, oral, or written). * Optional **exit slip**: “One way mulch helps the environment is…” | | |