Soil Food Web and Worm Bin Building

Grade: 7th

Season: Fall/Winter

Essential Question: Why is decomposition important? How can we build healthy soil?

Objective:
- Knowledge: Students see the web of life in the soil and understand its connection to soil health.
- Skill: Students will be able to build a worm bin.

Materials: good ball of yarn, worm bin, worms, shredded paper, food for worms, spray bottle, decomposer poster, soil food web cards

Introduction:
What happens to leaves that fall on our lawns if we don’t rake them up? An old tree that falls in the forest?
- Decomposition (write the word on the board)! There is all this life in the soil that breaks down organic matter (all the plant and animal material that was once living) by eating it – their waste becomes new food for plants.
- Our lesson today is going to be about who these organisms are!
- Have you ever seen mushrooms on a log in the forest? What decomposer is that? What else might you find under a log?
- Discuss worms, bacteria, and fungi

Why should we as potato gardeners care about decomposers?
- Make nutrients available for plants (by breaking organic matter into its component elements)

Activity 1: Setting up worm bin:
What are an animal’s 5 basic needs? (Have students turn to a neighbor to discuss) Food, water, oxygen, habitat, liveable temperature (write on board). How do these apply to worms? Think about where worms live. What is it like? How can we mimic that environment?
- Oxygen: do earthworms breathe? Yes, through their skin
- Moisture and Drainage. How do worms need water?
- Darkness and Bedding: Do earthworms have eyes? No, they have receptor cells that are sensitive to light
● Food
● Temperature: 55-77 degrees F
● Discuss: What will this worm bin turn into? What will live in here? How will this worm bin help our garden?
● The correct word for worm waste is worm “castings”

Activity 2: Play Soil Food Web Game
● How is a food web different than a food chain?
● What if we kept building this web all day?
● How would this food web be different if it had fewer characters?
● What if a few characters were cut out of the web? (option to literally cut a few characters off with scissors?)
● How does this web affect you? Your health?

Wrap up: Have students make a “Dos and Don’ts” poster for the worm bin or a “How to make a worm bin” brochure

Extensions:
● Cover Crop lesson
● Separating and harvesting worm castings for planting
● Worm casting tea experiments
● Decomposer Tag