

MATERIALS

- Gloves, (4) spading forks, (4) tubtrugs, (4) pruning shears
- (4) garden claws, (2) bow rakes
- Field Peas (1/2 cup) and Oats (1/3 cup)
- (1) plastic bucket, (8) small watering cans

PREPARATION

- Identify a bed with spent crops (e.g. three sisters or ground cherries). Set gloves, spading forks, tubtrugs, pruning shears, a bucket full of water, and the watering cans nearby.
- Label a piece of chart paper with today's main garden tasks: (1) remove and compost plants (2) loosen soil, and (3) broadcast cover crop.

PROCEDURE

Part 1: Remove and Compost Plants

- Gather students around the garden bed that will be planted with cover crop. Have students identify each plant.
- Demonstrate how to remove plants: use the spading fork to loosen the roots of a plant, then pull it out by its stem. Gently knock the soil off the roots and place the plant in a bucket. (Note: corn stalks do not decompose readily in the compost pile. They can, however, be used as decoration indoors. Use pruning shears to cut the stalk at ground level and untangle gently from the bean vines.)
- Select four students to use the spading forks to loosen the roots of the plants. If corn stalks are present, select four students to use pruning shears to cut and untangle unbent stalks. Select four students to dump full buckets in the compost pile. As the roots of plants are loosened, the remaining students pull out the plants, knock off soil, and place them in the buckets.
- Pass out garden gloves to all students. Go!

Part 2: Loosen the Soil for Planting

- After all plants have been removed to the compost pile, spread students out around the garden bed so that they each have enough space to work comfortably.
- Demonstrate how to properly use the garden claw to loosen the soil. Then, distribute garden claws evenly around the bed (to approximately every sixth student). Students will use the claw on the soil in front of them for five seconds, then they will pass the claw to the student on their left..
- As each student uses the claw, count to five as a class, then pass. Continue until every student has had the opportunity to use the claw and all the soil is loosened. Collect garden claws and gloves.

Part 3: Broadcast Cover Crop

- Reposition students evenly around the garden bed.
- Take a handful Field Peas and Oats and display it to the group. Demonstrate how to broadcast a handful of the cover crop seed over the section of the garden bed in front of you.
- Pass out small handfuls of seed to each. Once everyone has a handful, broadcast the seed together as a group. Or, alternatively, have students cheer on their peers as they broadcast one by one around the circle.
- Finally, demonstrate how to use a garden rake to lightly dig the seeds into the soil. (While demonstrating, take the opportunity to distribute the seeds a little more evenly where necessary.)
- Select a few students to take turns raking and smoothing out the newly cover-cropped garden bed. They should work from one end of the bed to the other. Select 8 students to use the watering cans to water the areas that have been raked over.
- The remaining students should collect, clean, and stow the garden tools.

Preparation

Patterns & Preparation

ENGAGE

Discuss this saying: ‘A society grows great when old men and women plant trees in whose shade they know they will never sit.’ Why plant a tree? Why plant a tree even though you know you will not be around to enjoy it? After a brief discussion, introduce the day’s topic: how gardeners prepare for next season. As gardeners we do things that don’t have an immediate benefit. We always take the long view and think ahead.

OBJECTIVES

- Students will be able to explain how actions taken during one growing season can impact the conditions of the following growing season.

EXPLAIN

Preparing for Next Season: Cover Crops

Someone may ask, “Why are you planting something in your garden that you won’t get any food from? It doesn’t even look pretty, like flowers do!” But the farmer is always looking to the future. Our food takes nutrients from the soil that must be replaced if we are going to rely on the soil next season. That’s why, after growing food for themselves, farmers grow food for the soil. We call these food crops for the soil “cover crops.” Cover crops can be planted during any part of the growing season. In early fall, Field Peas and Oats are a good choice because they grow quickly and then winterkill (i.e. die when the hardest freezes hit). When next spring rolls around, the cover crops will have turned into mulch and the soil will be ready to support a new season of strong plants.

Digging Deeper

Cover crops do four things: 1) *Cover crops shield out competing weeds.* If a cover crop is taking up prime real estate in the garden, weeds have no room. If the weed seeds are crowded out long enough, the seeds will die and the amount of weeding a gardener will have to do is lessened. 2) *Cover crops improve the soil structure.* As the cover crop roots penetrate deep into the soil, they help loosen the soil. This allows water to drain more easily. Then, as the cover crop dies and the roots decompose, the resulting organic matter makes the soil lighter and more hospitable to future generations of plants. 3) *Cover crops release valuable nutrients back into the soil.* Leguminous crops, like Field Peas, take Nitrogen out of the air and help bring it down into the soil for future generations of plants to use. 4) *Cover crops reduce erosion over the winter.* If nothing were growing in the garden bed, the heavy precipitation that winter brings would wash away much of the topsoil we rely on each year.

ADDITIONAL CONTENT INTERGRATION *(see previous page)*

In the beginning of this lesson, we talked about how farmers “take the long view.” We plant cover crop to add nutrients and prevent soil erosion – even though we will never eat the cover crop. We know that if we expect the earth to continue providing food for us, we must provide help for the land in return. How is planting a tree “taking the long view”? What are the short and long term benefits of tree planting?

ADDITIONAL MATERIALS

- Science Journals

EVALUATE

Exit Slip: List one way in which cover crops get us ready for next season.