# THE PRACTICES OF ORGANIC FARMING: COVER CROPS

**Summary:** In this collection of lessons, students will engage in hands-on activities exploring the practices of organic farming. Students will complete a rotation of four activities: soil investigation, cultivation, planting cover crops, and creating a compost pile.

**Time:** 30-45 minutes

**Teacher Notes:**

- This lesson is a part of a four-part series on the practices of organic farming, which includes soil investigations, composting, and tillage and cultivation.
- The "READ" sections of this lesson plan can be used as talking points or a script to introduce activities. Please note, these sections simply provide brief introductions to the topics. We recommend using your experiences to add more information and context to the topics being covered.
- If teaching asynchronously or assigning the lesson plan as homework, for the sections that instruct students to READ, consider recording yourself reading the sections aloud and sending the recording to students. This adaptation offers a helpful strategy for differentiating learning that supports all students, especially English Language Learners.
- The "THINK or DISCUSS" sections of the activities provide some great prompts for informal conversations. Consider asking your students these questions as they are gardening. You could also create a "question board" with the different questions and have students informally choose different questions to answer while they garden.



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**Teacher Notes Continued:**

- Optional—as an added activity you could create a public space where students can share the things they notice during each of the rotations. This could take the form of a board with chart paper and markers where students can write down their answers to the questions labeled "NOTICE." This extra activity supports students to glean observations from their classmates and learn from one another.
- For more information on the practices of organic farming, see the Center for Agroecology and Sustainable Food Systems curriculum on Organic Farming and Gardening Skills.
- This lesson is part of Edible Schoolyard Project's Understanding Organic curriculum and is the seventh lesson in the "core lessons" of the curriculum.

**References:**

Selecting and Using Cover Crops (2015). In Brown, M.; Miles. A. & Perez. J. (Eds.) *Teaching Organic Farming and Gardening* (pp. 31-95). Retrieved from https://casfs.ucsc.edu/about/publications/Teaching-Organic-Farming/PDF-downloads/1.6-covercrops.pdf

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# COVER CROPS

**READ:** Organic farming practices focus on the delicate balance between taking from the soil and giving back to it. Growing food is an intensive process that extracts nutrients, moisture, and organic material from the soil. To give back to the soil, organic farming systems emphasize building the soil's fertility—the ability for the soil to sustain plant growth. Two key methods that organic farming systems use to increase soil fertility are using compost and cover crops. Cover crops are crops grown solely to add organic matter and nutrients to the soil. See the Cover Crops Worksheet for more information. Cover crops benefit the soil in several ways, including:

- Reduce erosion—their roots hold the soil in place, and plant tops prevent the wind from blowing it away.
- Fix nitrogen—cover crops like legumes and beans grow in a symbiotic relationship with mycorrhizae (fungus) and other soil-dwelling bacteria. In relationship, they are able to create nutrients that other plants can't, such as nitrogen. Nitrogen is extremely important for plant life.
- Capture and retain water—the roots of cover crops aerate the soil, allowing water to percolate down instead of running off the top. They also provide shade and organic matter that decreases evaporation and water loss from the surface of the soil.
- Increase biomass—by reducing erosion, cover crops prevent organic material from washing away. Their roots also create a beneficial habitat for the populations of microbes that feed off the biomass and increase soil health.
- Attract beneficials and pollinators.

**DO:** Find a place outside in the garden to plant cover crop seeds. Any garden area (even a section of the garden that has something planted) will benefit from planting cover crops. However, it might be good to find a section that is empty, or where you just harvested a crop.

**GATHER MATERIALS:** Take some time to gather what you will need for planting. To plant cover crops you will need:

- Garden tools for cultivation
- Cover crop seeds such as oats, hairy vetch, clover, or a mixture of different cover crops

**PLANT:** Take your cover crop seeds and plant them directly into the dirt. If you are unfamiliar with direct seeding (sometimes called "direct sowing") see our lesson, How to: Direct Seed.



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**READ:** For every activity, take the time to notice. What does that mean? Sometimes when we focus on certain tasks, we might not pay close attention to our surroundings. *Noticing* allows us to pay attention to little things, like what the weather is like, or what we observe in the soil. While you work, try to take the time to slow down. You will use the questions from the NOTICE section to help you make those observations.

**NOTICE:** As you garden, think about or discuss your answers to the following questions:

- What do you notice about the soil? What is it? What kinds of creatures live there?
- What do you notice about the seeds you are planting? What colors are they? What are their shapes or textures? What do you think the plant will look like when it grows?
- What benefits do you think this cover crop provides?
- What is it like for you to be working in the land? What comes up for you? What thoughts, questions, memories, and feelings do you have?

**DISCUSS:** As you garden, discuss these questions:

- Can you recall some of the benefits of cover cropping? What are they?
- Did anything surprise you about the benefits?
- What questions do you have about cover crops? What felt confusing?
- Cover cropping is frequently used in organic farming, but much less common in conventional farming. Why do you think this is?