

ACTIVITY 2.5 Building a Lasagna Garden: Sheet Composting and Winterizing the Garden

Overview: Soil Lasagna gardens teach students about soil composition and decomposition. Soil lasagna gardens also save time tilling garden beds and add necessary nutrients to the soil.

Lesson Background:

Sheet Composting is a method of spreading organic matter over the soil and allowing it to compost where it sits. Waiting several weeks or months allows it to decompose, saving time tiling the beds in the spring. When starting sheet composting projects with students, we refer to it as making “soil lasagna.” A sheet-composted garden prevents weeds from growing (by blocking out light), provides rich organic soil (by adding compost and organic material) and saves time (by letting the lasagna do the work). Overall there is less digging, less weeding and a rich soil full of earthworms.

Cardboard and newspaper serve as a carbon input and are beneficial by blocking out sunlight and killing existing weeds or grass. The cardboard also provides a moist, dark habitat for worms. Worms and their eggs can live in the soil for several years waiting for the right moisture, food, and habitat to begin its life cycle again.

Compost is necessary to provide the right amount of “green” or nitrogen to your soil. You can use green materials, such as kitchen waste, manures (fresh or old), and green grass. Green materials provide nitrogen that enables microorganisms to develop bodies, which are necessary to digest their carbon source. **Do not use meat or dairy products as part of your compost, as they can encourage disease and encourage pests.*

Mulch is your dry “brown” vegetation including dry grass and weeds, leaves, straw, hay, dry compost crops, even woody materials. Dry “brown” materials provide carbon that serves as an energy source for all life forms.

INSTRUCTIONS:

FIRST LAYER: NOODLES.

1. Mark your garden plot.

Time of Year: Fall for spring planting

Grade Level: Pre K and Beyond

Objectives: Students will learn about decomposition, soil composition and plant nutrition.

Duration: 30- 60 minutes (depends on size of the garden)

Materials:

- Cardboard
- Mulch (grass clipping, straw or hay, leaf litter)
- Compost (garden compost, manure, soil amendments, kitchen water, plant materials)

2. Moisten 6 layers of newspaper or one layer of cardboard. Spread paper/cardboard on garden plot or grass.
3. If starting on an existing bed, dig the first few inches of soil using shovels, forks, and garden hoes. If starting on grass, you can turn the grass over or begin composting directly on the grass.

SECOND LAYER: THE SAUCE, THE MEAT AND THE VEGGIES

4. Spread 4-6 inches of garden compost, manure, or soil mix on top of the “noodles.”

FINAL LAYER: THE CHEESE

5. Mulch the compost with 6 inches of straw, leaf litter, or grass clippings.
6. Water the new garden space.
7. Use twine and stakes to mark the spot, to keep people off your plot and avoid compacting the soil.

ADDING LAYERS: To increase the depth of your garden, you can till the existing ground or add inches or layers to your garden. It is best to add the compost and mulch and skip the cardboard/newspaper layers when building your garden depth.

Plant roots prefer deep tilled rich soil, ideally 12 inches or more. Plants can spread their roots 2 ft and beyond. So, the deeper, the stronger and healthier the root system, the healthier the plant will be.

COOKING SOIL LASAGNA: Let your lasagna garden cook for 3 to 6 months before planting. The compost should be unrecognizable; its smell is fresh and woody, and the materials are dark brown or black.

PLANTING THE LASAGNA GARDEN. A dry winter will leave your noodles only partially broken down. If this is the case, remove some of the cardboard or newspaper, or plant directly into it.

HISTORICAL NOTE:

- Sheet composting is similar to methods developed by ancient cultures, notably Native Americans. To follow native traditions, dig a shallow trench (6-8 inches deep) the length of your garden bed. Fill the trench halfway with organic matter, including kitchen scraps. Cover the trench with soil and plant on either side of the trench.
- Native Americans put fish heads and various other fish parts into the soil. Although this method works great, it does have one problem. Rotting fish parts may attract animals--cats, dogs, raccoons and rodents. To avoid attracting animals in your garden, avoid the fish and use other sources of organic materials.

EXTENSIONS:

- Discuss how nature has a built in lasagna garden called the “forest floor”. Ask students what materials are found in the forest floor such as leaves, seeds, decaying trees and branches, animal scat, decomposing animals, and insects.
- Discuss the different types of soil (loam, sand, and clay).
- Discuss the role of earthworms in the garden and their role as decomposers.
- Complimentary lesson plans are available on [worms and compost building and soil.](#)