



Create Your Own Compost

UConn 4-H Earth Agents

Background

Have you ever heard of composting your food? You can turn a pile of old vegetable scraps into rich, beautiful compost! You may not think of a pile of “dirt” as beautiful, but compost can be added to soil to support the plants that grow the food we eat. Composting uses the power of insects, animals, and microbes to break down organic material, which adds valuable nutrients to our soil. Microbes are miniscule organisms, such as bacteria or fungi. They work together with other creatures like worms, beetles, and ants in the decomposition process. Decomposition is how large, complex material like an orange peel is broken down into smaller particles, making the nutrients more available for plants to use. Vegetable and fruit scraps, leaves, grass clippings, and other products can be composted. Meat and dairy products should not be added to your compost. Learn more at: [Backyard Composting | Soil Nutrient Analysis Laboratory \(uconn.edu\)](#)

Writing Your Hypothesis

Before you create your own composting system using the steps below, make a hypothesis about the temperature of your compost pile. A hypothesis is an educated guess about what you think will happen. As the material you added decomposes, do you think the compost pile will get warmer, cooler, or stay the same?

I hypothesize that my compost pile will become _____ over time.

Supplies and Tools

Organic material (vegetable scraps, etc.)

Bucket, can, plastic bag, or other container

Thermometer

Pencil

Worm castings (optional)

Graph paper (optional)



Activity Steps

Place compost-safe organic material (ex: banana peels, potato skins, wilted greens) in your compost container. If you have worm casting available, add those in as well. Mix or stir the contents of your compost container every few days. As the contents start to break down, you can begin to record the temperature of your compost. Turn your thermometer on and place the end into the middle of the compost. When the liquid in the thermometer stops rising, record the number next to where the liquid stopped in your data table (see below). Measure the temperature twice a week. Be sure to rinse off your thermometer between uses and use this thermometer only for your compost project. Add organic material frequently to keep your microbes active! Continue to measure the temperature of your compost until your data table is filled.

Optional: If you'd like, you can transfer the data from your table to graph paper for a visual depiction. Draw a large "L" on your graph paper. On the bottom horizontal line (x-axis), write each date equal distance apart. On the left-most vertical line (y-axis), write 0-150 in 10-degree intervals. Transfer your data to the graph for each date, placing a dot at the point where the date and the temperature meets. Connect the dots by drawing a line from one to the next.

Reflecting on Your Hypothesis After Collecting Your Data

Looking at your data, was your hypothesis correct? What happened to the temperature of the compost overtime? Can you brainstorm reasons for this change?

If you noticed that the temperature of your compost pile increased overtime, it is likely because the microbes release heat as they break down the organic matter into smaller and smaller pieces. This is similar to working up a sweat when you exercise, play sports, or play outside!

Data Collection Table

Date	Temperature (F)	Notes

If you enjoyed this project, visit 4-h.extension.uconn.edu to learn more about UConn 4-H. Check out the UConn 4-H webpage to view the video associated with this activity.

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