

Lesson 4: Composting

SCARLET CAMPERS

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Lesson Overview:

In this lesson, campers will explore the world of composting, discovering its practical and environmental benefits, as well as gaining an understanding of the importance of nutrients in food. To begin, campers will learn about nutrients and the cycle between nutrients in the soil/air and plant foods. Next, they will learn about composting and familiarize themselves with the materials that can be composted. To bring the lesson to life, campers will have the opportunity to create their very own mini-compost bins, complete with live worms! If time permits, they will also have the chance to engage in a coloring activity.

Behavior Change Objective:

As a result of this lesson, campers will compost appropriate food and organic waste in their daily lives, and begin to think about food in terms of nutrients.

Learning Objectives:

After participating in this lesson, campers will be able to:

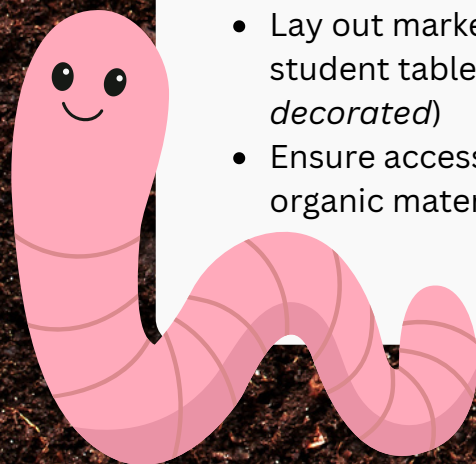
- Recall that food is composed of nutrients found in air and soil
- Identify materials which can and cannot be composted
- Demonstrate the basic steps of composting

Key Words:

Composting, composting worms, fertilizer, reducing waste, nutrients, vegetables, vegetable scraps, seed-to-plate

Before you Begin:

- Gather the necessary materials, listed below
- Lay out markers and the appropriate number of cups at student tables (*do not poke holes in cups until 1 cup is decorated*)
- Ensure access to a sink for hand washing after touching organic materials and soil



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Ingredients:

- Vegetable scraps (cucumber peels)

Materials:

- Live composting worms (About 2-3 per camper)
- Plastic cups (2 per camper)
- Small rock/bead/object for spacing cups for drainage (1 per camper)
- Permanent markers
- Shredded paper
- Potting soil
- Child-safe vegetable peelers
- Child-safe knives
- Fabric scraps/paper towels
- Rubber bands
- Sharp scissors or box cutter
- Worm printouts
- Crayons

Lesson Procedure and Script:

These are the talking points but make it your own! Most of all, have fun!

1. Introduce yourself and lesson topic of composting:

“Hi everybody! It’s so good to see everyone here today. In today’s lesson we are going to learn more about something called composting and we are going to get to make our own compost bins!”

2. Review class attention grabber:

“Before we start, does everyone remember what I do when I need to get your attention?”- Demonstrate 2 slow claps, then 3 fast claps, wait for students to clap back.

“Good job! You guys are excellent clappers.

3. Review previous lessons – Plant a Seed/Food Combinations/Fruit Skewers:

“How are your melon sprouts doing?”

Has anybody planted them outside, or in a bigger pot?”

Has anyone had any interesting flavor and texture combinations in the last week?”

Has anyone helped to chop up fruits and vegetables in the kitchen at home? Great!”



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Lesson Procedure and Script (continued):

4. Ask ice breaker question:

"To get us started today, we're going to go around the room and say our names and our favorite vegetable! You can raise your hand if you want to participate, but if you'd rather not that's okay too." Let kids say their names and favorite veggies.

"Those were all great answers, I love vegetables too and my favorite is _____!"

5. Introduce concept of nutrients:

"Vegetables are great because they are full of something our bodies need to work at their best. Can anyone guess what this is?" *Take some answers from campers.*

"The small substances in food that our bodies use is called nutrients! There are many different types of nutrients including carbohydrates, protein, fats, as well vitamins, and minerals. But where do the veggies get all of those nutrients from?" *Take a few answers.*

"Ultimately, vegetables, fruits, and any plant that we can eat get their nutrients from the soil and the air. Every plant is like a little chef that takes dirt and air and turns it into delicious food that our bodies can enjoy! Foods that come from plants and animals have a lot of nutrients, but once people start adding and taking away different parts of those whole, natural foods, they can lose some of those nutrients. That's called *processing*. What are some examples of processed foods you can think of? What are unprocessed foods?"

"If we want to make the plants' job of getting nutrients out of the soil easier, then we can do something called composting. We're going to take some of those nutrients that are tougher for us to eat or that we don't need and use a little help to turn them back into soil for plants to use. For example, did you know we don't have to throw veggie scraps into the garbage? We can use them to compost! Let's learn more."



Lesson 4: Composting (continued)

Lesson Procedure and Script (continued):

6. Introduce the topic of composting:

“Today we’re going to learn how to make our own composting bins! Does anyone know what compost is? Right, it’s the soil that gets made when you break down certain kinds of household garbage. Does anyone have a compost bin at home?”

What kind of things can you compost? Paper, cardboard, leaves, veggie/fruit scraps, eggshells, coffee grounds, napkins.

What kind of things should you not compost? Plastic, styrofoam, oil, meat/bones, dairy, cooked foods.

What do you use compost for? That’s right, compost is a kind of soil that is full of the nutrients that plants love to grow in. It’s also a good way to put less garbage into landfills, which is good for the environment.”

“There are all kind of things that can get broken down into compost, but sometimes they need a little help, so I brought some secret special helpers! These little guys love to eat fruit and vegetable scraps and turn them into compost. Does anyone know what lives in compost that turns scraps into dirt? Yup, it’s worms!”

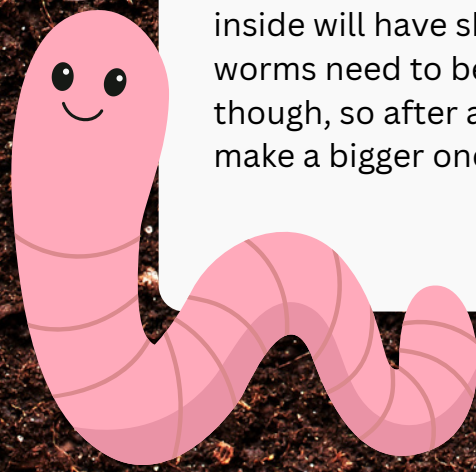
Hold up finished worm bin or bag of worms

“This is a mini composting bin with special worms called Red Wigglers. Why do you think they’re called that? Who wants to see the worms inside?”

Open the top of the mini bin, show off the worms

“Pretty cool huh? These guys wiggle around in the bin, eating scraps and turning them into things called castings. Does anyone know what castings are? Yup, it’s a fancy name for worm poop. The castings fertilize plants and help them to grow strong and healthy. Plants love worm poop!”

“So today we’re going to make these mini worm-compost bins (see picture in lesson plan). You can see this one has two layers. The bottom layer is to catch the water and waste that drips from the top layer. We’ll put a rock in between the cups so the worm’s habitat stays well-drained. This cup on the inside will have shredded paper, soil, and some veggie scraps. That’s all the worms need to be comfortable! This is just a starter composting bin though, so after about a week you’ll either need to get an adult to help make a bigger one, or you can just let your worms go in the dirt.”



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Lesson Procedure and Script (continued):

7. Have students decorate their worm bins:

"So just like when we planted our melon seeds, first we're going to take some time to decorate our worm bins. Everyone can grab two cups, but since we can only see the one on the outside that's the one that you'll decorate. We'll help you punch holes in the bottom of your second cup. We're going to take about 15 minutes to color."

Let kids choose 2 cups, pass out markers. Go around punching holes in the bottom of the inner cup while kids color

After 10 minutes, give 5 minute warning, then 2 minute warning etc.

8. Assemble the worm bins:

"Looking good! We have to move on now, but you can decorate your bins more when you get home. Now we're going to go around to your tables and help you assemble your bins! We're going to put in a scrap of fabric in the bottom so our worms can't crawl out. Then, we'll layer on some wet shredded paper and soil. Next, we'll put in some fruit scraps for the worms to eat." Have students use knives and peelers to add a small amount of scraps into the bin. "After that, we'll put in the worms, and rubber band a fabric scrap over the top so they don't spill out."

"Those look great! Your worms will eat about half of their body weight in food every day, but they don't weight that much. A couple small fruit or vegetable scraps every couple days should be plenty. If the soil looks too dry you can spray on a little water or add a little more wet newspaper. The worms like to be cool and moist. These little bins should keep them happy for about a week if you water them a little, then it'll be time to move them to a bigger bin (with an adult's help) or to let them go outside.

Good job everyone! That was a messy one, let's all wash hands."

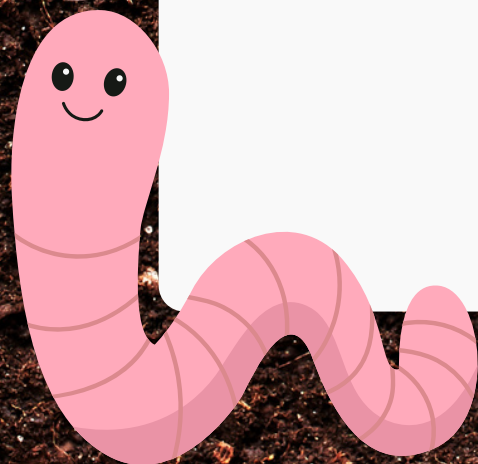


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Compost Bins: Hands On Activity Outline:

1. **Adults:** Call up each camper one at a time to choose 2 cups.
2. **Kids:** Decorate 1 cup with permanent markers.
3. **Adults:** Poke 4-5 holes in the bottom of 2nd cup with scissors.
4. **Kids:** Put a rock in between the bottom cup and top cup.
5. **Adults:** Go table to table, helping layer worm bins.
6. **Kids:** Place a smaller fabric circle at the bottom of the bin.
7. **Kids:** Squeeze most of the water from shredded paper, fluff up shreds, and line the bottom of the cup.
8. **Kids:** Layer in soil.
9. **Kids:** Place vegetable scraps in the bin.
10. **Adults and Kids:** Scoop ~10 worms into the bin.
11. **Adults and Kids:** Secure fabric scrap on the lid with a rubber band.
12. **Kids:** Color worm printouts.





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handout

