

Growing with Compost

FOURTH GRADE

Composting is an embedded practice in many schools, and it's fairly common knowledge that compost is good for plants because it provides nutrients and improves the soil's ability to retain water. In this experiment, we'll put that assumption to the test to find out just how beneficial compost is to the health of a plant. Do this lesson **Fall through early Spring** to transplant sugar snap peas in the garden.

SUBJECT

SCIENCE

TIME

30 - 45 MIN

+

5-10 MIN follow-up 2x per week for 2-3 weeks

MATERIALS

Newspaper pots, 3 per group

Potting soil, enough to fill 1 1/2 pots per group

Compost, enough to fill 1 1/2 pots per group

Sugar snap pea seeds, 3 per group

Measuring cups, 1 per group

Containers or buckets for mixing soil, 1 per group

Newspaper

Empty tomato paste cans or wooden dowels

Masking tape, 1 roll per group

Permanent markers, a few per group

DIRECTIONS

- Introduce the activity with a class discussion about compost. Ask students what compost is? What is compost made of? What is it for? Why do we make compost at school?

- Compost is the result of the decomposition process, and it is a substance that has lots of nutrients and helps make healthy soil.

In a school garden, compost is made from the fruit and vegetable scraps discarded at lunch, along with other natural materials like dried leaves and straw.

We make compost at school for two reasons - the first is that we use food waste as a resource, meaning that we can take things that would otherwise be thrown away and turn them into something that benefits us – natural fertilizer for the garden.

The other reason is that food that goes into the landfill gets buried and decomposes in a way that creates a harmful greenhouse gas, methane. California has even passed laws to prevent food waste from going into the landfill.

- Explain to students that they will conduct an experiment to collect data to show how compost impacts plant growth. They will grow seeds under three conditions: #1 Compost only, #2 Compost/Soil mixture, and #3 Soil only. Have students make predictions for each condition. Which of the three scenarios will result in the healthiest plant?
- Have students work in groups of four and distribute worksheets, newspapers, tomato paste cans/wooden dowels, masking tape, clipboards, pencils and markers.
- Follow the included instructions to make 3 newspaper pots per group.
- Have students mark each newspaper pot with the headings: #1 Compost, #2 Compost/Soil, #3 Soil.
- Use the measuring cup to measure out one part soil and one part compost and mix in the container or bucket. Then have students fill their #1 pot with compost, #2 with the compost/soil mixture, and #3 with potting soil.
- Next, plant one seed in each newspaper pot. Poke a hole about 1/2 inch deep in the center of the soil, drop in the seed, then cover it up with soil.



Watering cans or spray bottles, several to share

Growing with Compost Worksheets, 1 per group of 4

Pencils, 1 per group of 4

Clipboards, 1 per group of 4

Rulers, 1 per group

- Water the soil thoroughly and place the container in a sunny spot.
- Direct students to fill out the top portion of their Growing with Compost Worksheet.
- Visit the garden every few days to water the seeds or assign this task to a student. The seeds should sprout within one week.
- After one week, return to make the first observation of the seeds and measure the height of each sprout and record it on the worksheet.
- Continue to measure the plant every few days (2x per week) and record measurements on the sheet.
- After two to three weeks, ask students to draw conclusions from their data. Which section grew the tallest plants? Which one looked the healthiest? What mixture would they recommend to grow the healthiest plants?
- The bean seedlings can be transplanted into a larger pot, a garden bed, or taken home.

SOURCE

- BCK Programs



Growing with Compost Worksheet

Name: _____

Type of Seed: _____ Date Planted: _____

Date of Observation	Height of tallest plant (inches)
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____
	#1 Compost: _____ #2 Compost/Soil: _____ #3 Soil: _____

