Lesson 4: Planting With Compost

Grade Level: Grade 3
Concepts Taught:
Composting, measuring plant growth

Essential Questions:
- What does compost do?
- How can I tell when compost is helping the soil?
- What are some properties of compost and how does it effect soil?

NC Core/Essential Standards:
ELA : Text Type and Purposes: strands 2a, 2b, 2c, 2d
Science : 3.L.2.2; 3.L.2.4; 3.L.1.1;

Materials:
Soybean seeds
two identical pots or cups
soil (NOT potting soil-you may want to use soil dug from your school's grounds)
Compost*
Water
permanent markers
Lab sheets #1 and #2
*Compost can be obtained at municipal yard-waste facilities and many gardening or hardware stores.

Objectives:
- Students will investigate some of the properties of compost, including how compost can be used to improve poor soils.
- Students will compare a plant grown in plain soil with a plant grown in compost-amended soil.

Procedure:
Information about soybean plants:
- Will germinate 3-6 days after planting. If they have not germinated after 7 days, throw out both pots and start over.
- Flowers will appear 4-5 weeks after planting

1. **Soil only pot:** Fill pot or cup with soil up to ½ inch from the top. Dig small hole in soil (approx. 1 in. deep) with fingertip. Place 1 seed in the hole. Re-cover with soil. Add water to moisten soil. Explain to students that this is the "control" pot since it has only soil. Using a permanent marker, label this pot "Control."
2. **Compost-amended pot:** Prepare amended soil by filling the pot or cup two-thirds full with soil. Fill the rest of the pot with compost. Mix thoroughly to distribute compost throughout soil (this may be done by emptying the contents of the pot into a zip-top bag and shaking well). Explain to students that this is the experimental pot since it contains soil and compost. Using a permanent marker, label this pot "Experimental."
2. Return the compost-amended soil to the pot. Dig small hole in soil (approx. 1 inch deep) with fingertip. Place 1 seed in the hole. Re-cover with soil. Add water to moisten soil.
3. Place seeded pots in an area where they will get sunlight (or in a grow-lab if available). Water daily or every other day, making sure that each planting gets the same amount of water each time.
4. Have students make predictions based on their knowledge of compost as to which plant will grow best.
6. Observe changes and measure growth of the plants (using a ruler) every day for 3 weeks.
7. Record all observations and measurements on the observation lab sheet 1 & 2.

Extensions/Modifications:
1. Discuss with students how they will measure which plant grew "best." Should they measure plant height only? Should they measure the number and size of leaves or roots?
2. If the plant grown in compost showed better growth, why? By process of elimination, have students conclude that the nutrient supply was different in the pot with compost since the plants were watered the same and were exposed to the same amount of light.

Name _____

Planting Lab Sheet #1 – Soil Only

DAY	OBSERVATIONS	PLANT HEIGHT (in.)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

NAME_____

Planting Lab Sheet #2 – Soil + Compost

DAY	OBSERVATIONS	PLANT HEIGHT (in.)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

