

Name \_\_\_\_\_

## The Great Plant Food Mystery

### Guiding Question:

Does fertilizer (plant food) help plants grow bigger and healthier than plants without fertilizer?

### Objective:

Students will be able to conduct a simple controlled experiment to compare the effect of a variable (fertilizer) on plant growth. They will practice making observations, measuring, and recording data.

### Materials:

- 2 small, identical pots (or clear plastic cups) with drainage holes
- 2 saucers or plates to put under the pots
- Potting soil (enough to fill both pots)
- 6-8 fast-growing seeds (e.g., bean seeds, pea seeds, or marigold seeds)
- Water-soluble fertilizer for houseplants (mixed according to package directions)
- Water
- A ruler or measuring tape
- A permanent marker
- A lab notebook or the provided "Plant Growth Observation Journal" worksheet
- Pencils, crayons, or markers



### Hypothesis:

I think the plant with the fertilizer will \_\_\_\_\_

### Procedure:

1. Label Your Pots: Use the permanent marker. Write "WITH Fertilizer" on one pot and "NO Fertilizer" on the other.
2. Plant the Seeds: Fill both pots with the same amount of potting soil. Plant 3-4 seeds in each pot, about 1 inch deep.
3. The First Watering: Gently water both pots with plain water until the soil is moist but not soaking wet. Place the pots on their saucers in a sunny spot.
4. The Only Difference (The Variable): This is the most important part! From now on:
  - The pot labeled "NO Fertilizer" will only get plain water.
  - The pot labeled "WITH Fertilizer" will get the water with fertilizer mixed in.
  - Water them the same amount, on the same days.

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### Making Observations (Weekly)

1. Wait for Sprouts: In about 5-10 days, you should see little sprouts!
2. Record Your Data: Once a week, use your "Plant Growth Observation Journal" to:
  - Measure Height: Use your ruler to measure the height of the tallest plant in each pot (in inches or centimeters).
  - Count Leaves: Count the number of leaves on each plant.
  - Observe Color & Health: Look at the color of the leaves and the stem. Are they bright green? Yellow? Are the stems strong?
  - Draw a Picture: Draw what you see in each pot.

Plant Growth Observation Journal

Student Name: \_\_\_\_\_

Date Experiment Started: \_\_\_\_\_

My Hypothesis: I think the plant WITH / WITHOUT fertilizer will grow better because

\_\_\_\_\_.

Week 1 Observation (Date: \_\_\_\_\_)

Name \_\_\_\_\_

### Plant Growth Observation Journal

Date Experiment Started: \_\_\_\_\_

My Hypothesis: I think the plant WITH / WITHOUT fertilizer will grow better because

\_\_\_\_\_

\_\_\_\_\_

Week 1 Observation (Date: \_\_\_\_\_)

	WITH Fertilizer	NO Fertilizer
Height	_____ inches / cm	_____ inches / cm
Number of Leaves	_____ leaves	_____ leaves
Color and Health	_____	_____
My Drawing		

Week 2 Observation (Date: \_\_\_\_\_)

	WITH Fertilizer	NO Fertilizer
Height	_____ inches / cm	_____ inches / cm
Number of Leaves	_____ leaves	_____ leaves
Color and Health	_____	_____
My Drawing		

Name \_\_\_\_\_

Plant Growth Observation Journal

Week 3 Observation (Date: \_\_\_\_\_)

	WITH Fertilizer	NO Fertilizer
Height	_____ inches / cm	_____ inches / cm
Number of Leaves	_____ leaves	_____ leaves
Color and Health	_____	_____
My Drawing		

Week 4 Observation (Date: \_\_\_\_\_)

	WITH Fertilizer	NO Fertilizer
Height	_____ inches / cm	_____ inches / cm
Number of Leaves	_____ leaves	_____ leaves
Color and Health	_____	_____
My Drawing		

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Plant Growth Observation Journal

Week 5 Observation (Date: \_\_\_\_\_)

	WITH Fertilizer	NO Fertilizer
Height	_____ inches / cm	_____ inches / cm
Number of Leaves	_____ leaves	_____ leaves
Color and Health	_____	_____
My Drawing		

**Analyze the Data:**

- Which plant was taller at the end? \_\_\_\_\_
- Which plant had more leaves? \_\_\_\_\_
- Which plant looked greener and healthier? \_\_\_\_\_

**Draw a Conclusion:** Was your hypothesis correct? \_\_\_\_\_

My results show that the plant with fertilizer grew [taller/shorter/the same] and had [more/fewer/the same number of] leaves.

Based on my experiment, fertilizer does / does not help plants grow.