

**Materials Needed:** Paper cups, soil, lima bean seeds

**Questions for the Scientist:**

1. How does the mass of a plant increase?
2. How much mass can a given plant gain within a week? a month?

**State Your Hypothesis:** \_\_\_\_\_

**Procedures:**

1. Fill a paper cup with soil to 1-inch below the top of the cup. Measure the amount of soil in the cup. Record the amount, or mass, of soil. Record the date.
2. Find the mass of one lima bean and record it. Record the date you took these measurements.
3. Place 2 or 3 lima beans in the paper cup. Add enough water to dampen the soil without soaking it.
4. Place the cup in a warm location where it will receive sunlight (a window sill, for example). Water the soil each week and record how much water each cup received.
5. After one week, measure any plant growth with a ruler and record it. If the plants have not grown, record your hypothesis for why they have not grown yet.
6. After one month, measure any plant growth with a ruler and record it. If the plants have not grown, record your hypothesis for why they have not grown yet.
7. Remove the plant and roots from the soil. Do this very carefully. Find and record the mass of the plant. Then find and record the mass of the soil.

**Key Question:** Examine the data you collected to compare the current mass of both the plant and the soil to the measurements you recorded at one week and the measurements you recorded at the start of the experiment.

Now: \_\_\_\_\_

At week one: \_\_\_\_\_

At start of experiment: \_\_\_\_\_

**Results and Application:**

After studying your results, what conclusions can you draw? Do your results support your hypothesis? Explain your reasoning.