**Do Seeds Need Light to Germinate?**

NC Essential Standard 2.1.2

Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.

**Background Information:** Seeds need water, oxygen and the right temperature in order to germinate. This experiment tests to see if they need light to germinate. Read more about seeds on page 565 of your textbook.

**Pre-lab Questions:**

1. Define germination.

2. Mature plants need energy to grow. Where do they get this energy?
 Where does the embryonic plant in the seed get its energy for growth?

**Hypothesis:**
If \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Then\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials:**
quart-size ziploc bags, lima beans, paper towels, graduated cylinder, water

**Procedure:**

Day 1
1. Place a folded paper towel inside a Ziploc plastic bag and moisten it with 50 ml of
water.
2. Place 5 lima bean seeds in a row across the wet paper towel.
3. Repeat with a second bag.
4. Tape one bag to the side of the lab table in the light and tape one to the inside of
 a cabinet door in the dark.

Ziploc bag

 Bean seeds

 Paper towel

Day 3
After 3 days, record the number of seeds that have germinated.

**Data:**

 Number of Seeds Germinated
 Day Seeds in the Dark Seeds in the Light

 0 \_\_\_\_\_ \_\_\_\_\_

 3 \_\_\_\_\_ \_\_\_\_\_

Seed Germination: Class Data
Number of Seeds Germinated

Group Dark Seeds Light Seeds\_

 1 \_\_\_\_\_ \_\_
 2 \_\_
 3 \_\_
 4 \_\_
 5 \_\_
 6 \_\_
 7 \_\_

 Total: \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_
 Average: \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_

**Conclusion:** (What do the results show about the answer to our question? Do you accept or reject your hypothesis? Write a few sentences, using your results to support your conclusion.)

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