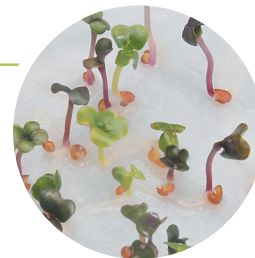


What Do Plants Need to Grow?

A Carolina Essentials™ Investigation

Student Worksheet



Overview

Plants grow from seeds. Seeds sprout with tiny roots and leaves that grow into a big plant. Plants have leaves above the ground. Leaves take in sunlight and make food for the plant. Roots are in the soil. Roots take in water and nutrients for the plant. Roots also help keep the plant in place.

Essential Question

What do plants need to grow?

Investigation Objectives

1. Can plants grow in the dark?
2. Can plants grow without water?

Safety

Wipe up water if it spills. Treat the sprouts gently.

Procedures

Day 1

1. Label the lids of the containers with your group number and these details:
 - A. Sun and Water
 - B. Dark and Water
 - C. Sun and Dry
 - D. Dark and Dry



MATERIALS

- 4 seed disks
- 4 plastic containers with lids
- 1 graduated cylinder
- Water
- 2 aluminum foil squares, 10 × 10 in
- 1 marker

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2. With a pencil, label the seed discs **A, B, C, and D**.
3. Count the number of seeds on each disc. Write the number of seeds in the data table under Day 1.
4. Put Disk A in **Container A—Sun and Water**.
5. Measure **10 to 25 mL** of water in the graduated cylinder.
6. Slowly pour the water into the container. The seed disk should be damp but not underwater.
7. Show the teacher the container. Put the lid on.
8. Put **Disk B** in **Container B—Dark and Water**.
9. Measure **10 to 25 mL** of water in the graduated cylinder.
10. Slowly pour water into the container. The seed disk should be damp but not underwater.
11. Show the teacher the container. Put the lid on.
12. Wrap up **Container B** with a piece of aluminum foil. Make sure no light can get to the seeds.
13. Put **Disk C** in **Container C—Sun and Dry**. Put the lid on.
14. Put **Disk D** in **Container D—Dark and Dry**. Put the lid on.
15. Wrap up **Container D** with a piece of aluminum foil. Make sure no light can get to the seeds.
16. Your teacher will tell you where to put the containers.

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Day 2

1. Count the number of sprouts in **Container A—Sun and Water**. Write the number in the data table.
2. Unwrap **Container B—Dark and Water** and count the number of sprouts. Write the number in the data table. Wrap up the container.
3. Count the number of sprouts in **Container C—Sun and Dry**. Write the number in the data table.
4. Unwrap **Container D—Dark and Dry** and count the number of sprouts. Write the number in the data table. Wrap up the container.
5. Your teacher will tell you where to put the containers.

Days 3 and 4

Repeat the steps for **Day 2**.

Day 5

1. Repeat the steps for **Day 2**.
2. Throw the plants away.

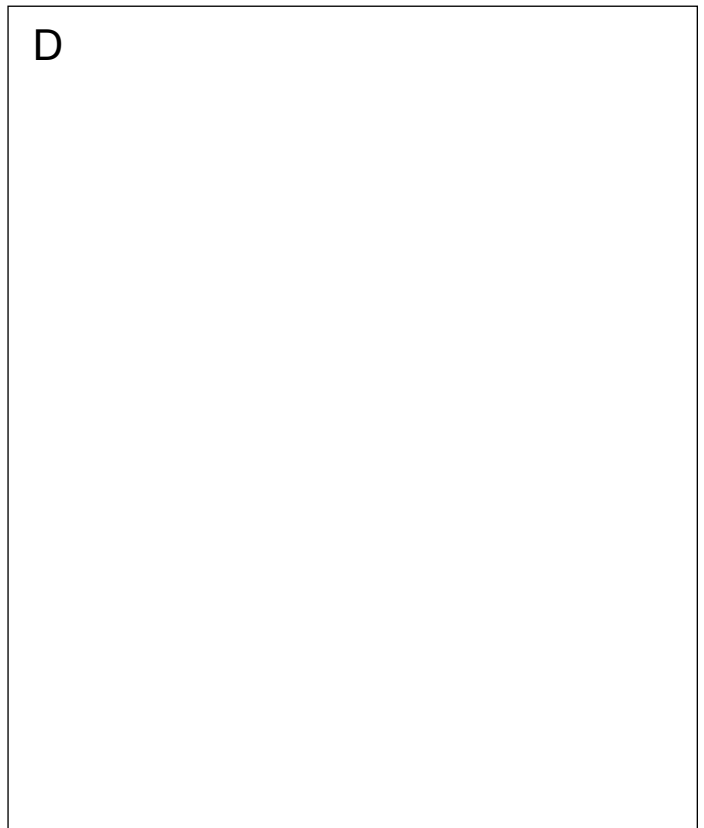
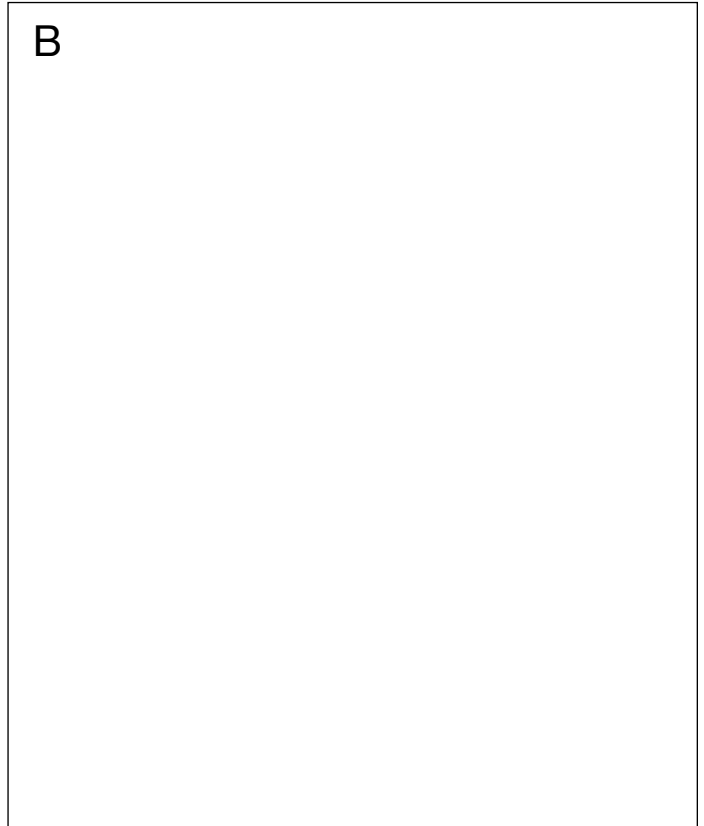
Data and Observations

Seeds and Sprouts

Container	A	B	C	D	Total
Day 1 Seeds					
Day 2 Sprouts					
Day 3 Sprouts					
Day 4 Sprouts					
Day 5 Sprouts					

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Day 5: Draw a sprout from each container.



Questions

1. Did all the containers have seeds that sprouted?
2. Which container had the most sprouts?
3. Which container had the least sprouts?
4. Look at your drawings. Which container had the healthiest sprouts?

Conclusions

1. Do plants need sun to sprout? How do the data show that?
2. Do plants need water to sprout? How do the data show that?
3. What do plants need to grow? Include evidence that supports your statement.