

What Do Plants Need?

Children usually grow taller each year. In order to grow, you need certain things. You need food, exercise, sleep and water to grow and stay healthy. Other animals have similar needs. For example, cows need grass to eat, owls need trees to sleep in, and fish need water to swim in. But what do plants need?

Think about all of the places you have seen plants growing. What do these places have in common? Are they usually bright or dark? Are they in a place that is warm or a place that is cold?

In this experiment, we are going to explore some of the things plants need to grow. We will see if they need water, warmth, and light. During this experiment we will manipulate some variables. **Variables** are things in an experiment that can be changed. We are going to manipulate, or change, the variables so that we can see which variables make a difference. The variables in this experiment are the amount of water a plant is given, the amount of light

a plant is exposed to, and the temperature of the plant's environment. We will give one plant sun and keep one plant in the dark to see which grows better. We will give one plant water, and keep another plant dry. We will keep one plant in a freezer, and another in the classroom at room temperature. When we see which plants grow bigger and faster, we will know what these plants need in order to grow their best.



Directions:

1. Fill 6 paper cups 3/4 full of soil.
2. Place three bean seeds in each of the cups.
3. Cover the seeds with a thin layer of soil.
4. Label the cups water, no water, light, no light, cold, and warm.
5. Water all of the plants except for the one labelled "no water".
6. Put the plant labelled "no light" in a dark closet.
7. Put the plant labelled "cold" in a freezer.
8. Put the four other plants on a window sill.
9. Water all of the plants every day except for the plant labelled "no water".
10. Check every day to see if the seeds have sprouted. Record all of your observations on the Data Chart.
11. Observe and record which seeds sprout first. Once a seed sprouts, record its height every day so that you can compare rates of growth.

Follow-Up Questions: When the data chart (p. 23) is completed, use it to answer these questions on a separate sheet or in a science journal.

Which seeds sprouted first? What does this tell you about what plants need? Does light seem better than no light? Do seeds grow when they are frozen? Draw some conclusions using your data table.

