



Exploring Some of the Environmental Factors to Which Plants Are Sensitive

It is easy to devise ways to find out the effect of different factors on plant growth. Some factors you might test are temperature, light, water, soil nutrients, and wind. The following experiments can help you find out what factors affect the growth of plants.

If you measure the growth of the plants during the experiment, you can place the results on a graph.

Experiment 1: At What Temperatures Do Some Seeds Sprout Best?

This experiment is designed to find out the effect that different temperatures have on a plant's growth.

You will need birdseed (the kind that is a mix of many kinds of seeds), three paper plates, and thin layers of cotton.

Wet the layers of cotton and place one on each plate. Scatter the seeds on the cotton and cover with another thin layer of moist cotton. Throughout this activity, do not let the cotton become dry.

Place 1 plate in a hot location, keep 1 in a refrigerator, and keep the other 1 in a room at a normal temperature. Observe the plates daily for 10 days.

Write a report describing the setup and your observations. Tell what happened and why you think it happened.

Experiment 2: Do Seeds Grow Best in Dark or Sunlit Places?

This experiment is designed to find out the effect light has on the growth of a plant.

To do this experiment, you will need two saucers, paper towels, and some birdseed.

Wet the paper towels and place them on the saucers. Sprinkle the birdseed on the towels. Place both saucers in a warm sunny spot. Cover one with a box so that no light gets inside. Keep the towels moist all the time.

Look at the seeds on the saucers every day for 10 days and take notes on what you see.

Write a report. Describe the setup, then tell what you saw happening during the 10 days. Tell why you think there were differences between what you saw on the 2 saucers.

Experiment 3: Do Some Seeds Grow at Different Rates After They Germinate?

Set up 2 identical pots with soil. Plant 5 radish seeds in one and 5 lima bean seeds in the other. When they start growing and break through the soil, measure the height of each plant. Keep a record of the height of each plant every day for 10 days.

Chart your measures for each plant on graphs to compare the rate of growth for each type of plant. Your graph for each plant might look like the ones shown on this page.

Write a report on what you learned from this experiment. Use your graphs in your report.

Experiment 4: Does the Amount of Water Affect Plant Growth?

Place equal amounts of radish seeds and lima bean seeds in potting soil in each of six pots. Put all but one pot in 1-quart milk cartons. Prepare one pot so that it does not get water and increase the amount

of water in larger and larger increments in each of the four other pots until the soil in the last pot is standing under water. For the last pot, seal the drain holes in the bottom of the pot. Cover the tops of each carton with a plastic bag held in place with rubber bands. This will keep the water from escaping and reduce the need for watering during this activity.

Place all of the covered plants in full sunlight. Set the uncovered plant near the others for comparing purposes. Water this plant regularly. Observe the plants daily. Keep notes on your observations. How does each plant compare to the control plant? Do some plants grow better than others? Do some not grow very well?

After 10 days, write a report about the setup of this activity and tell what you learned from doing it. What does too little water do to a plant's growth? What does too much water do?

COMPARING GROWTH OF RADISH AND LIMA BEAN PLANTS

