

The Hold of the Cold

Objective

Students will investigate the effects of temperature on growing plants.

Materials

- 10 dried lima bean seeds
- paper towels
- two plastic bags
- water
- refrigerator

Background

In the Arctic, temperatures often drop below 0°C (32°F), and cold winds lower surface temperatures even more. Many plants have only three months to sprout, grow, and produce seeds for the next summer. Timing is critical. Often, plants that sprout early die because of cold spring weather.

Action

1. Have students predict what will happen to the growing beans if one set of five is sprouted in the warm room and another set of five is sprouted in the refrigerator. (Students may want to sprout beans inside a cabinet to eliminate the effect of light.)
2. Assemble the two sprouting packages in exactly the same way. Dampen two or three paper towels, place five beans in paper towels, wrap loosely, and slip into one plastic bag.
3. Put one sprouting package in the refrigerator and another somewhere in the classroom or inside a cabinet.
4. Check the sprouting packages each day. Record the growth of the beans by writing a descriptive paragraph or drawing pictures. Discuss results after five or six days. Students may want to plant sprouted beans and grow plants in the classroom window sill. Is there a difference in growth rate now too?

Deeper Depths

Ask students if they think some plants are adapted to sprout in colder weather. Discuss which plants grow first in spring. What plants grow later? Repeat the experiment again using the seeds of early growing and late growing plants. Do some sprout better than others?