

Plant Growth

In school, the children have investigated some variables that affect the germination of seeds and the growth of plants. In this activity, you will observe how the germination of seeds is affected by varying amounts of moisture.

Problem:

How is seed germination affected by moisture?

Materials:

- 24 Wisconsin Fast Plant seeds
- 8 plastic cups
- soil
- water
- centimeter ruler
- magnifying lens
- marker
- calibrated vial

Procedure:

1. Label plastic cups 1 and 2 "No Water". Label cups 3 and 4 "10 ml of Water". Label cups 5 and 6 "20 ml of Water". Label cups 7 and 8 "30 ml of Water".
2. Punch 5 drainage holes in the bottom of each cup.

3. Fill each plastic cup with soil to a depth of 3 cm. Place 3 seeds on the surface of the soil and then cover with 1 cm of soil.
4. Place all the cups in the same area of your home.
5. Predict in which of the cups the seeds will germinate first.
6. Water the cups each day. Give each cup the designated amount of water. Use the chart, or one similar to it, to collect data. Diagrams and drawings can also be used to show the growth of the plants.
7. View daily; record new development and visible growth.
8. Discuss: Which seeds germinated first? Which plants developed best? Which amount of moisture is best for the germination of seeds and development of plants?

Plant #s	Water in mls.	Observations							
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
1, 2	0								
3, 4	10								
5, 6	20								
7, 8	30								

SUMMARY: Moisture is a variable that affects the germination of seeds and development of plants. Other variables for germination are temperature and seed depth. Plant growth, however, is affected by light, moisture, air, temperature, nutrients and seed depth.

EXTENSIONS:

Further Investigation:

Design a procedure to investigate the effect of temperature on seed germination. Carry out your experiment.

Related Excursions:

Brooklyn Botanic Garden
1000 Washington Street
Brooklyn, N.Y. 11225
(718) 622-4433

Queens Botanical Gardens
43-50 Main Street
Flushing, N.Y. 11355
(718) 886-3800

Literary Connections:

- Aardema, Verna. *Bringing the Rain To Kapiti Plain*. Scholastic Inc., 1981.
- Burnie, David. *Eyewitness Book: Plant*. Alfred A. Knopf, 1989.
- Kalman, Bobbie. *How a Plant Grows*. Crabtree Publishing Company, 1997.
- Pope, Joyce. *Plants and Flowers*. Troll Associates, 1994.

Related Web Sites:

- <http://explorer.scrtec.org/explorer/explorer-db/html/783751821-447DED81.html>
- <http://explorer.scrtec.org/explorer/explorer-db/html/835378199-81ED7D4C.html>