



GROWING UNDER GLASS POST-ALLAN GARDENS VISIT LESSON PLAN

Objectives:

Students will apply their knowledge of the needs of plants by experimenting with depriving plants of their basic needs: water, sun, air, temperature, soil, space.

Materials:

- observation chart (attached)
- 7 small indoor plants
- a sunny classroom spot
- access to water

Note: This lesson will take one class period to begin and about a month of weekly/bi-weekly observation sessions.

Lesson:

Begin by asking students to remember things they learned on their visit to the Toronto Botanical Gardens. Prompt students to recall that plants need 6 main things to go through the cycle of growth successfully: air, temperature, water, sun, soil and space. Tell students they will work as plant scientists or botanists for the next month to observe the effects on plants. Explain that each group will receive a plant and work to observe the effects of depriving the plant of one of its basic needs.

On day one set up these controls:

1. Water: This plant will not receive any water.
2. Sun: This plant will be kept in a shady area.
3. Air: The bottom of the leaves can be coated in Vaseline to prevent the plant from breathing.
4. Temperature: This plant can be kept in a freezer.
5. Soil: This plant's roots can be placed in water not soil.
6. Space: This plant can be replanted into a very small pot or several plants can be crowded into one pot.

Activity:

1. After the first lesson students will predict what will happen to their control plant and the plant they are depriving of various needs.
2. They will make a sketch of their hypothesis and one of how the plant looks at the beginning of the experiment.
3. Each week students will observe the changes in their plant and make a sketch. They will measure it and report on colour, look of leaves and any growth.
4. After observing for a few weeks students will compare their prediction with the final results and sketch the final results.



Closure:

Students will share results with class about their plant's reaction to the lack of daily needs. They will compare their plants with the control plant. Students will make a conclusion about which element was the most important for this plant and which element was the least important.



Names: _____

Type of Plant _____

We deprived our plant of (circle one): **water sun air temperature soil space**

Date	Observations of Control Plant	Observations of Plant deprived of: _____	Draw a Picture of your plant	Other Notes