

Water We Doing?

Description

In this two-week project, students observe the relationship between watering and plant growth and apply their experimental findings to the garden. The three activities are planned for a Monday/Monday/Friday sequence.

Objective

To control the application of water to plants.

Part One:

Materials

One package of bean or pea seeds
 One 1/2-pint milk carton per pair of students and one for you
 Potting soil for cartons
 One large self-stick label per pair of students
 One plant stake per pair of students
 Several water sprayers or sprinkling cans
 Several measuring cups or graduated cylinders
 Newspaper
 Class chart

Preparation

One week before the activity, plant a seed in each carton, first punching five identically spaced holes in the bottom of each. Water evenly as instructed on the seed packet and maintain the plants until the activity begins, at which time sprouts should just be showing.



What are the four necessities of plant life? (sun, water, air, soil) How can each of them be controlled in the garden? Which one of them can be controlled most easily? (water) How does watering plants affect their growth? (It helps them grow.) What happens to plants if they're watered too much? (They die.) What happens to them if they're not watered? (They die.) Let's set up a test to try to find out the amount of water to give a plant. First we must decide just when we are all going to water. (Decide on every day, every other day, or every third day.) We now have to agree on just how we will all do our watering. (Decide whether to pour on water or spray it.) These agreements are part of controlling a test so that we are only comparing one thing at a time. What other things must we control to make the test fair? (Elicit other factors of light and temperature.) Now I'll demonstrate various amounts of water, and each pair can decide which would be the best amount to use. (Show amounts from 25 mL to 250 mL.) Now each pair may put their names and amount on the chart. Let's begin with whoever is going to use the least water and work up from there. (Make sure that there is a diversity.) I'm going to set out a plant, too, but

results. Note: Soil that is too dry crumbles when it is squeezed; soil that is too wet oozes; soil that is just right sticks together but doesn't ooze.

2. Have students prepare soil in the garden for the eventual planting of beans.

Part Three, four days later:

Materials

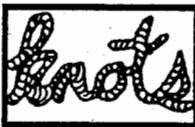
- One ruler per group
- One sheet of newspaper per group



Repeat the questions and analysis in the discussion for Part One. What have we measured each day? (height and number of leaves) What part of the plant have we not looked at? (roots) Let's look at those roots now to see what they have been up to while we've been working elsewhere.



1. Divide the class into groups of six. Give each group one plant that represents different amounts of watering.
2. Have students gently remove the plant from its carton and lay it out on the newspaper.
3. Have students compare the extent of the plant's underground growth to its above ground growth. Was it more? Less? About the same?
4. Transplant all the seedlings outdoors, and water them.



In what ways will watering garden plants be the same as watering test plants? (Soil dampness must be just right.) How will it be different? (We can't measure so exactly, we may want to sprinkle or soak, and so on.)



Have students continue to compare the factors in watering, including method of application, frequency, and so on.

