

Laboratory Investigation 12C

Chapter 12C: Major Plant Groups

Station # _____

Plants: Growing Moss

You may refer to pages 175-178
in your textbook for a general
discussion of nonvascular plants.
Time required: 50 minutes

People can grow moss in gardens and terrariums. In this activity, you will make a small terrarium for growing moss and other small woodland plants.

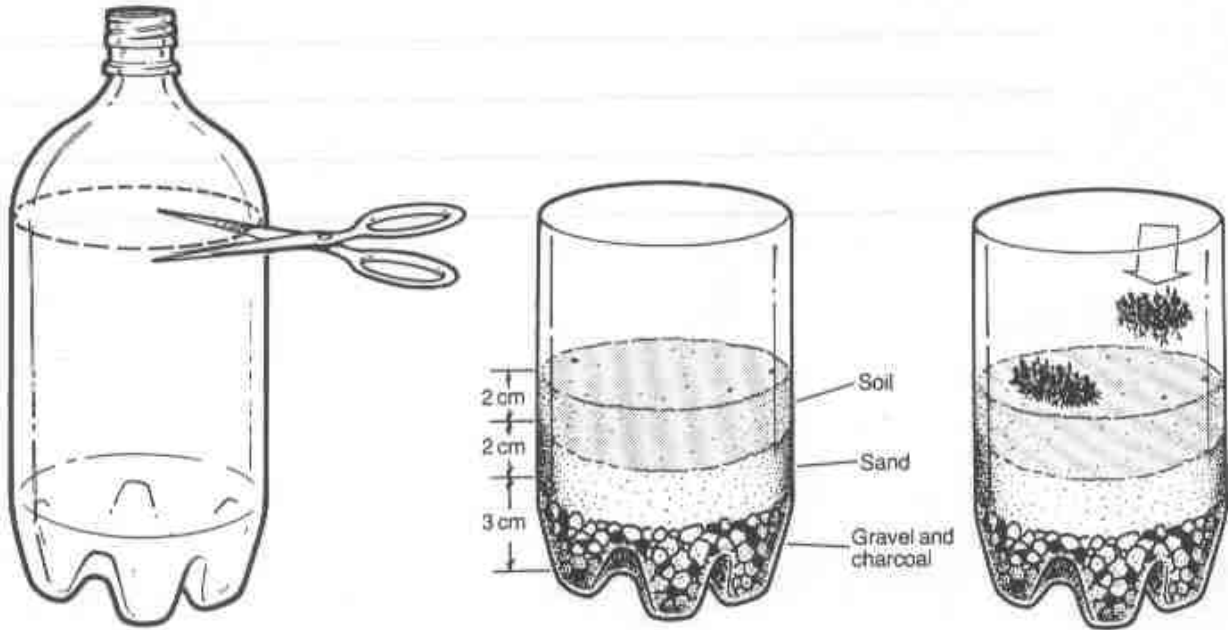
Materials



2-L soda bottle, scalpel, gravel, sand, soil, charcoal, moss plants, plastic wrap, rubber band, dissection kits, microscopes, slides, cover slips

Procedures

1. Obtain a clear plastic 2-L soda bottle, scalpel, scissors, coarse gravel or pebbles, sand, soil, and some small pieces of charcoal.
2. Remove the label on the bottle. With the scalpel, punch a hole near the top of the bottle where the sides become straight and the plastic thins out. Using this hole as a starting point, cut off the top of the bottle with the scissors.
3. Place a 3-cm layer of gravel on the bottom of the bottle. Add a few pieces of charcoal. Then add a 2-cm layer of sand. Finally, add a 3-cm layer of soil.



4. Collect some moss plants. Put the plants you have collected in a plastic bag to help keep them moist. Note: *Collect only as many plants as you need for your bottle! Obtain permission before you collect plants from somebody else's property.*
5. Plant the mosses in the bottle.
6. Add water to the bottle so that the water level is about halfway up the gravel layer.
7. Cover the bottle with plastic wrap. Secure the plastic wrap with a rubber band.
8. Keep the bottle in medium light. Add water as needed to maintain the level in the bottle. If molds start to grow in the bottle, reduce the amount of water and remove the cover until they disappear.

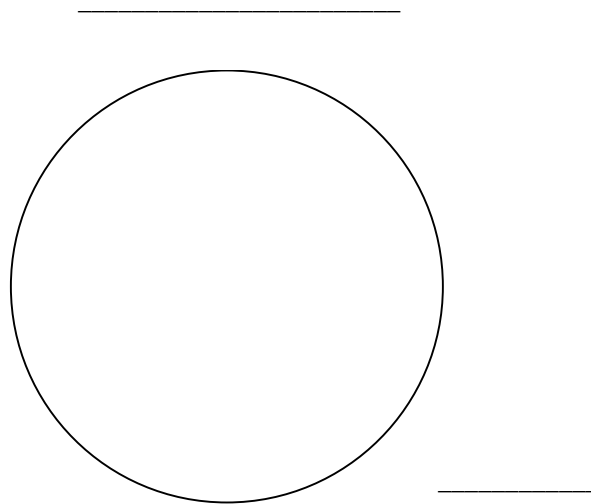
Matching

- | | |
|---------------|--------------------|
| A. fern | D. algae |
| B. gymnosperm | E. moss |
| C. angiosperm | F. vascular tissue |

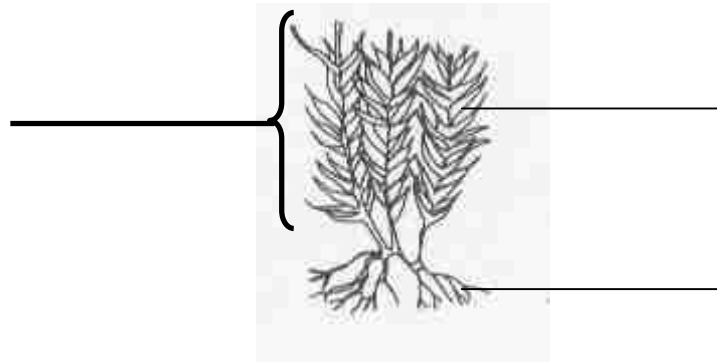
- _____ 1. Nonvascular plant with rhizoid
- _____ 2. Vascular plant with no seed
- _____ 3. Vascular plant with exposed seeds
- _____ 4. Vascular plant with seeds within fruit
- _____ 5. Mosses are small because they lack ____.

Microscope observations

1. Spread the moss plant out on the table to observe its structure. The leaflike parts above ground are not really leaves. With tweezers, remove one from the plant and place it on a slide in a drop of water. cover it with a cover slip. Examine it under low power and make a drawing.



2. The rootlike fibers that grow underground on a moss plant are called rhizoids. They are not true roots. Label the leaflike parts using the appropriate name and the rhizoids on the drawing of the moss plant.



3. How many layers of cells were in the moss leaflet?

4. Why is the moss leaflet so thin?

Observations

Record your observations of the terrarium in the table below.

Day	Observations
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

Questions

1. Why do you place sand and gravel on the bottom of the terrarium?

2. Why is it important to keep the rhizoids covered when transplanting the moss plants?

3. What kind of environment did you provide the moss?

4. Based on your setup, how do mosses get water from soil?

5. How are the conditions in the bottle similar to the mosses' natural habitat?

6. How are the conditions in the bottle different to the mosses' natural habitat?

7. What do the mosses look like?

8. Do the mosses in the bottle change over time? If so, how?

9. Discuss the differences between vascular and nonvascular plants.

Picture

Attach a picture of your completed moss terrarium.