

Chapter 15

ENRICHMENT

Use with Section 1

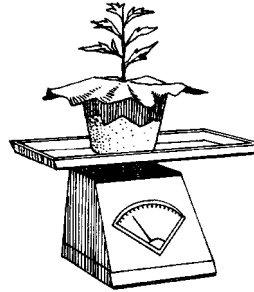
• Photosynthesis and Respiration

Measuring Transpiration

Water can make up 90 percent or more of the total weight of a plant. It's not surprising when you think about the juicy watermelons or tomatoes you've eaten. You've learned how water that is taken up by the roots of a plant is used for photosynthesis. But each day, a lot of water is lost through the stomata of the leaves as water vapor. If you have a terrarium containing plants, you have probably noticed the water that condenses on the top and sides of the container. In this activity, you can measure the rate of transpiration by measuring how much weight the plant loses over a given time.

Materials

small potted green plant
plastic wrap or foil
food scale

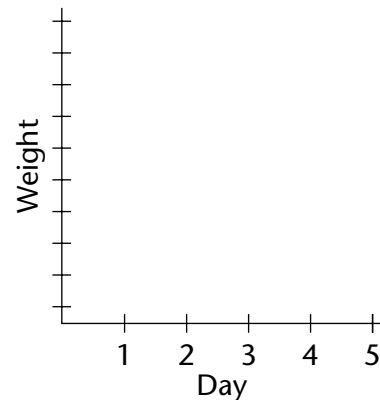


Procedure

1. Cover the top of the pot with the plastic wrap or foil to ensure that you are measuring water loss from only the stems and leaves.
2. If possible, leave the plant on the scale during the entire experiment.
3. Measure the weight of the plant at the beginning of the experiment. Record this under Day 1.
4. Do not water the plant. Weigh the plant every day.
5. Record your results in the table below. Then graph the data.

Data

Weight				
Day 1	Day 2	Day 3	Day 4	Day 5



Conclude and Apply

1. What tells you the rate of transpiration? _____
2. If the rate of transpiration increased, how would your graph change?

3. Would you expect to see less transpiration going on at night or during the day? Why?
