



HIDDEN WATER EXPERIMENT

TRANSPIRATION

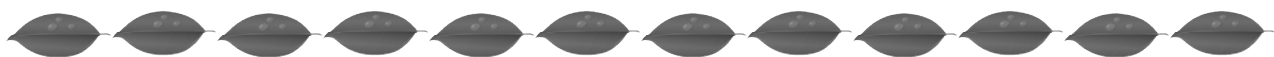
This simple experiment demonstrates to students how transpiration takes place in plants.

Begin the experiment by discussing the following points with students:

- ◆ Do plants need water?
- ◆ How do they get water?
- ◆ What happens to the water in a plant?



Write the word *Transpiration* on the board. Explain its meaning—the evaporation of water from a plant, mainly through its leaves. Transpiration helps a plant to keep cool and also aids the flow of nutrients around the plant.



EXPERIMENT

It is best to perform this experiment at the beginning of the day.

1. Carefully put the plastic bag over a selection of leaves or small branch of the plant.
2. Wrap the bag tightly around the branch and secure in place with the tape.
3. Decide upon the duration of the experiment (for example, 24 hours). Students can observe the bag throughout the day.
4. At the end of the experiment time, carefully remove the bag from the plant and pour the water into the test tube or glass. Explain to students that the water has transpired from the plant's leaves.

MATERIALS

- ◆ A clear plastic bag
- ◆ A pot plant
- ◆ Tape
- ◆ Test tube/glass to collect water

EXTENSIONS

- ◆ Ask students what they think would happen on a hot day—will the plant lose more or less water? Conduct the experiment again with the plant left in full sunlight. Discuss the results.
- ◆ Would more or less water be transpired during the day or night? Conduct the experiment on the same plant during the day and then again overnight. Compare the results.
- ◆ Try the experiment on different types of plants. Ensure that the surface area of leaves in the plastic bag is similar for all the plants to gain valid results.

