

Chapter 15

Use with Section 3

ENRICHMENT

● Energy in Cells

Studying Photosynthesis

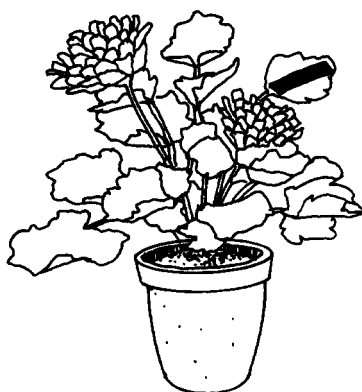
During photosynthesis, light energy is used to make glucose from carbon dioxide and water. The glucose is stored in the leaves and other plant parts in the form of starch, another carbohydrate.

The following experiment will show whether starch is being made and stored when photosynthesis is interrupted. Iodine will be used as an **indicator** for the presence of starch. An indicator shows the presence of a certain substance.

Materials



living green plant
piece of black paper
paper clips
saucer with rubbing alcohol
saucer with cornstarch solution
medicine dropper
tincture of iodine



Procedure

1. Attach a strip of black paper to the upper surface of 3 leaves. Cover about 1/3 of the leaf.
2. Place the plant in a sunny window for 2 or 3 days.
3. Cut the partly-covered leaves from the plant.
4. Remove the black paper and soak the leaves overnight in the saucer of alcohol.
5. Remove the leaves from the alcohol. With the medicine dropper, place a drop of iodine on parts of the leaves that were covered and on parts that were not covered.
6. Add a few drops of iodine to the cornstarch solution.

Observations

| Leaf | Color | | |
|------|---------|-----------|------------|
| | covered | uncovered | cornstarch |
| 1 | | | |
| 2 | | | |
| 3 | | | |

Conclude and Apply

1. Iodine is used as an indicator solution in this experiment. What change do you see in the color of iodine when it is added to cornstarch? _____
2. Why do the uncovered parts of the leaves turn a different color than the covered parts?

