Photosynthesis at Home Experiment

During our spring break, complete this simple experiment at home and answer the questions that follow.

Purpose: To determine if starch is present in the leaves of a plant.

Materials needed:

1. A broad-leafed plant (ex: geranium) Can be purchased at garden store (Home Depot).
2. Aluminum foil
3. Paper clip
4. Ethyl (rubbing) alcohol
5. Small bowl
6. Iodine
7. Eye dropper (optional)

Pre-lab questions:

1. Will starch be present in the leaf? Why or why not?
2. You will be covering a portion of the leaf for several days. Do you expect to find starch present in the portion of the leaf that is covered? Why or why not?
3. We will use iodine to test for starch. How will we know starch is present?

Procedure:

1. Cover part of one leaf of a broad-leafed plant with aluminum foil. Use a paper clip to secure the foil onto the leaf.
2. Place the plant in full sunlight for several days (at least two days, up to one week).
3. After several days, remove the leaf with the foil from the plant.
4. Soak the leaf in ethyl alcohol in a small bowl for a few hours.
5. After a few hours, remove the leaf from the alcohol.
6. Place a few drops of iodine on both the previously covered area of the leaf and the area not covered.
7. Record the results on the table below.
8. Answer the questions.

|  |  |  |
| --- | --- | --- |
|  | Color Change | Starch present (Y/N) |
| Covered portion of leaf |  |  |
| Uncovered portion of leaf |  |  |

Post-lab questions:

1. Which portion(s) of the leaf contained starch? Why?
2. What process could not happen in the portion of the leaf that was covered?
3. Why do you think leaves om plants that are in the shade are a deeper shade of green?
4. Write a cookbook style recipe for photosynthesis including the ingredients needed and the waste products.