

Photosynthesis (Kicking out method of starch)

Level Elementary

Concept

It is confirmed that starch is made in the leaf of the plant by photosynthesis.

It is confirmed that light is necessary for carrying out photosynthesis.



Materials

leaf of plant, filter paper, clear file, hammer, bleach for kitchen(chloride ion), iodine liquid, culture dish, aluminum foil and beaker

Working

How to beat

The leaf is placed between the filter paper made folding, and you place it in a clear file. Beat the leaf with the hammer calmly 20-30times.

You may do this operation on the desk or the floor.

Method of bleaching

Dilute the bleach to 20-30 times in thinness with water and put the green printed paper in this liquid until the color disappearing.

By using warm water of 30-50°C, the bleaching time becomes quickly.

Don't touch the liquid by your hand because of considerably thick.

Detection of starch

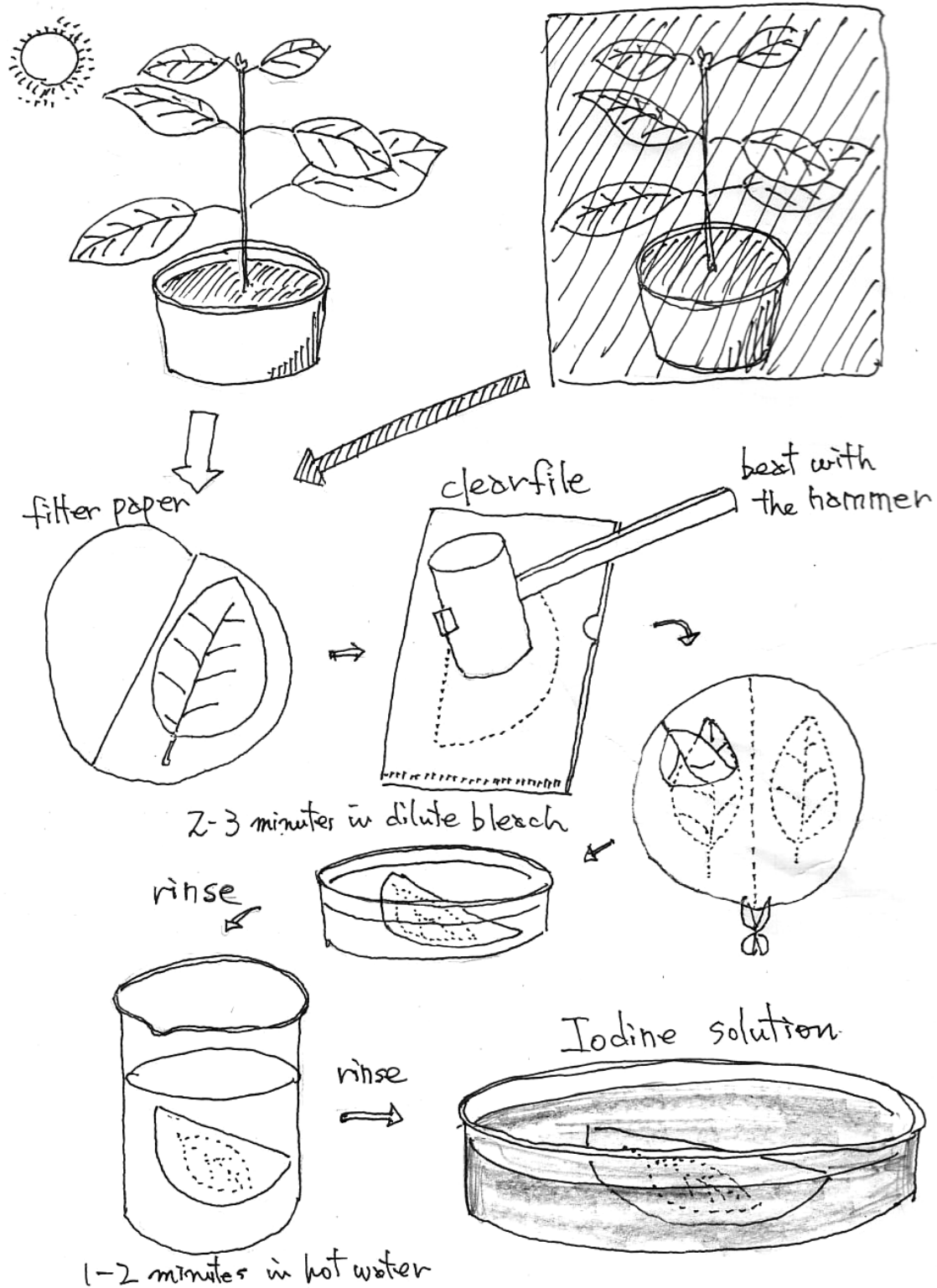
Bleach is calmly excluded applying it to the hot water or water, and you apply it to the iodine liquid thinned to 4 and 5 times.

It is understood that the part where the leaf was printed is dyed to blue, and starch is there.

Science

Starch becomes blue purple reacting with the iodine liquid.

It is understood that starch was made in the part that became blue purple.

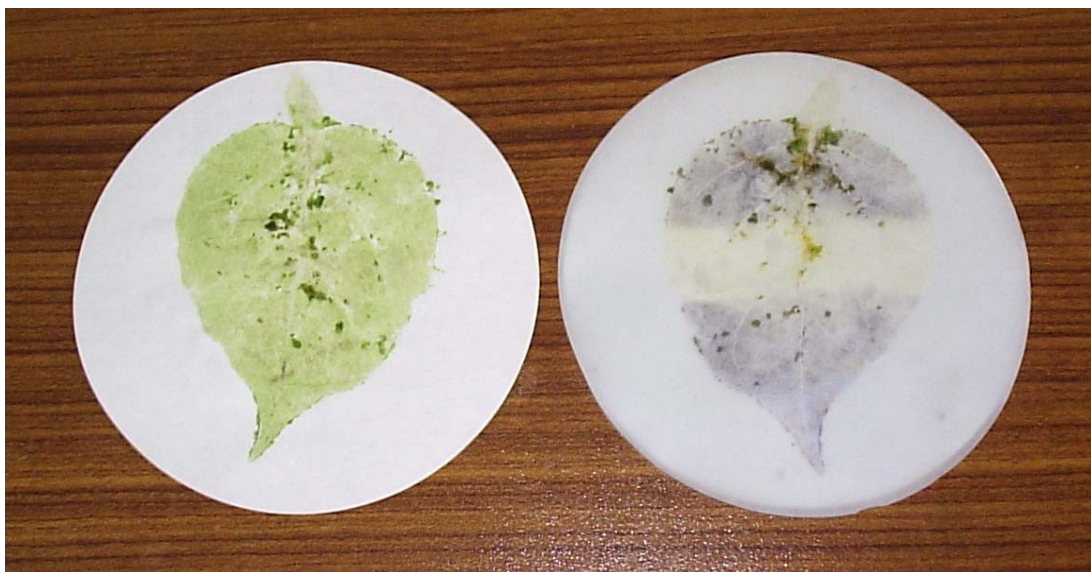
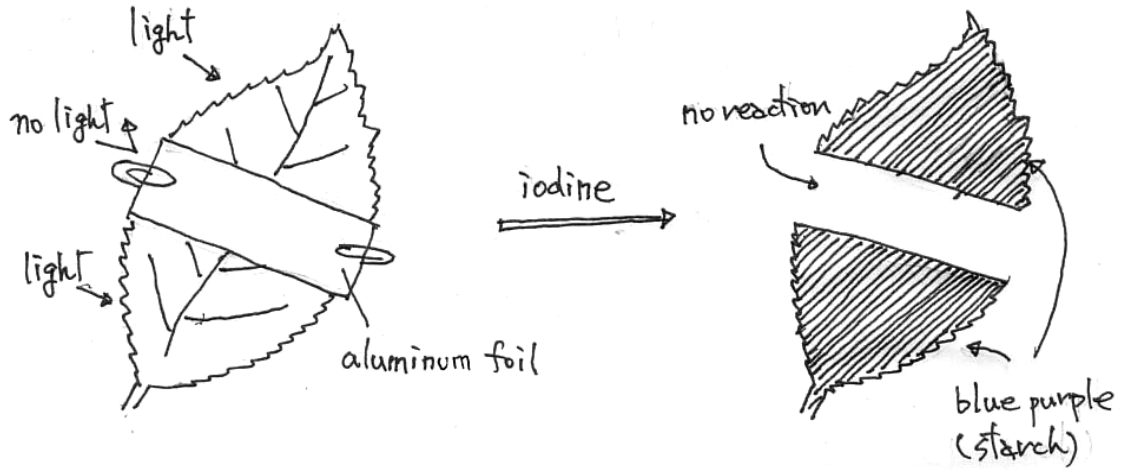


Extension

You can experiment as follows to confirm light is necessary for photosynthesis.

- ① The part of the leaf of the plant was covered with the aluminum foil the day before experiment.
- ② Starch is kicked out, and the iodine reaction is seen.
- ③ The iodine reaction appears in the part not covered with the aluminum foil, and the iodine reaction doesn't appear in the part covered with the aluminum foil.

- ④ The part not covered with the aluminum foil was exposed with the light and the photosynthesis was done.
The part covered with the aluminum foil was not exposed with light and photosynthesis was not done.



The starch reaction appears on the part where the photosynthesis was done.