

## Photosynthesis Experiment

Aim: My aim is to find out if light is needed for photosynthesis.

Introduction: Photosynthesis is needed for a plant to grow and to stay alive. When photosynthesis occurs the plant makes a substance called starch which gives the plant energy. You can tell if a plant has been photosynthesising when it produces starch.

### Method:

This test must be done using a control with which to compare the result. The control plant must be given everything it needs, including factors we are investigating.

1. Remove all of the starch from the plant's leaves. This process is called de-starching and it is done by putting the whole plant in the dark for three days or more. This is important because your results will all be the same if you don't.
2. Double check that there is no starch left in the plant by doing an iodine test on its leaves. If the leaf goes blue or black (or any other dark colour) then there is starch present.
3. Give the plant water so that it stays healthy.

4.a) Using sellatape to help, carefully cover four leaves (so that it is a fair test) with black sugar paper. Make sure the whole leaf is covered so that no sunlight can get to the leaf. b) With two other leaves from the plant only cover half of the leaf with black paper. c) With two other leaves cover the whole leaf as before but then prick four 1mm squared (approx) holes in random places around the leaf. d) Cover two more leaves with a transparent material.

5. Place the plant in a place where all of its leaves can see the sunlight. This may be a bit tricky so if some leaves that you are not using get in the way then cut them off.
6. Leave for four days.
7. Take all of the materials off the leaves and run the starch test.
8. Record and study your results.

My Predictions: I predict that the leaves which are covered with black paper will not produce starch. The leaves with half black paper and the other half uncovered will turn out with the uncovered half of the leaf producing starch and not the other half. in 'c)' the small holes in the black paper will allow sunlight through and so small quantities of starch will be produced in that area. In 'd)' the whole leaf will produce starch. I think this because plants produce starch when they are in green-houses.