

Seeing Green

Chlorophyll is the main pigment that absorbs light in plants and helps the process of synthesizing carbohydrates. What effect does light have on chlorophyll if it is removed from a living plant?

Materials

Beaker of prepared chlorophyll solution (made by teacher*)
Strong light source

Procedure

- 1) Darken the lights in the room. Shine a strong beam of light at the beaker of chlorophyll solution.
- 2) Observe the colour of the chlorophyll by viewing the sample at a slight angle
- 3) Observe the colour of the chlorophyll by viewing the sample at a right angle to the beam of light

Questions

- 1) What colours of light did you observe? From what you know about visible light and its different wavelengths what colour of light do you think chlorophyll absorbs?

*Teacher's notes

A way to make chlorophyll solution (or it can be bought from a laboratory supply company)

Making the chlorophyll solution:

- a. Remove the large veins of three small spinach leaves.
- b. Shred the leaves into small pieces by hand.
- c. Using mortar and pestle, grind leaves to a puree form.
- d. Combine puree with 10 ml of buffer solution.
- e. Grind until the mixture appears green and foamy.
- f. Place cheesecloth into funnel.
- g. Filter mixture through cheesecloth into a beaker. (This is the chlorophyll solution.)
- h. Place beaker with chlorophyll solution on ice.