

Leaf Flotation Assay

Purpose : To compare the effects of different wavelengths of light on photosynthesis

Materials:

**0.2% sodium bicarbonate
(NaHCO₃)**

30% dish detergent

Small petri dishes

**wild choke cherry leaf from
campus**

Hole puncher

Forceps

10ml syringe

Beakers

PPE

**Flourescent light source and
filters**

Procedure

- 1. Added 20ul of detergent into 100 mls of NaHCO₃ solution in beaker**
- 2. Make 10 leaf discs using a hole punch and place in syringe using forceps**
- 3. Pull up 10 mls detergent solution from step 1 into syringe**
- 4. Make a vacuum in the syringe by blocking end with finger and pulling back on syringe**
- 5. Repeat pulling and pushing the syringe plunger until the discs sink in the liquid**
- 6. Release discs and liquid into a small petri dish**
- 7. Remove detergent water and replace with 20 mls of NaHCO₃ without detergent. Be sure that the darker waxy shiny surface**

of the disc is facing the light. Use a forcep if needed to turn them.

- 8. Place dish under light of desired wavelength and time how long it takes 5 discs to float to the surface of liquid.**

This is the basic assay that was used for the 9th grade biology classes who we partnered with to help prepare them for MCAS. The biotechnology students had to first hypothesize which colored filter would give the fastest rate of floating. They had to base this hypothesis on their pigment extraction light absorption experiment and their transmission/absorbtion graphs for the light filters themselves. A sample of this preliminary data is shown in the lesson sequencing document.