

## LAB 9: Photosynthesis

**PURPOSE:** Learn how plants produce sugars and starch to fuel respiration.

**GOALS:**

- \*Identify the two reactions in photosynthesis as well as state the major reactants, products, and by-products of each.
- \*Recognize materials, understand methods *and* be able to interpret results for each experiment.
- \*Discuss what each experiment illustrates about photosynthesis.

*For all experiments follow directions precisely. Read all text and answer all questions. During any waiting periods you should work on other experiments.*

### p. C19 Discussion of the photosynthetic reactions.

#### C19-C21 Experiment 1: Chromotography

*You must use gloves and goggles when opening and closing the solvent jars*

\_\_ make pigment solution band according to directions

\_\_ place in solvent jar.

\_\_ when removing from jar do not forget to follow directions (step 5)

#### C22-C24 Experiment 2: Effect of light intensity

\_\_ select and cut *Elodea sp.*:

Use a fresh healthy stem, cut cleanly *underwater*.

Keep plant in solution *including the cut end* at all times.

\_\_ position *Elodea sp.* in pipette:

Do not crush or bend stem.

*Never* allow the tip of the pipette to rise above the surface of the solution.

The stem of the plant must be surrounded with solution: no air or bubbles.

Don't forget to drop the meniscus. Do this carefully so that *no bubbles* are caught in pipette!

\_\_ take data:

Meniscus falls backwards: i.e., from 0.89-0.88-0.87-0.86, etc. *Every line* is a change of 0.01.

#### C24-C25 Experiment 3: Carbon dioxide fixation

*You must wear goggles when using straws and pouring solution.*

#### C25-C26 Summary and review questions