

## **MARINE ECOSYSTEMS - Student Page**

### **Photosynthesis in marine plants**

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#### **Description**

Students will use elodea, water, and high intensity lamps to determine the relationship between temperature and the rate at which photosynthesis occurs (as measured in plant growth and transpiration.)

#### **Materials**

- Containers - to hold 1 - 2 liters of water (2 per group)
- Elodea sprigs (two per group)
- Tap water
- Plastic wrap
- High intensity lamp
- Clear tape
- Thermometers (2 per group)
- Data sheet (one per student)
- Pencil (one per student)

#### **Procedure**

1. Distribute instructions for experiment.
2. Read over expectations with students.
3. Safety procedures will be discussed and stressed with students.
4. Students fill their containers with 2 liters of tap water and let these stand over night.
5. Students will place one elodea sprig into each container -

verifying that the sprigs are the same size.

6. One container will be covered with plastic wrap and placed on the windowsill; the second will likewise be covered, but will be placed under a high intensity lamp.
7. Students will place thermometers adjacent to each container and affix in place with tape.
8. Students will generate hypotheses for each of the testing conditions; these will be written on their experiment & data sheets.
9. Students will observe their containers every day; making note of the surface of the plastic wrap, growth, or changes in color.
10. Students will evaluate the impact of temperature upon the rate of photosynthesis and transpiration. They will then relate this to increases in atmospheric temperature on phytoplankton activity and implications.