

# Biology Experimental Protocol



Name:

Date:

**Research Question: How does light intensity affect the rate of photosynthesis in aquatic plants?**

**Materials:** Aquatic plant (e.g., Elodea), beaker, water, sodium bicarbonate, light source (lamp), ruler, stopwatch, measuring cylinder, scissors

**Procedure:**

1. Fill a beaker with water and add a small amount of sodium bicarbonate to provide a source of carbon dioxide.
2. Cut a piece of the aquatic plant (about 10 cm) and place it in the beaker with the cut end facing upwards.
3. Position the light source at a fixed distance (e.g., 10 cm) from the beaker.
4. Allow the plant to acclimate to the light for 5 minutes.
5. Start the stopwatch and count the number of oxygen bubbles produced by the plant in 1 minute.
6. Record the number of bubbles.
7. Repeat steps 3-6 at different distances (e.g., 20 cm, 30 cm, 40 cm) to vary the light intensity.
8. Compare the rate of photosynthesis (number of bubbles) at different light intensities.

**Draw the experimental setup and label it.**

A large, empty rectangular box with a thin blue border, intended for the student to draw and label the experimental setup.

**Conduct the experiment and record your observations.**

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**Draw the experimental result.**

**Conclusion: Explain the experimental result.**

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