

Study Photosynthesis with the Floating Leaf Disk Assay

Name: _____

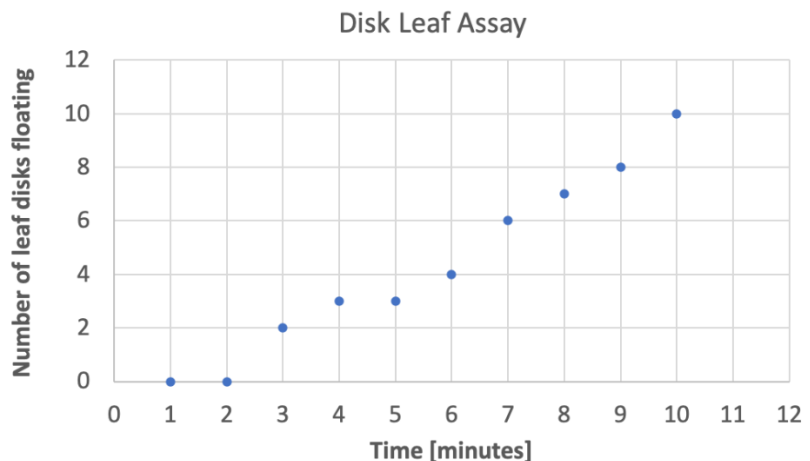
Date: _____

Student quiz

1. What do plants produce during photosynthesis?
 - a. Water and sugar
 - b. Sugar and oxygen gas
 - c. Light, carbon dioxide gas, and water
 - d. Sugar, oxygen gas, and carbon dioxide gas
2. In your own words, explain why the leaf disks started to float during the leaf disk assay.

3. The graph below (right) shows the results of a leaf disk assay with 10 leaf disks. What is the approximate Effective Time (ET_{50}), or the time at which 50% of the leaf disks floated, for this experiment?

- a. 1/6.5 min
- b. 3 min
- c. 10 min
- d. 6.5 min



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Student quiz

4. Imagine you use the leaf disk assay to investigate photosynthesis in different plants. All conditions for the experiment stay the same, except the plant type. The table below (right) shows a summary of your results. Which plant photosynthesizes the fastest?

- a. Spinach
- b. Ivy
- c. Rose bush
- d. Oak tree

Plant type	(1/ET ₅₀) [minutes ⁻¹]
Spinach	0.33
Ivy	0.1
Oak tree	0.22
Rose bush	0.15

5. In the leaf disk assay, the baking soda provides the leaf disks with carbon dioxide (CO₂). How would you set up an experiment to measure the effect of carbon dioxide on the rate of photosynthesis? What results would you expect in that experiment? Explain the reasoning for your answer.