

Leaf Disk Assay

Name: _____

Inquiry into Photosynthesis

Background

_____ is the process many organisms use to capture energy from the sun and store that energy in the chemical bonds of the glucose molecule.

Energy is used by organisms to do many things like _____, _____, and _____.

Plants are called, _____ which means they make their own food.

Plants do photosynthesis inside cell organelles called, _____.

Photosynthesis is a chemical reaction that requires _____, _____, and _____. If any of these are removed,

photosynthesis will not work. Photosynthesis makes two molecules;

_____, and _____. You can write the process of

photosynthesis as an equation:

_____ + _____ + _____ \Rightarrow _____ + _____

Using a Leaf Disk Assay, scientists can measure the rate of photosynthesis by the build-up of

Oxygen, which makes leaf disks float. In this experiment, we will adjust the _____

or _____ or _____ in order to see it's effect on photosynthesis.

Question: How does _____ effect

_____?

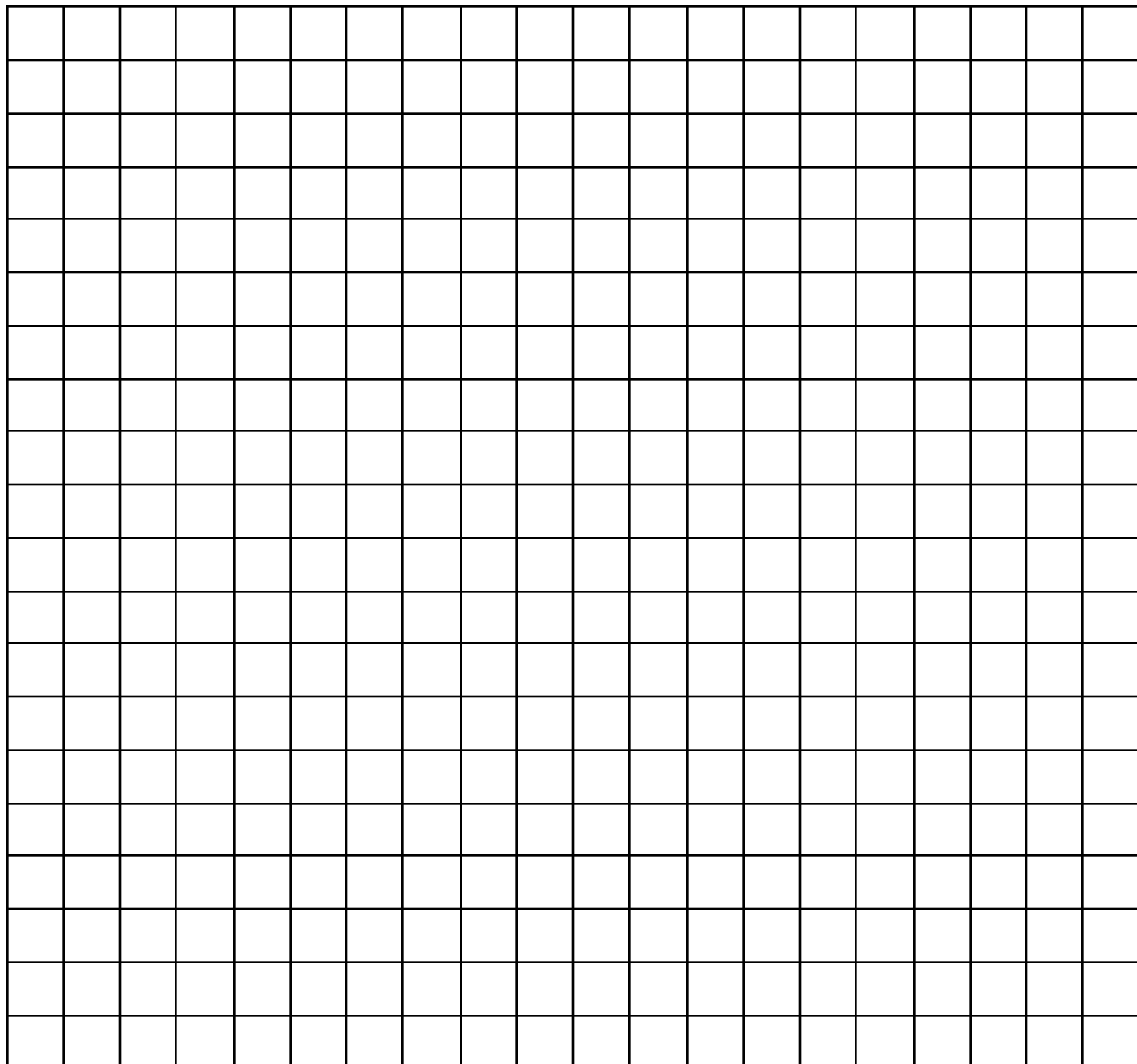
Hypothesis

_____ leaf.

- _____ Leaf
- Hole Punch
- Syringe (with cap)
- Water
- Clear cup
- NaCO₃ (Baking Soda)
- Sunlight

[illegible]

Graph



Results:

This data shows that _____

Conclusion:

1. What does a plant need for photosynthesis?
2. What are the products of photosynthesis? Which one is useful and which one is not?
3. Where does photosynthesis occur in a plant?
4. Write a hypothesis that this experiment is designed to test.
5. Which cup serves as a control?
6. What variables are tested in this experiment?
7. Compare the test groups. Which cup had the most leaf disks floating after 20 minutes?

8. Were there any cups without floating disks?

9. How do floating disks correspond to the rate of photosynthesis?

10. According to the data from the whole class, does light intensity affect the rate of photosynthesis? Explain.

11. How did the baking soda solution affect photosynthetic rates?

12. Do different plants do photosynthesis at a different rate?

13. Why is photosynthesis a light-dependent reaction?