This simulation allows you to manipulate many variables. You already observed how light colors will affect the growth of a plant, in this simulation you can directly measure the rate of photosynthesis by counting the number of bubbles of oxygen that are released.

In this simulation you will test the effect of the **amount of carbon dioxide** on the rate (speed) of photosynthesis. Change the following variables to establish your controls (the variables you keep the same throughout your experiment).

1. Click the thermometer to change the water temperature to 25 degrees C.
2. Turn on the lamp by sliding the purple light intensity bar until the lightbulb reads 50.
3. Keep the light settings at white light (you already tested colored light in the last experiment.)

* Experimental Question: How does the amount of carbon dioxide in the water affect the rate of photosynthesis in an aquatic plant?
  + Manipulated variable (what variable you are changing): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Responding variable (what you are measuring): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Hypothesis/Prediction

If I add more carbon dioxide to the water, then I will observe **more / fewer (circle one)** bubbles of oxygen released by the plant because (*write your* *scientific reasoning below*)

* Data table (Make sure to click the timer before beginning to count the bubbles!)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Number of bubbles of oxygen counted** | | |
| **Amount of CO2** | **After 30 seconds** | **After 1 minute** | **After 2 minutes** |
| **Normal**  (no addtl CO2 added) |  |  |  |
| **Increased**  (addtl CO2 added) |  |  |  |

* Conclusion
  + Was your hypothesis correct? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + When I increased the amount of carbon dioxide in the water, I observed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* + Why does adding more carbon dioxide result in more bubbles?