Photosynthesis Simulation

Data Collection:

Tables showing the effects of carbon dioxide concentration on the rate of photosynthesis

Experiments	Carbon Dioxide Concentration	Time to taken to measure the oxygen bubbles in seconds	Number of Oxygen bubbles Produced every 30 seconds
1	7	30	16
2	7	30	18
3	7	30	23
4	7	30	29
5	7	30	30
6	7	30	31

Experiments	Carbon Dioxide Concentration	Time to taken to measure the oxygen bubbles in seconds	Number of Oxygen bubbles Produced every 30 seconds
1	8	30	16
2	8	30	19
3	8	30	24
4	8	30	24
5	8	30	30
6	8	30	32

Experiments	Carbon Dioxide Concentration	Time to taken to measure the oxygen bubbles in seconds	Number of Oxygen bubbles Produced every 30 seconds
1	9	30	20
2	9	30	22
3	9	30	26
4	9	30	30
5	9	30	33
6	9	30	34

Experiments	Carbon Dioxide Concentration	Time to taken to measure the oxygen bubbles in seconds	Number of Oxygen bubbles Produced every 30 seconds
1	10	30	21
2	10	30	23
3	10	30	26
4	10	30	27
5	10	30	31
6	10	30	32

Variables:

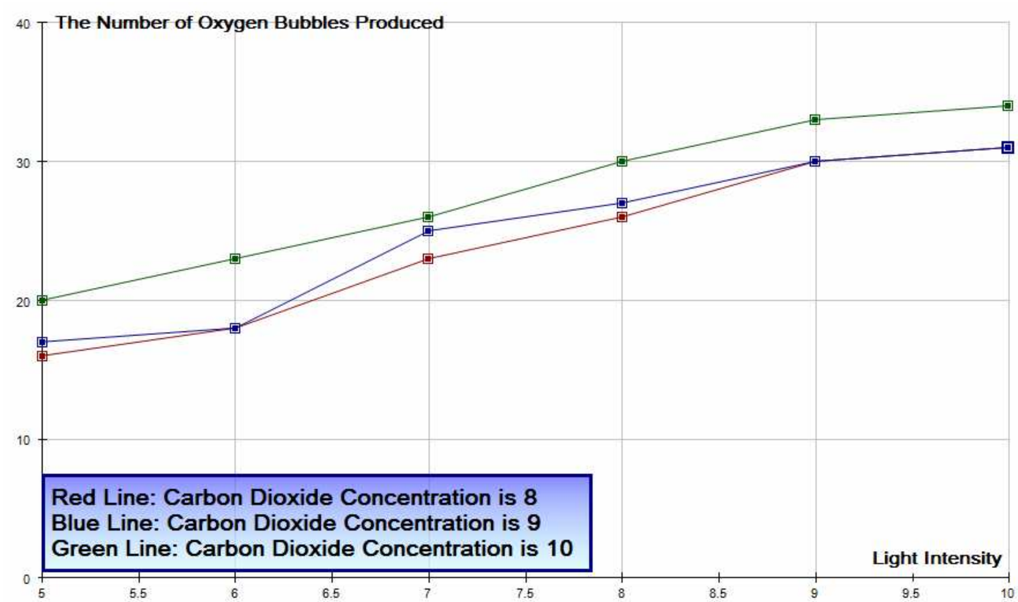
Independent: in this investigation two factors will be changes, carbon dioxide concentration and light intensity.

Dependent: the number of oxygen bubbles produced.

Controlled:

- The Color of the light will always be the same (white).
- The time taken to measure the bubble production will be the same (30 seconds).

Data Processing and Presentation:
Effects of light and CO2 on the Rate of Photosynthesis



The graph shows the number of oxygen bubbles produced when, light intensity and the concentration of carbon dioxide are changed. Each line has a different carbon dioxide concentration, and every different concentration has six readings. And every reading has a different light intensity. The graph shows, the higher the carbon dioxide concentration, and the higher the light intensity, the more oxygen bubbles were produced.

Conclusion:

As the concentration of carbon dioxide increases, and the light intensity increases so does the oxygen production.

The light dependent reaction and how the plant deals with the light. In the dependent phase, the photosynthetic organism converts the light energy into energy carried by electrons. In photosynthesis the electrons are picked up by electron transport system which uses the energy in the electrons to make energy carrying compounds called ATP. It also makes another compound called NADPH. The ATP and the NADPH are then used in the next step, which is called the light independent stage.

The light independent phase also known as the dark phase, takes place in the stroma, within the chloroplast. The result of the process is the conversion of carbon dioxide into sugar. This reaction does not depend on light, however it depends on the products of the light dependent phase. With the assistance of ATP (product of light reaction) and another chemical called NADPH, the carbon dioxide is turned into sugar.

The more light absorbed by the plant, the more ATP and NADPH are produced, in the light reaction. The more ATP and NADPH and carbon dioxide are present during the dark reaction, the more and faster sugar will be produced. This is supported by the graph above.