**Limiting Factors and Rate of Photosynthesis**

Directions: Using each of the data sets below, **graph for each the rate of photosynthesis vs. the limiting factor given (y vs. x.) (3 graphs total)**

1. ***Atmospheric Carbon Dioxide Levels and Rate of Photosynthesis***

**Data Table 1:** Data rate of photosynthesis and CO2 Concentration

|  |  |
| --- | --- |
| **Rate of Photosynthesis as measured by CO2 Uptake** | **CO2 Concentration (ppm)** |
| 0 | 0 |
| 11.5 | 200 |
| 13.0 | 400 |
| 13.9 | 600 |
| 14.5 | 800 |
| 15 | 1000 |

**Discussion Question:**

1. Describe how CO2 affects the rate of photosynthesis.
2. ***Light Intensity and the Rate of Photosynthesis***

\*\*\*Note: Irradiance is measured as light intensity per unit (light is measured in candelas, abbreviated cd)

**Data Table 2:** Data for rate of photosynthesis and light intensity

|  |  |
| --- | --- |
| **Rate of CO2 uptake** | **Irradiance (cd)** |
| -5.0 | 0 |
| 0 | 1 |
| 5.0 | 2 |
| 10.0 | 3 |
| 15.0 | 4 |
| 17.0 | 5 |
| 18.5 | 6 |
| 19.2 | 7 |
| 19.6 | 8 |
| 19.8 | 9 |
| 20.0 | 10 |

**Discussion Question:**

1. Describe how light intensityaffects the rate of photosynthesis.
2. ***Temperature and Rate of Photosynthesis***

**Date Table III:** Data for rate of photosynthesis and temperature

|  |  |
| --- | --- |
| **Rate of CO2 Uptake** | **Temperature °C** |
| 11.0 | 10 |
| 15.0 | 15 |
| 18.0 | 20 |
| 18.5 | 25 |
| 20.2 | 30 |
| 19.0 | 35 |
| 12.0 | 40 |
| 7.0 | 45 |
| 0.0 | 50 |

**Discussion Questions:**

1. Describe how temperature affects the rate of photosynthesis.