**Photosynthesis Virtual Lab**

How do plants grow under different light conditions?

**http://www.glencoe.com/sites/common\_assets/science/virtual\_labs/LS12/LS12.html**

Sunlight (white light) is pure energy that shines on the Earth all of the time. This light is made up of all colors visible in the rainbow, plus some colors that the human eye cannot see. In this lab, we will investigate how the different colors of light affect plant growth, and which colors of light are the most effective for growing producers through photosynthesis.

**Hypothesis:** Write a hypothesis (prediction) below about which color in the visible spectrum causes the most plant growth and which color causes the least plant growth

(Options: red, orange, green, blue, and violet light)

**Data Table:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Filter Color** | **Spinach Average Height (cm)** | **Raddish Average Height (cm)** | **Lettuce Average Height (cm)** |
| **Red** |  |  |  |
| **Orange** |  |  |  |
| **Green** |  |  |  |
| **Blue** |  |  |  |
| **Violet** |  |  |  |
| **How to calculate average height of a plant:**1. Add up total height of all plants combined
2. Divide by the number of plants you measured
 | **Example:**Plant 1- 16cmPlant 2- 18cmPlant 3- 20cmAverage height of the 3 plants = (16cm + 18cm + 20cm) ÷ 3 total plants = **18cm average** |

**Analysis Questions:**

1. How did you **test** your hypothesis? Which **variables** did you **control** in your experiment and which variable did you **change** in order to compare your growth results?
2. **Analyze** the results of your experiment. Did your **data** support your **hypothesis**? Explain. If you conducted tests with more than one type of seed, explain any **differences** or **similarities** you found among types of seeds.
3. What **conclusions** can you draw about which color in the visible spectrum causes the **most** plant growth?
4. Given that white light (sunlight) contains **all** colors of the spectrum, what growth results would you expect under white light?