**Green House Effect Lab**

**Purpose:** The purpose of this lab is to simulate the greenhouse effect. The Greenhouse effect is when greenhouses gases, such as carbon dioxide, cause some of the radiation from the sun to be trapped in the troposphere.

**Problem:** How quickly does the warming of the atmosphere occur? What conditions cause the warming of the atmosphere?

Independent variable:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent variable:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hypothesis:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Constants: type of candle, type of Ziploc bag

Control: the beaker without the gases from the candle

**Materials:**

* Plastic beaker
* Glass beaker
* 200 mL soil
* Candle
* Lighter
* Zip-loc bag
* Timer

**Procedure:**

1. Drop the candle into the glass beaker with soil
2. Call Ms. McDaniel over to light the candle
3. Let the candle burn for three minutes
4. Blow out the candle and place a thermometer in each beaker.
5. Cover the beakers with zip loc bags as quickly as possible to be sure the gases from the candle don’t escape.
6. Take an initial reading of the temperature (time = 0).
7. Turn on the heat lamp and place it so that it equally heats the two beakers.
8. Measure the temperature of each beaker every five minutes for a total of 20 minutes.

**Results:**

**Beaker without greenhouse gases (plastic beaker)**

|  |  |
| --- | --- |
| Time: | Temperature: |
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|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Beaker with greenhouse gases (glass beaker)**

|  |  |
| --- | --- |
| Time: | Temperature: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Graph: Make a line graph of your data**

**Analysis questions**

**Answer the following questions in COMPLETE SENTENCES.**

1. What trends, if any, were present in your data?

2. What were some possible sources of error in this experiment?

3. How would you improve the experiment if you were to run it again?

4. Based on the data you received, what remaining questions do you have? What experiment could you run in order to text these questions?