Greenhouse Effect Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Open the link <https://phet.colorado.edu/sims/html/greenhouse-effect/latest/greenhouse-effect_all.html>

Observe the relationship of UV (sunlight) to IR (infrared light). Before starting the simulation make sure that the Thermometer and Cloud are turned on. Click the button “Start Sunlight”. Use the Toggle button “Greenhouse Gas Concentration” to decrease and increase the amount of CO2.

1. How does the temperature change when you decrease the CO2?

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2. How does the temperature change when you increase the CO2?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Change the Toggle button “Greenhouse Gas Concentration” to the Calendar View. Complete Table 1

|  |  |  |
| --- | --- | --- |
| Date | CO2 Concentration | Surface Temperature |
| Ice Age |  |  |
| 1750 |  |  |
| 1950 |  |  |
| 2020 |  |  |



Now Go to the Layer Model To look at the effect of multiple layers in an atmosphere Start the simulation with 0 Layers. Complete Table 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Absorbing Layers | Surface Temp | Layer 1 Temp | Layer 2 Temp | Layer 3 Temp |
| 0 |  |  |  |  |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |

3. What is the effect on Surface Temperature when additional Absorbing Layers are added to the atmosphere?