The Greenhouse Effect, Earth’s Energy Budget and Climate Change

**Pre Lab Questions = your background information!! MUST HAVE!!**

* How the energy budget of earth works **( radiative sources vs. absorbtion)**
* **Albedo**
* **Greenhouse effect? How does it work? Good or bad thing?**

**After conducting your experiment:**

* Disseminate your data and what it means to other groups. Be sure to connect it back to the overall heat budget and the amplification of the greenhouse effect.
* Keep your data easy to read by giving headings for your tables and labeling all numbers!!
* Graphs can also show trends in your data.
* Explain what you were trying to prove/answer and what evidence from your lab points you towards an answer!

**As you are listening to others experiments:**

* Collect their data and what questions they were trying to prove.
* What conclusions did they come up with? What evidence connects them to that conclusion?
* How does this relate to the greenhouse effect and earth’s energy budget?

**In your conclusion ( within the FORMAL LAB REPORT!)**

* What were you trying to figure out?
* What does the data say? ( patterns, connections, relationships)
* Apply this conclusion to the amplification of the GHE. How does this change the earth’s energy budget? To what degree? Implications of this? Current anthropogenic sources of these GH Gases? What is their role in the current climate change theory?
* In what way is Earth’s atmosphere different than what is found in the bottle? How does Earth’s atmosphere differ in composition and what processes are occurring in the atmosphere that are not occurring in the bottle?
* Errors in running the experiment? Ways in which data could have been skewed? How to remedy this?
* Future investigation?

**Using other groups’ data analysis:**

Write a letter to the U.N. explaining the SCIENCE behind the GH effect and our current anthropologic additions that could cause changes to this natural cycle and the effect on Climate.

* What affects do each of the following have on the greenhouse effect? And invariably climate?
* Which gas(es) amplify the greenhouse effect more?
* What is the effect of increases amounts of carbon dioxide on temperature variability?
* What effect do land vs. water have on air temperature and radiation?

Relate the Carbon cycle, Earth’s heat budget and greenhouse effect using the data above and the topics we have covered in class. How do these all work together to create the climate of Earth? How does changing these cycles affect our climate worldwide?