

G-7 EXPLORING THE DATA: Making Hypotheses & Connections

(worth 10 pts)

➔ Each member of the group sign below and print your name:

GROUP # _____

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PART A -- WHAT'S REALLY WARMING THE EARTH?

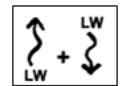


The Envelope in your Group Folder contains the **Forcing Mechanisms** we've been discussing in recent classes ➔

- On your Whiteboard, **SORT** the 7 forcing mechanisms into 2 columns: **Natural vs Human (Anthropogenic) Forcings**, then copy your results into the table below
- Then on the whiteboard and in the table above, **SKETCH IN THE ENERGY BALANCE SYMBOL** for the process associated with each forcing. To simplify matters, use only these 3 choices:

(The third choice is a combo of 2 symbols)

HINT: ozone might need a different symbol for Stratosphere vs Troposphere)



| NATURAL FORCINGS | | HUMAN FORCINGS | |
|------------------|--------|----------------|--------|
| | Symbol | | Symbol |
| | | | |
| | | | |
| | | | |
| | | | |

- Next – on the Whiteboard – **REARRANGE** the forcing mechanisms into **3 columns** to indicate what your **HYPOTHESIS** is about each forcing's **influence on warming or cooling the Earth since 1880:**

| COOLING Influence | MINIMAL INFLUENCE during post-1880 timeframe OR Influence cancels out | WARMING Influence |
|----------------------|---|----------------------|
| | | |
| | | |
| | | |
| | | |

#4. Now go **ASSIGNMENTS in D2L**, click on **G-7 Exploring the Data** and open up **LINK #1.** and work your way through the interactive graphic to explore the relative importance of each forcing mechanism on the global temperature since 1880.

In the space below **compare** the **DATA TIME SERIES RESULTS** with your group's hypothesized arrangement in **#3.** (For example: Were there any surprises that you didn't expect in some of the forcings? How good a job did your group do in your cooling vs warming hypotheses?)

#5. Now, **keep LINK #1 open on one laptop** at your table, and **on another laptop, scroll down through Figures 1 through 7** (all of **which** we've looked at in class) posted on the G-7 webpage. In a phrase or two explain the **CONNECTION** between one or more of the **forcing mechanism times series** in **LINK #1** and the class figure.

| |
|----------|
| Figure 1 |
| Figure 2 |
| Figure 3 |
| Figure 4 |
| Figure 5 |
| Figure 6 |
| Figure 7 |

#6. Now look at **FIGURE 8 (the enlarged version)** which illustrates all the factors that contribute to the **Emission of the major Greenhouse Gases in the United States.**

Based on this figure (and what you've learned in questions #1 -5 above) list some actions that individuals, businesses, governments or corporations could take that could slow global warming

#7. Lastly, **EXPLORE** temperature data from all over the world using the **TEMPERTURE RECORD TOOL** at **LINK #2.** You can plot data by station, by country, by latitude band – you can compare two latitude bands or two countries; you can look at trend lines for different time periods, etc. etc. **JUST GO CRAZY!!!!** **Then summarize what you've learned in this exploration about whether or not the world really is WARMING!**