

Greenhouse Effect and Global Warming Worksheet

Data Tables

Part I. Greenhouse Effect

All temperatures in degrees C

| Time (min) | Open | Clear Bottle | Bottle with Construction Paper |
|------------|------|--------------|--------------------------------|
| 0 | | | |
| 5 | | | |
| 10 | | | |
| 15 | | | |
| 20 | | | |

Part II. Sources and Levels of Greenhouse Gas

| Source of CO ₂ | Initial Solution Color | Color after Adding Gas | Number of Drops of NaOH Required |
|---------------------------|------------------------|------------------------|----------------------------------|
| Breath | | | |
| Automobile Exhaust | | | |
| CO ₂ | | | |

Post-Lab Questions

1. Compare and contrast the temperature results obtained for the different thermometer setups in Part I.
2. Define the greenhouse effect and global warming. Describe how they are related.
3. How do the temperature results observed for the different bottles in Part I relate to the greenhouse effect?
4. What additional experiments could be performed using the basic setup in Part I to further investigate the greenhouse effect?
5. Which indicator sample(s) in Part II revealed the presence of carbonic acid after the balloon gases were bubbled through them?
6. Compare the number of drops of NaOH required to return to the original control color for each solution. What do these results mean?
7. Which balloon sample contained the largest amount of CO₂? Which contained the least?
8. Describe possible sources of experimental error that may affect the results for Part II.
9. Name a few ways to decrease the amount of greenhouse gas that is released into the atmosphere.