**Exploring the Gas Laws!**

**Station Work Assignment (25 Points)**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station I: Computer Simulation

Observations:

What parameters did you change? What can you say about gas laws?

Station II: Aluminum Can (Gay-Lussac’s Law: Temperature and Pressure)

Observations:

Proposed Relationship:

Station III: Cartesian Diver (Boyle’s Law: Pressure and Volume)

Observations:

Proposed Relationship

Station IV: Balloon and Flasks (Charles’ Law: Volume and Temperature)

Observations:

Proposed Relationship

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Instructions for Graphic Organizer**

**(50 Points)**

* A graphic organizer is a great tool to help learn and study what you need to know.
* You will be creating a graphic organizer to organize the gas laws you explored today. Note: these are not all the gas laws we will study. We will make a foldable once all are covered.
* Fill in the graphic organizer below, the rubric is also attached to show how I will grade.

|  |  |  |  |
| --- | --- | --- | --- |
| Gas Law | What quantities does it relate? | Equation? | What does this mean? How did the station exemplify this? |
| Boyle’s Law |  |  |  |
| Charles’ Law |  |  |  |
| Gay-Lussac’s Law |  |  |  |

**Procedural Notes for Stations:**

Station 1: Computer Simulation

1. Open the program at <http://intro.chem.okstate.edu/NSFCCLI/GasLaw/GLP.htm> (should be bookmarked)
2. Clicking the button to the left of the parameter will hold it constant so you can change other parameters
3. Change at least two parameters different and observe how they change

Station 2: Aluminum Can (Gay-Lussac Temperature and Pressure)

1. Fill an aluminum can with approximately 10 mL of water
2. Put on hot plate to let water boil (when boiling will see steam)
3. With a thermal glove quickly transfer aluminum can into ice water bath
4. Write down observations
5. Throw away aluminum can in trash

Station 3: Cartesian Diver (Boyle’s Law Pressure and Volume)

1. Observe 2 L bottle with Cartesian diver
2. Squeeze bottle on sides
3. Write down observations

Station 4: Balloon and Flasks (Charles’ Law Volume and temperature)

1. Fill at 250 mL Erlenmeyer flask with 10 mL of water.
2. Stretch an un-inflated balloon over the mouth of the flask
3. Place flask on hot plate and let water boil
4. Now with a thermal glove, put the flask in a beaker of ice and let it cool
5. Write down observations
6. Discard balloons in the trash.