



UNIT 5: CHEMISTRY OF CLIMATE CHANGE

Workbook 5.1: Gas Laws

Lesson 2: Blow 'Em Up!



GUIDING QUESTION: EXPLAIN THE RELATIONSHIP BETWEEN PRESSURE, VOLUME AND TEMPERATURE OF A GAS.

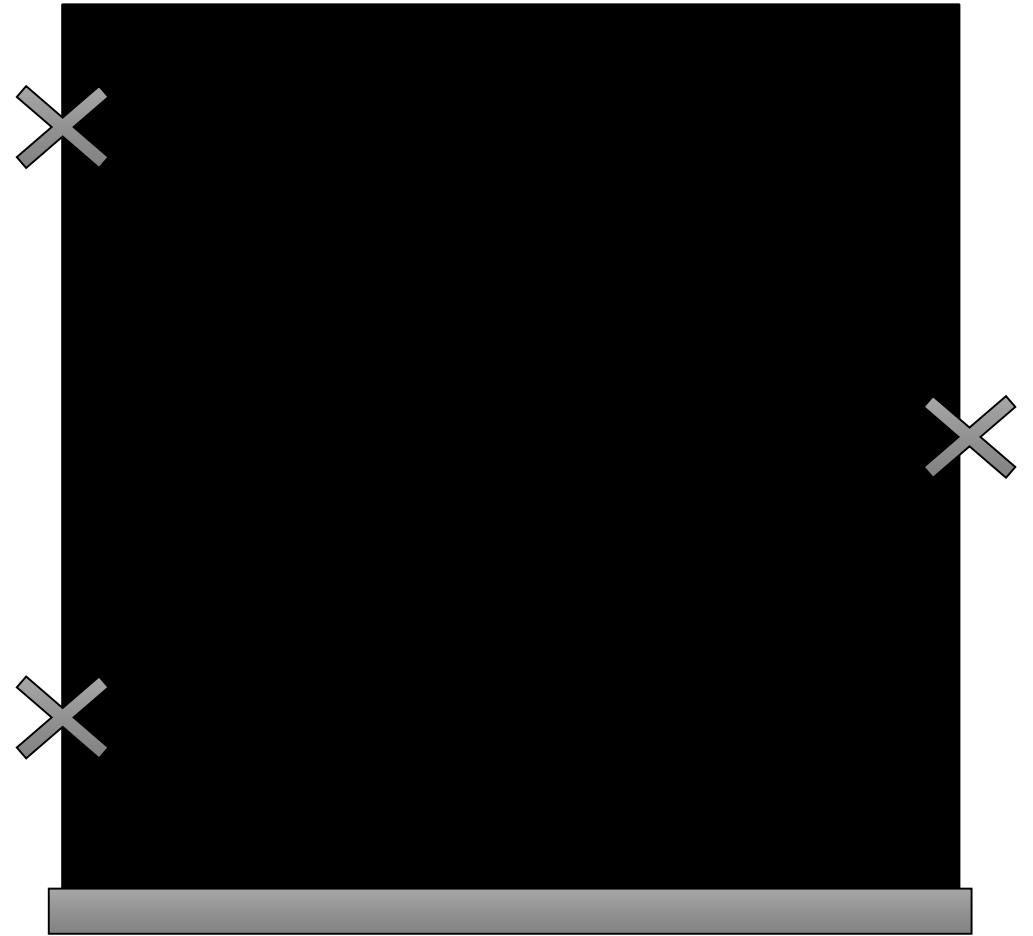
- **Do Now:**

- A friend is laying on a sealed bag that has a hose attached. You start to blow air into the bag. What do you think will happen to your friend and the bag? Explain your reasoning.

LET'S FIND OUT!

1. You have a sealed bag. Cut 2-3 holes around the edge of the bag. (Do not put all on one side!)
2. Insert a straw into each cut hole. Tape around the straw.
3. One person will **lay** on the bag. The other people will try to blow up the bag using the straws until the bag pops or no more air can be put into the bag.

GOAL: To lift the person off the ground!



THINK ABOUT IT!

Data/Observations

Before

During

After

Write in words what you observe in the top row

** Pay attention to the temperature of the air that comes out of the bag!**

Draw a particle model of what is happening *before* inflating, *during* inflation, and *after* you finish and allow it to deflate in the bottom row.

NOTES

So....did it work???

- There are three things at work here:
 - Pressure
 - Volume
 - Temperature
- These three variables play a huge role in the behavior of gases.



NOTES

- **Pressure:** the continuous physical force exerted on or against the sides of container or on an object by gas particles colliding into it.



NOTES

- Volume: the amount of space a substance takes up or occupies
 - All gases expand to fill their containers

NOTES

- **Temperature:** the degree or intensity of heat present in a substance or object, especially as expressed according to a comparative scale and shown by a thermometer or perceived by touch.
- Temperature is caused by the kinetic energy of particles moving around. Gases have kinetic energy as they fly around in space. This is measured as temperature.



CHECK-IN

You quickly let the air out of a balloon. Explain what happens to pressure, volume and temperature of the balloon.

CLOSURE

- Answer Guiding Question on page 6:
 - Explain the relationship between pressure, volume and temperature of a gas.
- Homework #8 due Friday, 4/13.
- Achieve 3000: “No Idle Law” due Friday, 4/20.
- Binders are due at the block (Wed 4/11 and Thurs 4/12)