

Name: \_\_\_\_\_

Class: \_\_\_\_\_

# Compressibility

Compressibility – The ability to be squeezed into a smaller volume.

## **Purpose:**

---

---

---

## **Equipment:**

- 
- 
- Safety Goggles

## **Procedure:**

1. Twist the cap tightly onto your empty bottle.
2. Squeeze the bottle as hard as you can
3. Estimate how much of the original volume of the bottle that you could compress – one quarter, one third, one half, more?
4. Record your estimate.
5. Repeat steps 1 – 4 for the following:
  - a. Empty bottle – Done
  - b. Bottle half filled with water – Prepare yourself
  - c. Bottle 100% filled with water – Prepare yourself
  - d. Bottle half filled with sugar – Use class example
  - e. Bottle “100%” filled with sugar – Use class example

Note: Consider the following safety precautions:

- While squeezing the bottles, be sure to aim the top away from people.
- Water spilled on the floor can be very slippery, please be careful to clean up any messes you make.

## **Hypothesis:**

---

---

---

---

**Data:**

(complete a data table here)

**Discussion:**

Complete the following on a separate piece of paper, and neatly staple it to this sheet. You may answer in dot-jot format.

1. How did your ability to compress the bottle containing water change as the amount of water increased?
2. How did your ability to compress the bottle containing sugar change as the amount of sugar increased?
3. How does the compressibility of a gas compare to the compressibility of a solid?
4. How does the compressibility of a gas compare to the compressibility of a liquid?
5. How does the compressibility of a liquid compare to the compressibility of a solid?
6. If a car ran over the water filled bottle, what do you think would happen? Would the water inside compress as the bottle flattened, or would the bottle burst as the plastic gave way? Explain your answer.
7. Would a force greater than the force exerted by your two hands be able to compress the water filled bottle and the sugar filled bottle? Think about the particles.