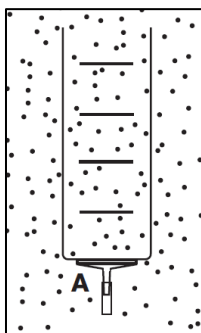


M3.1 Foss Chemistry 3: What's In the Bubbles Activity?

Directions: Answer the questions below using complete sentences and proper grammar. You will need a periodic table.



1. Make a list of the gases¹ you know about or have heard about.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

- f. _____
- g. _____
- h. _____
- i. _____
- j. _____

2. How would you define *gas*?

3. Everything is made of elements². Which *elements* might be in the gas that forms when sodium bicarbonate (NaHCO_3) and citric acid ($\text{C}_6\text{H}_8\text{O}_7$) react?

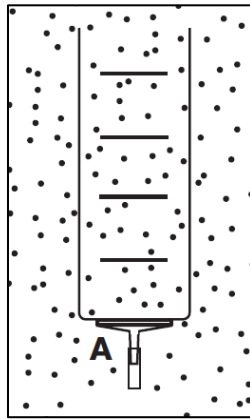
- a. _____
- b. _____

- c. _____
- d. _____

4. Which gas do you think is in the bubbles that form when NaHCO_3 and $\text{C}_6\text{H}_8\text{O}_7$ react? _____

¹ an air-like fluid substance which expands freely to fill any space available, irrespective of its quantity

² each of more than one hundred substances that cannot be chemically interconverted or broken down into simpler substances and are primary constituents of matter. Each element is distinguished by its atomic number, i.e., the number of protons in the nuclei of its atoms



5. What is the air in the syringe and the air in the bubble made of? _____
6. What happens to the *air particles* in the syringe when you push on the plunger?

7. What happens to the *air particles* in the bubble when you pull up on the plunger?

8. Are there more *air particles* in the bubble when it is compressed³ or when it is expanded?

9. When you push on the plunger, are the *air particles* closer together in the syringe or in the bubble?

10. What is between *air particles*? _____
11. What happens to *air particles* when a volume⁴ of air is compressed?

When a volume of air expands⁵?

³ flatten by pressure; squeeze; press

⁴ the amount of space that a substance or object occupies, or that is enclosed within a container

⁵ become or make larger or more extensive