SfS Away from the Classroom!

AP17: Model Lung (Recommended for Grades 3-8)

Please use the following resources to learn about how your lungs work!

Watch these Videos:

https://www.youtube.com/watch?v=8NUxvJS-_0k and https://www.youtube.com/watch?v=mOKmjYwfDGU

Answer these questions:

- What gas do you release when you exhale? What gas is needed from the air when you inhale?
- What muscle is involved when you breathe in and out?
- Why is the left lung smaller than the right lung?
- How much air do you breathe in every day?

Activities: Follow these directions to measure the capacity of your lungs.

You will need:

• Balloons (1 for each participant) • Ruler	• Paper • At least one lab partner

NOTE:

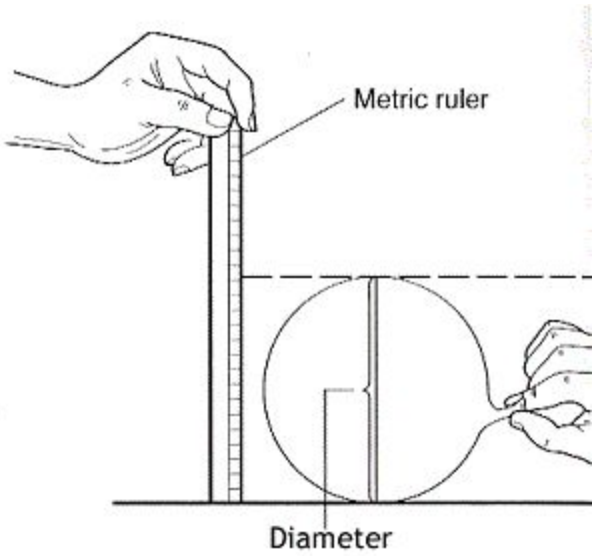
- The amount of air that you move in and out of your lungs while breathing normally is called **TIDAL VOLUME**.
- The maximum amount of air moved in and out of the lungs is called the **VITAL CAPACITY.** This is measured by the amount of air a person can expel from the lungs at maximum inhalation.

Measure tidal capacity:

1. Pull on a round balloon several times to stretch it out.
2. Inhale normally and then exhale normally into the balloon. Do not force your breathing.
3. Pinch the end of the balloon and measure its diameter (see Figure 1, below).
4. Repeat with your lab partner(s).
5. Record all results on a piece of paper.

Measure Vital Capacity:

1. Take a deep breath and then exhale into the balloon.
2. Pinch the end of the balloon and measure its diameter in cm.
3. Repeat with your lab partner(s).
4. Record the number on a piece of paper.



Timing your breath:

1. Take a deep breath and hold it.
2. Time how long you can hold your breath before needing to breathe again.
3. Repeat with your lab partner(s).
4. Record your results

<u>Make observations & use Claims, Evidence, and Reasoning!</u>

1. **Claim**: Vital capacity is always greater than tidal capacity**.**
    - **Evidence**:
    - **Reasoning**:
2. **Claim**: A person with a larger vital capacity will be able to hold their breath longer.
    - **Evidence**:
    - **Reasoning**: