

Inquiry Question

When taking a deep breath how much air can your lungs hold?

Name: _____ **Date:** _____



Did you know an adult male can hold up to 6 litres of air in their lungs?

Your lungs have many different features that allow them to intake a lot of oxygen.

In this project we will discover how much oxygen your lungs can take in.

General Instructions

In this lesson you will be discovering your lung capacity using various materials. It is important to make sure you have collected all these materials before beginning the project.

Materials you'll need:

- Plastic dish pan
- 2 feet of aquarium or similar plastic tubing
- 1 gallon (4 liter) plastic milk jug
- Masking tape
- Pen
- An 8oz cup

Hints and Ideas:

- Place a strip of masking tape down the side of the milk jug from the top to the bottom.
- Fill the jug with water using a cup to measure the amount of water it takes to fill the jug. Mark each cup on the tape (these measurements will serve to show the amount of air exhaled) and screw on the cap.
- Fill the dish pan about $\frac{1}{2}$ full with water.
- Place the jug upside down in the water, and remove the cap.
- Have a helper hold the jug. Do not allow air bubbles to enter the milk jug.
- Place one end of the aquarium tubing inside the mouth of the jug.
- Take a normal breath and exhale through the tubing. Mark the water level on the tape.
- Refill the jug with water and return it to the dish pan.
- Breathe in deeply and make an effort to exhale all of the air in your lungs through the tubing. Mark the water level on the tape.
- Design an experiment to test the effects of different temperatures and exercise on lung volume.
- Submit your lung volume observations, experimental design for temperature differences and exercise on lung volume and the answers to the following questions to your teacher:
 1. What is lung [capacity](#)?
 2. What happens in the plastic bottle as you exhale into the rubber tubing?
 3. What effect does differing temperatures have on the volume of air? Explain.
 4. What effect does exercise have on the volume of air? Explain.

Project submission:

You can either submit photos/video of your project (along with an explanation and/or steps of construction) or if you can drop-in to the school, you can present it to your teacher in-person.