



TESTING LUNG CAPACITY WITH A BALLOON AND WATER DISPLACEMENT

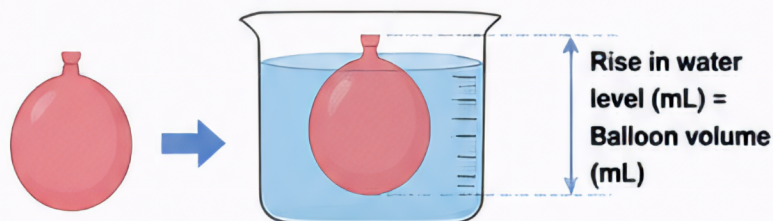
Your lungs fill with air when you breathe in. The more air your lungs can hold, the greater your lung capacity. In this experiment, you will use a balloon to model your lungs and water displacement to measure volume.

MATERIALS

- 1 balloon (round, not long)
- 1 clear container or large measuring cup (at least 2000 mL capacity)
- Water
- Measuring cylinder or graduated measuring cup (in mL)
- Optional: funnel (to help fill the balloon if needed)
- Towel or paper towels

HOW IT WORKS

When you blow air into the balloon, the balloon expands. Placing it in water causes the water level to rise. The amount the water level rises equals the volume of air in the balloon, which models the air your lungs hold.



PROCEDURE

1. **Fill the Container:** Fill the clear container with water near the top. Note the starting water level.
2. **Prepare the Balloon:** Make sure the balloon is empty. Stretch it gently a few times.
3. **Inflate the Balloon:** Take a deep breath and blow air into the balloon. Inflate it as much as you comfortably can. Tie the end securely.
4. **Measure Displacement:** Gently place the balloon into the water. Make sure it is completely submerged without squeezing it. The water will rise.
5. **Record the New Water Level:** Carefully read the new water level.
6. **Calculate Volume:** Subtract the starting water level from the new water level. This difference is the volume of air in the balloon (your lung capacity) in milliliters (mL).
7. **Repeat:** Try 2–3 more times to see if you can improve your result.

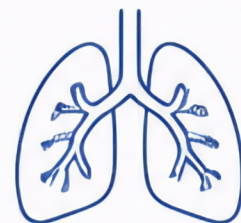
DATA TABLE

Trial	Starting Water Level (mL)	New Water Level (mL)	Lung Capacity (mL) (New – Starting)
1			
2			
3			
Best Result			

THINK & REFLECT

1. What was your best lung capacity (in mL)? _____
2. What factors do you think could affect your results? _____

3. How could you try to improve your lung capacity? _____



SAFETY FIRST: Do not overexert yourself. If you feel lightheaded, take a break. Clean up any spilled water.