🧪 Pre-Lab Worksheet: Measuring Lung Capacity Using Balloons

Name: _____

Date: _____

Class/Period: _____

🔍 Purpose

The purpose of this experiment is to estimate a person's lung capacity by measuring the volume of air they can exhale into a balloon in a single breath.

❓ Pre-Lab Questions

1. What is lung capacity?
   Write your definition below.

   _____
   _____

2. Why might it be useful to measure someone's lung capacity?
   List at least two real-world applications.

   _____
   _____

3. What are some factors that might affect a person's lung capacity?
   Think of the differences between people.

   _____
   _____

🔬 Hypothesis

Make a prediction:
If a person is (older/younger, taller/shorter, more/less athletic), then their lung capacity will be _____ because _____.

🧰 Materials Needed

- [ ] Latex or rubber balloon
- [ ] String or flexible measuring tape
- [ ] Ruler or meter stick
- [ ] Calculator
- [ ] Data table / recording sheet
- [ ] Helper or partner

🧪 Safety Precautions

List at least one safety rule to follow while using balloons in this experiment and how you will prevent it from happening. It's ok if you come up with more than one.

_____

_____

📊 Variables

Independent Variable (What you change):

_____

Dependent Variable (What you measure):

_____

Controlled Variables (What you keep the same):

_____

_____

📋 Procedure Preview

1. Take a deep breath and exhale completely into the balloon in one breath.
2. Tie off the balloon.
3. Measure the circumference of the balloon at its widest point.
4. Use a formula or chart to estimate the volume of the balloon.
5. Record your result.

❓ Questions Before You Begin

How will you make sure each person only blows once and uses their full breath?

_____

What will you do if the balloon pops or is under-inflated?

_____