Lung Capacity Experiment – Lab Worksheet

Name: _____ Date: _____

Class: _____

Experiment Title: Measuring Lung Capacity Using Balloons

Question:
How does the amount of exercise a person does affect the size of the balloon they can blow up?

Hypothesis:
I think that _____

because _____

Materials Needed:

- **Latex balloon**
- **Measuring tape or string + ruler**
- **Pen/pencil**
- **Data table**

Procedure:

1. **Take a deep breath and blow as much air as you can into the balloon with one normal breath to determine his/her <u>reserve lung air capacity.</u>**
2. **Pinch the end so no air escapes.**
3. **Measure the circumference (around the widest part) of the balloon with the string and the ruler or measuring tape..**
4. **Record your result in the table below.**
5. **Ask the volunteer to blow into the balloon again after a deep breath to determine his/her <u>vital lung capacity.</u>**
6. **Pinch the end so no air escapes.**
7. **Measure the circumference (around the widest part) of the balloon with the string and the ruler or measuring tape..**
8. **Record your result in the table below.**
9. **Repeat steps for each volunteer.**
10. **Ask each person how often they exercise**

If a person exercises…	Rating
1 to 2 hours for 5-7 days a week	10
1 hour for 4-5 days a week	9
30 minutes for 4-5 days a week	6
30 minutes for 2-3 days a week	4
30 minutes for one day a week	2
No exercise at all	0

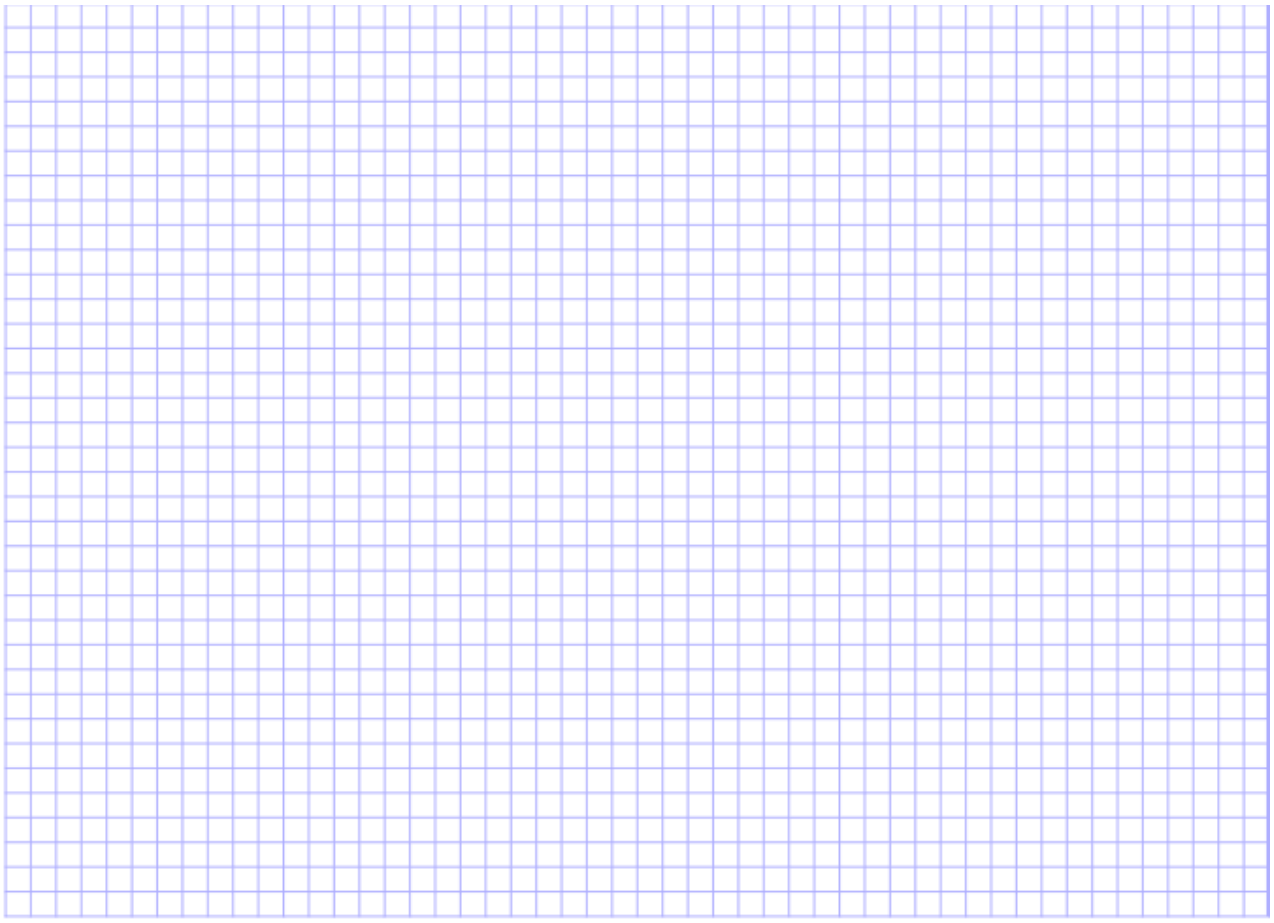
Data Table and Graph

Data Table

Student	Age	Height	Fitness level	Circumference of the balloon		Gender
				normal breath (cm)	deep breath (cm)	

Graph

-Using the graph paper below, create a graph that reflects the data that relates to your hypothesis. You might not need to use all the data categories to support or reject your hypothesis. Remember to include: Title, Axis Labels, Units, Key



Post-Lab CER Analysis - Use the Claim, Evidence and Reasoning (CER) method to analyze your data. Write your answer as a paragraph in the box to the right.

Claim - (A claim is a statement that answers the research question.) Make a claim that answers your hypothesis about the lung capacity in your "live" experiment.	
Evidence - (Evidence is found in the experimental design and in the data from the experiment. List 3 pieces of evidence that would support your claim.) Below are some sample prompts: - Do taller people always have more reserve air capacity? - What about vital capacity? - Did physical fitness have a bearing on the results of the data?	
Reasoning - (Reasoning explains the "Why" of the claim.) Take each piece of evidence from above and explain how it supports the claim and why you saw these results..	