Measuring your Lung Capacity

Directions: Write purpose, Background info, Hypothesis and answer all questions.
Purpose: What is your own personal average lung capacity?

Background Information:
Explain what you learned from Monday's lab. Use the sponge to represent the lungs and the water to represent air.

Hypothesis: How much air (in liters) do you think you can breathe out in 1 breath?

Procedures:

1. Copy down the data table, you will only record your own capacity.
2. Show teacher to receive your mouth piece.
3. Roll the tubing as close to the mouthpiece as possible.
4. While your partner holds the roll of tubing between both hands, take as deep a breath as you can. Slowly exhale as much air as you can in **ONE BREATH,** into the tubing. Do not blow into the tubing too hard, because your partner will have trouble holding it as it unrolls. If you are the person holding the tube, move backward slowly as it unwinds.
5. Just before you take the tubing out of your mouth, put one hand on the plastic insert and the other around the tubing. Twist the tube at the end of the insert to keep air from escaping. Your partner will roll the excess tubing toward you.
6. Using the numbers on the on the tube, determine how much air you exhaled. Record your answer on the data table.
7. Repeat the procedure 3 more times. Record the information in your science notebook. Total the results of both trials and determine the average.
8. Reverse roles with your partner and repeat Steps. Make sure you use your own apparatus.

Your Trails	Amount of Air Exhaled in Liters
1	
2	
3	
4	
Average	

Data table (questions are on page below)

Title	Kid 1	Kid 2	Kid 3	Kid 4	Kid 5	Kid 6	Kid 7	Kid 8	Kid 9	Kid 10	Averages
Boys	3.3			3.8		3.9	2.8	3.7			
Girls		2.3	2.8		3.1				1.9	2.1	
Non Exercise	3.3				3.1		2.8		1.9	2.1	
Exercise		2.3	2.8	3.8		3.9		3.7			
Band				3.8		3.9	2.8	3.7			
Non-Band	3.3	2.3	2.8		3.1				1.9	2.1	
Chorus			2.8	3.8		3.9		3.7			
Non Chorus	3.3	2.3			3.1		2.8		1.9	2.1	
10-11 years old			2.8	3.8	3.1	3.9		3.7			
12-13 years old	3.3	2.3					2.8		1.9	2.1	

Analyzing the Data:

Enter your average on the computer in the front of the room.

1. Looking at the data of the class, do you think there are any numbers that should be taken out (mistakes made)?
2. What do you think would be some (more than 1) reasons for any errors in this lab?

Use the data table ***ABOVE not this classes*** to answer the following questions:

3. What are 2 observations from the data table that you can make about the data that is in it?
4. How many total kids were used to collect the data?
5. How many boys were used in the data table?
6. How many girls were used?
7. How many band members were used?
8. How many non –band members were used in the data?
9. How many boys were 12-13 years old?
10. How many girls were in chorus?
11. Why do you think that some people can exhale more than others?
12. Did people who exercised daily have a higher or lower average than those who did not?
13. Why do you think they have a higher lung capacity?
14. Did people who played an instrument have a higher or lower average than those who did not?
15. Why do you think they have a higher lung capacity?
16. Did people who sang daily have a higher or lower average than those who did not?
17. Why do you think they have a higher lung capacity?
18. Did people who were older or young have a higher average lung capacity?
19. Why do you think they have a higher lung capacity?
20. What are some things you have learned from this data table about lung capacity and the activities people participate (or don't) in?

Use your classes data on the front screen

21. How did the boys compare to the girls in class?
22. How did the band/orchestra members compare to the non?
23. How did the people in sports compare to those not in sports?
24. How did people who vape compare to people who did not?

Conclusion:

- Out of all the data our class collected, what would be ALL the things a person could do to increase their lung capacity?