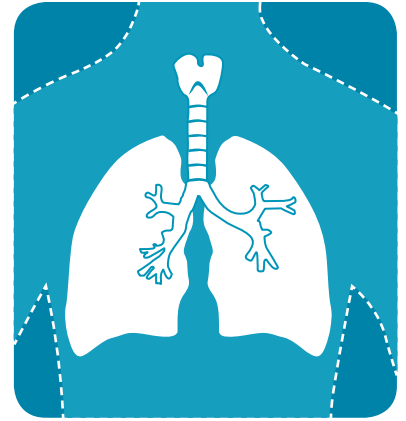


ACTIVITY 5G: Student Processing Out

- Obstructed Airways



Directions: Class Data. Your teacher will help you collect class data. Follow the directions below.



1. It is time to tally the results of the experiment:
 - a. Trade Student Data Page with the person next to you.
 - b. When your teacher calls out the words from the original **Unrestricted Word List**, carefully check off each word that is written correctly on the paper you are tallying.
 - c. Count the number of correct words.
 - d. Write that number in the space after “**Number of Words Recalled Correctly**”. It is below the **Unrestricted Word List Table**.
 - e. Now, look at the list to see if any words are written down, but are not checked off. These words were added to the list, but were not really on the word list.
 - f. Count the number of unchecked words. Write that number in the space after “**Number of Extra Words Added in Error**”.
2. Repeat steps 1 and 2 for the **Restricted Word List**.
3. In this part of the data analysis, you will be recording class data in *Data Table A*. First, the teacher will ask for the **Unrestricted Breathing**.
 - a. Your teacher will call out each number in the first column of the Data Table A (below). This number represents the number of **Words Recalled Correctly**.
 - b. When the teacher calls out “1”, all students with a paper in which there is a 1 in the blank next to **Words Recalled Correctly**, for the **Unrestricted Breathing** will raise their hands.
 - c. Keep your hand up as the count is taken and called out.

IT'S NO FUN BEING ON

Activity 5G
Elementary Level


RESTRICTION

UNIT:
PULMO
PARK

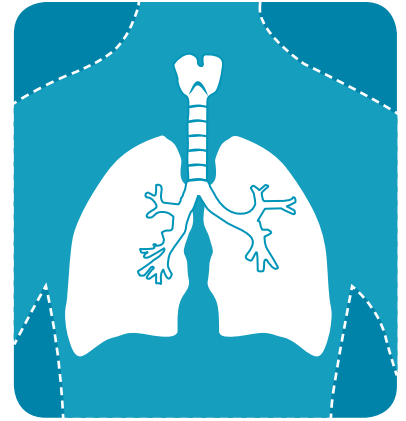


Data Table A

Class Data
Number of Words Recalled
Unrestricted Breathing vs. Restricted Breathing

Number of Words Recalled	Unrestricted Breathing (Record the Class Total)	Restricted Breathing (Record the Class Total)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
* Mode		

* Remember that Mode is the value that occurs most often in a set of numbers.



IT'S NO FUN BEING ON

Activity 5G
Elementary Level

RESTRICTION

UNIT:
PULMO
PARK





IT'S NO FUN BEING ON


Activity 5G
Elementary Level

RESTRICTION

6. You will now record the class data for **Number of Extra Words Added** for **Unrestricted Breathing** in **Data Table B**.
 - a. Your teacher will call out each number in the first column of the Data Table B (below). This number represents the **Number of Extra Words Added**.
 - b. When the teacher calls out "1", all students with a paper in which there is a 1 in the blank next to **Number of Extra Words Added**, for the **Unrestricted Breathing** will raise their hands.
 - c. Keep your hand up as the count is taken and called out.
 - d. When the number is called out, write the number in the box below that intersects the column titled **Unrestricted Breathing**, and the row labeled 1.
 - e. Repeat a, b, c, and d for all other numbers in the first column of the data table.
7. Next, you will record the class data for **Number of Extra Words Added** for **Restricted Breathing**. Again, the process will be the same as listed in step 6.
8. Once the table is filled in, it is time to record the mode for **Number of Extra Words Added** for **Unrestricted Breathing** and **Restricted Breathing**. Remember: the mode is the number that occurs most often.
 - a. Look at the column for **Unrestricted Breathing**. Of the numbers 1 through 12, which has the highest total? This is the **mode**.
 - b. Record the mode for **Number of Extra Words Added** for **Unrestricted Breathing** in the space provided at the bottom of the table.
 - c. Repeat a and b for **Number of Extra Words Added** for **Restricted Breathing**.

Data Table B:

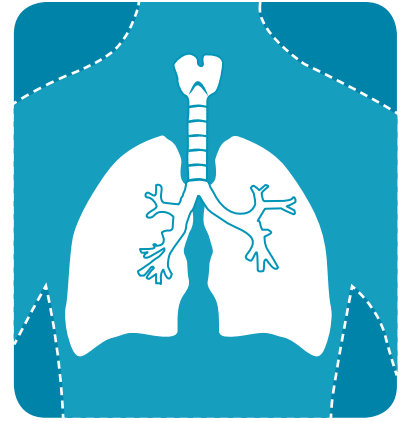
Number of Extra Words for
Unrestricted Breathing vs. Restricted Breathing

Number of Extra Words Written	Unrestricted Breathing (Record the Class Total)	Restricted Breathing (Record the Class Total)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
* Mode		

* Remember that Mode is the value that occurs most often in a set of numbers.

Filling in Missing Pieces of Information:

- ➔ How many students in your class wrote the word “rain” in the Unrestricted Breathing List? _____
- ➔ How many students in your class wrote the word “snow” in the Restricted Breathing List? _____



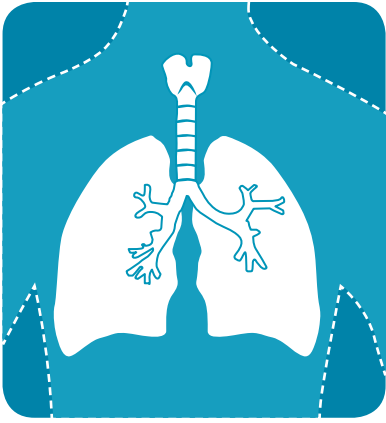
IT'S NO FUN BEING ON

Activity 5G
Elementary Level

RESTRICTION

UNIT:
PULMO
PARK





IT'S NO FUN BEING ON RESTRICTION

Activity 5G
Elementary Level

Your brain has the wonderful ability to detect patterns in sets of information. In this case, the words **rain** and **snow** were left out of the sets of words read to you in the experiment. Under normal circumstances, your brain will often fill in missing pattern pieces, which explains why some students may have included the word **rain** in the **Unrestricted Breathing Recall List** and why some may have included **snow** in the **Restricted Breathing Recall List**. Is there a big difference in the number of students who included **rain** (in error) in the first recall list and the number who included **snow** (in error) in the second recall list? Explain why you think this may happen.

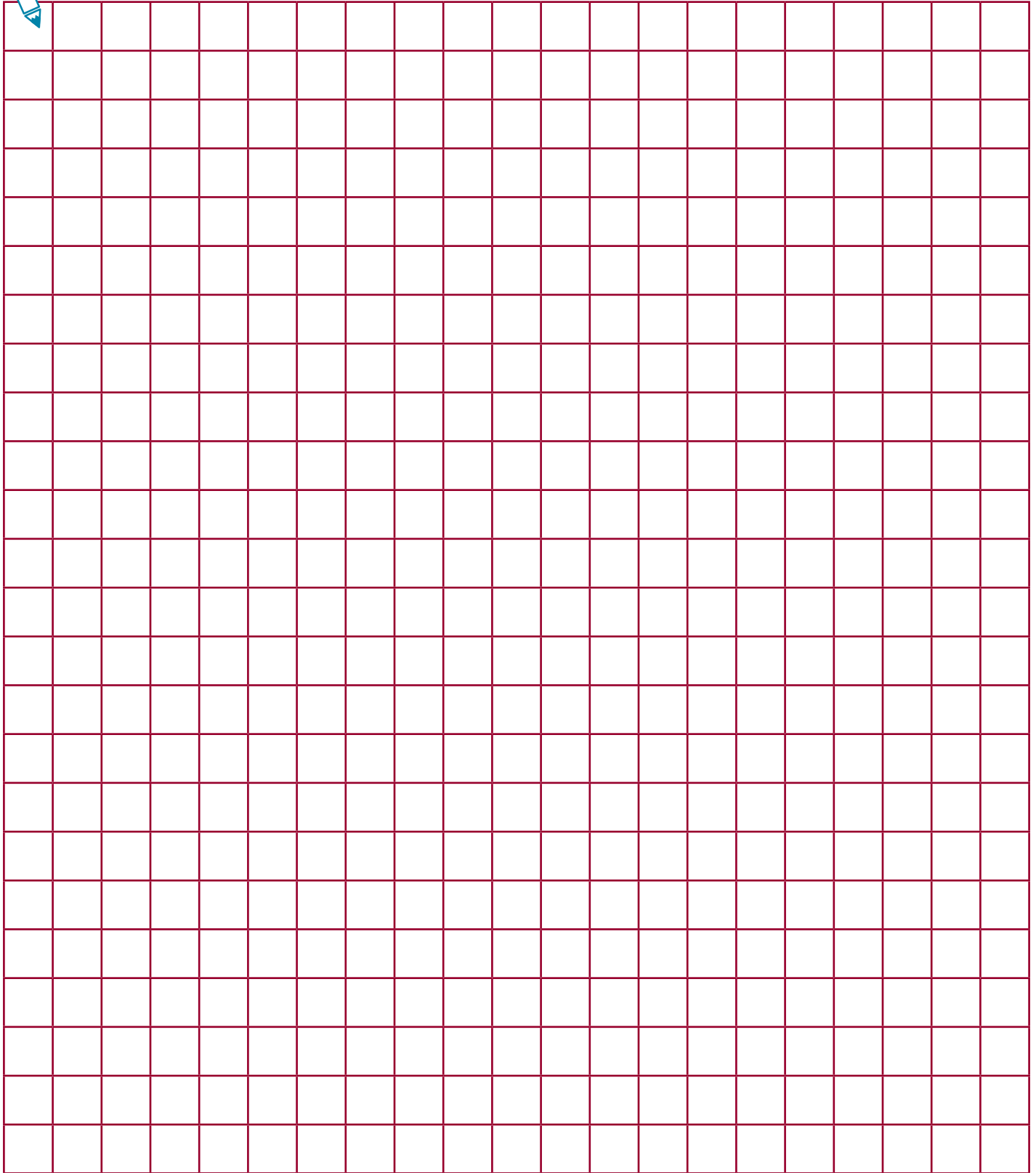
What do these numbers tell you about the effect of restricted breathing on your ability to fill in missing pieces of a pattern?

Why do you **think** restricted breathing might affect the brain's ability to do more complex tasks?

Graphing Results:

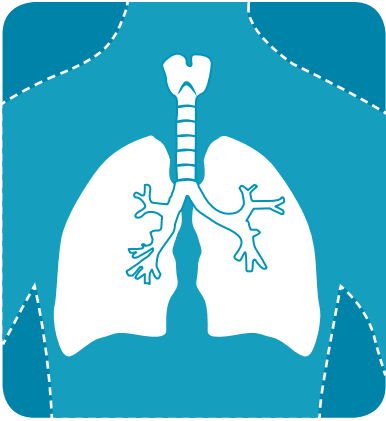
On the graph paper included after this page, make a double bar graph of the data from Data Table A and Data Table B. Be sure to include the *mode* in your graphs.

Graphing Paper



UNIT:
PULMO
PARK





IT'S NO FUN BEING ON RESTRICTION

Activity 5G
Elementary Level

Conclusions:

1. How did breathing through the small straw simulate restricted breathing?



2. Why was it more difficult to breathe through the small straw when you were running in place than when you were sitting?

3. Why was the mode included in the data table rather than the **median** (average)?

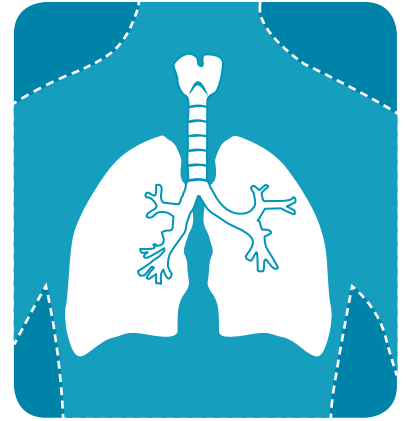
4. What evidence do you see in your graphs to indicate that restricted breathing affects memory recall? Please explain.

5. What happens to your ability to conduct even simple daily tasks when your breathing is restricted or obstructed?

6. What other daily activities might be affected by restricted or obstructed breathing?

7. How would your life be affected if you had restricted breathing all day, every day of your life?

8. If you were creating an anti-smoking advertisement, how could you use these data and these graphs to persuade people not to smoke?



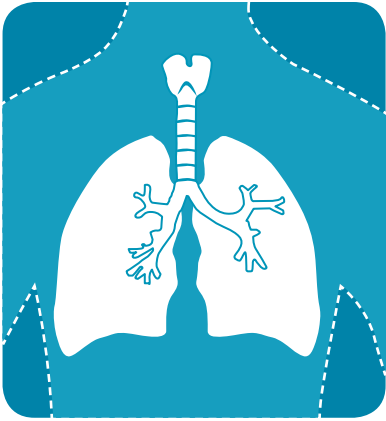
IT'S NO FUN BEING ON

Activity 5G
Elementary Level

RESTRICTION

UNIT:
PULMO
PARK





IT'S NO FUN BEING ON RESTRICTION

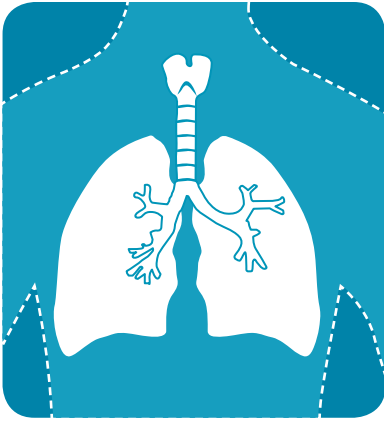
Activity 5G
Elementary Level

Evaluation:

1. Use your observations, vocabulary (from background information and animation), and evidence from this experiment to explain how pulmonary disease affects your body.

2. Evaluate your participation in this investigation. How much did you contribute to both the investigation and the discussion? How would your participation change if you were to do this experiment again or participate in a similar investigation?

3. What new knowledge did you gain? How will this knowledge change your attitude toward others with asthma or other pulmonary diseases?



IT'S NO FUN BEING ON RESTRICTION

Activity 5G
Elementary Level

4. Thinking about the experimental investigation, what are you still unsure about? Is there anything you still feel you don't understand?

5. What questions do you have that could be used in future investigations?
