Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How Many Breaths?**

**Day 1**



**Objective**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DO NOW:**

How minutes are in a day? Show your work.

**Partner Practice**

1. Are you a female or male? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Do you play a sport? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Take turns practicing timing with the stopwatch. For example, have your partner time you saying the alphabet, doing 20 jumping jacks, etc.
4. Have your partner run the stopwatch for one minute while you count your breaths. Try to be as natural as possible. Record the number in the table below. Then swap so you both can be timed.

|  |  |
| --- | --- |
|  | **One Minute** |
| **Number of Breaths** |  |

1. Now *estimate* the number of breaths you would take in an hour using a ***proportion***. Show work below.

Record the number of breaths in one hour below.

|  |  |
| --- | --- |
|  | **One Hour** |
| **Number of Breaths** |  |

1. Now estimate the number of breaths you would take in a day using a proportion. Show your work below.

Record the number of breaths in one day below.

|  |  |
| --- | --- |
|  | **One Day** |
| **Number of Breaths** |  |

1. Do you think there is a relationship between the number of breaths you take and playing a sport? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Do you think there is a relationship between the number of breaths you take and gender? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How Many Breaths?**

**Day 2**



**Objective**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Entering Data**

* Go to iSenseproject.org and search projects for “How Many Breaths?”
* Under “Contribute Data”, enter your “label” and “key” words from Mrs. Mullen
* Then select “Manual Entry”
  + Name your data set with your name
  + Enter your data into each column and select from the 2 drop-down options also
  + “Save” data when finished
* Select the blue “Visualize” button at the left to see your data put into graphs

**Exploration**

* Select from the scatter graph, bar graph, and histogram
* When in histogram, adjust the bin size to see what happens
  + What is the bin size? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Questions**

**Bar Graph**

1. What is the mean (average) breaths/minute for **females**? (Hint: Group by gender. Be sure “Breaths in a Minute” is on the y-axis. Under Tools, select mean (average).)

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1. What is the mean (average) breaths/minute for **males**?

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1. Who takes more breaths/minute on average: males or females? How many more?

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1. Continue using the **bar graph.** Which group appears to take more breaths in a day: students who play sports or students who don’t? (Hint: Group by sport. Select “Breaths in One Day” for the y-axis and deselect “Breaths in One Minute”.)

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* 1. How many more breaths/day do they take?

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1. Based on the bar graph, does there appear to be a connection between the number of *breaths/day* and *playing sports*? Explain.

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**Histogram**

1. How many students who *play sports* take more than 1500 *breaths/hour*? (Hint: Group by sport. Set field to “Breaths in One Hour”. Bin size of 50.)

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1. How many students who *don’t play sports* take more than 1500 *breaths/hour*?

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1. Does there appear to be a relationship between *number of breaths* and *playing a sport*? Explain.

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**Scatter Plot**

1. How many students take more than 30,000 breaths/day? (Hint: Group by gender. Set x-axis to data-point (id). Set y-axis to “Breaths in One Day”.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Of those students, how many males? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Females? \_\_\_\_\_\_\_\_\_\_\_\_
2. How many students take more than 40,000 breaths/day? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   1. Of those students, how many males? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Females? \_\_\_\_\_\_\_\_\_\_\_\_
3. How many students take more than 50,000 breaths/day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Does there appear to be a relationship *number of breaths* and *gender*? Explain.

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**Analysis / Conclusions**

Relationship between number of breaths and gender? Explain.

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Relationship between number of breaths and playing a sport? Explain.

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Did any of the data surprise you? Explain.

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