A Gassy World – Day 2

Name: _____ Date: _____ Core: _____

LT: I can collect and analyze data to investigate whether more CO_2 gas will be released from cold ocean water or warm ocean water.

During the last class, you planned and carried out an inquiry to answer the question, "Is more CO_2 gas released in cold salt water or warm salt water?" In this lesson you will use the same procedure as your classmates to collect analyze data and extend the findings to the real world problem of global climate change.

Part 1: Data Collection

1. Use a graduated cylinder to measure and pour 40 mL of cold salt water into a 50 mL test tube.
2. Use a graduated cylinder to measure and pour 40 mL of warm salt water into a second 50 mL test tube.
3. Break an antacid tablet in two 1.5 g halves. (This can be weighed on a scientific balance.) Place each half in a separate uninflated balloon.
4. Attach a balloon over the opening of each test tube.
5. Tip the balloon up, allowing the tablet to fall into the test tube. The balloon will inflate due to the CO_2 being released from the salt water. Sampling in this way will allow all of the gas to be captured.
6. Using the string, measure the circumference of the inflated balloon. Record your data in the table below.
7. Repeat steps 5 and 6 with the other balloon.
8. Share your data with the rest of the class.

My Group's Data - The Effect of Water Temperature on the Release of CO_2

Salt Water Temperature	Circumference of Balloon (cm)
Cold	
Warm	

Part 2: Data Analysis

Class Data - The Effect of Water Temperature on the Release of CO_2

Table Number	Cold Salt Water – Balloon Circumference (cm)	Warm Salt Water – Balloon Circumference (cm)
1		
2		
3		
4		
5		
6		
7		
8		
Class Average*		

* Calculations Average = sum of the values (cm) ÷ number of values

Cold Salt Water Average = _____ ÷ _____ = _____

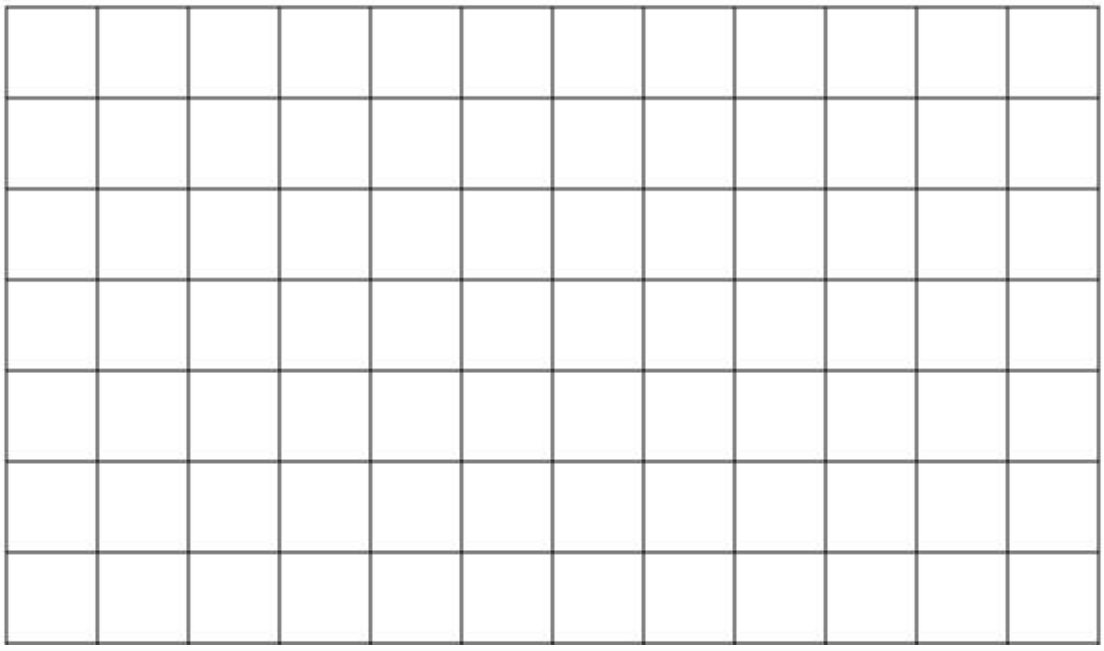
Warm Salt Water Average = _____ ÷ _____ = _____

Graph: Create a graph using the class averages. Remember to use TAILS.

IV: _____

DV: _____

Type of Graph: _____



Key:

Part 3: Discussion

1. According to the analysis of the data, is more CO_2 released from warm salt water, or cold salt water?

   _____

2. Using this information, would more CO_2 be released into the atmosphere from cooler oceans or warmer oceans?

   _____

3. If more CO_2 is released into the atmosphere from warmer oceans, what impact would it have on global warming? (Consider what you have learned about the relationship between CO_2 concentration and temperature.)

   _____

   _____

   _____

   _____