Experiment Proposal

The Guiding Question... | *How does the temperature of the reactants affect the strength of the reaction between Diet Coke and Mentos?*

Hypothesis 1	**Hypothesis 2**	**Hypothesis 3**
IF...*warmer reactants causes a stronger reaction...*	IF...*the temperature of the reactants does NOT affect the strength of the reaction...*	IF...*cooler reactants causes a stronger reaction...*

The Test

AND…

Procedure

1) Place 2 2L Diet Cokes in fridge, 2 outside, and 2 inside
2) Tape meter sticks to outside wall
3) Place 2L bottle of Diet Coke in front of meter sticks
4) Count Mentos and place them in the PVC pipe with a notecard underneath
5) Open the Diet Coke (record temperature) & line up the PVC pipe with the opening (with notecard in between)
6) Remove the notecard, step back after Mentos fall
7) Measure and record the maximum spray height
8) Repeat steps for all trials (1,3,&5 mentos 2x each)

Diagram of Equipment Setup

- maximum spray height
- PVC tube with mint Mentos
- notecard
- 2L bottle of Diet Coke

Meter Stick taped to Wall
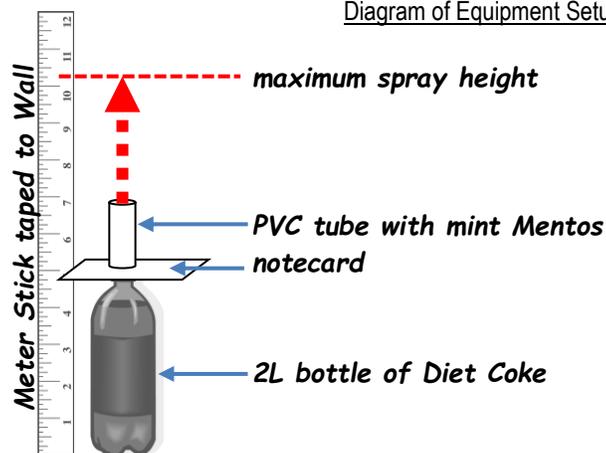
What data will you collect?
- ✓ *Temperature of Reactants (independent variable)*
- ✓ *Maximum height of spray (dependent variable)*
- ✓ *Type/amount of soda (controlled)*
- ✓ *Type of Mentos (controlled)*
- ✓ *Amount of Reactants – soda and Mentos (controlled)*

How will you analyze the data?
- *Merge data with other classes*
- *Calculate the average maximum spray height for each temperature (add maximum height for each trial and divide by the number of trials)*
- *COMPARE the average maximum spray heights for each temperature in the reaction (data table AND bar graph)*

Predicted Result if Hypothesis 1 is Valid	**Predicted Result** if Hypothesis 2 is Valid	**Predicted Result** if Hypothesis 3 is Valid
THEN...*the average spray height will increase as the temperature of the reactants increases.*	THEN...*the average spray height will remain consistent across all temperatures.*	THEN...*the average spray height will increase as the temperature of the reactants decreases.*

Your Data

AND…
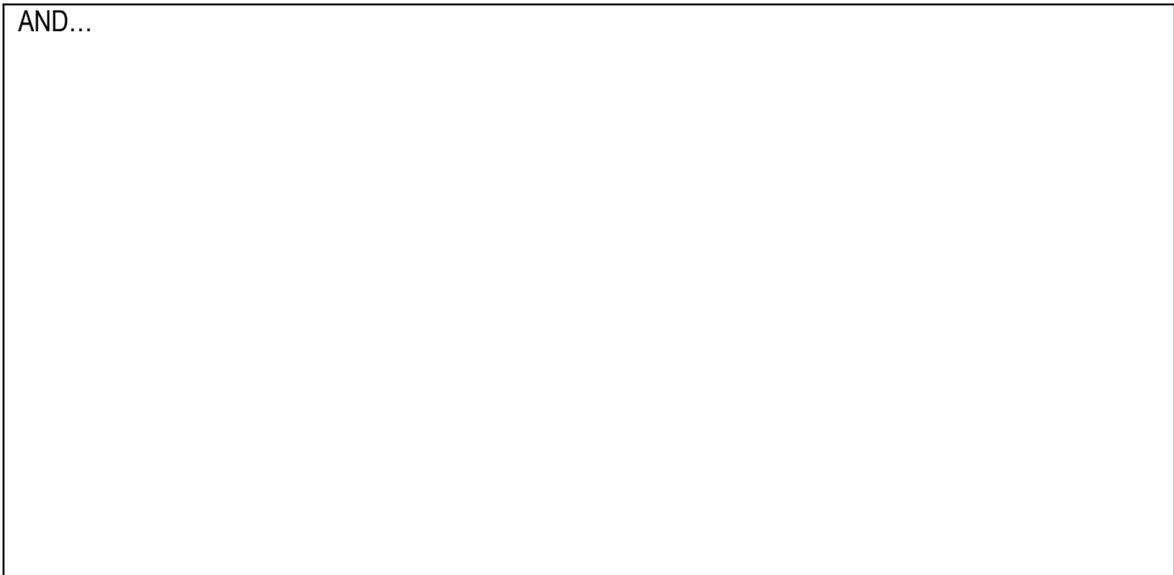
**Your Analysis
and
Interpretation
of the Data**