Name _____

Ice Cream Investigation

Focus Question: Which combination of ingredients will result in the tastiest vanilla ice cream?

Learning Objective: Students will design and conduct a class CONTROLLED EXPERIMENT to determine the tastiest ice cream by having each team change / manipulate ONLY ONE VARIABLE.

Team Name: _____

Identify the recipe used by your team to make vanilla ice cream in the investigation. (Circle)

milk	**½ cup**	sugar	2T	3T	4T	5T
½ and ½	**½ cup**	vanilla	1/4 t.	2/4 t.	3/4 t.	

Directions:

1. Fill the large bag half full of crushed ice and then add ~3/4 cup of rock salt.
2. Carefully follow your team's recipe and add the milk, ½ & ½, sugar, and vanilla into the small bag and seal it.
3. Place the small bag inside the large bag and seal it tightly shut.
4. While holding the zipper seal at the top, gently mix the ingredients for ~ 10 minutes.
5. After dumping the salt/ice mixture from the large bag down the outside drain, open the small bag and spoon the ice cream into the "community taste test bowl."
6. Try all the recipes and record your flavor scores below

Flavor Testing Results:

Team Names:	1 Variable Tested	Circle Flavor Score:			1 = poor ;	5 = superb
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5
_____	_____	1	2	3	4	5

Concluding Questions:

1. Was your team a control or experimental group in this experiment? How do you know?
2. What are the independent variables (CAUSE) in this experiment?
3. What is the dependent variable (EFFECT) in this experiment?

4. List 5+ constants or variables that remained the same among all the experimental teams?

5. List 2+ variables from this experiment that should remain constant in a “perfect” experiment, but probably varied from team to team.

6. Predict how these “constants” that varied a little from team to team (described in the question above) would impact the validity of our experimental conclusions?

7. For any teams that followed the exact SAME recipe, did their ice cream taste exactly the same??? Explain why or why not?

8. Which team made the tastiest vanilla ice cream?

9. What is the recipe for the tastiest vanilla ice cream?

_____ milk _____ sugar

_____ ½ and ½ _____ vanilla

10. Is there more than one correct answer to the focus question? Explain why or why not?

11. If you were given the chance to investigate the focus question further, what specific changes to the recipe would you make and WHY?

12. Create a graph (below) that best depicts the data from this controlled experiment.