The CHEMISTRY of Ice Cream

Who knew chemistry (and Physics) could be so tasty! Today we will be investigating properties of Ice Cream and freezing points, and some yummy results of energy changes.

Pre-Lab questions:

1. Define Freezing Point?

2. Is freezing an exothermic or endothermic process?

3. Is melting an exothermic or endothermic process?

4. How does energy flow? (from where to where?)

OBJECTIVES:

- Investigate the effects of temperature change on phase changes
- Investigate the effects of changes in freezing point
- Utilize the law of conservation of energy
- Apply these concepts to make ice cream!

RECIPE:

Ingredients:

Ice
Salt
Sugar
Milk
Vanilla extract

Write your final recipe here. Copy it from the ice cream balls directions:

Analysis:

1. What state of matter was the milk when you began?

2. What state of matter was the milk when you were done?

3. In order to change the phase of the milk, what had to be removed?

4. What happened to the heat energy that left the milk?

5. Why was salt added to the ice?

6. If you did not add sugar, would the ice cream freeze faster or slower? Why?

7. Why did the outside of the ball get wet? (assume that your ball did not spring a leak.)

8. Describe the transfer of energy that occurred in this lab.

9. How could you improve your recipe to make the ice cream freeze faster?