

SCIENCE OF MAKING ICE CREAM

NAME

DATE

CLASS

SCORE

Purpose:

To use an ice/salt mixture to freeze cream into ice cream.

Hypothesis:

If salt is added to ice, then its melting point will _____
creating a cool enough environment to freeze creme.

Materials:

- small ziploc bag
- large ziploc bag
- 1 Tbs sugar
- 1/4 tsp vanilla extract
- 1/2 cup half-half cream
- 3 cups ice
- 4 Tbs salt
- thermometer
- plastic spoons for taste testing

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Procedure:

1. Pour sugar, half and half and vanilla extract into the small ziploc bag. Seal the bag.
2. Note the appearance of the cream mixture before cooling and record observations in Table 1.
3. Put the ice into the large ziploc bag. Take the temperature of the ice and record in Table 1.
4. Add 2Tbs of salt to the ice in the large bag and mix. Record the temperature of the ice/salt mixture in Table 1.
5. Add 2Tbs more of salt to the ice mixture and mix. Record the temperature of the ice/salt mixture in Table 1.
6. Place the small ziploc bag containing the cream mixture into the large bag with the ice mixture. Seal the large ziploc bag.
7. Shake the large ziploc bag for five minutes. Try to hold the corners of the bag while shaking.
8. Note the appearance of the cream mixture after cooling and record observations in Table 1.
9. With your teacher's or parent's permission, taste your ice cream from the small bag.

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Observations:

Table 1: The Temperature Change of Ice and the Change of State of a Cream Mixture

Appearance of cream, sugar and flavoring before cooling.	
Temperature of ice before salt added.	
Temperature of ice after 2Tbs of salt was added to ice and mixed.	
Temperature of ice after second tsp of salt added to ice and mixed.	
Appearance of cream mixture after cooling.	

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Conclusions:

1. What happened to the temperature of ice after 2 Tbs of salt was added? After 2Tbs more salt was added?



2. What happened to the state of the ice after salt was added to it?



3. Where did the energy come from to create the change of state?



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Conclusions: :

4. Why do you think that the cream mixture needed to be shaken?



5. Why did the cream mixture freeze?



6. In step 7, why were you instructed to hold only the corners of the bag?



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Conclusions: :

7. Ice cream makers often add air into ice cream as it's made. How would this effect the hardness and texture of the ice cream? Is this a physical or a chemical change? Explain

Discussion :

How did your ice cream taste? Would you make this again at home?