

**Project FOCUS
Best Lessons
SECOND GRADE**

Title of Lesson: Making Homemade Ice Cream

Theme: Physical Science

Unit Number: 1 Unit Title: Properties of Matter

Performance Standard(s) Covered (enter codes):

S2CS5

S2CS3

S2P1

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Question: What are the properties of matter in this system?

Key Terms: Solids, Liquids

Purpose: Conversion of liquids (milk mixture) to solids (ice cream) via freezing (removal of heat)

Methods: Mixing and Freezing

Learning Activity (Description in Steps)

Abstract (limit 100 characters): A visualization that liquids can turn into solids when heat is removed (freezing).

Details: The properties of solids, liquids, and gases are discussed prior to completing this activity. Ask the students to identify the state of matter of the milk, ice, salt, vanilla extract, etc. and what they think is going to happen when the milk mixture is subjected to the ice and shaken. Use a measuring cup to measure out the amount of each ingredient needed in order to have the correct proportions. The milk, sugar, and flavoring is then proportionally added to the quart sized plastic bag and sealed. The small bag is placed inside of the gallon sized bag that has the salt and ice proportions and the gallon bag is consequently sealed as well. Next the bags are shaken for roughly 6-8 minutes or as long as needed until the liquid milk mixture transforms into a solid ice cream. The small bag is then taken out of the large one and the ice cream is ready to eat. This is a fun and yummy experiment that shows how liquids can turn into solids when cooled (heat extracted).

Materials Needed (Type and Quantity):

Measuring Cup

Quart Sized Plastic Bags

Gallon Sized Plastic Bags

Spoons

1/4 Teaspoon of Vanilla Flavoring (or any other flavor)

1 Tablespoon of Sugar

1/2 cup of Milk

Sufficient amount of Ice

6 Tablespoons of Rock Salt

Notes and Tips (suggested changes, alternative methods, cautions):

Use a variable amount of sugar based on the known potential hyperactivity of the students. Be sure that the small bag containing the milk mixture is completely sealed, otherwise the salt will penetrate the small bag and turn the ice cream unpleasantly salty. Also, more ice may be needed if the students shake for a long time and still do not have solid ice cream. If possible, have mittens ready for students to put on their hands while shaking the bag of ice, because many will complain of having very cold hands. Making other flavors like chocolate and strawberry available will cater to many preferences other than vanilla flavoring.

Sources/References:

1) <http://crafts.kaboose.com/ice-cream-in-a-bag.html>

2)

3)