



GREATER BANNER ELK HERITAGE FOUNDATION

Banner House Museum

Heritage Trunks Classroom Tools

MATTER, PROPERTIES AND CHANGE UNDERSTANDING PROPERTIES OF SOLIDS AND LIQUIDS



Public Schools of North Carolina
State Board of Education | Department of Public Instruction

Matter: Properties and Change

	Essential Standard	Clarifying Objectives	
2.P.2	Understand properties of solids and liquids and the changes they undergo.	2.P.2.1	Give examples of matter that change from a solid to a liquid and from a liquid to a solid by heating and cooling.
		2.P.2.2	Compare the amount (volume and weight) of water in a container before and after freezing.
		2.P.2.3	Compare what happens to water left in an open container over time as to water left in a closed container.

<http://www.dpi.state.nc.us/docs/curriculum/science/scos/support-tools/new-standards/science/k-2.pdf>

MATERIALS (FOR EACH GROUP OF STUDENTS-UP TO 4 IN EACH GROUP):

- ½ cup half and half
- ½ teaspoon vanilla
- 1 tablespoon sugar
- 1 quart size Ziploc bag
- 1 larger Ziploc bag
- Ice
- 2 tablespoons Salt
- Empty one-gallon jar (clean, never used for non-food materials)
- Bowls and spoons for each student

HISTORY STORY:

Did you know there was a cheese factory in Banner Elk? The “Shawneehaw Cheese Cooperative” was built in 1917—over 100 years ago. The really interesting thing is that it wasn’t owned by one person. It was a “cooperative” which meant that lots of people worked together to make it happen and then they all shared in the profits together. It takes a lot of work to make something like that happen. Not to mention science. Cheese is made from milk that has things added to it so that over time, it turns from liquid milk to solid cheese. When “matter” (or the stuff that stuff is made of) changes from liquid to solid to gas, all sorts of interesting things can happen. The cheese made in Banner Elk even won a silver medal at the World’s Fair in Chicago!

Let’s work together to see what wonderful things we can make when liquid turns to solid!

ACTIVITY: ICE CREAM

Materials (for each group of students-up to 4 in each group):

- ½ cup half and half
- ½ teaspoon vanilla
- 1 tablespoon sugar
- 1 quart size Ziploc bag
- 1 larger Ziploc bag
- Ice
- 2 tablespoons Salt
- Empty one-gallon jar (clean, never used for non-food materials)
- Bowls and spoons for each student

Procedure:

1. Fill the smaller Ziploc baggie with half and half, vanilla, and sugar. Close bag tightly.
2. Put smaller bag inside larger bag and close very tightly.
3. Put the bags inside the jar and fill with ice, leaving enough room for the bag to move freely inside the jar.
4. Add the salt to the ice and close the jar very tightly.
5. Have the students sit in a circle on the floor and roll the can back and forth to each other-lots of motion is good, but be sure the baggie and the cans won't open-so don't toss the jar.
6. After 8-10 minutes, open the jar to see if the half-and-half has thickened to ice cream. If not, seal everything back up and roll it around for a few more minutes. You may want to add more ice if it has melted.
7. Once the liquid has solidified to a semi-solid, pour the ice-cream into bowls for the students to enjoy!