

# Ice Cream

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## Ice Cream in a Bag

(per group of 4)

1/4 c sugar	1/2 t vanilla	1 c 2 percent milk	1 c (1/2 pt) whipping cream
ice	3/4 c water	3/4 c rock salt	4 plastic spoons
1 gal zip-lock freezer bag		1 qt zip-lock freezer bag	measuring spoons
wooden spoon	measuring cup	duct tape	4 8-oz sundae cups
		cloth towels or hot/cold mitts	

1. Pour milk, whipping cream, sugar and vanilla into a 1-qt zip-lock freezer bag, and seal tightly with duct tape.
2. Place the quart zip-lock bag with the ice cream ingredients inside a 1-gallon zip-lock bag.
3. Pack ice around the small bag.
4. Add the rock salt and water.
5. Seal the larger bag with duct tape.
6. Have students shake or toss the bags between them while protecting their hands with cloth towels or hot/cold mitts.
7. Continue until ice cream is frozen.
8. Open the outer bag, and discard the ice and salt.
9. Rinse the bag containing the ice cream.
10. Divide the ice cream into sundae cups with the wooden spoon.



### PHYSICAL SCIENCE ACTIVITY

1. After ingredients have been put together in the bag, students will observe and describe their mixture.
2. After the ice cream is made, students repeat the observation and describe the ice cream.
3. Ask students what changes they have observed, and what caused the changes. Was motion involved in the change?

P.A.S.S. Physical Science—Grade 1: 1; Grade 2: 1.1,2; Grade 3:1.1

## Snow Ice Cream

fresh, clean snow	2 t vanilla	2 T sugar	1/2 c milk	small styrofoam cups
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1. Put sugar and vanilla in cups.
2. Pack snow in on top of the sugar and vanilla, leaving enough room for the milk.
3. Pour in milk, and mix it all together.

Can snow ice cream make you sick? Snow does contain bacteria. In fact, bacteria form the foundation of some snowflakes. But life is full of bacteria, and not all bacteria is harmful. There are no studies showing children becoming ill from snow, but there is no real consensus on the matter. Be aware of the risks, and make sure your snow is clean and fresh.

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.

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# What does freezing do to foods?

Most foods are made from living or once-living material and all such material is made of cells. Water is one of the few substances that expands on freezing, so if you put something made of cells into a freezer, the water inside them turns to ice and expands, rupturing the cells and damaging other structures. Slow freezing gives large ice crystals time to form. For ice cream, commercial freezing is done rapidly to prevent large ice crystals from forming. Constant churning is also used, as in homemade ice cream and the ice cream made in this activity. This breaks up larger ice crystals as they form. When melted ice cream is put in the freezer, it freezes slowly, allowing large ice crystals to grow and making the ice cream unpleasantly crunchy.