



# 4-H Club GO TO Resources



June 2017

## Lesson Objectives:

Club members and parents will:

- Learn about the ingredients in ice cream.
- Learn that salt lowers the freezing point of water and thus helps the water in the milk freeze, resulting in ice cream.
- To have fun while making and eating a delicious treat!

**Time:** 15-20 Minutes

## Equipment and supplies:

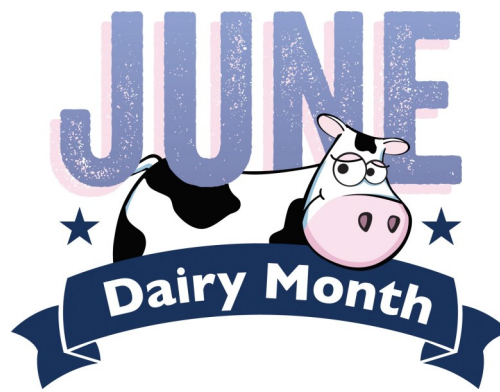
- Sugar
- Vanilla Extract
- Milk
- Whipping Cream or Half & Half
- Crushed Ice
- Rock Salt
- Towels
- Quart and Gallon Ziploc Freezer Bags
- Duct Tape
- Scissors
- Spoons
- Bowls or cups

## Preparations:

- Review Lesson
- Gather equipment and supplies

## Celebrate! June Dairy Month!

*Enjoy a hands on activity where the 4-H'ers make their own ice cream!*



Kids and adults of all ages love this activity and with June being Dairy Month it is a wonderful time to try this tasty, hands on science project with your 4-H club members. This activity can be done inside or outside. The 4-H'ers can work in groups of 2-4, depending on how much ice cream you want to make. Once the group has mixed the ingredients, there will be about 10-15 minutes of time to “churn” the ice cream. During this time, you could do several things:

- 4-H Leader or older teen can explain the science behind “Matter and Its Interactions” (See the next page for explanation) and just have fun shaking and making ice cream.
- If you have a youth with a dairy project in your club, you could have them talk about what it is like to be a dairy farmer, or invite a dairy farmer to the meeting to give a brief presentation during this time.
- Play a game of dairy trivia. Midwest Dairy Association has a great trivia sheet which provides questions and answers to test your 4-H families knowledge about dairy. Here is the link to this resource: <https://www.midwestdairy.com/wp-content/uploads/2017/04/JDM-Trivia.pdf>
- A club member could give their 4-H talk.

This activity is lots of fun and the ice cream is delicious! In order to have a successful activity you will want to note a few things:

- The bags get very, very cold—provide bath towels, gloves or pot holders in order for the kids to be able to tolerate the cold and to keep shaking the bag. Have them switch often. The churning process is harder than it sounds!
- Be sure to rinse the salt off the bag, salty ice cream isn't very tasty!



# Ice Cream in a Bag

**Next Generation Science Standards:** Matter and It's Interactions

Ice cream freezes at  $-6$  degrees C (21 degrees F). Ice cream can be made in the classroom with the understanding that the freezing point of water is actually lowered by adding salt to the ice between the bag walls. Heat energy is transferred easily from the milk through the plastic bag to the salty ice water causing the ice to melt. As it does so, the water in the milk freezes, resulting in ice cream.

## Materials needed for each group:

1/4 Cup Sugar

1/2 Teaspoon Vanilla Extract

1 Cup Whole Milk

1 Cup Whipping Cream, Half & Half or Milnot

Crushed Ice (1 bag of ice will freeze 3-4 bags of ice cream)

1 Cup Rock Salt

Duck Tape

Towel, Potholders, or Gloves

1 Quart and 1 Gallon size Ziploc freezer bags (Ziploc brand is usually stronger & work the best).

## Directions:

1. Pour the milk, whipping cream, sugar and vanilla in a 1 quart freezer bag and seal. For security, fold a piece of duct tape over the seal.
2. Place the bag with the ingredients inside a gallon freezer bag.
3. Pack the larger bag with crushed ice around the smaller bag. Pour 1 cup of salt evenly over the ice and seal the bag.
4. Wrap in a towel and shake for 10 minutes. Open the outer bag and remove the inner bag with the ingredients. Rinse or wipe off the bag to be sure salt water doesn't get in to the ice cream.
5. Cut the top off and spoon into cups or bowls.
6. Makes about 3 cups. (1 bag will serve approximately 3-4 youth).
7. Serve plain or top with nuts, coconut or fruit. ENJOY!

Activity courtesy of Illinois Farm Bureau Ag in the Classroom: <http://www.agintheclassroom.org/TeacherResources/InterestApproaches/Ice%20Cream%20in%20a%20Bag.pdf>.

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## Sources & Additional Lesson info:

4-H Club GO TO Resources is being offered to 4-H clubs in Boone, DeKalb and Ogle Counties as a way to enrich and enhance 4-H experiences and programming at the club level. It is the goal of the Extension staff to assist 4-H leaders and officers in providing simple hands-on activities on a monthly basis that can broaden the 4-H club experience and as a result heighten positive youth development.

The “Ice Cream in a Bag” activity was adopted from the Illinois Farm Bureau Ag in the Classroom materials. This activity as well as others can be found at: [www.agintheclassroom.org/TeacherResources](http://www.agintheclassroom.org/TeacherResources).

June Dairy Month resources courtesy of Midwest Dairy Association, June Dairy Month Tool Kit and can be found at: <https://www.midwestdairy.com/dairy-resource-center/toolkits/june-dairy-month-toolkit/>.

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