



The Science of Ice Cream



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When the temperatures outside start to soar, help your kids cool off by making some homemade ice cream.

Ice cream making is a fun activity for the whole family and will introduce kids to the “science” of ice cream. For younger children, that will simply be the magic of turning milk into ice cream. Older kids can start to learn about the scientific process that causes milk to turn into frozen ice cream.

Did you know that if you just mixed the ingredients of ice cream together and put it in the freezer, you would end up with a big chunk of ice? To make ice cream, the ingredients need to be stirred constantly while the mixture is freezing.

Salt also plays a big part in the ice cream making process. Because salty ice is colder than ice made from pure water, salt is added to the ice around ice cream ingredients, making them cold enough to freeze. Once you have mastered the ice cream making process, it’s experiment time. Have older children vary the amount of salt used to freeze the ice cream, or try not adding any salt. How does this affect the freezing time? Does it freeze without salt? Kids will have great fun making their own ice cream and will learn a lot in the process.

Best of all, these two versions of homemade ice cream only take a half-hour or less to make. So gather your ingredients, grab a spoon and get ready to dig in!

Coffee Can Ice Cream

Here’s What You Need...

1 pound coffee can, washed and dried thoroughly
3 pound coffee can, washed and dried thoroughly
1 cup milk or half & half
1 cup sugar
1 tsp vanilla
6 tablespoons salt
Ice cubes

Directions...

1. Have your child pour the milk or half & half, sugar and vanilla into the 1 lb. coffee can and seal the can tightly with the lid.

2. Instruct your child to put the smaller can inside of the larger can. Have your child put the ice around the smaller can, trying to keep it centered in the larger can. Have your child sprinkle the salt onto the ice and seal the larger can with the lid.

3. Tell your child to roll the can around on the floor for about 30 minutes.

4. Open the lid of the large can and remove the small can. Wipe the small can clean. Then open the lid and enjoy.

Ice Cream in a Bag

Using plastic Ziploc bags allows several children to make their own individual servings of ice cream in just 5-8 minutes!

Here’s What You Need...

1/2 cup milk or half & half
1 tablespoon sugar
1/4 teaspoon vanilla
2 quart-sized Ziploc freezer bags and 1 gallon-sized Ziploc freezer bag per child
3 tablespoons salt
Ice cubes

Directions...

1. Instruct the children to put the milk or half & half, vanilla and sugar into the small bag and seal it, getting as much air out of the bag as possible.

2. Have the kids put the bag with the milk mixture into the second quart-sized freezer bag and seal tightly.

3. Ask children to fill their large Ziploc bag half full of ice and salt.

4. Have children put the small bag inside of the large one and seal tightly.

5. Give children gloves or mittens to keep their hands warm. Then have them shake the bags for 5 to 8 minutes.

6. Instruct children to wipe off the top of the small bag before opening it up. Now they are ready to eat their kid-made ice cream.

Variations: Encourage your child to create other ice cream flavors by using chocolate milk or by adding other ingredients such as chopped candy bars, crushed cookies, marshmallows or flavored syrups.

This helps develop...

These ice cream activities can stimulate a child’s cognitive skills. This is the mental process of knowing by developing awareness, perception and reasoning. These abilities are engaged by following multi-step directions, acknowledging time concepts, measuring ingredients and focusing on the concepts of more and less.

Fine motor skills, the use of small muscle movements in the hands that occur in coordination with eyes, are targeted in both activities. These skills are practiced when sealing the bags and the lids on the cans, sprinkling salt, pouring ingredients, and rolling the cans or shaking the bags.

Language, the expressive ability to communicate ideas and needs, and the receptive ability to understand what is said or written, can be enhanced when focused on in this activity. Parents can encourage conversation by guiding an ongoing narrative as to what they are doing during each step of the recipe. Ex. “We are putting the small can into the big can.”

Social emotional development involves a child’s feelings of self worth, confidence and pride as well as their ability to get along with others in a group setting. This is a great activity for children of all ages and abilities. Hands-on learning experiences are fun especially when the end the end result is a tasty treat! ♦

This monthly family activity series, “Hands-on-Kids!” is brought to you by a partnership between the Children’s Museum of Northern Virginia (CMNOVA) and FAMILY Magazine. For more activities you can do with your children to spark their love of learning, visit the CMNOVA web site, www.cmnova.org. On their web site you will also find information about the Children’s Museum of Northern Virginia and how you can become involved. CMNOVA is committed to building a place where our children can freely explore and develop a lifelong love of learning. Robin DeRosa Lundgren, a CMNOVA volunteer, is Vice President of Aquarian Entertainment and creator of the kids’ cooking show “Culinary Kids”.