



# Freezer Bag Ice Cream



**Purpose:** Students will learn about the states of matter while making ice cream.

**Background:** Fluid milk is used in many ways. After the cow is milked, the milk flows to a refrigerated tank where it is cooled. Once the tank is full, a milk truck picks the milk up from the dairy and transports it to a processing plant. Here it is either processed for fluid milk consumption in the immediate area, processed into dairy products or sent out of state as an export.

In Florida, most of the milk produced is used for fluid consumption. Some plants, such as Publix Processing Plant in Lakeland, take the milk they are delivered and turn it into products such as sour cream, ice cream, yogurt, frozen yogurt, and cottage cheese. Hard cheese, however, is a product that is not made in Florida.

## Florida Dairy Facts:

- In 2018, the dairy industry brought over \$472 million to Florida through milk cash receipts.
- There are approximately 125,000 dairy cows in the state of Florida.
- Florida produces around 300 million gallons of milk a year.
- Each gallon of milk is approximately 345 squirts of a cow's udder.
- Each Florida dairy cow produces 6-8 gallons of milk each day and is milked 2-3 times a day.
- Cows chew their cud at least 50 times per minute.

**Materials:** 1 cup of half and half, 1 tsp of vanilla extract, 2 Tbsp of sugar, ½ cup of coarse sea salt, ice, 1 gallon freezer bag, 1 quart freezer bag, Option 1: bath towel, Option 2: toppings for ice cream-sprinkles, whipping cream, chocolates, etc.

**Suggestion:** Have students in groups of 3-4 to make a bag of ice cream.

## Activity:

1. Pour liquid half and half into a quart sized freezer bag.
2. Add 1 tsp of liquid vanilla extract.
3. Add 2 tbsp of solid sugar.
4. Seal the bag tight and set to the side.
5. Fill the gallon sized freezer bag halfway with solid ice cubes.
6. Add ½ cup of coarse solid sea salt.
7. Place the quart bag into the gallon bag. Close to seal tight.
8. Shake and move the ice around for 5 minutes. Pass the bag from student to student every 30-60 seconds.  
Option 1: Place a bath towel around the bag before shaking.
9. Remove the quart sized bag.
10. Scoop solid ice cream into cups and enjoy. Option 2: Add toppings and enjoy!