

DAIRY LESSON #1

# MILK & CREAM

**Ask:** When I say dairy, what foods do you think of?

**Say:** When we talk about dairy products, most people think of foods that are made from milk.

**Ask:** How do you think we get cream?

**Say:** Cream is a dairy product made from the fat layer skimmed from the top of milk after it comes out of the cow. When milk is processed, it is put through a centrifuge (a machine that spins the milk like a merry-go-round). Since the cream is heavier than milk, it separates from the milk.



## ACTIVITY: MAKING BUTTER

**Say:** Today we are going to see what happens if we shake cream for a long time.

**Directions:** Place students in small groups of 3 or 4. Give each small group a jar and lid. In each jar, add  $\frac{1}{2}$  cup heavy whipping cream and a pinch of salt. Screw the jar lid on tight and have students take turns shaking the jar. It will take around 10 minutes for the cream to turn into butter, so ask the questions below as the students take turns shaking the jar.

**Ask:** We are using cream to make butter instead of milk. What did you notice about the cream when we put it in your jar?

**Ask:** When you are at the grocery store, you can buy different kinds of milk: whole, 2%, 1%, and skim. What do you think those labels are referring to?

**Say:** The labels refer to how much cream, or fat, is still in the milk when it is bottled.

**Ask:** Listen as you shake the jar. What do you hear? What do you see?

**Ask:** In what ways do we use butter when cooking and baking?

**Say:** We can use butter to add flavor, moisture, and texture to different recipes.

**Directions:** When the cream has clotted and becomes butter, you will see a ball of butter with a milky liquid at the bottom. If necessary, pour the contents of the jar onto a strainer to strain out the milky liquid so you are only left with the butter. Allow the students to try their butter by spreading it on bread with a plastic knife.

**Ask:** What method did we use to change the cream into butter?

**Say:** The method we used is called "churning." This involves shaking or whipping the cream so the butter separates from the liquid.

**Ask:** What do you think would have happened if we had used milk instead of the heavy whipping cream inside the jar? Would it have become butter?

**Say:** The milk would not become butter because there is not enough fat in the milk to separate out. The heavy whipping cream has enough fat in it to separate out from the other milky liquids.

### MATERIALS NEEDED

- Jars with lids
- Heavy whipping cream
- Salt
- Strainer
- Bread
- Plastic knives

## ALTERNATIVE ACTIVITY: MILK TASTE TEST

**Say:** Today we are going to taste test different cream amounts in milk.

**Ask:** When you are at the grocery store, you can buy different kinds of cow's milk: whole, 2%, 1%, and skim. What do you think those labels are referring to?

**Say:** The labels refer to how much cream, or fat, is still in the milk when it is bottled.

**Ask:** How do you think the different kinds of milk will taste compared to each other?

**Directions:** Give each student a piece of paper, writing utensil, and 4 small paper cups. Have students divide the paper into four quadrants by drawing a horizontal line across the middle of the page and a vertical line across the middle of the page. Label each quadrant with one of the milk types: whole, 2%, 1%, and skim. Then, have students label each of their four small paper cups with one of the milk types: whole, 2%, 1%, and skim. Tell students not to drink the milk until you tell them. Fill one small paper cup with skim milk for each student. As you are filling the cups, ask the following questions to keep students engaged:

**Ask:** What color is the milk?

**Ask:** Are there any bubbles or cloudy spots in the milk?

**Ask:** What does it smell like?

**Directions:** After all students have a cup of skim milk, have them taste it. On their piece of paper, have them draw an emoji that best represents what they thought of the milk in the corresponding quadrant (smiley face, frowny face, etc.) Repeat this process for each milk type.

**Ask:** Which was your favorite and why?

**Ask:** What was the difference between the one you liked the most and the one you liked the least?

### MATERIALS NEEDED

- 4 small paper cups per student
- Piece of paper for each student
- Writing utensil for each student
- Skim milk
- 1% milk
- 2% milk
- Whole milk

## ADDITIONAL ACTIVITIES

- *Let's Make Butter!* video from SciShow Kids  
[youtube.com/watch?v=eILYWF8T8g0](https://www.youtube.com/watch?v=eILYWF8T8g0)
- *Milk Song* video from Go Noodle  
[youtube.com/watch?v=0xZGW0b-yYE](https://www.youtube.com/watch?v=0xZGW0b-yYE)



Learn more about Farm to After School  
[education.ne.gov/ns/farm-to-school/farm-to-after-school](https://education.ne.gov/ns/farm-to-school/farm-to-after-school)