**Grass to Milk**

**Grade Level(s)**

PreK-Kindergarten

**Estimated Time**

30 minutes

**Purpose**

Students will develop an understanding of where milk comes from while creating their own ice cream and butter samples.

**Materials**

* Book: Grass to Milk
* Ice Cream, Ice Cream Song
* Ice cream: Half and Half, sugar, vanilla extract, ice and rock salt
* Small Ziploc (enough for each student)
* Large Ziploc (enough for each student)
* Mason jar (1) or baby food jars
* Butter: Heavy whipping cream, yellow food coloring and salt
* Crackers
* Napkins
* Plastic knife

**Vocabulary**

**Dairy-** containing or made from milk.

**Half and Half -** a mixture of milk and cream.

**Heavy Whipping Cream-** least 36 percent of which is milkfat.

**Cows-** a fully grown female animal of a domesticated breed of ox, kept to produce milk or beef.

**Ruminant-** an even-toed ungulate mammal that chews the cud regurgitated from its rumen. The ruminants comprise the cattle, sheep, antelopes, deer, giraffes, and their relatives.

**Interest Approach – Engagement**

1. Ask the question: How is ice cream made? How is butter made? What if I told you it begins with a cow and grass?
2. Read the story “Grass to Milk”

**Background - Agricultural Connections**

Butter and ice cream have been a huge part of the American diet for a very long time! Both come from milk that dairy cows produce. On a typical dairy farm, cows are milked 2-3 times per day. The milk is never touched by human hands until it is opened after being purchased at a grocery store. This is made possible by mechanical milking machines that imitate a calf suckling, and mechanized processing from farm to final product.

The biggest dairy producing states are California and Wisconsin, because there is plenty of rolling land for cows to graze on. (Description came from IALF)

Shaking agitates the fat molecules in the cream, which clump together to make butter! Before butter was made in factories, like it is today, people made butter from cream using a **butter churn**. Churns had a rotating arm inside a barrel that would agitate the fat molecules in the butter, just like shaking it does.

Today, butter is made by machines that age and agitate the cream on their own.

**Procedures**

1. Sing the “Ice cream, Ice Cream” finger play song. Teach the lyrics to the students before singing the whole song as a group.



1. Instruct the students to go back to their spots at the table.
2. Make one large jar of butter as a class or have the students make their own in baby food jars (jar, heavy whipping cream, salt and yellow food coloring). Shake!
3. Pass out ice cream ingredients (2 bags, ½ cup half and half, 1 tablespoon of sugar, and 1 tsp of vanilla, ice and rock salt). Shake!
4. Serve!
5. Take home sheets

**Author(s)**

Morgan Ball

**Organization Affiliation**

Linn County Farm Bureau Education Outreach Program

**Skills we are practicing with this lesson:**

* 1. Language: Uses language to sing new lyrics in a song.
  2. Social Development: Cooperates with others during group activities.
  3. Social Development: Understands the concept of taking turns.
  4. School Readiness: Follows step directions.
  5. School Readiness: Listening skills and strategies.