

HARVEST of the MONTH in the CLASSROOM



DAIRY

HISTORY

People have been drinking animal milk for as long as we have had domesticated animals. The ancient Egyptians produced dairy products, but reserved it for royalty! In European nations, it wasn't until the 14th century that cow's milk became more popular than sheep's milk. Dairy cows were brought to North America by Europeans in the early 1600s, but it took hundreds of years, until 1884, for the glass milk bottle to be developed, and it wasn't until the 1930s that the milk carton was used!

FUN FACTS

Neolithic herdsman from Central Asia may have discovered yogurt by accident, when milk curdled and thickened!

There are over 800 different breeds of cow and six different breeds of dairy goat. Goat milk is popular outside of the U.S.

The average cow produces six gallons of milk per day, or about 55 pounds. This adds up to about 350,000 glasses of milk in a lifetime.

There are about 1,200 dairy farms in New England, but all 50 states have dairy farms.

FARMER BIO



High Lawn Farm (Lee, MA) owns 1,600 acres of land, and actively farms 460 of those acres and the rest is protected woodland for wildlife. They grow hay and corn to feed their herd of Jersey cows, which they milk. They produce a wide range of dairy products, and cheese (Italian Cheddar, Blue, and Vache are just some of the cheeses they make!) is their favorite. Their products are available at their farmstead creamery, and they ship to grocery stores, restaurants, and schools throughout New England.

MAKING BUTTER

Grades K-5 • 30 minutes



DAIRY

OBJECTIVES

Students will learn how to make butter and understand how cream changes form for better preservation.

ESSENTIAL QUESTIONS

- Where does food come from?
- What is butter?
- Where does butter come from?
- How can we feed ourselves?

MA STATE FRAMEWORK(S)

K-3 Physical Science Standards
K-PS1-1
2-PS1-4

MATERIALS NEEDED

An old-fashioned butter churn or picture of one. Following list per group:

- 1 cup whipping or heavy cream at room temp.
- Plastic jar that seals securely
- Two or three marbles
- Colander
- Bowl
- Wooden spoon
- Butter knife
- Crackers
- Small paper cups

PROCEDURE

An hour before beginning this activity, remove the cream from the refrigerator. Cream at room temperature will turn into butter more quickly than cold cream.

Introduction

Tell the students that many food products are made from milk. Ask them to list as many as they can. Explain that you will be reading a few riddles and they need to guess which milk product you are describing.

Cold and creamy; a frozen treat; in a cone or a shake; it can't be beat! (ice cream)

A thick, tart, custard; fruit flavored or plain; curdled or cultured; with a funny name. (yogurt)

Rich, creamy, yellow; salted or sweet; on toast or corn; it's good to eat. (butter)

Explain that they will get a chance to make their own butter. Ask the students how they think butter is made? Record their ideas. Show them an old fashioned butter churn or a picture of one. Ask them how they think it was used?

Lesson developed in partnership with:
[Island Grown Initiative](http://IslandGrownInitiative.org)

MAKING BUTTER

Page 2



Divide the class into two or three groups of eight to ten students each. Give each group a half-pint of cream, a plastic jar and two or three clean marbles. Direct them to add the cream and marbles to the jar and fasten the lid securely. Ask the students why marbles are put in the container with the cream.

Have one student in each group shake their jar and ask everyone to listen to the sound of the cream and the marbles in the jar. What do they think will happen to the sound as the cream begins to thicken? Ask the students to predict how long it will take to make butter. Have each group record their predictions and starting times.

It can take 5-10 minutes to make a batch of butter! Take this time to teach the class a traditional butter making song ("Butter Cake") to sing while shaking the jar. Explain that as the butter was passed from child to child they sang this song, changing the name each time. When the next verse begins, the jar is passed to another student who continues the shaking. Or teach the class a more lively modern song, Shake It! (see below), passing the jar after each chorus. Take breaks periodically to listen to the sound of the marbles in the jar. When do they notice a difference in sound? You can also turn the process into a competition to see which group can make butter first.

When the students see a lump of butter surrounded by a thin liquid, have them record the finish time. Ask whether they know the name of the liquid that is formed when making butter? (Buttermilk) Direct the students to place a bowl beneath a colander and carefully pour the buttermilk off. Pour the buttermilk into another container and chill for tasting later.

With the colander over the bowl, have the students wash the butter by pouring cold water over it to rinse off any traces of buttermilk. Direct them to gently press the butter against the side of the colander with a wooden spoon to be sure all the water is out. Then have them place their butter in a small bowl. A half-pint of cream will make approximately a quarter pound of butter.

Now it's time to enjoy the taste of fresh homemade butter. If the students will be eating the butter on salted crackers, they do not need to add salt. Otherwise, each group can add a pinch of salt and mix it into the butter.