

Farm to Fridge

^ Milk Comes From A Cow?

A lesson based on the book, Milk Comes From A Cow? by Dan Yunk.

This book was financed by the Kansas Farm Bureau Foundation for Agriculture on behalf of Kansas Farm Bureau, The Voice of Agriculture. It was written to educate young people, parents and teachers about where our food comes from.

America's food supply is safe, affordable and abundant but also vastly misunderstood by the consuming public. It is the intention of Kansas Farm Bureau to improve the public's knowledge about the importance farming and ranching plays in our quality of life.



BACKGROUND INFORMATION:

Ask the students, "Where does milk come from?" *Anticipated responses: the refrigerator, the grocery store, a cow ...* Listen to *Milk Comes From A Cow?* to find out. *Read aloud to the class.*

You followed Kailey in *Milk Comes From a Cow?* as she traveled to a dairy farm to learn that milk does come from a cow and is sold at the grocery store. But, how does milk get from the farm to our cereal bowl?

The Milk Process:

- Begin by reviewing that dairy cows produce milk for people to drink. Dairy cows live on a dairy farm where farmers milk them morning and night. The milk you get from the farm is called raw milk.
- Explain to the students that today you will learn how the milk gets from the farm to the store for us to drink and enjoy. Begin explaining that a tank truck driver picks the milk up from the farm. The milk trucks have shiny metal tanks designed to keep the milk cold. They pump the milk into the tank where it is cooled to 38°F. Before the truck leaves the dairy farm, the milk is tested for safety and regulation purposes.
- The milk is then taken to the dairy processing plant. When the milk arrives, it moves through a series of pipes to special machines. As the milk moves through the plant, it undergoes some special changes before it is put into bottles or cartons for us to drink.

Level: Grade K-2

Subjects/Standards:

Science K-2
Standard 2: Physical Science,
Bookmark 1: *The student will develop skills to describe objects.*

Student Learning Outcomes:

The students will:

- Explain the journey of milk from the dairy farm to the consumer.
- Will know the correct terms used in the dairy processing plant and transportation.
- Will be able to identify dairy products and beverages.

Activity Description:

- The students will make butter and complete a worksheet. They will also do a worksheet on the story of milk.

Estimating Teaching Time:

60 minutes.

The Milk Process:

- These changes are called **pasteurization** and **homogenization**.
- Pasteurization is where the milk is heated to kill any germs that would make the milk unsafe or cause it to spoil. After the milk is heated, it is then cooled very quickly. When this process is finished, it is called pasteurized milk.
- Then ask the students if they have heard of the word homogenization before. You can show them the word on the milk label. After showing them, go on to tell them how milk undergoes homogenization.
- The process of homogenization is where the butterfat or cream in the milk is mixed in to give it a smooth taste. If milk were not homogenized, the cream would rise to the top and we would have to either shake or stir the milk before drinking it.
- Butterfat or cream is sometimes removed from milk to make it a low fat milk. It is then called 1% milk. You may then ask the students what their favorite kinds of milk are. Accept all the answers.
- After the milk undergoes the changes, special machines are used to package the milk. The special machines put the milk into bottles or cartons, seal the containers, and load them into milk crates.
- The milk is stored in a large refrigerated room until it leaves the dairy processing plant. Then trucks deliver them to stores and schools.
- You can ask the students if they know anyone that works at a dairy processing plant. Explain to them there are several people who help process milk. Some of the main jobs are:

Dairy plant manager- controls the machines that process milk.

Lab Technicians- test the milk samples.

Dairy Plant Worker- keeps the machines running. The machines process the milk and put into containers.

Dairy Truck Driver- delivers the milk to stores and schools.

Additional Facts:

- Humans never touch the milk with their hands.
- Milk is one of the safest foods you can consume.
- Milk is tested to make sure it is fresh and clean.

ADDITIONAL RESOURCES & LITERATURE:

*MILK COMES FROM A
COW*

BY DAN YUNK

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Dairy Spot

www.dairyspot.com

Mid-Atlantic spot for
dairy

Virginia Cooperative
Extension

[www.sites.ext.vt.edu/
virtualfarm/main.html](http://www.sites.ext.vt.edu/virtualfarm/main.html)

Visit a virtual dairy farm

Moo Milk

www.moomilk.com

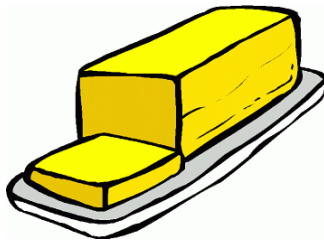
Virtual tour–
The story of milk

New Vocabulary:

- Pasteurization
- Homogenization
- Dairy plant manager
- Lab Technician
- Dairy Plant Worker
- Dairy Truck Driver

What Dairy products are made from milk?

- Cheese
- Yogurt
- Cottage Cheese
- Ice Cream
- Sour Cream
- Butter



Activity: Let's Make Butter!

- Start out by asking the students how they use butter. The students will respond with a variety of answers. Explain to them how butter comes from a dairy cow. Hand out the "Let's Make Butter" worksheet.
- Split your classroom into groups of three. Have one student line up cafeteria style to get the materials. Have a different person in the same group get their ingredients. Once the group has everything they need, begin the butter making process.
- Have the students pour the whipping cream into a clean plastic jar until the jar is half full. Screw the lid on tight. Have the students take turns shaking the jar.
- When the whipping cream thickens into whipped cream, stop and let the students see how it has changed.
- Spoon out a scoop of the whipping cream and demonstrate to the students how thick it has gotten. Have the students describe the changes that have occurred.
- Put the lid back on the jar and have the students continue to shake it for about 10 minutes. Yellow clumps will form as the butter fat particles begin to stick together.
- You may then have the students record on the "Let's Make Butter" handout what the pale yellow clump is and what the remaining liquid is.
- Pour off the milk and wash the butter by adding cold water. Pour off the water and use the wooden spoon to remove any excess milk. Continue to work the butter until milk is gone.
- You may add salt if you would like and serve the butter on whole wheat crackers for all the students to try. Explain to the students throughout this activity that you can see how the butterfat is removed from the cream to make butter.

EQUIPMENT:

- "Let's Make Butter" handout
- Milk Label

Each group needs a:

- Plastic jar with tight fitting lid
- Bowl
- Wooden spoon
- Cup
- Plastic knife

INGREDIENTS:

- 1 pint whipping cream (18-20 students)
- 1 cup cold water
- 1/4 teaspoon salt (optional)
- Whole wheat crackers

Prepare Ahead:

- Make copies of the "Let's Make Butter" and "Story of Milk" handouts.
- Gather enough jars, bowls, and spoons so the whole class can participate.
- Set up the ingredients and materials on a table for the students to get at the instructed time.

Let's Make Butter

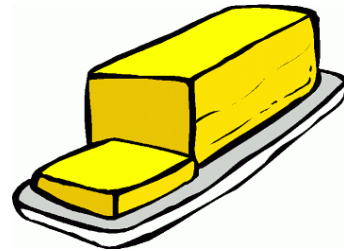
^ Milk Comes From A Cow?

Name _____

How to make butter!

8 oz whipping cream
1 cup cold water
1/4 teaspoon salt
whole wheat crackers

wooden spoon
jar with lid
cup
bowl



Pour the cream into the jar. Put the lid on the jar and make sure it is on tightly. Start shaking the jar. Watch the cream change from cream to butter and milk. Pour the milk off into the measuring cup and add the butter to the bowl. Add 1 cup cold water and gently mix the butter with the water. Use the wooden spoon to press the butter to remove any remaining milk and water. Add the salt and mix with the butter. Spread the butter on whole wheat crackers and enjoy the taste of butter.

1. Describe changes that have occurred in the jar.

2. What is the pale yellow clump?

3. What is the remaining liquid?

4. Did you like the taste of the butter?

Let's Make Butter

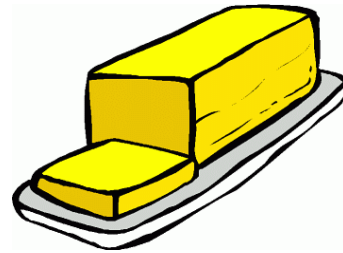
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Name _____ **Answer Key** _____

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1. Describe changes that have occurred in the jar.

The cream starts to get thick. Yellow clumps will start to form. Butter fat particles start to stick together.

2. What is the pale yellow clump?

Butter

3. What is the remaining liquid?

Fat free milk

4. Did you like the taste of the butter?

Your own opinion

Farm to Fridge

Name _____

Cut out the pictures and glue above the correct sentence.

1. Dairy cows on the farm are milked every day. **2.** Milk is stored in a cooling tank on the farm.

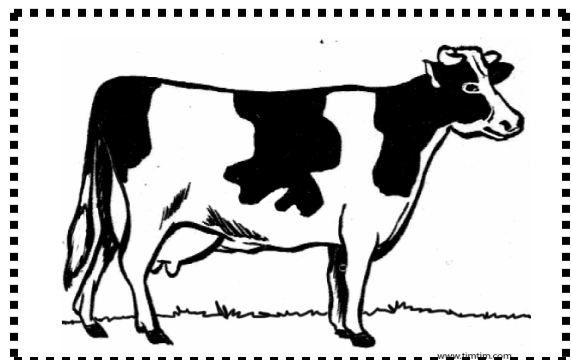
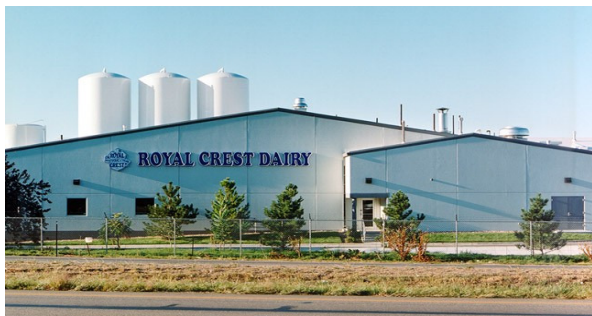
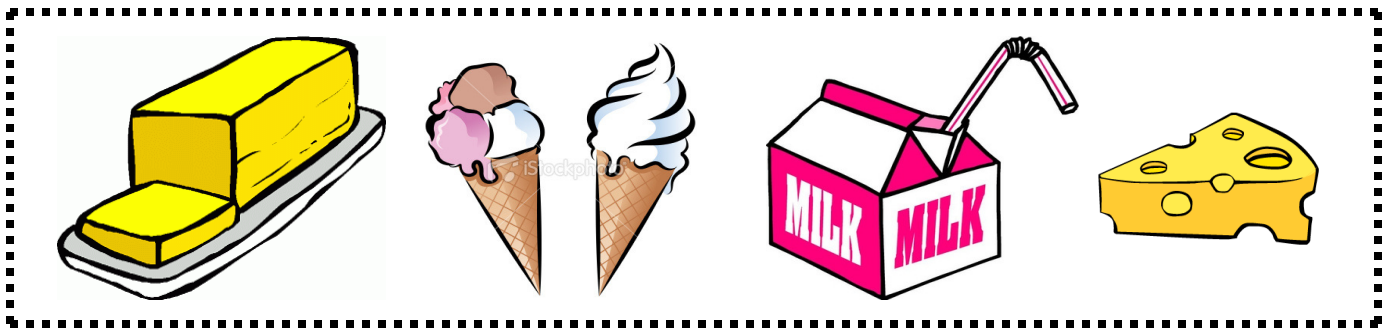
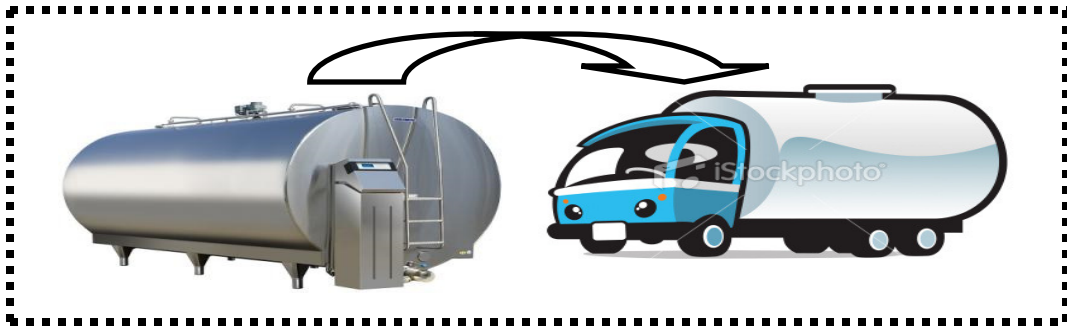
3. Milk is pumped from the cooling tank to the truck to be taken to the milk plant.

4. The dairy plant is where milk is processed so it is safe for us to eat & drink.

5. The milk truck delivers the products to stores and schools.

6. Many good things to eat and drink are made from milk.

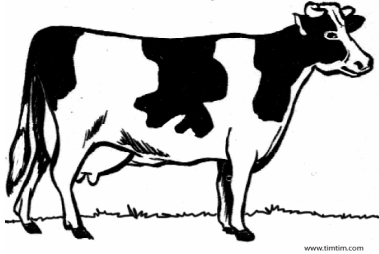




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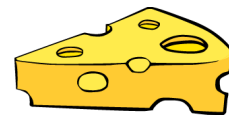
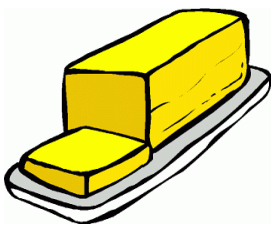
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