Fun Facts to Accompany
Milk Comes From a Cow?

Milk Comes From a Cow? *(Pre-3rd) was written to educate youth about the dairy industry. This guide provides dairy industry facts, useful definitions, answers to frequently asked questions, and additional websites for teachers to utilize in their classrooms.*

While reading Milk Comes From a Cow?, the following comparisons demonstrate how much a cow eats and drinks daily.

"A cow eats about 80 pounds of hay, corn and other grasses." (Page 8)

You can equate this to…

1440 slices of bread or 480 hamburgers or 206 baked potatoes

"They also drink 30 to 40 gallons of water in a day." (Page 8)

You can equate this to nearly a bathtub full of water.

Fun Facts:

2006 Kansas Dairy Facts:

Number of licensed dairy farms:	430
Number of dairy cows:	112,000
Pounds of milk produced annually:	2.3 billion
Average dairy herd size:	124 cows

Kansas ranks 17th in milk production in the United States!

- U.S. Department of Agriculture National Agricultural Statistics Service

Meat comes from beef cattle and milk products come from dairy cows. Examples of products made from milk include…

- ✓ Cheese
- ✓ Butter
- ✓ Yogurt
- ✓ Sour Cream
- ✓ Cream Cheese
- ✓ Ice-Cream

25 gallons of milk can make…

9 gallons of ice-cream *-or-* 25 pounds of cheese *-or-* 11 pounds of butter

Calcium and Vitamin D, both abundant in milk, help form strong bones and teeth.

A cow has over 40,000 jaw movements every day!

DAIRY DEFINITIONS:

HOLSTEIN [**hohl** – steen]: a dairy breed that is black and white spotted. A Holstein's spots are unique --- no two patterns of spots are alike. Holsteins produce the most milk and are the most popular breed of dairy cattle. A mature Holstein weighs about 1,500 pounds. The normal productive life is six years for a Holstein cow.

GUERNSEY [**gurn** – zee]: a dairy breed that has a fawn, which is a light yellowish-brown, body with white markings and a white tail. Guernseys produce milk that has a distinct golden color. A mature Guernsey will weigh 1,150 pounds.

JERSEY [**jur** – zee]: a dairy breed that has a tan body and brown feet. Jerseys produce milk with the highest protein and fat content. Jerseys are the smallest breed of dairy cattle, weighing only 900 pounds at maturity.

BOVINE: relating or belonging to the group of ruminant mammals which consists of cattle, bison, and buffalo

CATTLE: a group of bovine, both male and female, raised primarily for the production of milk and meat

BULL: an uncastrated male bovine

STEER: a castrated male, raised for producing meat

COW: a mature female who has given birth. A dairy cow usually has her first calf at two years old, at which time she starts to produce milk.

HEIFER: a young female who has not given birth to a calf

CALF: a male or female bovine that is less than a year old

UDDER: a large bag between a cow's rear legs where milk is stored. It can hold 25 to 50 pounds of milk!

MILKING PARLOR: a special building where the udders are washed and then attached to the milking machine. Cows are milked two times daily, 365 days a year. Milking by hand, a farmer can milk six cows in an hour. Today, the machines in milking parlors can milk up to 100 cows in an hour.

RUMINANT: the name for animals, like cattle, sheep, goats, deer, and camels, which have four chambers of their stomachs: the rumen, reticulum, omasum, and abomasum.

1. The RUMEN [**roo**-min] is the first chamber, which holds up to 50 gallons of partially digested food. This is where the cud comes from.
2. The RETICULUM [ri-**tik**-y*uh*-l*uh* m] is often referred to as the hardware stomach. If a cow accidentally eats a piece of hardware, like a nail or a piece of fencing, it lodges here, causing no further damage. Digestion continues on to the next chamber.
3. The OMASUM [oh-**mey**-s*uh* m] filters even more minerals and nutrients out of the feed for the animal to digest.
4. The ABOMASUM [ab-*uh*-**mey**-s*uh* m] is known as the true stomach, since it acts similar to a human's stomach. Stomach acids are used to complete the cow's digestion process.

CHEWING THEIR CUD: Food eaten by cattle is first chewed to soften it, swallowed, and then is returned to the animal's mouth to continue chewing. A cow can spend up to 8 hours a day chewing its cud. This process helps the animal get the most out of difficult to digest foods, like grass.

Frequently Asked Questions:

What happens to the milk after the cows have been milked?

After the cows are milked, the raw milk is pumped into refrigerated storage tanks, where it is cooled to 38°F. A truck comes each day to haul the milk to the processing plant. Before the truck leaves the dairy farm, the milk is tested for safety and regulation purposes. Milk trucks have shiny metal tanks designed to keep the milk cold. The milk then arrives at a processing plant, where it goes through pasteurization and homogenization.

Pasteurization is heating the milk up to 162°F for 16 seconds to kill any bacteria, germs, or yeast in the milk. It is then cooled immediately back to 38°F. Homogenization is the process in which the butter fat, also known as the cream, is broken up and blended in with the rest of the milk. The milk is then bottled and shipped to grocery stores, schools, and restaurants. Dates are printed on the milk jugs to show how long the milk will stay fresh. On average, it only takes 2 days for milk to go from the cow to the grocery store.

Why is the baby calf cleaner than the cow in the picture? (page 8)

Dairy calves are separated from their mothers within a few hours of birth and kept in a different area. This decreases the risk of passing diseases. This separation also allows the cow to start producing milk for human consumption. After receiving its first milk from its mother, a calf is then fed a milk replacer and is commonly known in the industry as a bucket calf. Only three days after calving, the cow is producing milk solely for human consumption.

Why does the cow look dirty in the picture? (page 9)

A cow's body, legs, and tail may appear to be dirty, but the udder is the important area of concern. Upon entering the milking parlor, each cow's udder is thoroughly cleaned and disinfected before being attached to the milking machine, ensuring that the milk will be as sanitary as possible. In fact, the dairy industry works hard to provide a safe milk supply, as milk and dairy products are among the most tested and regulated foods in the United States.

What are the differences between different milks?

The percent of milkfat distinguishes one type of milk over another. Today, most manufacturers remove the milkfat and then add some back based on what type of milk is desired. This ensures one gallon of whole milk will be consistent in taste and in nutritional value as the next gallon.

- **Whole Milk** has 3.5% milkfat, which gives this milk its rich, creamy texture. It is recommended for children to drink whole milk up to at least two years old. The fatty acids in whole milk are important to brain development and the nervous system. It is not fortified with Vitamin A, like the other low-fat or nonfat milks.

- **2% Reduced-Fat Milk** has 2% milkfat, as the name implies, but still has a taste similar to whole milk. It is fortified with vitamins A and D, since these vitamins are lost when removing the milkfat.

- **1% Low-Fat Milk** has even less milkfat, only 1%. It, too, is fortified with vitamins A and D. It is a popular choice among women or those on diets.

- **Skim Milk** has as much milkfat as possible removed, hence why it is also known as nonfat milk. It only has ½ gram of fat per serving and 45% less calories than whole milk. Despite popular belief, a glass of skim milk provides all the same nutrients as a glass of whole milk, just with less fat and calories.

- **Chocolate Milk** is typically made with reduced-fat, low-fat, or skim milk with the addition of cocoa and other sweeteners. The chocolate only adds extra calories, approximately 60 per serving, and a little caffeine, but does not add any fat to milk. Other flavored milks, like strawberry or banana, are similar.

- **Buttermilk**, as referred to on the dairy farm, is the liquid that remains after the butter has been separated from the whole milk. However, commercially, it is made by adding lactic acid to low-fat or skim milk. Buttermilk is commonly known as 'sour milk' and is used heavily in cooking, for example buttermilk biscuits or pancakes.

- **Acidophilus Milk** (pronounced as-i-**dof**-uh-luhs) is low-fat or skim milk that has a live bacterial culture, lactobacillus acidophilus, added to make the milk more digestible for some people.

The chart below depicts the calories, fat, saturated fat, and calcium per serving in each type of milk. A serving size is 8 fluid ounces, or 1 cup. Notice that each provides the same amount of calcium!

	Calories/ Serving	Fat (g)/ Serving	Sat. Fat (g)/ Serving	Calcium (mg)/ Serving	% Daily Value of Calcium
Whole	152	8	5	285	29
2% Reduced Fat	122	5	3	285	29
1% Low-fat	101	2	2	285	29
Non-Fat (Skim)	90	1	1	285	29

Figures from the Dairy Council of California, http://www.dairycouncilofca.org/Milk-Dairy/NutritionMain.aspx

For additional information, visit these websites and many more:

- Moo Milk
  - www.moomilk.com
- Virginia Cooperative Extension
  - www.ext.vt.edu/resources/4h/virtualfarm/
- USDA Animal Improvement Programs Laboratory
  - http://aipl.arsusda.gov/kc/kcindex.html
- Best Food Nation
  - http://www.bestfoodnation.com/dairy.asp

Provided by Kansas Farm Bureau 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.

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