

The Dairy Shoppe

Wyoming Social Studies, Mathematics

Objectives:

- Learn about the history of the dairy industry.
- Know what advancements have been made in the dairy industry.
- Learn about dairy cattle.
- Understand the many aspects involved in running a business.

Background:

Dairy cows have the ability to change grass and grains, the kind people can't eat, into milk—a nearly perfect food! The dairy cow can do this because she is a ruminant, an animal with four compartments to her stomach. Ruminants do not have any upper front teeth. They eat by wrapping their tongues around their food and pulling it into their mouths.

Dairy cattle were brought to America during the early Viking voyages in the 1000s, Columbus' voyages in 1492, and the colonists' settlements in the early 1600s. When pioneers settled the West, they took dairy cattle with them for milk, cheese, and butter. Later, cities began growing rapidly and it was harder to get milk from the farm to the people in the city. This problem was solved when railroads became a form of transportation. Milk was then transported to many places, some as far as 50 miles away.

Nowadays milk is supplied to consumers daily. Before the late 1600s, milk was only available during the spring, summer, and fall because cows could feed on pastures during these times of the year. When the colonists began saving some grain and hay for the cattle to eat during the winter, cows started producing milk all year long.

Dairy farming occurs in every state of the United States. However, California, Wisconsin, New York, Minnesota, and Pennsylvania are leading milk-producing states. On today's dairy farms, cows are milked two or three times a day with special milking machines.

Farmers, using automated equipment, milk dairy cows and store the fresh milk in a refrigerated tank. The electric milking machine marked the end of the standard milking stool and the tiring job of milking by hand. With just two of these portable milking machines, a farmer can milk a dozen cows in a quarter of the time it used to take by hand.

Dairy farmers are careful to keep the milk clean and avoid exposing it to the open air, which might cause contamination. After the milk is taken from the cows, it is



Standards

Social Studies

Production, Distribution,
& Consumption: 3.1

People, Places,
& Environments: 5.4

Mathematics

3rd Grade:
Number Operations
& Concepts: 1.3

4th Grade:
Number Operations
& Concepts: 1.3

Materials

- Poster board
- Markers, crayons, or colored pencils
- Construction paper
- Glue or rubber cement
- Chocolate milk (in small cartons)
- White milk (in small cartons)
- Paper or plastic cups
- Ice
- Cooler or ice bucket

Estimated Time

45 Minutes

Grades 3-4

notes:

pumped through a clear plastic pipe to a refrigeration tank. Special refrigerated tank trucks then pick the milk up and transport it to the dairy processing plants, where the milk is pasteurized to kill any disease-causing bacteria.

All dairy cows are female and must have a calf before they can produce milk. Heifers are female calves less than one year of age, and after cows reach two years of age they usually give birth to their own calves.

Dairy cows spend six and a half hours a day eating hay, silage, and grain. Silage is fermented corn, wheat, or hay with the stalks and leaves. Cows eat 50 pounds of silage as well as 40 pounds of feed and hay each day, equaling 90 pounds. (The average American only eats four pounds of food a day.) Dairy cows also drink 25-50 gallons of water daily. This food and water turn into about 100 glasses of milk a day.

There are many different breeds of dairy cows and each breed varies in the amount of richness of the milk produced. Some dairy farmers keep several breeds of cows in the herd in order to maintain a consistent quality of milk. Holstein-Friesian cows are large black and white cows. They produce the most milk, but the least butterfat. Holsteins are the most popular breed in this country and adapt to all kinds of climates.

Activity Procedures:

1. Discuss the background information with the students.
2. Discuss the areas of dairy cattle and milk production.
3. Next, discuss with the students the elements of running a small business, such as a coffee shop or soda shop.

Students will need to know about:

- Managers:
Management styles
 - Kitchen Workers: Safe food handling/work ethic, responsibility
 - Counter Workers: Cleanliness/positive work ethic, responsibility
 - Cashier: Honesty/mathematical accuracy
 - Bookkeepers: Honesty/record keeping
 - Maintenance: Cleanliness/positive work ethic responsibility
 - Advertising: Promotion/sales
4. It is important to emphasize how each person has a vital role in the business, and how they must all work as a team for the business to be successful. Ask the students if they would like to open a “specialty drinks stand” called “The Dairy Shoppe” for other students in the school.

The stand could serve special drinks such as:

Iced Mocha:

chocolate milk served over a cup of ice.

Double Mocha:

double chocolate milk at a discounted price served over a cup of ice.

Choco Latte:

white and chocolate milk served together over ice.

*Students can make posters to advertise the sale of their products. The posters should include information such as the name of their business, when and where they will be selling their drinks, and what type of drinks they will be selling.

*This would also be a good opportunity for the students to talk with a local shop owner to learn more about a small business, and what subjects in school the shop owner now finds most helpful. Perhaps the students could write resumes stating their qualifications and experiences, fill out applications, and interview for specific jobs in the small business.

Additional Activities:

Invite in a small business owner or farmer/rancher to talk about their business. Have them focus on products and subjects needed for a career in that business.

Questions for Assessment:

- How would supply and demand affect the price a consumer is willing to pay?
- Determine how much of the profit will be distributed to those involved in the process of production, marketing and service.
- What is the ***most expensive*** part of running a small business?
- What is the ***least expensive*** part of running a small business?
- How might this business be run differently in a different location?

Materials Adapted from Illinois Agriculture in the Classroom.

vocabulary:

- *industry*
- *transportation*
- *consumer*
- *automated*
- *contamination*
- *silage*
- *accuracy*
- *promotion*
- *work ethic*
- *marketing*