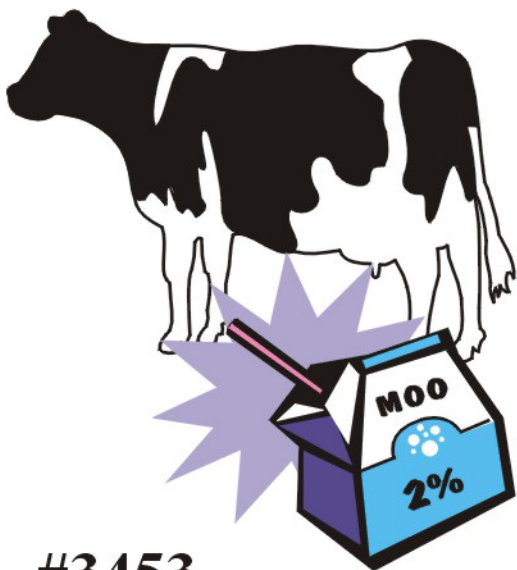


DAIRY FARM



#3453

OPEN-CAPTIONED
FILMS FOR THE HUMANITIES
1994

Grade Levels: 2-6

10 minutes

2 Instructional Graphics Enclosed

DESCRIPTION

Kate visits a dairy farm when a new calf is born. While there, she learns how cows are fed, milked, and cared for. Demonstrates how they are milked twice a day, and how the milk is stored. Also shows how it is collected, processed, and readied for the consumer.

ACADEMIC STANDARDS

Subject Area: Science

- Standard: Understands the genetic basis for the transfer of biological characteristics from one generation to the next
 - Benchmark: Knows that plants and animals closely resemble their parents (See Instructional Goal #1)
 - Benchmark: Knows that many characteristics of an organism are inherited from the parents of the organism (e.g., eye color in human beings, fruit or flower color in plants), and other characteristics result from an individual's interactions with the environment (e.g., people's table manners, ability to ride a bicycle) (See Instructional Goal #1)
- Standard: Understands the cycling of matter and flow of energy through the living environment
 - Benchmark: Knows that plants and animals need certain resources for energy and growth (e.g., food, water, light, air) (See Instructional Goal #4)
 - Benchmark: Knows the organization of simple food chains and food webs (e.g., green plants make their own food with sunlight, water, and air; some animals eat the plants; some animals eat the animals that eat the plants) (See Instructional Goals #2 and #4)

Subject Area: Geography

- Standard: Understands the characteristics of ecosystems on Earth's surface
 - Benchmark: Knows the components of ecosystems at a variety of scales (e.g., fungi, insects, plants, and animals in a food chain or food web; fish and marine vegetation in coastal zones; grasses, birds, and insects in grassland areas) (See Instructional Goals #2 and #4)

Subject Area: Technology

- Standard: Understands the relationships among science, technology, society, and the individual
 - Benchmark: Knows that new tools and ways of doing things affect all aspects of life, and may have positive or negative effects on other people (See Instructional Goal #3)
 - Benchmark: Knows areas in which technology has improved human lives (e.g., transportation, communication, nutrition, sanitation, health care, entertainment) (See Instructional Goal #3)

INSTRUCTIONAL GOALS

1. To present the sequence of a cow's life, from birth to becoming part of the milking herd.
2. To sequence milk processing, from the cow to the consumer.
3. To illustrate that technology and machinery aid the farmer.

4. To explain that farmers grow crops to provide food for animals and humans.

VOCABULARY

1. Holstein cow
2. gestation
3. disinfect
4. teat
5. udder
6. insulated
7. milk house
8. radio transmitter
9. stainless steel
10. pasteurization

BEFORE SHOWING

1. Discuss prior knowledge about milk and where it originates. Record all answers in a graphic organizer.
2. Discuss the importance of growing crops that benefit animals and people.
3. List items that might make the farmers' work easier.
4. Present factual information about a cow's gestation period. Emphasize that in order for a cow to produce milk, she must first give birth to a calf.

DURING SHOWING

1. View the video more than once, with one showing uninterrupted.
2. Pause the video before the section in which Kate is in the fields talking about the crops.
 - a. Identify and discuss the crops grown for the animals.
 - b. Identify and discuss the crops grown for people.

AFTER SHOWING

Discussion Items and Questions

1. Review graphic organizers completed before viewing the video. Add or clarify information.
2. Differentiate between the function of the udder and teat in the milking process.
3. Identify and discuss the types of milk that humans consume.
4. Generate a list of dairy products that originate from milk.
5. Retrace and enumerate the steps in obtaining and processing milk, from the cow to the warehouse.
6. Discuss the importance of cleanliness and the use of stainless steel in the process of obtaining milk and preparing milk products.
7. Refrigeration is important for preserving milk. Describe the importance of keeping milk cool in the following places:
 - a. milk house
 - b. trucks
 - c. warehouse
 - d. grocery store
 - e. homes
8. Identify and discuss the following:
 - a. the numbered collar on each cow

- b. the radio transmitter in the feeding station
 - c. information gathered on the computer
 - d. adjustments made by the farmer according to the computer information
9. Discuss the varied uses of corn in the dairy industry. Identify other ways in which corn benefits humans as well.
10. Many farmers have gardens.
- a. Why do they have gardens?
 - b. Who benefits from the gardens?
 - c. What are two vegetables that grow above the ground?
 - d. What are two vegetables that grow below the ground?

Applications and Activities

1. Sequence a timeline depicting a calf being born to becoming a cow as a member of a milking herd. (See INSTRUCTIONAL GRAPHICS.)
2. Have a milk-tasting experience. Determine differences among the following:
 - a. whole milk
 - b. 1% milk
 - c. 2% milk
 - d. skim milk
 - e. buttermilk
 - f. chocolate or flavored milk
11. Research various breeds of cows. Determine the following:
 - a. differences or similarities in physical appearance
 - b. breeds used to produce milk
 - c. breeds used to produce meat
12. Refrigeration is important in keeping milk fresh for the consumer. Experiment to observe what happens to milk when refrigeration is not present.
 - a. Measure 1 cup of milk into a container.
 - b. Store the container at room temperature.
 - c. Hypothesize possible outcomes.
 - d. Make daily observations noting color, texture, odor, and consistency.
 - e. Log information noted in observations.
 - f. Draw conclusions as to what happens to milk when refrigeration is not present.
 - g. Compare results to the original hypothesis.
13. Research Louis Pasteur and the pasteurization process of heating and cooling milk to eliminate bacteria.
14. Illustrate the 12-hour cycle of a milking cow.
15. Bring in assorted milk containers.
 - a. Assemble these in graduated sizes from the smallest to the largest.
 - b. Measure liquid into each.
 - c. Use comparative adjectives to describe the capacity of each container.
16. Develop a grain recipe which dairy cows might consume. Calculate the amounts needed for 1 cow, 10 cows, 25 cows, and 80 cows.
17. Role-play the people associated with a dairy farm.
 - a. farmer
 - b. persons involved with the maintenance of the cows
 - c. persons milking the cows

- d. persons collecting milk
 - e. persons processing the milk
 - f. persons testing the milk
 - g. persons working at a milk warehouse
18. Obtain corn on a stalk, and a bale of hay for sensory exploration. Elicit vocabulary to describe each.
 19. Create a tasting center where viewers can feel, smell, and taste garden vegetables. Include edible vegetable stems, leaves, and roots.
 20. Complete a worksheet illustrating technology in dairy farming. (See INSTRUCTIONAL GRAPHICS.)
 21. Visit a dairy farm or milk-processing plant.

INSTRUCTIONAL GRAPHICS

- COW TIMELINE
- TECHNOLOGY AND THE FARMER

RELATED RESOURCES

Captioned Media Program

- Farm Babies and Their Mothers (Revised) #3030
- Food: From Farm to City #2175
- Food Products #3127
- Mammals #3152
- Trip to the Farm, The #2536

World Wide Web

The following Web sites complement the contents of this guide; they were selected by professionals who have experience in teaching deaf and hard of hearing students. Every effort was made to select accurate, educationally relevant, and “kid-safe” sites. However, teachers should preview them before use. The U.S. Department of Education, the National Association of the Deaf, and the Captioned Media Program do not endorse the sites and are not responsible for their content.

- ZETAH FAMILY <http://www.geocities.com/Heartland/Hills/1092>
Meet the Zetah family who operate a dairy farm of Holstein cows in Minnesota. A tour of their farm depicts raising and caring for cows, along with growing their own feed.
- DAIRY FACTS FROM THE FARM TO YOU <http://www.mda.state.mi.us/kids/pictures/dairy/index.html>

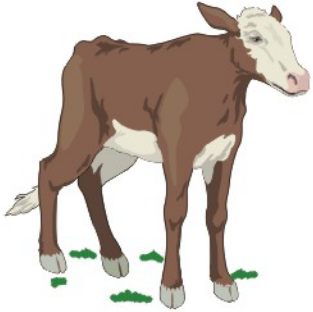
Pictorial tour of a Michigan dairy farm. Interesting facts accompany the pictures following the format of obtaining milk from the cow all the way to the grocery store.

- THE DAIRY ZONE http://www.milk.co.uk/toolbars/zone_milk.html

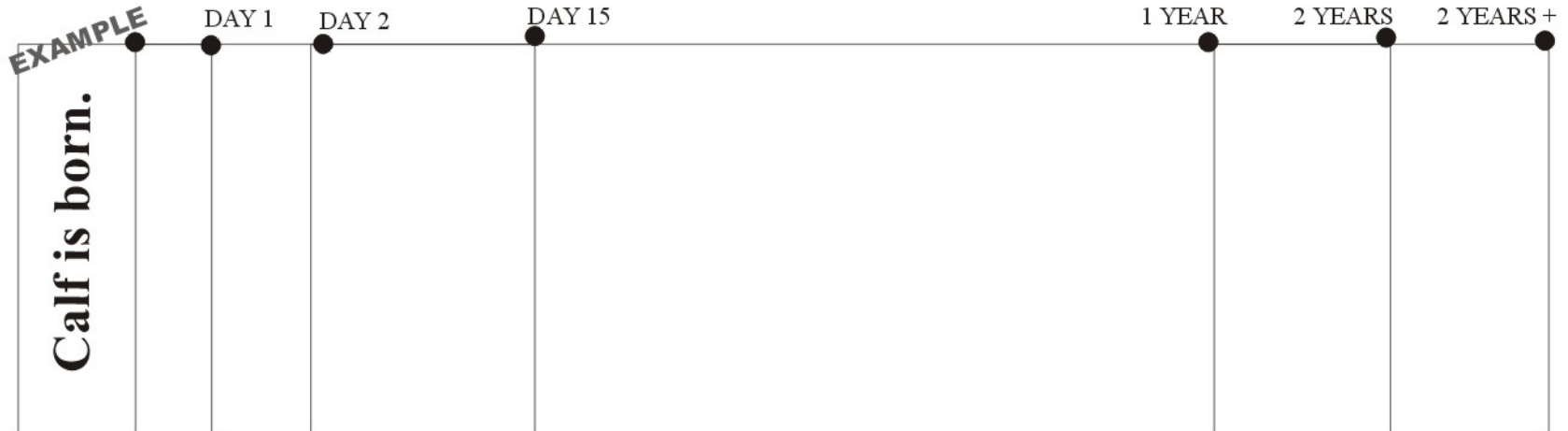
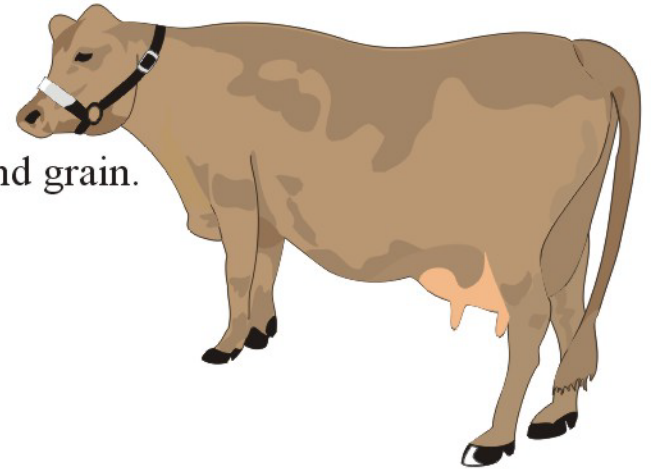
Everything you want to know about dairy products is located here, from the history of dairy farming in the United Kingdom to packaging milk in containers.

COW TIMELINE

Directions: Use the sentences below to finish the cow timeline. Put these in order, starting with the calf's birth.



- Calf is put into the barn.
- Calf lives in a hutch and eats milk and grain.
- Cow can be bred.
- Calf is born.
- Cow gives birth and gives milk.
- Calf spends 1 day with mother.
- Calf continues to grow and develop.



TECHNOLOGY AND THE FARMER

Technology and machinery can enable a farmer to be more efficient.

Write sentences about how **machines** help the farmer.



Write sentences about how **computers** help the farmer.





**PLEASE RETURN LESSON GUIDE
WITH VIDEO**

**Lesson guide also available
online at *www.cfv.org***

National Initiatives Team

Research to Practice Division

**Office of Special Education and
Rehabilitative Services**

U.S. Department of Education

