

# Introduction to Dairy

## Grade Level(s)

PreK and KG

## Estimated Time

30 minutes

## Purpose

Students will learn about the source of dairy products and the life cycle of a dairy cow.

## Materials

### ▪Links:

Website with worksheets and virtual resources: [www.linncoag.com](http://www.linncoag.com) -2020/21 drop down-December

Instructional video: <https://www.youtube.com/watch?v=0ZZKG4ZDybY>

Book-Tales of the Dairy God Mother link:

[https://drive.google.com/drive/folders/1wGptwX0X6vm0XQdtC3MYxQrojHe-yr\\_r?usp=sharing](https://drive.google.com/drive/folders/1wGptwX0X6vm0XQdtC3MYxQrojHe-yr_r?usp=sharing)

Optional videos:

- Holstein Dairy FarmChat <https://www.youtube.com/watch?v=hkcVyW7dvAg>
- Cinnamon Ridge FarmChat <https://www.youtube.com/watch?v=1yEtnmR0zXw>
- Milking goat FarmChat (comparing the production of cow milk to goat milk) <https://www.youtube.com/watch?v=yq0XJ0iRwBo>

### ▪Worksheets (available in kit or on website):

Parts of a dairy cow

Butter recipe sight book

Math game- cow picture

“Moo-velous” milk match worksheet

### ▪Other supplies needed (available in kit, on website or can be found in your classroom):

Dice

Black, brown and tan poms

Hay sample

## Vocabulary

- **Holstein** – the most common type of milk cow; a dairy breed that is uniquely black and white spotted
- **Jersey** – Another common breed of milk cow that is generally smaller and brown
- **Guernsey** – a third breed of dairy cow that is usually brown and white spotted
- **dairy cow** – a cow raised primarily for milk production
- **udder** - a large bag between a cow’s rear legs where milk is stored
- **Milking machine** – a gentle machine that collects milk from the cow’s udders
- **Milking parlor** – the place where cows go to be milked

### Interest Approach – Engagement

1. Tell students that **today we are going to learn about how milk is produced.**
  - a. Question prompts:
    - i. Where does milk come from?
    - ii. Where do we find cows? (farms)
    - iii. What kind of cow gives us milk? (direct students to the idea of dairy cows vs. beef cattle)

### Background - Agricultural Connections

- Dairy cattle are different from beef cattle. There are many breeds of cattle, and some are better at producing milk than producing beef. These are called dairy cattle.
- There are about six main breeds of dairy cattle.
  - **Holsteins** are the most common. These are the cows that Chik-Fil-A uses in advertising. They are notable for their huge frame, high milk production, low milk fat, and of course, black and white spots.
  - **Jersey** cattle are also quite common. They are noticeably smaller framed, and more tan in color. They have a higher butterfat and protein content than Holsteins, so often times the two breeds are crossed. This causes hybrid vigor, but also helps the offspring produce lots of milk that is high in protein. These hybrids are sometimes called “HoJos”. You can see a Jersey cow on page 15 of Milk Comes from a Cow?
  - **Brown Swiss** cattle are known for being strong and hardy. These cattle can be even larger than Holsteins and produce large amounts of butterfat and protein, like Jerseys. They’re not as commonly used in commercial production simply because of the Holstein’s capacity for milk production, but they are still a common, hardy, dependable breed.
  - **Guernseys** have some spots, but their coloring is more reddish-brown. They are sometimes called “Golden Guernseys” because their milk is actually slightly golden in color. This is because they produce large amounts of beta-carotene, which is a source for Vitamin A.
  - **Ayrshire** cattle vary some in color but are generally red and white spotted. They are known for being healthy animals.
  - **Milking Shorthorns** should not be mistaken with their beef breed counterpart. Milking Shorthorns are among the least popular but have loyal producers that appreciate their durability and grazing efficiency.

- The dairy animal's lifecycle does vary from the beef animal's lifecycle, though they are the same species.
  - Dairy calves will be weaned from their mother much sooner and fed milk replacer instead. This helps the producer collect more of the mother's milk, and can help keep the calf away from various kinds of bacteria, diseases, etc.
  - Calves are housed in hutches. They look something like large, plastic doghouses with a front lawn. This is also a step that producers take to decrease disease outbreaks. Nose to nose contact with other calves increases their risk of getting sick.
  - When a heifer (female calf) begins cycling, she will be bred.
  - Steers will be sold to a feedlot to be fed out with other beef animals.
  - There are some producers that raise bulls for breeding purposes.
  - Dairy cows (mature females) will not milk continuously after they calve; they generally dry off in about 305 days. Cows will continue to be bred until they become unproductive. This can vary between breeds, animals, and operations.
- Milking time can work differently at various operations.
  - Many operations milk twice a day, but some are moving to three times per day.
  - Cows will often know it is milking time and walk themselves to and from the milking parlor without much assistance. Cows enjoy milking time, as it relieves pressure and they can even get a snack!
  - Before and after milking, producers will clean the cows' udders as well as equipment. They also may take a couple squirts of milk from each cow before milking to check for discoloration, chunks, or other signs of infection. One thing in particular producers watch for is mastitis. If a cow does look like she is suffering from an infection or disease, her milk will not be added to the other cows' milk. She will be separated and treated.
    - If a cow is treated with antibiotics, her milk will not be collected for sale until the withdrawal period is up. Each antibiotic has a strict time limit on the label, so products from the animal (meat or milk) cannot be collected until that time limit is up. If a producer is found to have antibiotic residue in their bulk tank (milk collection tank), they will face huge fines or possibly get their farm taken away.
  - Most producers use automatic milking machines that latch onto the cow's udder like a vacuum. They will unlatch automatically when the cow is finished milking. Some producers use robotic milkers that don't require people to place the machine on the animal at all.

## **Procedures**

1. Read or watch the read-aloud video: Tale of a Dairy God Mother. Ask the students to review what the story was about.
2. Watch the instructional video, link provided above or on our website. Morgan will show pictures of different breeds of dairy cows, feed samples, and supplies used on the farm.
3. Review the parts of a dairy cow together as a class (optional: color the cow)

- Udder, horns, tail, hooves, ears and nose.
4. Hand out the “Moo-velous” milk activity and ask the students to glue each dairy food to one of the buckets.
  5. Incorporate dairy into your math curriculum. Pass out the dairy cow photo and a handful of poms to each student (mix of brown, black and tan). Roll the dice and instruct the students to count out that many poms to place as spots on their cow. You can go one step further and say a number and color or poms.
    - Make this activity one of your centers if you have enough dice and have the students work on their math individually.
  6. Send home butter recipe sight book.
  7. Optional: watch the local FarmChat videos-links provided above.

### **Organization Affiliation**

Resources compiled by Morgan Hibbs, Linn County Farm Bureau

### **Agriculture Literacy Outcomes**

T2.K-2.b Identify animals involved in agricultural production and their uses.

### **Iowa/ Common Core Standards**

- **Science:**
  - K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- **Language Arts:**
  - Kindergarten:
    - (Writing) W.K.5: With guidance and support from adults, respond to questions and suggestions from peers and add details to strengthen writing as needed.
    - (Writing) W.K.8: With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
    - (Reading) RI.K.1, DOK 1: With prompting and support, identify the main topic and retell key details of a text.
    - (Reading) RI.K.1, DOK 2: with prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).