

# Adopt-A-Cow: Dairy

## LESSON 1: WHERE DO MILK AND CHEESE COME FROM?

### KEY TERMS

Breed, Dairy, Cow, Calf

### EDUCATION STANDARDS

#### English Language Arts

- RL.1, SL.1, SL.2, SL.3

#### Science

- 1.LS3-1

#### Social Studies

- K.SS.1.C

#### Optional Moo Math:

##### Mathematics

- K.CC.B, K.OA.A.1, K.OA.A.2, 1.OA.A, 2.OA.A, 2.OA.B

### TIME NEEDED

**Part I:** Lesson, Mapping, and Video (30 min)

**Part II Option A:** Activity: Moo News (20 min)

**Part II Option B:** Activity Cow-Calf Matching (20 min)

**Optional Moo Math:** (30 min)

### MATERIAL LIST

#### Materials for the whole class:

- Computer
- Projector/TV/Promethean board
- PowerPoint

#### Materials for the individuals or teams

- Worksheets
- SD Dairy Map
- Moo News
- Cow-Calf Matching
- Moo Math



### EXPECTED LEARNER OUTCOMES

**OBJECTIVE 1** – Youth will be introduced to the dairy industry and where it exists in South Dakota.

**OBJECTIVE 2** – Youth will learn about a few dairy breeds in South Dakota and note the similarities and differences between dairy calves and their mothers.

### BACKGROUND

Eating and drinking dairy products is important as it provides nutrients like calcium, potassium, vitamin D, and protein. These are essential in maintaining the body and growing strong bones. According to the USDA, youth age 2 to 8 years require approximately two and a half cups of milk per day; while youth ages 9-18 require around three cups of milk.

South Dakota recognizes milk as its state drink. In SD nearly 190,000 dairy cattle reside producing around 375 million pounds of milk (USDA, 2023).

Dairy cattle can produce large quantities of milk which is used to make a variety of dairy products like cheese and ice cream. In the United States there are seven different breeds of dairy cattle: Holsteins, Red and White Holsteins, Milking Shorthorns, Jerseys, Brown Swiss, Guernsey, and Ayrshire.

### VOCABULARY

**Breed** – A group of animals within a species that have a distinctive appearance and characteristics.

**Dairy** – Milk based products, derivatives, and processes.

**Dairy Cow** – A cow raised by a farmer for milk production.

**Calf** – A young bovine animal in its first year is called a calf.



## ACTIVITY PREPARATION

Lesson is designed using a PowerPoint format. This is done to provide structure and speaking points. It also provides visual aids to help youth understand what is being discussed. In a less formal setting, a PowerPoint may not be appropriate, and educators may select not to use the formal presentation. Individual slides can be printed to provide visual aids.

If you want youth to mark their location on the map, be sure to have maps printed for each student. However, this can also be done as a group for younger students that may not be able to identify where they are on the SD map.

**Part II Option 1:** Moo News may be more appropriate for older audiences. This activity asks youth to use reading comprehension to identify clues about the appearance of different breeds. These clues are bolded to help them stand out even more.

The Moo News Dairy Line Up and breed matching worksheet can be printed so each student or group of students can read them. Additionally, each article is a slide in the PowerPoint if you would like to go through them as a group.

**Part II Option 2:** Cow-Calf Matching. Rather than leaning into reading comprehension like Option 1, this activity has youth looking for visual clues to identify which calf belongs to which cow. Youth will identify physical characteristics that are the same between cow and calf.

Print a copy of the Cow-Calf matching cards for each group. You may choose to limit the number of pairs that you have students match. To make it easier, limit it to four cow-calf pairs rather than six.

## ACTIVITY INSTRUCTIONS

*\*Detailed notes are contained within the PowerPoint notes section for each slide.*

- I. Dairy foods, where do they come from? (Slide 2)
  - a. Ask youth if they recognize the foods displayed.
  - b. What do they know about them?
  - c. What are they?
  - d. What do they have in common?
  - e. Where do they come from?
- II. Milk and Dairy Products Start Here (Slide 3)

Explain to youth that all their favorite dairy products originate on the farm with cows – specifically dairy cattle.
- III. It takes 48 hours to get from farm to store (Slide 4-5)

Slide 5 Video: Milk's Journey: 48 Hours in 48 Seconds (0:57) ([youtu.be/LVyLCqPIYeE?si=OzbpdgDh86PosMpl](https://youtu.be/LVyLCqPIYeE?si=OzbpdgDh86PosMpl))
- IV. Where are the Dairy cattle? (Slide 6)
  - a. Where do you see most of the dairy farming in SD?
  - b. Why is the eastern part of the state good for dairy farming? (Close to feed sources of corn and soybeans, close to transportation routes, and available workers)
- V. Let's meet a SD Dairy Farmer (Slide 7-8) ([youtube.com/watch?v=DNM1MJ6dC2w](https://youtube.com/watch?v=DNM1MJ6dC2w))
  - a. Here we will meet the Dairy farmer we will be following along with our adopted cow and calf.
- VI. Moo News (Slide 9-17) (Daily Moo News worksheet)

If we look closer at these dairy farms, we will find that there are a variety of different types of cows. Some are black and white, some are red, and some are brown. This is because they are different breeds. We may be more familiar to using the term breeds when we are talking about the dogs in our neighborhood. We may have a Labrador while our neighbor has a Chihuahua. These different breeds of dogs are known for different characteristics. This is true for cattle too. There are specific breeds of cattle that are better for producing milk than others. These are dairy breeds. Let's take a closer look at what those breeds are.

Read the Daily Moo News and have the students use context clues to match the cow pictures with the appropriate news article.



## VII. Are You My Momma? (Slide 18-19) (Matching Cards: Are You My Momma?)

Hand out the cow and calf cards and have the youth work together to match the mothers with their calves. Have them look at their cows and calves. Use the characteristics of the cows and calves to match them. Clues are given on the answer sheet.

## EXTENDED LEARNING

If you are looking for ways to incorporate dairy education further into your classroom, below are some resources that you can utilize. These do not have to be used in conjunction with this lesson, but whenever works for your classroom.

Note: the time needed to complete these activities is not included in the estimated time on the front page of the lesson.

- Moo Math Worksheets – These worksheets can be added into your math lesson or sent home as a bit of extra math practice.
- Interactive Dairy Cow Poster – This virtual poster allows you to further explore the different Dairy Breeds. [dairydiscoveryzone.com/legendairy-cow/](http://dairydiscoveryzone.com/legendairy-cow/)
- Type of Dairy Cows – Midwest Dairy has created this resource for exploring Dairy Breeds. [midwestdairy.com/farm-life/dairy-cows/](http://midwestdairy.com/farm-life/dairy-cows/)

## REFERENCES

United States Department of Agriculture. USDA. (2023). [nass.usda.gov/Statistics\\_by\\_State/South\\_Dakota/Publications/Livestock\\_Releases/Milk\\_Production/2021/index.php](https://nass.usda.gov/Statistics_by_State/South_Dakota/Publications/Livestock_Releases/Milk_Production/2021/index.php)

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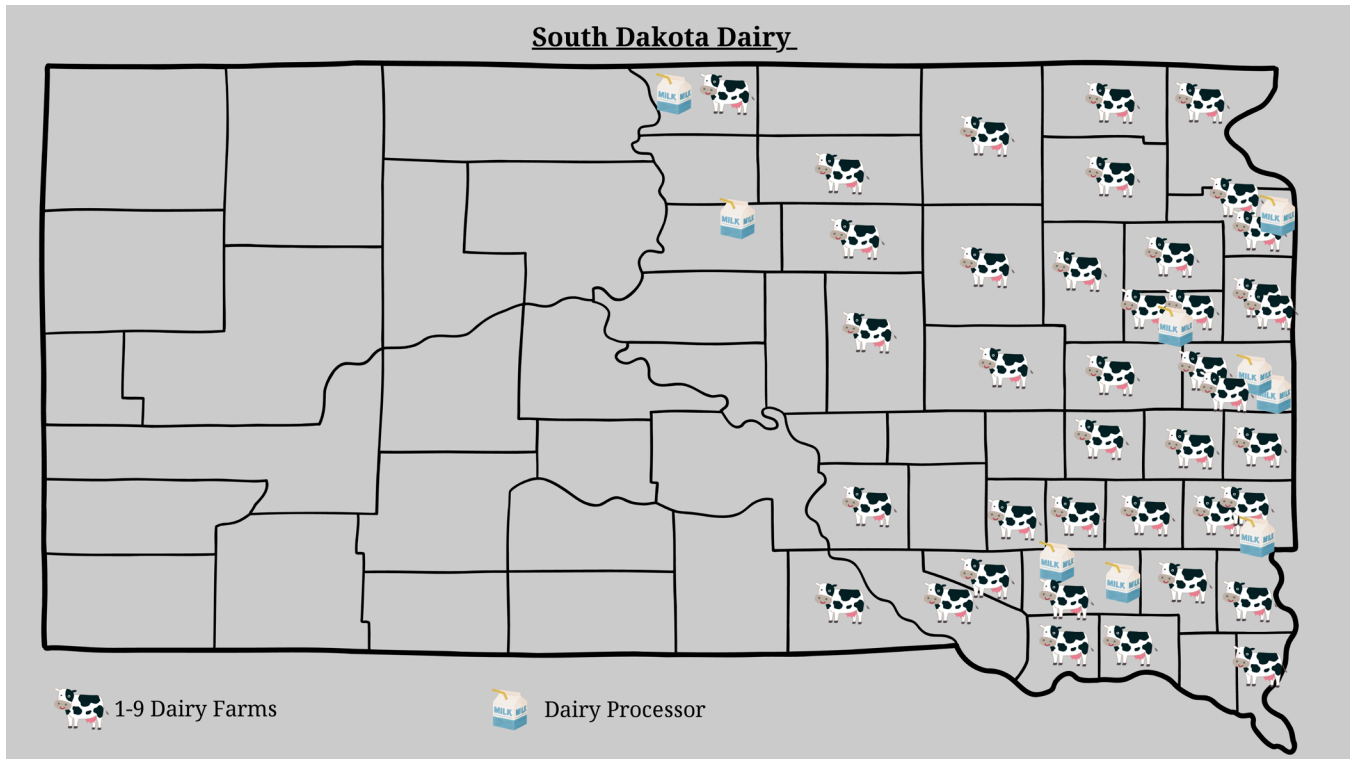


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## Dairy Mapping Worksheet 1



This map shows where South Dakota's dairy cattle and dairy processing facilities are located. Locate and mark your hometown and county.

What do you notice about where the dairy cattle are located and where the processing facilities are located in comparison?

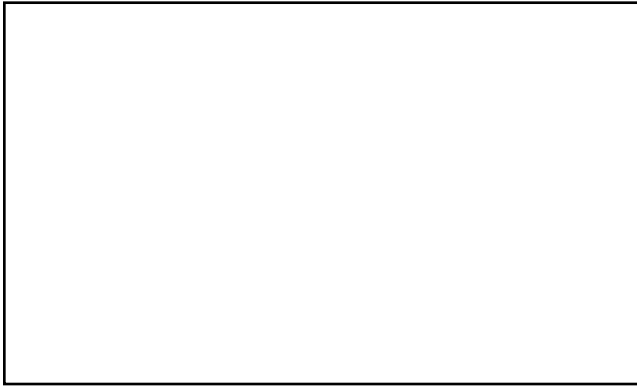




## DAILY MOO NEWS

### Dairy Line-Up

*(adopted from Cowabunga! From the California Foundation for Agriculture in the Classroom)*



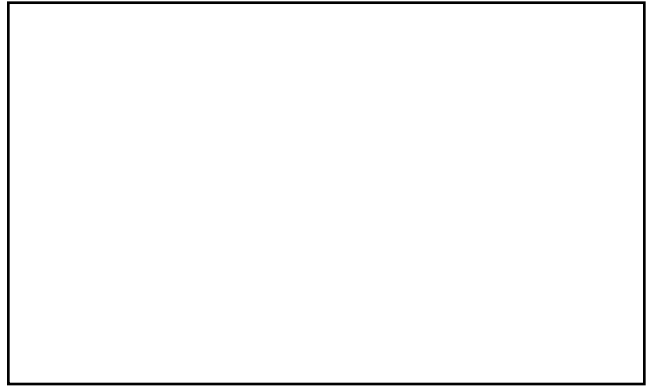
#### STYLIN' SALLY THE HOLSTEIN

First in our line-up, coming from the Netherlands in Northern Europe. Sally is a Holstein whose great-great-great-grandmother entered the United States by ship in 1852, arriving in Boston, Massachusetts. Weighing in at 1400 pounds, Sally is one of the largest cattle in our line-up. Her **black and white** wardrobe makes her the ultimate classy cow. Like others of her breed, Sally produces more milk than any others on the line up, nearly 10 gallons of milk per day.



#### RUNNIN' RITA THE BROWN SWISS

Rita is coming in hot next in our line-up. She comes all the way from Switzerland, a mountainous country known for Swiss cheese. Rita's ancestors crossed the ocean in 1869 and entered the U.S. in Massachusetts. Rita enjoys grazing on grass, but she has a sweet tooth. Her milk is high in lactose and milk sugar. It is perfect for making cheese. Rita is a very athletic 1400 pounds and is famous for her strong feet and legs. Rita is also known for her **grey-brown** color with a **light band around her muzzle** (nose and mouth).



#### GERTRUDE THE GREAT GUERNSEY

Coming all the way from Guernsey, a small nation off the Northern coast of France, we have Gertrude the Great. Gertrude's Guernsey ancestors arrived in the Americas in 184. Gertrude is famous for her golden milk and is a light red color with white spots. Weighing in at 1250 pounds, she will be making milk for years to come as her breed is known for living longer than any other breed.



#### CALLY THE COMPACT JERSEY

They say great things come in small packages and Cally is no different. Cally weighs in at a mere 1000 pounds, making her the smallest in our Dairy Line-up, but don't let her size fool you! Cally still produces high quantities of milk. Her family first migrated to the Americas in 1850 and is known for their attractive **reddish-brown coat** color with **black and white shading around their nose, eyes, and feet**.



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## MOO NEWS PICTURES

Read the Daily Moo News. Use the clues in the articles to help the newspaper editor match the photo of each cow to the article about her. Cut the below pictures out and place them in the appropriate part of the paper.



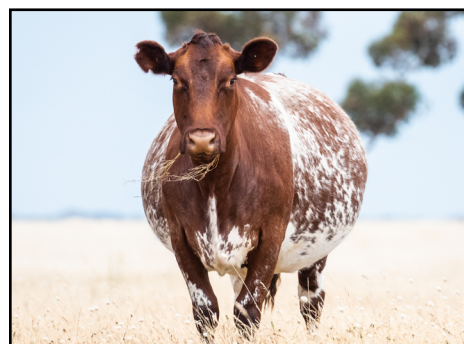
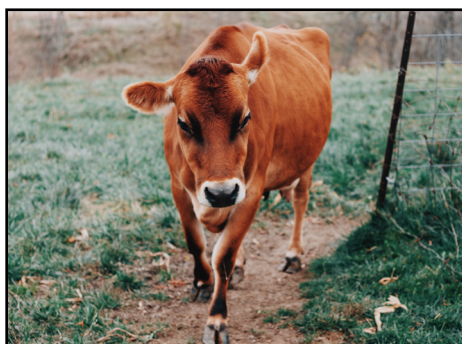
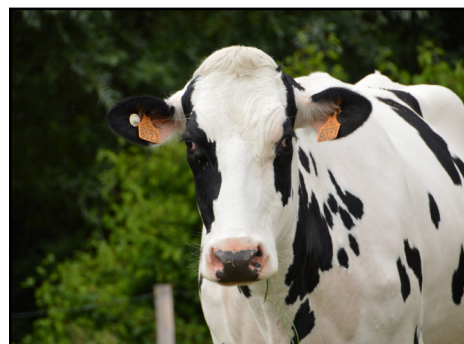
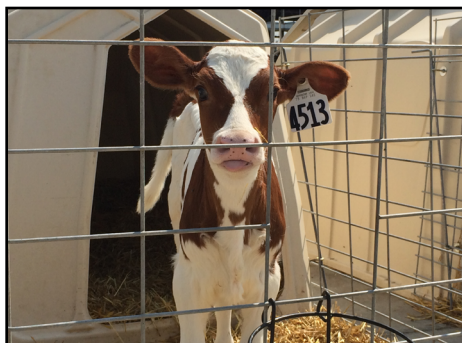
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## MATCHING CARDS: ARE YOU MY MOMMA?

Help the baby calf find her mommy! Cut out the cow and calf cards. Have youth sort the cow calf pairs. Have them discuss how they know which calf belongs to which cow. What traits are similar and different between mom and baby?





## MATCHING CARDS: ARE YOU MY MOMMA? (ANSWER KEY)

Help the baby calf find her mommy! Cut out the cow and calf cards. Have youth sort the cow calf pairs. Have them discuss how they know which calf belongs to which cow. What traits are similar and different between mom and baby?



A – Grey-brown color with light band around black nose



B - Distinct white with dark red markings



C – Distinct white with black markings



A – Grey-brown color with light band around black nose



B - Distinct white with dark red markings



C – Distinct white with black markings



D – White with light red markings



E – Reddish-brown coat with light shading around nose and eyes



F – Red with white markings – the white is in a speckle pattern (roan)



D – White with light red markings



E – Reddish-brown coat with light shading around nose and eyes



F – Red with white markings – the white is in a speckle pattern (roan)



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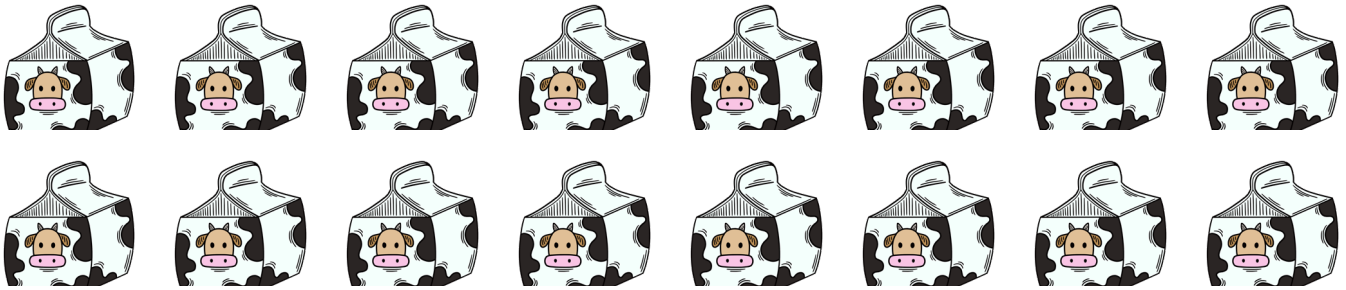




## Moo Math (Kindergarten)

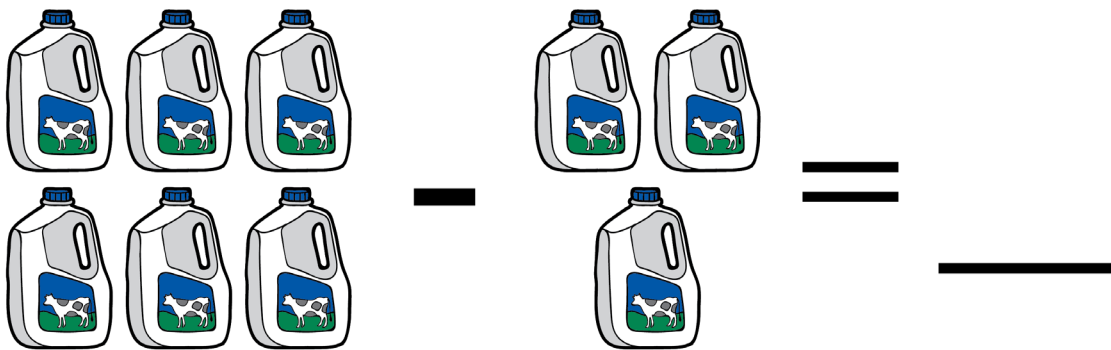
### Extended Learning

1. A newborn calf drinks 128 ounces of milk in one setting. The milk cartons that kindergarteners are given at lunch are 8 ounces, how many cartons of milk would you need to feed a baby calf? Count the cartons below to find out:

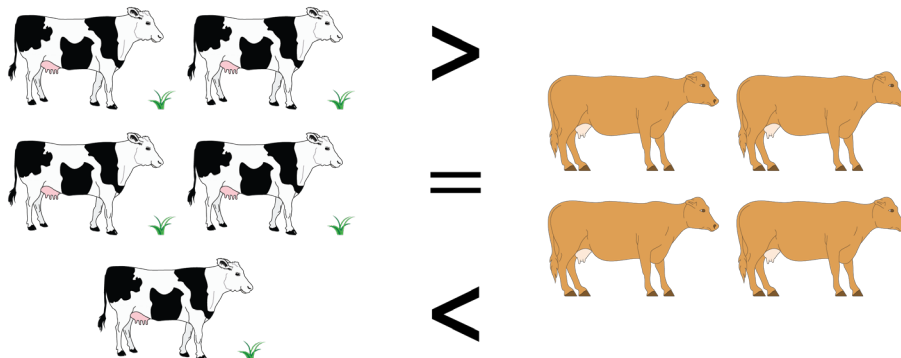


The baby calf needs \_\_\_\_\_ bottles.

2. If a dairy cow can produce 6 gallons of milk per day and your class drinks 3 gallons of milk per day. How many gallons of milk are left over?



3. Farmer Joe has a herd of Brown Swiss and Holstein cattle. Can you indicate if he has more, less, or an equal number of Brown Swiss and Holstein?







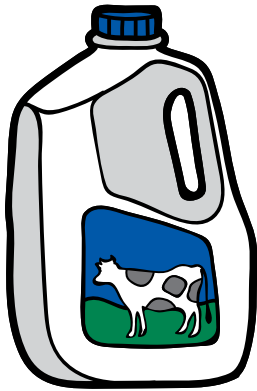
## Moo Math (First Grade)

### Extended Learning

1. A newborn calf drinks about 1 gallon of milk, or about 16 cups milk, at once. If you can drink 2 cups of milk in one sitting, how many more cups of milk does the baby calf drink in on sitting?



2. If a dairy cow can produce 6 gallons of milk per day and a class of 25 first graders consume 3 gallons of milk per day. Will the first graders have more or less milk than they need? By How much?



3. Farmer Jack has three types of cows on his farm. He has 8 black and white Holsteins, 6 Brown Swiss cows, and 3 golden Guernsey cows. How many cows does farmer Jack have?



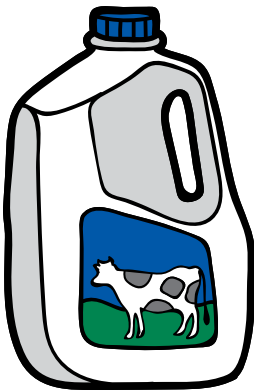
## Moo Math (Second Grade)

### Extended Learning

1. A newborn calf drinks about 1 gallon of milk, or 128 ounces of milk at once. A newborn human baby drinks about 2 ounces milk at once. If a human baby bottle can hold 2 ounces, how many baby bottles would you need to feed a baby calf?



2. If a dairy cow can produce 6 gallons of milk per day and a class of 25 first graders consume 3 gallons of milk per day. Will the first graders have more or less milk than they need? By How much?



3. Farmer Jack has three types of cows on his farm. He has 8 black and white Holsteins, 6 Brown Swiss cows, and 3 golden Guernsey cows. How many cows does farmer Jack have?