

# Dairy Cows

## Alaska Agriculture in the Classroom for Pre-K (Ages 3-5)

### Lesson Goal

The goal of this lesson is to teach Pre-K students how to recognize dairy cows and to care for them, make butter from milk, and understand that dairy products provide nutrients for personal health.

### Student Objective

The student will be able to mimic the sounds of dairy cows, recognize their image and understand how to care for them. The student will participate in a group and physical activity and



communicate that dairy products are a healthy choice of food.

### Activities

- **Story Time:** Alaska Agricultural Story, Children's Books
- **Exploring:** Dairy Cows and Making Butter
- **Creating:** Paper-Plate Cows
- **On the Go!:** Cows Make Noises!
- **MyPlate:** Making Healthy Food Choices, Blueberry Shakes, and Strawberry Milk

### Vocabulary

Dairy, butter, whey, cud, hoof, herd, calf, and cooperative.

## Rubric

Alaska Early Learning Guideline Domains	Student Target	Facilitating Activities
1 – Physical Well-Being, Health, and Motor Development	The student participates in a physical activity, involving coordination and movement.  The student recognizes and participates in making and eating nutritious foods.	<ul style="list-style-type: none"> <li>• Making Healthy Food Choices</li> <li>• Making Butter and Cows Make Noises!</li> </ul>
2 – Social and Emotional Development	The student participates in a group activity, displays cooperative teamwork to accomplish a group goal, and recognizes individual contributions.	<ul style="list-style-type: none"> <li>• Making Butter</li> </ul>
3 – Approaches to Learning	The student sustains attention on a multi-task project with specified requirements.	<ul style="list-style-type: none"> <li>• Making Butter and Paper-Plate Cows</li> </ul>
4 – Cognition and General Knowledge	The student communicates comprehension by recognizing the images of animals and is able to show understanding of how to care for them.  The student is able to choose healthy foods.	<ul style="list-style-type: none"> <li>• Dairy Cows</li> <li>• Making Healthy Food Choices, Blueberry Shakes, and Strawberry Milk</li> </ul>
5 – Communication, Language, and Literacy	The student listens with attentiveness and curiosity.  The student mimics sounds and/or actions.	<ul style="list-style-type: none"> <li>• Alaska Agricultural Story and Children's Books</li> <li>• Cows Make Noises!</li> </ul>

# Story Time!

## Agriculture in Alaska

### Havemeister Dairy

Brown and black-spotted cows lounge in a small field outside the Havemeister Dairy barn. The farm outside of Palmer hardly resembles the industrial operations that dominate the dairy industry outside of Alaska. Havemeister Dairy is a small family farm. The Havemeisters' success is a cocktail of hard work, experience, good business sense, and local support in a state where everything from feed to fertilizer costs twice as much and where the number of commercial dairies has dwindled from double digits to just two since the early 2000s. People drink less milk than they used to, too.

Barriers, like cost of land, available equipment, and a lack of local dairy knowledge have meant few have tried to enter the industry since it has contracted so dramatically. Luckily for Ty Havemeister, dairy runs in his blood. Havemeister's work ethic runs in the family. His 79-year-old father Bob Havemeister is up at 6 a.m. every day working on the farm. He has no plans for retirement. His grandparents opened Havemeister Dairy in 1935. Back then, they weren't alone. Drought and poverty in the upper Midwest led President Theodore Roosevelt to experiment. The federal government sent more than



*Ty Havemeister on his farm in Palmer. –Edible Alaska*

200 families north to the fertile soils of the Matanuska Valley. They called it the Matanuska Colony, and it put Palmer on the map as an agricultural economy. The Havemeisters had never really farmed before. They started with one cow.

Bob Havemeister took over the farm when he was in high school, after his father died young. He grew the operation to around 160 cows and 5,000 gallons of milk production a week, on average. The dairy now employs six people, and they pasteurize, bottle, and deliver their own milk. They even grow their own hay. "We do everything. It goes from the cow to the table," Ty Havemeister says. "It's pretty special." Stainless steel equipment gleams inside the creamery. The machinery is quiet, but three days a week, it hums for ten hours straight, while Havemeister and two other employees work mechanically to safely turn raw milk into a pasteurized, bottled product. Once a month, the state's dairy inspection program pulls samples of Havemeister

Dairy's pasteurized milk. The dairy sanitarian visits regularly to inspect their cows and facilities. Ty Havemeister smiles and looks back to the field. "I guess it's time to get back to work."

*Erin McKinstry*

## Children's Books

### *Materials*

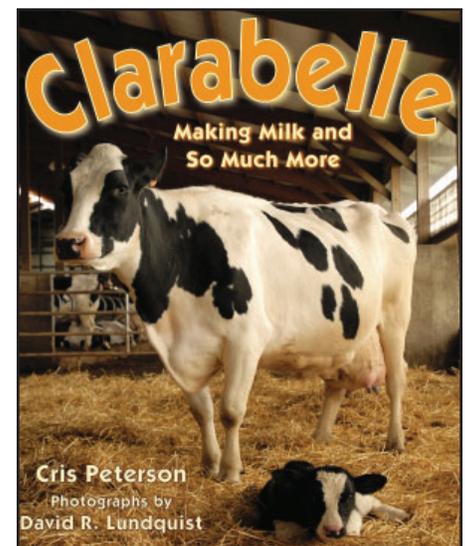
- The book Clarabelle: Making Milk and So Much More by Cris Peterson

- Pictures of dairy cows being cared for on a farm

1. Read Clarabelle: Making Milk and So Much More (or other dairy book) to the students.

2. Discuss how dairy cows are raised and how butter is made from milk.

3. Using the images, review how dairy cows are cared for, including the types of food they eat, shelter they need, space to run, milking, and veterinarian health care.



# Exploring

## Dairy Cows

### Materials

- Images of dairy cows, Holsteins and Jerseys
- A variety of fresh dairy products from the grocery store, including butter, yogurt, cheese, milk, and ice-cream
- Small paper cups

1. Show the students the images of the dairy cows as you discuss the following. All dairy cows are female cows and are raised by farmers for their milk. A dairy farmer is most concerned about the health of their cows for making good milk. Dairy cows need a healthy diet, a clean place to live, and good medical care. Dairy cows are herbivores and eat grains and grasses and are fed and watered every day.

2. Dairy cows can be black and white Holsteins or brown Jerseys. It takes a baby cow, a calf, only two years to grow up.

3. Dairy cows are milked 2-3 times per day. Some farmers milk cows by hand, but most cows are milked with machines. The milk is sent to a processor by refrigerator trucks that keep the milk cold. Dairy cows can produce 6-7 gallons of milk per day.

4. We all like to drink milk, but did you know that we make lots of things from milk, including butter, yogurt, cheese, and ice-cream! Dairy provides us with calcium and protein, which helps us grow and make us

strong.

5. Distribute small samples of the fresh dairy products in the paper cups for students to taste.

6. Ask students to share whether they like the dairy products and how they taste.



## Making Butter

### Materials

- Small glass jar with a tightening lid (glass is ideal, but plastic will also work)

- Small strainer and bowl

### Ingredients

- 1-pint heavy whipping cream
- ½ tsp salt
- Crackers or bread into small pieces

1. Discuss the butter making process. Show pictures of Churns and a stick of butter or bring a real stick of butter and have offer the students to taste the difference between the store-bought butter and the butter they will make.

2. Fill the 1-pint jar, 2/3 full of heavy whipping cream.

3. Add a small amount of salt if desired.

4. Have students shake vigorously for 1-2 minutes per students, then pass the jar to another student to continue shaking. Repeat this until distinct solids and whey forms in the jar.

5. Using the strainer drain the whey into the bowl.

6. Pour the whey into small Dixie cups for the students to taste, if desired.

7. Serve the butter on the crackers or bread.

8. The students may compare the homemade and store-bought butter by tasting both.

9. Ask them which they prefer, and why.

# Creating

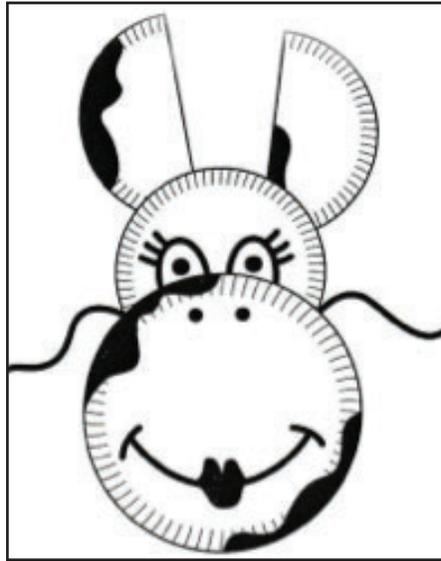
## Paper-Plate Cows

### Materials

- Large dinner-sized and dessert-sized paper plates
- Staplers
- Markers
- String
- Paper-hole puncher for the mask option

1. Give each student 1 large paper plate and 2 smaller paper plates.
2. Staple one of the small plates, as a head, to the large plate in the middle of the top edge.
3. Cut one of the small plates in half and then staple the pieces to the top of the cow's head, for ears.
4. Draw the eyes on the 'head' plate and the mouth and nose holes on the 'nose' plate.
5. Add black spots on the head—placement of these may vary.

**Farm Banner:** On banner paper draw items dairy cows need, such as fencing, barns, a water trough, a grain feeder, and hay or straw. These could also be drawn by the students on 8 x 11.5 paper and then cut out and posted and glued to the banner. Discuss why cows need these items. Hang the student's paper-plate cows on the banner. Remember to write their names on the cows beforehand.



**Mask:** To turn it into a mask, use the paper-hole puncher to make holes on either side of the eyes and attach strings, long enough to fit around the student's head.



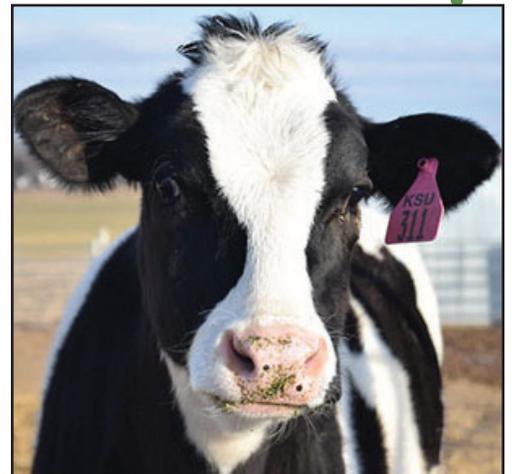
Stomp! Swish! Moo!  
Flick!  
Breathe!  
Chomp!

# On the Go!

## Cows Make Noises!

### Materials

- Space to move around
1. Make cow noises and ask the students to repeat them out loud. Noises could include mooing, chewing cud (chomping), walking on hooves (stomping), flicking tails (swishing), and sleeping in the hay (breathing quietly).
  2. Add body movements to the noises: tilt your head up when mooing, smack your lips when chewing a cud, stomp your hooves while walking around the room, swing your tails (an arm behind your body), and breath deeply while sleeping in the hay.
  3. Find a place to move around and repeat the noise and body Moo-vents as you walk around the area as a group



# MyPlate

## Making Healthy Food Choices

### Materials

- MyPlate Poster
- MyPlate Place mats, laminated for reuse
- Laminated pictures of food choices, including a variety of food choices from each group and multiples of the same types of food, plus some that don't fit into the suggested groups, such as candy.

1. Show the students the laminated MyPlate poster and discuss what it represents. Explain that it shows the five food groups they should eat from each day to grow up healthy. Point out the different colors and types of foods that belong to each group.

2. Hand out laminated MyPlate place mats and let students choose five foods from a pile of laminated food choices.

3. Demonstrate how to place their foods into the correct food groups on their MyPlate place mat.

4. Discuss their choices and ask them to trade in some for others in order to fill their plate—ending up with a choice for each food group area—a full plate.

5. Discuss how making food choices that fill in each food group area for meals will help them grow healthy.

6. Point out that dairy has a space of its own!



## Blueberry Shakes

### Materials

- Blender
- Large spoon
- Small paper cups
- Plastic spoons

### Ingredients

- 2 cups natural vanilla ice cream
- 2 cups frozen blueberries
- 2 cups milk
- 1 Tbsp honey

1. Take the ice and blueberries out of the freezer 1/2 hour before preparation, to thaw slightly for easier mixing.

2. Place all of the ingredients in a blender and blend on high until smooth and creamy.

3. Spoon into paper cups and pass them out to the students along with a spoon to enjoy!

## Strawberry Milk

### Materials

- Fine mesh strainer
- Large spoon
- Mixing bowls, 1 large and 1 small
- 1-2 quart pitcher
- Small paper cups

### Ingredients

- 1 quart of whole milk
- 1/2 cup fresh or frozen strawberries, chopped
- 1/4 cup granulate sugar
- 1/4 cup water

1. Prior to the lesson, place the quart of whole milk into the freezer until it is very cold, but not frozen.

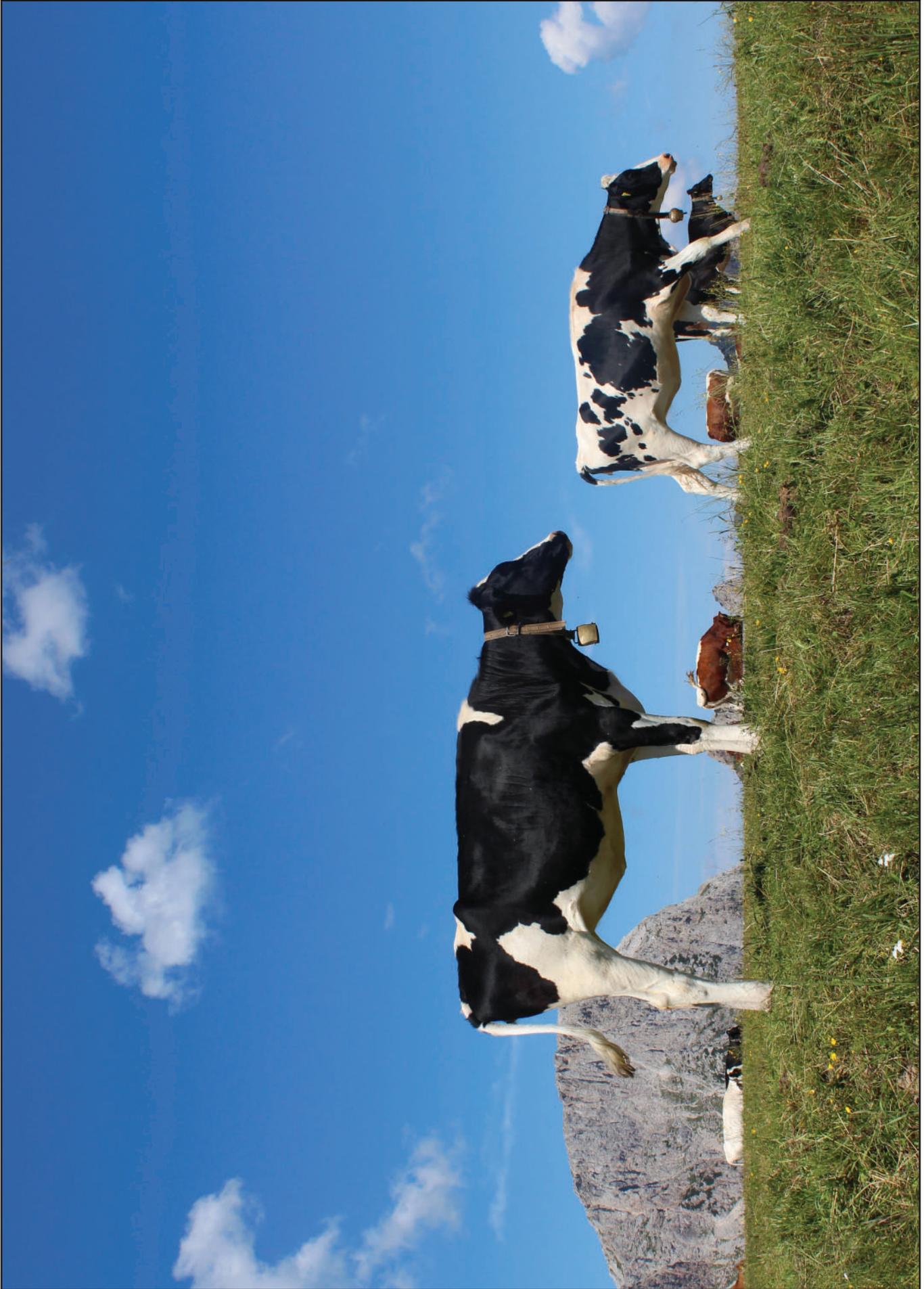
2. Place the strawberries, sugar, and water into a small saucepan. Bring it to a low boil and then cook for 10 minutes, stirring occasionally, until fragrant and reduced to a thick syrup.

3. When cooled slightly, place the mesh strainer over the mixing bowl and carefully pour the mixture through the strainer. Discard the leftover parts of the strawberries.

4. Pour the cold milk into a pitcher and add 1/2 of the strawberry syrup into the very cold milk. Stir thoroughly, add the rest of the syrup, and then stir again until smooth.

5. Serve to students in small paper cups.





Holstein Dairy Cow and Calf



Jersey Dairy Cow and Calf

# MyPlate Place Mat



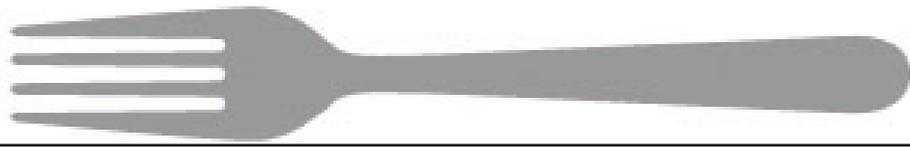
Dairy

Grains

Protein

Fruits

Vegetables



# What's MyPlate All About?

