



Lesson 2: From Cow to Carton

Grade Level: 1st Grade

Time: 60 minutes (Each center rotation is 10 minutes)

Subjects: ELA, Science

Overview: This lesson is Lesson 2 of 5 in the *Milk Comes From a Cow?* unit of the *Growing Readers* micro-curriculum, based on the book series by Kansas author Dan Yunk. Building on the first read in Lesson 1, students deepen their understanding of the journey of milk from farm to table through a short informational video and three hands-on learning centers. As students simulate milking a cow, compare dairy products, sequence the journey of milk, and apply sentence-writing skills, they strengthen scientific observation, informational writing, and their understanding that many foods have a farm story. Connections to *Celebrate Wheat* reinforce the idea that both wheat and dairy products begin on Kansas farms before reaching consumers.

Skillset: Activating and connecting prior knowledge across units, recognizing biomimicry as a way humans design solutions by observing nature, recognizing the features of a complete sentence, using personal and possessive pronouns correctly, observing and describing using the senses, comparing and contrasting, sequencing, vocabulary development, gathering information from a video source and from experience to answer a question, collaborative conversation, independent informative writing, and Kansas connections through dairy farming.

Kansas Academic Standards

Kansas ELA Standards

SL.1.1 Participate in collaborative conversations with diverse partners about topics and texts with peers and adults in small and large groups to expand language comprehension.

SL.1.1.a Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.2 Ask and answer questions about key details in a text read aloud, information presented orally, or through media.

W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

W.1.10.d Use personal, possessive, and indefinite pronouns (e.g., I, me, my).

W.1.11.b Use end punctuation for sentences.

RF.1.1.c Recognize the distinguishing features of a sentence (e.g., first word, capitalization, ending punctuation).

Science Standards

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

National Agriculture Literacy Outcomes

Plants and Animals for Food, Fiber, and Energy

T2.K-2.b Identify animals involved in agricultural production and their uses (i.e., work, meat, dairy, eggs).

T2.K-2.d Identify examples of food and fiber products that come from plants and animals.

Objectives

Science Objectives

Students will be able to:

- Demonstrate understanding that dairy cows need food and water to produce milk.
- Simulate milking a cow and describe what happens to milk after it leaves the cow.
- Explain how a human-made invention (a baby bottle) was designed to mimic how a cow's udder feeds a calf.
- Observe and describe the differences among whole milk, skim milk, and heavy whipping cream using the senses.
- Sequence the journey of milk from the dairy farm to home using picture cards.

English Language Arts Objectives

Students will be able to:

- Gather information from a video source to answer the question: How does milk get from a cow to our homes?
- Identify the distinguishing features of a complete sentence, including the first word, capitalization, and ending punctuation.
- Apply personal, possessive, and indefinite pronouns correctly in their writing (e.g., I, me, my).
- Include end punctuation correctly when writing a sentence.
- Participate in collaborative conversations by following agreed-upon discussion rules and building on classmates' ideas during center activities.
- Ask and answer questions about key details from the video and center activities.
- Write an informative sentence or two that introduces a topic, includes a fact, and provides a sense of closure.
- Recall information from the center activities to answer a question about the journey of milk from the farm to consumers.
- Sequence the steps in the journey of milk by arranging picture cards in the correct order, and explain the sequence.

Materials Needed

Whole Class:

- Smartboard or display screen
- Dairy MAX YouTube video: The Journey of Milk
<https://www.youtube.com/watch?v=nx0KYWxrO1k>
- Chart paper and markers (for sentence mechanics mini-lesson)

Center 1 — Milk the Cow:

- Cow cutout (one per center)
- Latex gloves (one per student, filled with real milk and tied at the wrist)
- Bucket (one per center)
- Milk the Cow writing sheet (one per student — see companion document)

- Pencils or crayons

Center 2 — Milk Comparison:

- Whole milk (small clear sample cups, one per student)
- Skim milk (small clear sample cups, one per student)
- Heavy whipping cream (small clear sample cups, one per student)
- Milk Comparison Observation Sheet (one per student — see companion document)
- Pencils or crayons
- Hand wipes or paper towels

Center 3 — Map the Journey:

- Journey of Milk picture cards — black and white, pre-cut (one set per student — see companion document)
- Journey of Milk sequence sheet — five boxes left to right (one per student — see companion document)
- Glue sticks (one per student)
- Crayons

Note: Check for milk allergies before Lesson 2. Students with a milk allergy should observe and describe using visual and tactile senses only at the Milk Comparison center and should not taste. Have an alternative activity ready if needed.

Lesson Procedures

1. Whole Class — Video Introduction: Gather all students together for the whole-class video before centers begin.
 - a. Explain to students: “Before we go to our centers today, we are going to watch a short video about milk. As you watch, think about what happens to milk after it leaves the cow. We are going to answer the question: How does milk get from a cow to our homes?”
 - b. Play this YouTube video. Dairy MAX: The Journey of Milk
<https://www.youtube.com/watch?v=nx0KYWxrO1k>
 - c. After the video, ask students:
 - “What was one thing you saw in the video?”
 - “Where does the milk go after the cow is milked?”
 - “Did the video remind you of anything from our book Milk Comes From a Cow?”
2. Sentence Mechanics: Explain to students: “At each center today, you are going to write about what you did and what you learned. Before we start, let’s review what makes a complete sentence so your writing is easy for a reader to understand.”
 - a. Explain to students: “A sentence has three important features. First, the first word always starts with a capital letter. Second, a sentence is a complete thought — it tells us something. Third, every sentence ends with a punctuation mark, like a period.”
 - Write an example on chart paper and point to each feature:
 “I milked the cow.” — “What is the first word? Is it capitalized? What mark is at the end?”
 - b. Explain to students: “Most of the sentences you write today will end with a period. A period tells the reader to stop — the sentence is finished. Watch me write a sentence and add the period at the end.”

- c. Model write this sentence: “The cow gives us milk.” Point to the period. “That little dot tells the reader: stop, the sentence is done.”
 - d. Explain to students: “Today you are going to write about what YOU did. We use special words called pronouns to talk about ourselves. The word ‘I’ means ‘me’ — the person talking. The word ‘my’ means that something belongs to me. For example: I milked the cow. My hands felt the udder. ‘I’ is always capitalized, even in the middle of a sentence. Watch.”

Write both example sentences on chart paper and underline the pronouns:

 - “I milked the cow.” — “Which word is the pronoun? What does I mean here?”
 - “My hands felt the udder.” — “Which word is the pronoun? What does my tell us?”
 - e. Explain to students: “As you write at each center today, remember: a capital letter at the start, a period at the end, and use ‘I’ and ‘my’ correctly when you are writing about yourself. Now we are going to visit three centers. At each center, you will do something hands-on to learn more about milk and where it comes from, and you will write a sentence about your experience. Listen for directions at each center and do your best work.”
 - f. Introduce center expectations and rotation signal before students move. Remind students of discussion rules: listen with care, take turns, and speak one at a time.
3. Center 1 — Milk the Cow Center. Setup: Place the cow cutout at the center. Pre-fill latex gloves with real milk and tie them securely at the wrist before the lesson. Set out one glove per student and a shared bucket. Place writing sheets and pencils at the center.
- a. Explain to students: “At this center, you are going to milk the cow, just like Farmer George did in our book! The glove is your cow’s udder. Gently squeeze the fingers one at a time to let the milk out. The milk won’t hurt anything, so squeeze carefully!”
 - b. Students take turns squeezing the glove fingers over the bucket to simulate milking.
 - c. While milking, prompt oral language:
 - “What does the udder feel like?”
 - “What comes out when you squeeze?”
 - “Where does real milk go after the farmer milks the cow?”
 - d. Explain biomimicry to students: “The udder is a body part that helps a mother cow feed her baby calf. People often solve problems by watching nature. Engineers watched how calves nurse the cow’s udder and designed bottles with soft nipples that help human babies drink milk in a similar way. The bottle doesn’t look like an udder, but it functions similarly by allowing milk to be delivered through sucking. This is called biomimicry — when people design a solution by copying how a plant or animal solves a problem in nature.”
 - e. Ask students:
 - “How is a baby bottle like a cow’s udder?”
 - “What other human inventions do you think might copy something from nature?”
 - f. Writing component: After milking, each student writes one to two sentences naming the topic and supplying a fact:

- “Write about what you did. Start with I. Remember your capital letter, your pronoun, and your period. Example: I milked the cow. The milk came from the udder.”
 - Students draw a picture of themselves milking the cow above their writing.
- g. Circulate and prompt: “Did you start with a capital letter? Did you use ‘I’ or ‘my’ correctly? Did you end with a period?”
4. Center 2 — Milk Comparison Center setup: Set out three labeled sample cups at each student spot: Whole Milk, Skim Milk, and Heavy Whipping Cream. Place Milk Comparison Observation Sheets and pencils at the center. Have hand wipes available. (Check the allergy list before this center begins. Students with a milk allergy observe only with their eyes and hands and do not taste.)
- a. Explain to students: “At this center, you are going to look at, feel, and taste three different kinds of milk. They all come from a cow, but they look and taste different. Your job is to observe carefully and record what you notice on your observation sheet.”
 - b. Guide students through each sample one at a time:
 - “Look at the whole milk. What color is it? Is it thick or thin?”
 - “Now look at the skim milk. How does it look different from the whole milk?”
 - “Now look at the heavy whipping cream. What do you notice?”
 - c. Students taste each sample and describe:
 - “How does the whole milk taste?”
 - “How does the skim milk taste? Is it the same or different?”
 - “How does the heavy whipping cream taste? What is different about how it feels in your mouth?”
 - d. Students complete the Milk Comparison Observation Sheet:
 - Draw each sample in the labeled circle.
 - Circle describing words (thick/thin, white/yellow, sweet/plain) for each sample.
 - e. Writing component: Students write one to two sentences naming their favorite sample and giving a reason:
 - “My favorite is the _____. It tastes _____.” Remember: capital letter, pronoun my, and a period at the end of each sentence.
 - f. Explain to students: “All three of these come from a dairy cow. The difference is how much cream — or fat — is in each one. Whole milk has the most, skim milk has almost none, and heavy whipping cream has the most of all.”
5. Center 3 — Map the Journey Center setup: Place pre-cut picture card sets, sequence sheets, glue sticks, and crayons at the center. Each student receives one set of five picture cards and one sequence sheet.
- a. Explain to students: “At this center, you are going to show the journey milk takes from the dairy farm all the way to your home. You have five picture cards. Your job is to put them in the right order and glue them on your sequence sheet.”
 - b. Review the five cards with students before they begin:
 - Cow (Dairy Farm) — “Where does the milk start?”
 - Milk Truck — “How does the milk travel?”
 - Processing Plant — “Where does the milk get prepared?”
 - Grocery Store — “Where do we go to buy milk?”
 - Home — “Where does the milk end up?”

- c. Students arrange the cards in order from left to right, then glue them onto the sequence sheet.
 - d. Students color the picture cards after gluing.
 - e. Prompt oral language while students work:
 - “What happens first?”
 - “What comes after the milk truck?”
 - “In Celebrate Wheat, wheat also traveled to different places. How is that like the journey of milk?”
 - f. Writing component: Explain to students: “You just watched a video and built a sequence showing the journey of milk. Use what you remember to answer this question in writing: How does milk get from the farm to our homes?”
 - g. Explain to students: “Write one or two sentences using what you remember from the video and from your sequence cards. Start with a capital letter and end with a period.”
6. Whole Class Closing Discussion: Gather all students back together after rotations are complete.
- a. Explain to students: “You visited three centers today and learned a lot about milk. Let’s share what we discovered.”
 - b. Ask students:
 - “What was your favorite center? What did you do there?”
 - “What surprised you most about milk?”
 - “Can you tell me the journey of milk in order? Where does it start and where does it end?”
 - “How is the journey of milk like the journey of wheat in Celebrate Wheat?”
 - “If someone asked you where milk comes from, what would you tell them now that you couldn’t have told them yesterday?”
 - c. Invite two or three students to read a sentence from one of their center writing sheets. Ask the class: “Did that sentence start with a capital letter? Did it end with a period?”
 - d. Kansas Connection: Explain to students: “Kansas is a cattle state. Dairy farms all across Kansas produce milk that travels to processing plants and then to grocery stores, just like the cards you put in order today. Whether you live near a dairy farm or in the middle of a city, Kansas dairy farmers are working every day to make sure milk gets to your table.”
Ask students:
 - “Have you ever seen a dairy farm?”
 - “Do you know anyone who works at a dairy?”

Assessment: Student understanding is assessed through teacher observation during center rotations and whole-class discussion, as well as through three student writing products: the Milk the Cow writing sheet, the Milk Comparison writing response, and the Map the Journey writing response. The teacher should note whether students can describe what happens to milk after the cow is milked, explain the connection between a cow’s udder and the design of a calf bottle, use observational vocabulary to compare the three milk samples, correctly sequence the five steps of the milk journey, recall information from the video and their experiences to answer a question in writing, write a sentence that names a topic and supplies a fact, use personal and possessive pronouns correctly, use end punctuation, and demonstrate understanding of

sentence features including capitalization and ending punctuation. Unprompted connections between the milk journey and the wheat journey from *Celebrate Wheat* indicate meaningful cross-unit learning transfer and should be noted.

Supplemental Activities: After centers are complete, display the completed Map the Journey sequence sheets and writing responses on a classroom wall alongside the wheat farm-to-table anchor chart from the *Celebrate Wheat* unit. Invite students to compare the two journeys: “How many stops did the wheat make? How many stops did the milk make? What is the same about both journeys?” This visual comparison builds cross-unit schema and reinforces the idea that many foods share a farm-to-table story. As a quick sentence-mechanics check, invite students to do a gallery walk to find one well-written sentence on a classmate’s paper and identify the capital letter and the end punctuation.

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Student Name: _____

From Cow to Carton

[illegible]

Student Name: _____

Milk Comparison Observation

Circle your observations for each type.

Whole Milk

Color	White	Cream	Yellow
Thickness	Thin	Medium	Thick
Taste	Plain	Sweet	

Skim Milk

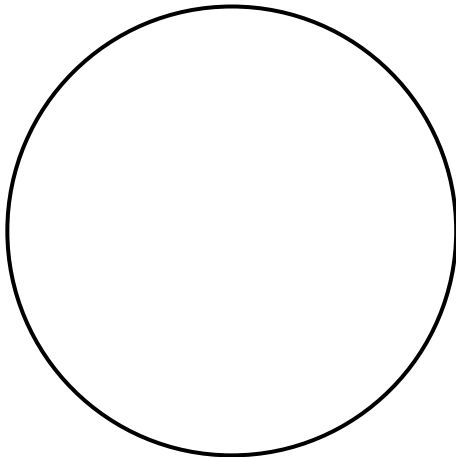
Color	White	Cream	Yellow
Thickness	Thin	Medium	Thick
Taste	Plain	Sweet	

Heavy Whipping Cream

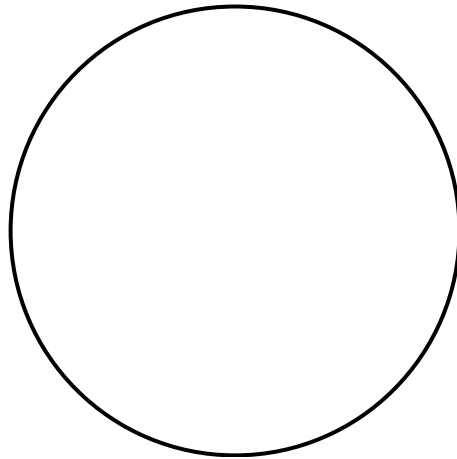
Color	White	Cream	Yellow
Thickness	Thin	Medium	Thick
Taste	Plain	Sweet	

Milk Comparison Observation

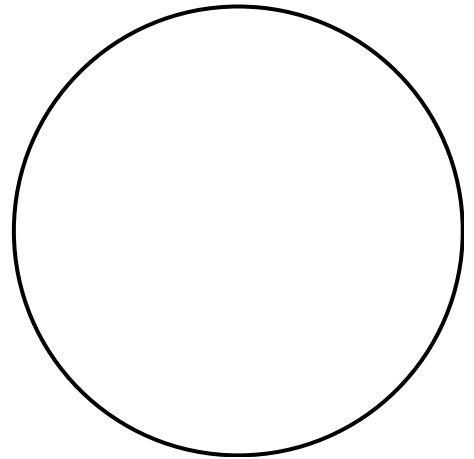
Draw the sample in the correct circle.



Whole Milk



Skim Milk



Heavy Whipping Cream

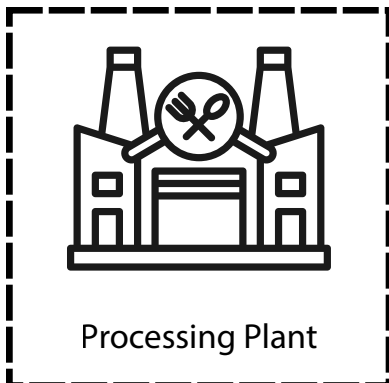
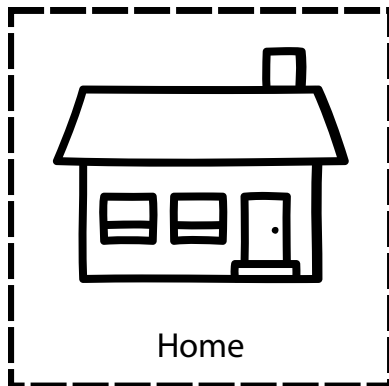
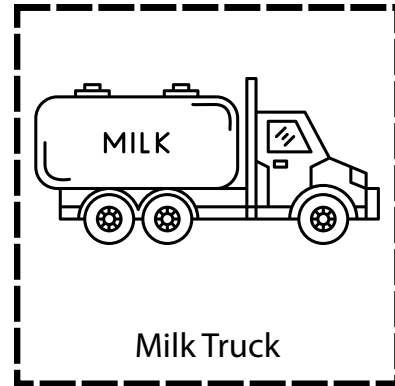
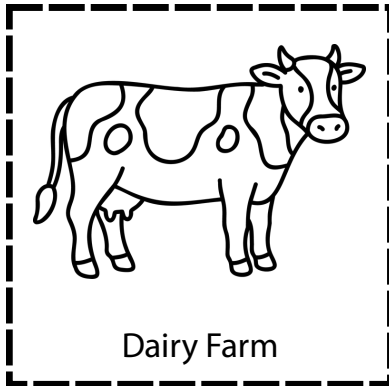
Complete the sentence frame.

My favorite is _____ because

Sequence Cards

Carefully cut out the cards below.

Then, glue them to the Sequence Sheet.



From Cow to Cone!

Glue the sequence cards into the correct boxes below.

First

Second

Third

Fourth

5.7.17

[illegible]