



Lesson 4: From Farm to Frozen Treat

Grade Level: 2nd Grade

Time: 60 minutes

Subjects: ELA, Science

Overview: This lesson is Lesson 4 of 5 in the *Milk Comes From a Cow?* unit within the *Growing Readers* micro-curriculum, based on a series of books written by Kansas author Dan Yunk. Building on students' understanding of dairy farming and dairy products, students investigate how cream becomes ice cream through a short informational video, a hands-on science investigation, and informative writing. As they observe changes in the cream and describe its properties using precise adjectives, students gather information from multiple sources to write an informative paragraph about where ice cream comes from and how it is made. The lesson concludes with peer revision and editing while reinforcing the farm-to-table journey of dairy products.

Skillset: Activating and connecting prior knowledge across the unit, gathering information from a video source, recalling information from experience to answer a question, distinguishing shades of meaning among closely related adjectives, using adjectives to develop precise informative writing, hands-on science investigation, classifying materials by observable properties, informative writing with topic introduction, definitions, facts, and a concluding statement, revising and editing with guidance and support, and consulting reference materials to check and correct spelling.

Kansas Academic Standards

Kansas ELA Standards

RI.2.12.b Distinguish shades of meaning among closely related verbs and closely related adjectives.

W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

W.2.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

W.2.8 Recall information from experiences or gather information from provided sources to answer a question.

W.2.10.e Use adjectives and adverbs and choose between them depending on what is to be modified.

W.2.11.e Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

Science Standards

2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

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.

T3.K-2.b Recognize that agriculture provides our most basic necessities: food, fiber, energy, and shelter.

Objectives

Science Objectives

Students will be able to:

- Plan and conduct an observation investigation to describe and classify the cream at each stage of the ice cream-making process by its observable properties.
- Explain that ice cream is a dairy product made from cream that comes from a cow.
- Trace the journey of ice cream from the dairy farm to the finished product.

English Language Arts Objectives

Students will be able to:

- Gather information from a video source and recall information from the ice cream-making experience to develop their informative writing.
- Distinguish shades of meaning among closely related adjectives used to describe the properties of ice cream and cream.
- Use precise adjectives in their informative writing to describe the properties of dairy materials.
- Write an informative paragraph that introduces a topic with a definition, uses facts to develop points, and provides a concluding statement.
- Revise and edit their writing with guidance and support from peers and the teacher.
- Consult reference materials to check and correct spelling of technical dairy vocabulary.

Materials Needed

Whole Class:

- Smartboard or display screen
- YouTube Highlights Kids: How Is Ice Cream Made? | Ever Wonder | Highlights Kids <https://www.youtube.com/watch?v=hO-7cz7gyAY>
- Chart paper and markers
- Adjective shades of meaning chart (teacher-prepared — see Step 3)

Ice Cream in a Bag:

- Heavy whipping cream or half and half is best; whole milk can be substituted with less solid results (1/2 cup per student)
- Sugar (1 tablespoon per student)
- Vanilla extract (1/4 teaspoon per student)
- Small zip-lock bags (1 per student)
- Large zip-lock bags (1 per student)
- Ice (enough to fill large bags halfway)
- Rock salt or table salt (6 tablespoons per large bag)
- Plastic gloves or small towels (to hold cold bags while shaking)

- Spoons and small cups for tasting
- Paper towels or napkins
- Hand wipes

Writing:

- From *Cow to Cone* writing sheet — companion document (one per student)
- Pencils
- Content vocabulary reference card (one per student — key unit terms: Holstein, pasteurize, buttermilk, processing)
- Beginning dictionaries or classroom word reference materials (one per student or pair)

Note: Check for milk allergies before this lesson. Students with a milk allergy should observe and participate in the shaking activity using a pre-sealed bag that contains no dairy ingredients. Have an alternative snack ready.

Lesson Procedures

1. Connecting to What We Know

- Explain to students: “In this unit, we have learned that milk comes from dairy cows on a farm. We made butter by shaking cream, we studied the journey of milk from farm to home, and we compared two books by Dan Yunk about Kansas farm-to-table food. Today we are going to make one more dairy product — ice cream. As we make it, I want you to think like both a scientist and a writer. You are going to observe carefully and choose precise words to describe what you experience.”
- Ask students:
 - “What dairy products have we made or tasted in this unit? What did each one start as?”
 - “In Lesson 3, we analyzed how the properties of cream changed when we made butter. What properties changed? How did shaking cause that?”
 - “What do you predict will happen to cream when we mix it with ice and salt today? Will the properties change the same way as butter, or differently?”

2. Whole Class — Video: How Ice Cream is Made. Explain to students: “Before we make our ice cream, we are going to watch a short video. As you watch, recall what you already know from our book and unit and connect it to what you see. After the video, I am going to ask you to use information from both the video and your own experience to help you write today.”

- Play the YouTube video, Highlights Kids: How is Ice Cream Made? | Ever Wonder? | Highlights Kids <https://www.youtube.com/watch?v=hO-7cz7gyAY>
- After the video, ask students:
 - “What key information did the video give us about how ice cream is made? Recount at least two facts.”
 - “How does the process in the video compare to what we are going to do with our bags?”
 - “What information from the video will you use in your writing today?”
(W.2.8 — students are gathering information from the video as a provided source and will also recall information from their own ice cream-making experience. Both sources will feed into the informative writing.)

3. Adjectives & Shades of Meaning. Explain to students: “Before we make our ice cream, we are going to learn about a powerful writing tool: adjectives. An adjective is a word that describes a noun — it tells us what something looks like, feels like, tastes like, or smells like. Today we are going to pay close attention to the adjectives we use to describe what we observe, because precise adjectives make informative writing much more interesting and accurate.”
 - a. Shades of meaning among closely related adjectives:
 - b. Explain to students: “Some adjectives are closely related — they describe similar things, but with slightly different meanings. Choosing the right adjective makes your writing more precise. Let’s look at some adjective families we will use today.”
 - c. Display an adjective shades of meaning chart with three groups:
 - Temperature: cool — cold — icy — freezing. “All four mean the temperature is low, but they describe different degrees. Which one best describes how the bag feels after shaking?”
 - Texture: smooth — creamy — thick — dense. “All four describe texture, but they each say something slightly different. Which one best describes how the cream feels before shaking? After?”
 - Taste: sweet — rich — mild — bland. “All four describe taste. Which one most precisely describes how the ice cream tastes? How is rich different from sweet?”
 - d. Explain to students: “As you make your ice cream today, pay attention to which adjectives from our chart best describe what you observe at each stage. You will use those adjectives in your writing.”
4. Ice Cream in a Bag — Science Investigation: Explain to students: “In Lesson 3, we analyzed how cream changed into butter. Today we are conducting a new investigation: we are going to observe how cream changes into ice cream and classify its properties at each stage. Think of yourselves as scientists collecting data.” (Check allergy list before beginning. Students with milk allergies should have an alternative activity ready.)
 - a. Before shaking, ask students to describe their initial observation:
 - “Describe the cream right now. What adjective from our chart best describes its temperature? Its texture?”
 - b. Model each step before students begin:
 - Pour 1/2 cup of heavy whipping cream into the small zip-lock bag.
 - Add 1 tablespoon of sugar and 1/4 teaspoon of vanilla.
 - Seal the small bag tightly, pressing out as much air as possible.
 - Place the small bag inside the large bag.
 - Fill the large bag halfway with ice.
 - Add 6 tablespoons of rock salt over the ice.
 - Seal the large bag tightly.
 - Shake and squeeze the bag for 8–10 minutes. Use gloves or a towel — the bag will get very cold!
 - c. Prompt scientific observation and adjective selection at each stage:
 - “Stage 1 — After 2 minutes: How has the temperature changed? Which adjective from our chart fits now — cool, cold, icy, or freezing?”
 - “Stage 2 — After 5 minutes: The cream is thickening. How would you classify it now — smooth, creamy, thick, or dense?”

- “Stage 3 — After 8 minutes: What has happened to the cream? What properties does it have now that it did not have before?”
 - d. Once ice cream has formed, open the small bag carefully and scoop into cups for tasting.
Ask students:
 - “How does it taste? Which adjective most precisely describes the flavor — sweet, rich, mild, or bland?”
 - “What properties changed from beginning to end? How would you classify the ice cream compared to the cream you started with?”
 - “Where did the cream come from? So where did our ice cream come from, all the way back to the beginning?”
 - e. Kansas Connection. Explain to students: “The cream in your ice cream started with a dairy cow on a farm. From the cow on the dairy farm to the milk in the truck, to the cream in your bag, to the ice cream in your cup — that is the journey of milk. Do you know anyone who works on a dairy farm or lives near one? If not, do you know someone who works in a grocery store or restaurant that sells dairy products? Either way, you are connected to the dairy farming story.”
5. Bridge to Writing. Gather students together after tasting.
- a. Explain to students: “You just made ice cream, observed it change through three stages, and chose precise adjectives to describe each one. Now you are going to use all of that — plus what you saw in the video — to write an informative paragraph that teaches someone exactly what ice cream is and where it comes from.”
 - b. Explain to students: “In second grade, informative writing has four parts: you introduce your topic with a definition — tell the reader what the thing actually is; you develop your points with facts; you use precise adjectives to help the reader picture what you are describing; and you end with a concluding statement that wraps up your writing.”
 - c. Ask students to verbalize before writing:
 - “What is a definition of ice cream? Tell me in one sentence what ice cream actually is.”
 - “What is one fact you know about how it is made? Use information from both the video and your own experience.”
 - “Which two adjectives from our chart will you use? Make sure they are the most precise ones.”
 - “How will you close your paragraph? What final thought wraps up what you have taught the reader?”
 - d. Instruct students: “Turn to a partner and say your definition sentence out loud. Make sure it names your topic and defines it.” Allow 2–3 minutes for oral rehearsal. Students who articulate their definition, facts, and adjectives before writing produce more precise and complete informative paragraphs.
6. Shared Writing - Modeling the Writing Process. Gather students in a place where they can see the chart paper clearly.
- a. Explain to students: “Watch how I write an informative paragraph. I am going to introduce my topic with a definition, develop my points with facts and adjectives, and close with a concluding statement.”
 - b. Model writing, thinking aloud at every step:

- “My introduction with a definition: Ice cream is a frozen dairy product made from cream, sugar, and flavorings. I introduced my topic and defined it — I told the reader exactly what ice cream is.”
 - “My fact with an adjective: The cream starts as a thick, pourable liquid, but the freezing temperature causes it to become a smooth, solid treat. I used thick and smooth — both are adjectives from our chart. Notice where they sit: thick comes right before the noun liquid, and smooth comes right before the noun treat. That is where adjectives belong — right before the noun they describe, or after a linking verb like is or feels. Now think about this: what if I had written ‘the cream starts as a cold liquid and becomes a cold treat’? Cold is an adjective, but it is not precise — it does not tell the reader anything about texture or what changed. Thick and smooth are more precise because they describe exactly what the properties are at each stage. When you write today, place your adjectives before your nouns and choose ones that tell the reader something specific.”
 - “My second fact using information from the video and our experience: The cream in ice cream comes from milk produced by dairy cows on a farm, just like Farmer George’s Holsteins in our book.”
 - “My concluding statement: Every creamy scoop of ice cream is connected to a dairy farmer who started that journey. I ended with a thought that wraps up what I taught the reader and connects back to our dairy theme.”
- c. Point to each part and name it:
- Introduction with definition: what ice cream actually is
 - Fact + adjectives: how it is made and what it looks/feels like
 - Fact from sources: where it comes from
 - Concluding statement: wraps up the writing
- d. Remind students: “Before you begin writing, make sure your vocabulary card and dictionary are at your table. Use them when you are unsure of a spelling. That is what good writers do.”
7. Informative Writing — From Cow to Cone. Distribute the From Cow to Cone writing sheet.
- a. Explain to students: “Write your informative paragraph. Include: a definition of ice cream, at least one fact developed with a precise adjective, information recalled from the video or your experience, and a concluding statement. Use your reference materials for any spelling you are unsure of.”
- b. As students write, circulate and support:
- Prompt for the definition: “Your first sentence should define ice cream. What is it, exactly?”
 - Prompt for adjective use: “Which adjective from our chart describes how the ice cream felt or tasted? Use that word.”
 - Prompt for source use: “What did the video tell you about ice cream that you can include as a fact?”
 - Prompt for concluding statement: “How does your paragraph end? Write a final thought.”
 - Encourage reference material use: “If you are not sure how to spell that word, check your vocabulary card or dictionary.”

Differentiation note: For students who need additional support, provide a paragraph frame at teacher discretion: “Ice cream is _____. It is made from _____ cream that comes from a _____. The ice cream tasted _____. Dairy farmers in Kansas _____.” For students ready for a challenge, prompt them to use two adjective pairs from our shades of meaning chart and explain why they chose one word over the other.

8. Revising & Editing — Peer and Self

- a. Explain to students: “In second grade, good writers do not just finish and stop. They go back and make their writing stronger. We are going to do a quick revision and editing check — first with a partner, then on your own.”
- b. Peer revision (2–3 minutes): Explain to students: “Swap your paper with a partner. Read their paragraph and answer these three questions: Does the paragraph start with a definition? Does it include at least one adjective? Does it have a concluding statement? Circle any adjective you find. Put a star next to the concluding statement.”
- c. Self-editing (2–3 minutes): Explain to students: “Get your paper back. Look at what your partner circled and starred. Now check your own writing: Is your first sentence a definition? If not, revise it. Did your partner find an adjective? If not, add one. Is your concluding statement there? If not, write one now. Finally, check any spelling you are unsure of against your vocabulary card or dictionary.”
(W.2.5 — this revision and editing step is guided and structured. Second graders need explicit criteria to revise toward. The three-question checklist gives them a concrete target rather than the vague instruction to “make it better.”)

9. Closing Discussion & Reflection

- a. Gather students together with their revised writing sheets.
- b. Ask students:
 - “What did we make today? Where did the cream come from?”
 - “In *Celebrate Wheat*, wheat became pizza crust. In this unit, what did milk become?”
 - “What is the most precise adjective you used in your writing? Why did you choose that one over a closely related word?”
- c. Invite students to share their paragraphs. After each one, ask the class:
 - “What was the definition in the introduction?”
 - “Which adjective did the writer use? What other adjective from our chart could have worked? How are they different?”
 - “What was the concluding statement?”
- d. Reinforce the farm-to-table connection: “Dairy cows give us milk. Milk gives us cream. Cream gives us butter and ice cream. Every frozen, creamy, sweet scoop traces back to a dairy farmer.”

Assessment: Student understanding is assessed through teacher observation during the video discussion, adjective instruction, ice cream investigation, shared writing model, independent writing, and peer revision. Teacher should note whether students can distinguish shades of meaning among closely related adjectives and select precise ones for their writing, recall information from the video and their experience to develop their informative writing, write an informative paragraph that introduces a topic with a definition, uses facts and adjectives to develop points, and provides a concluding statement, revise and edit their writing using the peer and self-editing checklist with guidance and support, and consult reference materials to check

and correct spelling independently. The From Cow to Cone writing sheet serves as the primary written artifact for this lesson.

Supplemental Activities: Display the From Cow to Cone writing sheets alongside the butter narrative writing from Lesson 3 and the Map the Journey sequence sheets from Lesson 2. Guide students to examine all three artifacts and identify the farm-to-table connection throughout the unit. Add the adjective shades-of-meaning chart to the classroom wall as a permanent writing reference. Invite students to find adjectives in their independent reading books and classify them using the temperature, texture, and taste categories from the lesson.

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From Cow to Cone

Name: _____

Date: _____

Writing Prompt: Write an informative paragraph about ice cream. Introduce your topic with a definition, include at least one fact developed with a precise adjective, recall information from the video or your experience, and end with a concluding statement.

My Paragraph:

This image shows a blank sheet of white paper with four sets of horizontal ruling lines. Each set includes a solid blue line at the top, a dashed blue line in the middle, and another solid blue line at the bottom, providing a guide for handwriting practice. The sets are evenly spaced vertically across the page.

Self-Check

- ☐ Is there a capital at the start of each sentence?
 - ☐ Is there a period at the end of each sentence?
 - ☐ Have you checked your spelling?
 - ☐ Is there a concluding statement?
 - ☐ Did you introduce your topic with a definition?
 - ☐ Did you include a fact with a precise adjective?
 - ☐ Did you include information from the video/personal experience?

Vocabulary Reference Cards



Holstein



Buttermilk



Processing



Pasteurize