

Lesson 3: Wheat Has Friends

Grade Level: 2nd Grade

Time: 60 minutes (with additional days for germination observation)

Subjects: ELA, Science

Overview: This lesson is Lesson 3 of 5 in the *Celebrate Wheat* unit within the Growing Readers micro-curriculum, based on a series of books written by Kansas author Dan Yunk. In this lesson, students engage in a purposeful reread to deepen their understanding of how wheat grows and becomes food, then expand their learning to include other major Kansas crops: corn, soybeans, sorghum, and sunflowers. Students examine real seeds, record observations through drawing and writing, and compare similarities and differences across crops. Second graders apply explicit instruction in determining word meaning from context, understanding how the prefix *un-* changes the meaning of a base word, gathering information from experiences and sources to answer a question, producing and expanding simple and compound sentences, and consulting a dictionary to check spellings. Students conclude by creating a “farm in a glove” model to observe seed sprouting. Connections to *The Soil Neighborhood* are revisited as students explore how soil nutrients support plant growth beyond germination.

Skillset: Activating and connecting prior knowledge across units, seed observation and comparison, determining word meaning from context, prefix *un-* instruction, gathering information from experience and text to answer a question, producing and expanding simple and compound sentences, dictionary use for spelling, informative drawing and writing, germination understanding, and agricultural awareness across Kansas crops.

Kansas Academic Standards

Kansas ELA Standards

RI.2.4 Determine the meaning of words and phrases in a text relevant to a second-grade topic or subject area.

RI.2.11.b Determine the meaning of the new word formed when a known prefix is added to a base word (e.g., happy/unhappy, do/redo).

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

W.2.10.f Produce, expand, and rearrange complete simple and compound sentences.

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

Science Standards

2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

National Agriculture Literacy Outcomes

Plants and Animals for Food, Fiber, and Energy

T2.K-2.a Describe how plants are grown and used for food.

T2.K-2.e Identify the importance of natural resources (e.g., sun, soil, water) in farming.

T4.K-2.a Describe how farmers use tools and equipment to plant, grow, and harvest crops.

Objectives

Science Objectives

Students will be able to:

- Identify that wheat, corn, soybeans, sorghum, and sunflowers all begin as seeds.
- Observe and describe similarities and differences among seeds.
- Plan and investigate to observe what seeds need to begin growing.
- Explain that seeds need water, air, and warmth to begin growing.
- Describe germination as the process of a seed sprouting.
- Collect observational evidence that different seeds sprout at different rates.
- Connect the role of healthy soil to what a plant needs once it begins to grow, drawing on prior knowledge from *The Soil Neighborhood*.

English Language Arts Objectives

Students will be able to:

- Determine the meaning of content-specific words and phrases encountered in the read-aloud using context clues.
- Determine the meaning of the word unloaded by identifying the prefix 'un' and the base word loaded, explaining how the prefix changes the meaning.
- Generate additional words with the prefix 'un' and explain how the prefix changes each base word.
- Gather information from the seed investigation and the read-aloud to answer a question in writing.
- Produce, expand, and rearrange complete simple and compound sentences in written and oral responses.
- Consult a beginning dictionary to check and correct the spelling of key lesson words.

Materials Needed

- Book: *Celebrate Wheat* by Dan Yunk
- Lined writing paper (one sheet per student for each observation round)
- Seed Reference Cards — companion document (one per student)
- Labeled food service gloves, teacher labels before lesson (one per student)
- Masking tape strips, for student name labels (one per student)
- Student markers or pencils
- Cotton balls (5 per student)
- Small bowls of water (one per group)
- Soybean, wheat, corn, sorghum, and sunflower seeds (one of each per student)
- Tape, to secure gloves
- Simple map of Kansas
- Beginning dictionaries or student dictionary reference cards (one per student or pair)

Lesson Procedures

1. Activating Prior Knowledge

- a. Gather students and explain: *"In our last lesson, you planted your own wheat seed in a cup, just like farmers do. Today, we are going to read Celebrate Wheat again. This time, we are listening very carefully because we want to connect what we planted to what happens to wheat as it grows and becomes food. We are also going to pay close attention to specific words in the book and figure out what they mean."*
 - b. Explain the purpose of a second read: *"Good readers read books more than once. The first time, we read to understand the story. The second time, we read to look more closely; for details, for vocabulary, and for connections to what we already know."*
 - c. Ask students:
 - *"What did you plant in your cup?"*
 - *"What did your wheat seed need to start growing?"*
 - *"Who planted wheat in our story?"*
 - d. Bridge to *The Soil Neighborhood*: *"We also know from The Soil Neighborhood that healthy soil is full of helpers. Once a seed sprouts and takes root, those soil helpers provide the plant with the nutrients it needs to keep growing. Today, as we listen to the story again, think about all the things working together to help wheat grow: sun, water, and the soil neighborhood underground."*
2. Purposeful Second Read-Aloud with Vocabulary Focus
- a. Set a listening purpose: *"While I read today, listen for what happens to wheat after it is planted and how it becomes the food we eat. Also listen for words that are new or that you want to understand better. When you hear a word you are not sure about, give me a thumbs up so we can stop and figure out what it means together."*
 - b. Read *Celebrate Wheat* aloud. Pause at key moments to:
 - *highlight illustrations,*
 - *determine the meaning of content-specific vocabulary from context,*
 - *connect the text to the students' planting experience.*
 - c. Planned vocabulary stops: At each vocabulary word, model how to use context clues from the surrounding sentences and illustrations to determine meaning before confirming the definition.
 - *"Harvest — the text says farmers cut the wheat when it turns golden. What clues tell us what harvest means?"*
 - *"Kernels — the text says kernels are collected in the grain bin. What do you think kernels mean based on what we know about wheat?"*
 - *"Mill — the text says wheat is taken to a mill where it is ground into flour. What does a mill do?"*
 - d. Ask students during reading:
 - *"What does the wheat look like when it first starts growing?"*
 - *"What helps the wheat grow taller?"*
 - *"What do farmers use to harvest the wheat?"*
 - *"What food does wheat turn into in the story?"*
 - e. After reading, ask students:
 - *"How is the wheat in the story like the seed you planted?"*
 - *"What happens to wheat after farmers harvest it?"*
 - *"Why do you think wheat is important to people?"*
3. Prefix Instruction — 'un'

- a. Anchor to the text: *"In our book, there is a sentence that says: 'the kernels are unloaded into trucks.' Let's look closely at the word unloaded."*
 - b. Write unloaded on chart paper.
 - c. Explain to students: *"This word has two parts. The base word is loaded, which means something was put onto the truck. The prefix is 'un'. A prefix is a group of letters added to the beginning of a base word that changes its meaning. The prefix un- means 'not' or 'the opposite of.' So if loaded means 'put on,' then unloaded means 'taken off.' The kernels were taken off the combine and put into the trucks."*
 - d. Show visually on chart paper:
un- + loaded = unloaded (taken off; the opposite of loaded)
 - e. Ask students: *"If loaded means put on, what does unloaded mean? How did the prefix change the meaning?"*
 - f. Build out the prefix: *"The prefix 'un' works the same way in many other words. Let's see how it changes the meaning of these base words."*
 - happy → unhappy ("not happy")
 - tie → untie ("to undo tying")
 - safe → unsafe ("not safe")
 - pack → unpack ("to take things out of a packed space")
 - cover → uncover ("to remove a cover")
 - g. Ask students: *"What pattern do you notice? What does un- always do to the base word?"*
 - h. Connect back to agriculture: *"In farming, we also hear words like unloading grain at the elevator and unpacking equipment. The prefix 'un' is a useful word part to know."*
4. Transition from Wheat to Other Crops
- Prompt: *"We have been learning a lot about wheat. You planted a wheat seed, and in the story we learned how wheat grows and becomes food."*
- a. Pause and ask: *"Do Kansas farmers only plant wheat?"*
 - b. Explain to students: *"Kansas farmers plant wheat, but they also plant many other crops. Crops are plants that farmers grow to make food and other things that people need."*
 - c. Show the wheat, soybean, corn, sorghum, and sunflower seeds.
 - d. Explain to students: *"Just like wheat, Kansas farmers plant these seeds to produce different crops."*
 - e. Ask students:
 - *"Do these seeds look the same or different?"*
 - *"What do you notice when you look at them?"*
 - *"What crops do you think these seeds will grow into?"*
 - f. Explain to students: *"Today, we are going to be seed scientists. Scientists look closely at details, record what they notice, and gather information to answer questions. You are going to observe each seed and write about what you find."*
5. Seed Examination (Hands-On Investigation)
- a. Seed Identification — Teacher Introduction: Before distributing seeds, hold up each seed one at a time and introduce it clearly. Display each seed at the front of the room or under a document camera so that all students can see it.
 - b. Say for each seed:
 - *"This small, tan seed is wheat. Wheat is the crop we read about in our story. It grows in big fields across Kansas."*

- *“This large, yellow seed is corn. Corn grows tall on stalks. You might have seen corn fields on a drive through Kansas.”*
 - *“This small, round, tan seed is a soybean. Soybeans are used to make cooking oil and animal feed.”*
 - *“This small, reddish seed is sorghum. Sorghum looks a little like wheat but is smaller and more round.”*
 - *“This long, striped seed is a sunflower seed. Sunflowers grow tall with bright yellow petals.”*
- c. Distribute the *Seed Reference Card* to each student.
 - d. Explain to students: *“This card shows you what each seed looks like and tells you its name. You can use it to help identify seeds and spell their names correctly. If you are not sure how to spell a word, you can also check a dictionary.”*
 - e. Distribute a set of seeds to each student (wheat, corn, soybean, sorghum, and sunflower). Ensure each student has their own seeds, a sheet of lined writing paper, the *Seed Reference Card*, and access to a beginning dictionary.
 - f. Explain to students: *“Each of you has your own seeds to look at closely. Scientists observe carefully, draw what they see, and write about what they notice. For each seed, you will draw the seed carefully on your paper and label your drawing with the seed’s name and at least two describing words. Then you will write two complete sentences about the seed, one naming and describing it, and one telling what it looks like or how it feels. Use your Seed Reference Card and dictionary for spelling help.”*
 - g. Remind students of expectations:
 - *“We use our eyes to look closely.”*
 - *“We do not put seeds in our mouths.”*
 - *“We handle them gently.”*
 - h. Model expectations using one seed (wheat):
 Hold up a wheat seed and say: *“Watch how I look closely. I notice the seed is small and tan. I will draw the wheat seed here on my paper. (Draw and show students). Now I label my drawing: I write the word “wheat” with an arrow pointing to the seed, and I write two descriptive words near my drawing: “small” and “tan”. Next, I write my two sentences: “The wheat seed is small and tan.” and “It feels hard, and it has a pointed tip.” Notice that the second sentence is a compound sentence. Now let me check the spelling of wheat using my Seed Reference Card or dictionary: W-h-e-a-t.”*
 - i. Explain to students Simple and Compound Sentences: *“In second grade, we are working on writing strong sentences. A simple sentence has one subject and one predicate, which tells what the subject does, has, or is: “The wheat seed is tan.” A compound sentence joins two simple sentences with a conjunction like and, but, or so: “The wheat seed is tan, and it feels hard.” When you write your sentences today, try to write at least one compound sentence. Use a comma before the conjunction.”*
 - j. Guide students through one seed at a time. Allow students to hold and examine their own seed while they draw, label, and write on their lined paper.
 - k. Provide structured prompts while students are working:
 - *“What word describes this seed?”*
 - *“Can you expand that sentence? What else can you tell us about the seed?”*

- *“Can you combine two ideas into one compound sentence using and, but, or so?”*
 - *“If you are not sure how to spell that word, check the Seed Reference Card or look it up in your dictionary.”*
- l. As students work, the teacher circulates and explicitly supports:
- *Labeled scientific drawings: seed name and at least two describing words with arrows*
 - *Expanding simple sentences to compound sentences*
 - *Use of at least one ‘un’ word in the comparison paragraph*
 - *Dictionary used for spelling verification*
 - *Correct capitalization and end punctuation*
 - *Proper letter spacing and formation*
- m. After students observe and write about all five seeds, bring the class together for the comparison discussion below.
- n. Explain to students: *“Scientists and writers gather information from their observations and from sources to answer questions. You just observed five different seeds up close. Now we are going to use that information to answer a question: How are these seeds the same and how are they different? Think about what you drew and wrote, and share your thinking. Then you will add a comparison paragraph to your lined paper: write two or three sentences comparing at least two seeds. Here is the challenge: try to use at least one word with the prefix ‘un’ that we learned earlier. For example, you might write: “The sorghum seed is unlike the corn seed because it is much smaller.” or “The sunflower seed is uneven in color because it has stripes.” Think about how ‘un’ changes the meaning of your base word, just like unloaded did in our book. This is called recalling information from an experience to answer a question.”*
- o. Ask students:
- *“Which seed was the biggest?”*
 - *“Which seed was the smallest?”*
 - *“Did any of your seeds look the same?”*
 - *“How were the seeds different?”*
- p. Explain to students: *“Even though these seeds look different, Kansas farmers plant all of them. Each seed can grow into a different crop.”*
 Differentiation note: For students who need additional support, provide sentence starters at teacher discretion (e.g., “The ___ seed is ___. It is ___ than the ___ seed.”). For students ready for a challenge, prompt them to write at least two compound sentences in the Compare section, using their observations as evidence.
6. Dictionary Use
- a. Explain to students: *“Before we move on, let’s practice using a dictionary to check our spellings. A dictionary lists words in alphabetical order and shows us how to spell them correctly.”*
- b. Model dictionary use:
 Say: *“I wrote the word sorghum. I want to check my spelling. I look in the dictionary under the letter s. Then I look for sor-. I find sorghum and check: s-o-r-g-h-u-m. That is correct. If I had spelled it wrong, I would fix it now.”*
- c. Have students check the spelling of at least two words from their lined paper using a dictionary or the Seed Reference Card.
- d. Ask students:
- *“Why do we check our spellings?”*

- *“How does a dictionary help us as writers?”*
- *“What do you notice about how words are organized in a dictionary?”*

7. Seed Sprouting Activity — Farm in a Glove

Prompt: *“We just looked closely at seeds from different Kansas crops. All of these seeds can grow into plants.”*

- Ask students:
 - *“What do farmers do first if they want to grow a crop?” (plant a seed)*
 - *“What do you think a seed needs to start growing?”*
- Explain to students: *“When a seed starts to grow, we say it sprouts. Germination is the scientific word for a seed beginning to grow, or sprout. Today, we are going to help our seeds germinate by giving them what they need, just like farmers do.”*
- Ask students:
 - *“What do seeds need to start growing?”*
- Guide students to identify:
 - *Water*
 - *Air*
 - *Warmth*
- Explain to students: *“When the seed grows bigger, it will also need light and nutrients from the soil. Remember the helpers in the soil neighborhood? Once roots form, those helpers get to work providing nutrients to help the plant grow strong. Right now, we are just helping the seed start.”*
- Show a glove and say: *“We are going to make a tiny farm with our seeds, a farm in a glove. Each finger of the glove will hold a different seed. The glove helps us watch how seeds sprout.”*
- Explain to students: *“I have already written the name of each seed on the fingers of your glove so you can match your seed to the correct finger.” Hold up a sample glove with fingers labeled: wheat, corn, soybean, sorghum, sunflower.*
- Model each step slowly while students watch before distributing materials:
 - *Show the labeled glove.*
 - *Place a strip of masking tape across the palm of the glove.*
 - *Write your name on the masking tape.*
- Explain to students: *“You will write your name on masking tape and stick it to your glove so we know which glove belongs to you.”*
- Dip a cotton ball in water and gently squeeze it so it is wet but not dripping.
- Hold up one seed and identify it clearly:
 - *“This small tan seed is wheat.”*
 - *“This big yellow seed is corn.”*
- Briefly review visual characteristics to help students identify their seeds.
- Place one seed on the cotton ball, then put the cotton ball into the matching labeled finger of the glove.
- Say aloud what you are doing:
 - *“I am putting the wheat seed on the wet cotton ball.”*
 - *“I am matching the wheat seed to the finger that says wheat.”*
 - *“The water will help the seed sprout.”*
- Distribute labeled gloves, masking tape strips, markers, cotton balls, water bowls, and seeds.
- Support students as they:
 - *Write their names on masking tape and attach it to their glove.*
 - *Dip and squeeze cotton balls.*

- *Place the correct seed on each cotton ball.*
 - *Match the seed to the labeled glove finger.*
 - q. Use oral language prompts, encouraging compound sentences:
 - *"I put the seed in the glove, and the cotton ball will keep it wet."*
 - *"The corn seed is large, but the wheat seed is small."*
 - *"This seed needs water to grow, so I dipped the cotton ball first."*
 - r. After students finish putting seeds in the gloves, help them fold down the glove opening and secure it with tape.
 - s. Hang gloves with fingers pointing downward.
 - t. Explain to students: *"We do not need to add more water. The cotton ball has enough water for the seed to start growing."*
8. Prediction & Discussion
- a. Ask students:
 - *"What do you think will happen to the seeds?"*
 - *"Which seed do you think will sprout first?"*
 - *"Will all of the seeds look the same when they sprout?"*
 - b. Explain to students: *"We will watch our seeds over the next few days and see how they change. Scientists make predictions and then observe to see if they were right."*
 - c. Connect to W.2.8: *"As you observe your seeds each day, you are gathering information from an experience. You will use that information to answer the question: What do seeds need to grow? Keep your observations in your journal so you have evidence to write about."*
9. Discussion & Reflection
- a. Gather students near the hanging gloves.
 - b. Ask students:
 - *"What did we learn today about seeds?"*
 - *"What does a seed need to start growing?"*
 - *"What was different about the seeds we looked at?"*
 - *"How are the seeds we looked at the same?"*
 - c. Guide students to reflect on the germination activity:
 - *"Why did we put the seeds on wet cotton balls?"*
 - *"Why did we match each seed to the correct finger on the glove?"*
 - *"What do you think will happen inside the seed first?"*
 - d. Reinforce vocabulary: *"Today we learned that when a seed starts to grow, it sprouts. The scientific word for sprouting is germination. In our book Celebrate Wheat, Grandma told Kailey that wheat starts as a seed. Today, we helped wheat and other crops begin that same process."*
10. Kansas Connection
- a. Display a simple map of Kansas.
 - b. Explain to students: *"We live in Kansas, and Kansas is a farming state. Farmers in Kansas plant many crops."*
 - c. Review the five crops from the lesson and briefly explain what each is used for:
 - **Wheat** – flour for bread, pasta, and pizza crust
 - **Corn** – eaten by people; used to feed livestock
 - **Soybeans** – cooking oil, animal feed, and many food products
 - **Sorghum** – ground into flour, made into molasses syrup, and used as animal feed
 - **Sunflowers** – seeds for snacks and sunflower oil

- d. Kansas Connection:
Kansas Connection — Teacher Script: *“The seeds you held today, wheat, corn, soybeans, sorghum, and sunflowers, are not just classroom materials. They are the same seeds that Kansas farmers plant in their fields every year. In Kansas, those fields stretch as far as you can see. Some of you have driven past them, or maybe you’ve helped plant a garden at home or on your family’s land and know what it feels like to put a seed in the ground. Others of you might not have thought much about where seeds come from before today, and that is okay, because now you do. Every loaf of bread, every bag of chips, every bottle of cooking oil has a seed story behind it, and a lot of those stories start right here in Kansas. The farmers who grow these crops work hard every season, planting, caring for the land, and harvesting so that people everywhere have food to eat. What did you do today in your glove? Farmers do the same thing, just on a much bigger scale.”*
- e. Ask students:
- *“Have you ever seen fields of corn or wheat when you are driving?”*
 - *“Has anyone seen sunflowers growing?”*
 - *“Do you know someone who is a farmer or rancher? What types of crops or livestock do they grow?”*
 - *“How does germinating your own seeds help you understand what farmers do?”*

Assessment: Student understanding is assessed through ongoing formative observation throughout the lesson, including participation in the purposeful reread and vocabulary discussion; accuracy and detail in scientific drawings with labels; written seed observations and comparison writing; engagement in the seed sprouting activity; and application of grade-level literacy skills. Teacher should note whether students can determine the meaning of content-specific words from context clues, correctly identify the prefix *un-* and explain how it changes the meaning of *unloaded* and other base words, use information gathered from the investigation to answer a question in writing, produce and expand at least one compound sentence, use at least one word with the prefix *un-* in their comparison writing, and use a dictionary to check and correct spellings. Students who make unprompted connections to *The Soil Neighborhood* demonstrate meaningful cross-unit learning transfer and should be noted.

Supplemental Activities: Germination Observation Journal — Ongoing Inquiry: Over the days following this lesson, give students regular opportunities to observe their farm-in-a-glove and record what they notice. Each observation session, students draw two seeds side by side on lined paper, label each drawing with the seed name and at least one describing word, and write two sentences comparing what they observe — at least one of which should be a compound sentence (e.g., “The corn seed has a root, but the wheat seed has not sprouted yet.”). Students use their observations as evidence to answer the guiding question: What do seeds need to grow? Prompt students to check their spelling of seed names using the Seed Reference Card or a dictionary. Because seeds germinate at different rates, the compare-and-contrast observations will naturally change from day to day, giving students authentic, ever-changing material. The journal directly connects to W.2.8 — students are recalling information from experience to answer a question — and to W.2.10.f as they practice expanding and rearranging their sentences across multiple entries.

Differentiation note: For students who need additional support, provide sentence starters at the teacher's discretion. For students ready for a challenge, prompt them to write three or four sentences per observation entry, including at least two compound sentences and a comparative statement using un-vocabulary where relevant (e.g., "The sorghum seed is still unsprouted, unlike the corn.").

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Seed Reference Card



Wheat



Corn



Soybean



Sunflower



Sorghum