HARVEST OF THE MONTH - JULY / WHEAT & GRAINS

Grades 6-8

KANSAS STATE DEPARTMENT OF EDUCATION

Kansas leads the world in the success of each student.

MAY 20, 2025

Kansas State Board of Education

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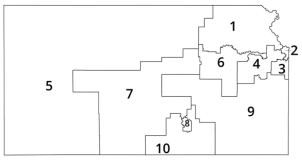

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SUCCESS DEFINED

A successful Kansas high school graduate has the

- Academic preparation,
- Cognitive preparation,
- Technical skills,
- Employability skills and
- Civic engagement

to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

OUTCOMES

- Social-emotional growth
- Kindergarten readiness
- Individual Plan of Study
- Civic engagement
- Academically prepared for postsecondary
- High school graduation
- Postsecondary success

Kansans CAN

MISSION

To prepare Kansas students for lifelong success through rigorous, quality academic instruction, career training and character development according to each student's gifts and talents.

VISION

Kansas leads the world in the success of each student.

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Kansas leads the world in the success of each student.

July 1, 2025

HARVEST OF THE MONTH

July / Wheat & Grains

INTRODUCTION

Over the next few weeks, we will be learning about a kind of food that we grow in Kansas. I'm going to give you some clues to see if you can guess what this food is.

- This food is a member of the grass family.
- it produces a dry one-seeded fruit called a kernel.
- They are high in fiber
- We usually grind them up to make flour.
- Show picture.

Can you guess what food I'm talking about? We will be learning about wheat and grains!

VOCABULARY

Weather: The short-term atmospheric conditions at a specific location and time, including temperature, wind, humidity, and precipitation**Endosperm:** The tissue part of a seed that serves as a food source for the developing plant

Climate: The long term weather patterns of a specific location

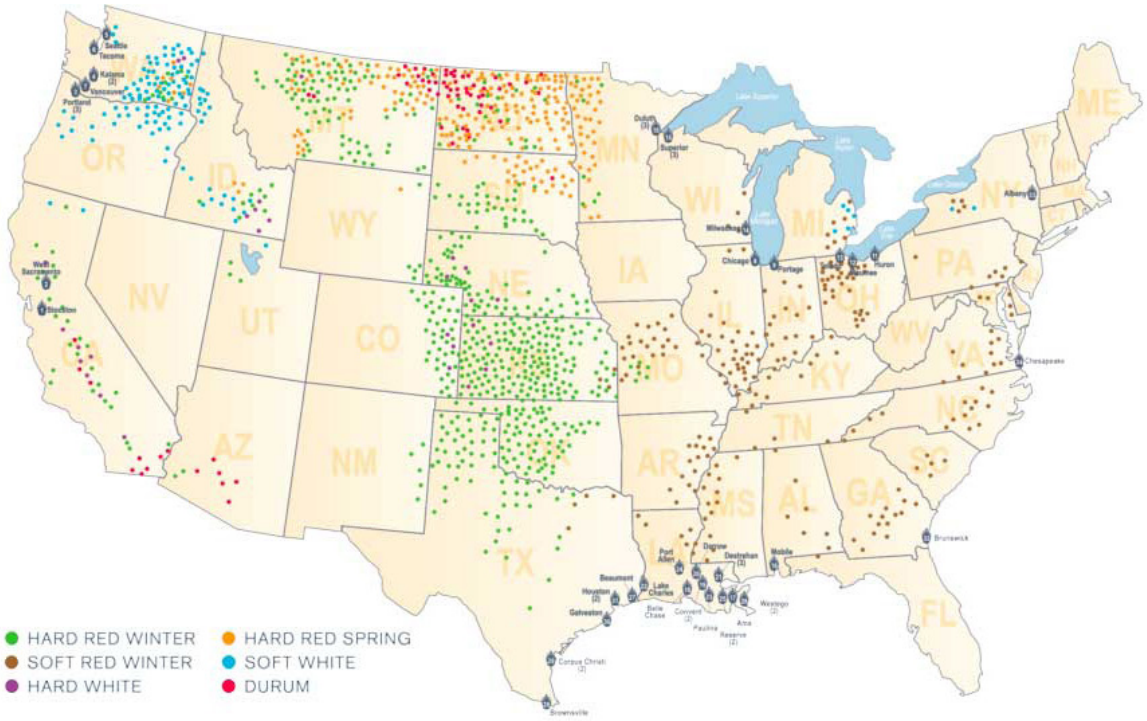
GENERAL RESOURCES

Kansas Wheat[1]

Whole Grain Council[2]

ENGAGE

Display the map[3] from the following website for students to analyze:



Provide each group of three to four students with the map. Share with students that wheat is one of the most versatile plants on our planet. Six different classes of wheat are produced within the continental United States. Explain to students that the map is showing where wheat is grown.

Ask students to create a notice and wonder chart on a piece of paper that would look like this example:

1 https://kswheat.com/

2 https://wholegrainscouncil.gov/

3 https://wheatworld.org/wheat-101/

Notice	Wonder

Ask students to take three minutes to analyze the map and write down things they notice on their notice and wonder chart. Provide an additional three minutes to write down things they wonder about the map.

Once students have had time to document things they notice and wonder about the map, lead a class discussion to document what things students noticed about the map. Write these noticings on either a piece of chart paper or directly on an enlarged map.

Lead the class in voicing their wonders about the map. Write these questions largely on a piece of chart paper or on the class whiteboard for all students to be able to see.

State: Today, we are going to figure out why Kansas might be the best location to grow hard red winter wheat.

EXPLORE

Explain to students that their job today is to be detectives why Kansas might be the best location to grow hard red winter wheat. Students will work in groups of three to four where they will be asked to read the following website texts. Each student will read one of the articles on the websites to become an expert on that text with the mindset that they need to collect evidence that would support the question posed earlier in the lesson.

- Facts about Wheat[4]
- Wheat production by region[5]
- Wheat: An Essential Grain[6]
- Facts about Wheat[7]

4 https://wheatworld.org/facts-about-wheat/

5 https://wheatworld.org/wheat-production-regions/

6 https://wheatworld.org/wp-content/uploads/2020-Wheat-101-One-Pager.pdf

7 https://eatwheat.org/learn/wheat-facts/

Facts about Wheat
Wheat production by region
Wheat: An Essential Grain
Facts about Wheat

Students will document their evidence while reading one of the articles. They then will share this evidence with the others at their team, making sure to note the evidence on their graphic organizer.

As a class, discuss what evidence they collected to answer the guiding question.

EXPLAIN

Show the following video 'Slow evolving crisis': Extreme weather's impact on wheat yields in Kansas'[8] about how the climate has impacted farmers growing wheat:

Extreme weather is impacting wheat yields in Kansas. A study from K-State found that hot, dry, windy events led to a 4% yield reduction per 10 hours of extreme weather.

Read aloud the book The Biography of Wheat (How Did That Get Here?) By Jennifer D. B. Lackey.

Use the following think aloud protocol [9]

1. Explain to students what think-alouds are and why they are useful. Emphasize that it's a strategy for thinking about and understanding a text while reading.
2. Begin by modeling the strategy. Model your thinking as you read. Explicitly articulate your thinking process, making it clear how good readers engage with the text. Use phrases like "I'm thinking," "I wonder," or "This makes me think of..." Do this at points in the text that may be confusing for students (new vocabulary, unusual sentence construction).

8 https://www.youtube.com/watch?v=H4Eb0Pj1hlI

9 https://www.readingrockets.org/classroom/classroom-strategies/think-alouds

3. Introduce the assigned text and develop a set of questions to support thinking aloud (see examples below).

    What do I know about this topic?

    What do I think I will learn about this topic?

    Do I understand what I just read?

    Do I have a clear picture in my head about this information?

    What more can I do to understand this?

    What were the most important points in this reading?

    What new information did I learn?

    How does it fit in with what I already know?

4. After the initial model, discuss specific reading strategies that students can use during think-alouds. These might include predicting, connecting, visualizing, questioning, summarizing, and monitoring comprehension.
5. Give students opportunities to practice the technique, and offer structured feedback to students.
6. Read the selected passage aloud as the students read the same text silently. At certain points stop and "think aloud" the answers to some preselected questions.
7. Demonstrate how good readers monitor their understanding by rereading a sentence, reading ahead to clarify, and/or looking for context clues. Students then learn to offer answers to the questions as the teacher leads the think-aloud.
8. After individual or group think-aloud activities, engage students in reflective discussions. Ask questions like, "What did you learn from your classmates' think-alouds?" or "How did thinking aloud help you understand the text better?"

ELABORATE

Use the following recipe to make Pizza in a Bag. Allow students to change the variable of using different types of wheat flour.

- Student recipe[10]
- Teacher Guide[11]

10 https://kswheat.com/sites/default/files/pizza_in_a_bag_kids_version_1.pdf

11 https://kswheat.com/sites/default/files/pizza_in_a_bag_leader_guide.pdf

KANSAS SCIENCE STANDARDS ADDRESSED

MS-ESS2-6 Earth's Systems

Students who demonstrate understanding can:

MS-ESS2-6

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

Clarification Statement:
Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.

Assessment Boundary:
Assessment does not include the dynamics of the Coriolis effect.]

The performance expectations above were developed using the following elements from the NRC document A Framework for K-12 Science Education.

Science and Engineering Practices

Developing and Using Models
Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

- Develop and use a model to describe phenomena.

Disciplinary Core Ideas

ESS2.C: The Roles of Water in Earth's Surface Processes

- Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents.

ESS2.D: Weather and Climate

- Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns.
- The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents.

Crosscutting Concepts

Systems and System Models

- Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.

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