

HARVEST OF THE MONTH - JULY / WHEAT & GRAINS

K-2



Kansas leads the world in the success of each student.

SEPTEMBER 30, 2024

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.

MOTTO

Kansans Can

SUCCESS DEFINED

A successful Kansas high school graduate has the

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

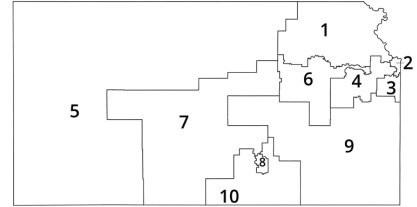
to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

OUTCOMES

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



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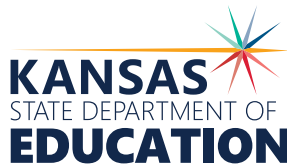


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Jan. 25, 2024

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

Seed: a fertilized ripened part of a flowering plant that is capable of producing a new plant.

Endosperm: The tissue part of a seed that serves as a food source for the developing plant

Germ: The center part or embryo of a grain that is separated in milling as an oily flake and used as a source of protein

Function: The role or job a specific structure plays

Bran: The outermost and protective coating of a wheat kernel

Structure: A part that has a specific function

Whole Grain: A whole grain includes all of the parts of the grain. Including the bran, endosperm and germ. A food may be considered a whole grain even after being processed (crushed, cracked, rolled, etc.) as long as all parts of the grain are found in the food product. An example of this might be whole grain spaghetti.

GENERAL RESOURCES

Kansas Wheat¹

Whole Grain Council²

ENGAGE

To engage students in this topic start by incorporating wheat into their math lesson using the wheat sheet.³ Engage students by talking about the parts of a wheat plant and asking them if they are familiar with what wheat is. Answers may include things like “it makes up flour”

EXPLORE

To build on what the students know about wheat as flour and the wheat we saw in the math lesson, tell students that wheat, like many other plants, has special parts. The stalk, for example, is like a stem that holds the plant up but the grains are special because they are the parts we can eat. Ask the students what types of things do we eat that are made of wheat? Examples may include things like bread, noodles, cookies and cake. Take a moment to show a picture of a wheat grain⁴ and introduce the term whole grain. Students may be familiar with whole grain bread. If you have access to wheat products such as oats and different types of flour allow students to explore and describe the differences they see in the products. This step in the lesson allows student background knowledge to be activated, allowing them to better connect to the next step of the lesson.

1 <https://kswheat.com/>

2 <https://wholegrainscouncil.org/>

3 https://drive.google.com/file/d/1G_kaO8bRog3_mDoSPrhmF5G1tA-6mm-x/view

4 <https://wholegrainscouncil.org/what-whole-grain>

EXPLAIN

Before we can eat the wheat it must be processed. Let's read a story about the journey wheat might take on the way to our table. This story is fiction (remind students that fiction means not real) but that parts of it are very true. Ask them to keep track of the parts they think might be real when it comes to how wheat comes to our table.

ELABORATE

Revisit the sequence of the story. Why did the Little Red Hen do each specific step in that order? After allowing students to share out and recount the pieces of the story. Remind students that the process described in the book is very similar to the process that happens in real life.

Take a moment to demonstrate how the wheat berry is separated from the chaff, or should students this video we watch how wheat is separated into its parts : processing wheat into flour.

Have students observe specifically the mortar and pestle used in the story and the stone mill in the video. Have students brainstorm ways that engineering could be used to make this process more efficient using technology.

LITERATURE CONNECTIONS

READ ALOUD PROTOCOL

Reading aloud to children is an important part of helping them be proficient readers. It builds their oral vocabulary, which is foundational to establishing a strong reading and writing vocabulary. It builds background knowledge which will support future reading comprehension. Reading (and singing) with students is one of the best ways to “reset” the climate in your classroom, calm and refocus attention on learning. As you share a book with students, make sure students are seated comfortably and that you show the book’s illustrations as you read the text. This will allow students to utilize the illustrations to support vocabulary learning and comprehension. This will be extremely important for students who have recently arrived. Included below are some helpful tips for sharing a book with children that will ensure the experience is joyful and informative.

- Prepare for the reading, preview the book to see if there are any parts of the book that may be confusing and require additional explanation. Check for both content and language appropriateness.
- Think of a fun and engaging way to introduce the book. Engagement can be enhanced by having an item to accompany the book to peak their interest and curiosity. Consider an item integral to the theme/topic of the book (a piece of fruit, a spade, a cup of soil), a puppet, a brief story or an engaging question.
- Plan a few questions to propose before, during and after the reading- but don’t make it an interrogation! Questions don’t need to be literal or detail oriented, but can be thought provoking, such as “How might you fix this problem?” or “Think of a time when something like that happened to you?”, etc.
- Think of ways to keep each student actively engaged during the reading (raising hands, giving thumbs up/down, discussing with a shoulder partner, clapping out answers, etc.)
- Encourage word curiosity! Stop at words not all students may know and conduct a think-aloud. “Boys and girls...I see a new word and I am wondering if anyone can tell me what “soil” is...
- Check for understanding. At the completion of the book, ask a few questions to check for general understanding related to the characters, plot, problem or solution in the story and/ or a few of the relevant who, what, when, where, why and how questions essential to comprehending the story.
- Leave the book where the children can access it for a re-reading experience, navigation of the pictures if a picture book and for a future writing model.

Read The Little Red Hen

KANSAS SCIENCE STANDARDS ADDRESSED

K-LS1-1 From Molecules to Organisms: Structures and Processes

Students who demonstrate understanding can:

K-LS1-1

Use observations to describe patterns of what plants and animals (including humans) need to survive

Clarification Statement:

Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.

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

Analyzing and Interpreting Data

Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

- Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)

Connections to Nature of Science

Scientific Knowledge is Based on Empirical Evidence

- Scientists look for patterns and order when making observations about the world. . (K-LS1-1)

Disciplinary Core Ideas

LS1.C: Organization for Matter and Energy Flow in Organisms

- All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)

Crosscutting Concepts

Patterns

- Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1)

Connections to other DCIs in kindergarten: N/A

Articulation of DCIs across grade-levels: 1.LS1.A (K-LS1-1); 2.LS2.A (K-LS1-1); 3.LS2.C (K-LS1-1); 3.LS4.B (K-LS1-1); 5.LS1.C (K-LS1-1); 5.LS2.A (K-LS1-1)

Common Core State Standards Connections: ELA/Literacy –

W.K.7

Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). (K-LS1-1)

Mathematics –

K.MD.A.2

Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. (K-LS1-1)

1-LS3 Heredity: Inheritance and Variation of Traits

Students who demonstrate understanding can:

1-LS3-1

Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents

Clarification Statement:

Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.

Assessment Boundary

Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.

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

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.

- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.

Disciplinary Core Ideas

LS3.A: Inheritance of Traits

- Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.

LS3.B: Variation of Traits

- Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.

Crosscutting Concepts

Patterns

- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

Connections to other DCIs in first grade: N/A

Articulation of DCIs across grade-levels: 3.LS3.A (1-LS3-1); 3.LS3.B (1-LS3-1)

Common Core State Standards Connections: ELA/Literacy

RI.1.1

Ask and answer questions about key details in a text. (1-LS3-1)

W.1.7

Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-LS3-1)

W.1.8

With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-LS3-1)

Mathematics

MP.2

Reason abstractly and quantitatively. (1-LS3-1)

MP.5

Use appropriate tools strategically. (1-LS3-1)

1.MD.A.1

Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1-LS3-1)

2-LS4-1 Biological Evolution: Unity and Diversity

Students who demonstrate understanding can:

1-LS1-1

Make observations of plants and animals to compare the diversity of life in different habitats

Clarification Statement:

Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.

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

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

- Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4-1)

Connections to Nature of Science

Scientific Knowledge is Based on Empirical Evidence

- Scientists look for patterns and order when making observations about the world. (2-LS4-1)

Disciplinary Core Ideas

LS4.D: Biodiversity and Humans

- There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)

Crosscutting Concepts

N/A

Connections to other DCIs in second grade: N/A

Articulation of DCIs across grade-levels: 3.LS4.C (2-LS4-1); 3.LS4.D (2-LS4-1); 5.LS2.A (2-LS4-1)

Common Core State Standards Connections: ELA/Literacy –

W.2.7: Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-LS4-1)

W.2.8: Recall information from experiences or gather information from provided sources to answer a question. (2-LS4-1)

Mathematics –

MP.2

Reason abstractly and quantitatively. (2-LS4-1)

MP.4

Model with mathematics. (2-LS4-1)

2.MD.D.10

Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems. (2-LS4-1)

A sample of Kansas ELA Standards addressed in this unit are listed below. For details and specific grade level standard alignment, see: [Kansas 2023 English Language Arts Standards](#)

Reading Foundations: Standard 3; using grade level phonics and word reading skills

Reading Literature: Standard 1; asking and answering questions about a text

Reading Literature: Standard 4; word meaning/ word choice

Reading Information: Standard 3; Describe relationship between historical events, scientific ideas or concepts

Reading Information: Standard 12; word meaning/ nuances

Writing: Standard 3; writing effective narratives to share experiences/ information with effective word choice and relevant details

Speaking and Listening: Standard 4; effectively presenting ideas and detailed/ sequenced descriptions with others

Research to Build and Present Knowledge: Standard 7,8,9

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