HARVEST OF THE MONTH - FEBRUARY / SWEET POTATOES

Grades 9-12

KANSAS STATE DEPARTMENT OF EDUCATION

Kansas leads the world in the success of each student.

JULY 17, 2025

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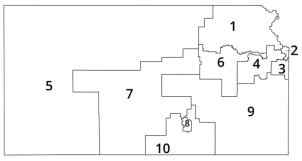
900 S.W. Jackson Street, Suite 600
Topeka, Kansas 66612-1212
(785) 296-3203
www.ksde.gov/board



DISTRICT 1

Danny Zeck
Vice Chair
Danny.Zeck@ksde.gov

DISTRICT 2

Melanie Haas
Melanie.Haas@ksde.gov

DISTRICT 3

Michelle Dombrosky
Michelle.Dombrosky@ksde.gov

DISTRICT 4

Connie O'Brien
Connie.O'brien@ksde.gov

DISTRICT 5

Cathy Hopkins
Chair
Cathy.Hopkins@ksde.gov

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Dr. Beryl A. New
Beryl.New@ksde.gov

DISTRICT 7

Dennis Hershberger
Dennis.Hershberger@ksde.gov

DISTRICT 8

Betty Arnold
Betty.Arnold@ksde.gov

DISTRICT 9

Jim Porter
Jim.Porter@ksde.gov

DISTRICT 10

Debby Potter
Debby.Potter@ksde.gov

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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Kansans Can

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Randy.Watson@ksde.gov

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Frank.Harwood@ksde.gov

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Division of Learning Services

Dr. Renee Nugent
Renee.Nugent@ksde.gov

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Kansas leads the world in the success of each student.

July 1, 2025

HARVEST OF THE MONTH

February / Sweet Potatoes

INTRODUCTION

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

- This food is a vegetable that grows underground in the soil.
- They are a good source of Vitamin A which helps keep our eyes and immune system healthy. They are also good for our hearts and blood pressure. They are also a good source of Vitamin C and fiber which help with digestion.
- They are oval shaped, and their skin can be tan, brown, or purplish red and their insides can be white, orange, or purple.
- They are sweet and even have sweet in their name!
- They can be eaten raw, baked, mashed, and as an ingredient in pies and casseroles. Many of us eat them with marshmallow melted on top around Thanksgiving.

Can you guess what food I'm talking about? We will be learning about Sweet Potatoes!

VOCABULARY

Sustainable Development Goals: global goals adopted by the UN in 2015 that are a universal call to action to end poverty, protect the planet, and foster peace and prosperity among all people

Tuber: Edible thickened part of the sweet potato plant

Cultivation: The process of growing and nurturing sweet potato plants for agricultural purposes

Staple Food: Foods that constitute the majority of a particular diet, and generally supply virtually all or most of the caloric intake of energy and nutrients

Vine: The above ground, trailing part of the sweet potato vine that may produce additional

GENERAL RESOURCES

Food and Agriculture Organization of the United Nations[1]

Our World in Data[2]

ENGAGE

As the global climate changes, governments, scientists, and cultivators are scrambling to find crops that provide high nutrition and low environmental costs. In this lesson, students will explore different characteristics of the sweet potato and how it compares genetically, nutritionally, and in terms of sustainability to other global food crops. To get students thinking about characteristics of food crops, start by showing students the article: What Are the World's Most Important Staple Foods?[3]

Have the students generate questions about the different staple foods and how they feed the global population. Questions could be related to nutrition value, water requirements, favorable soils, propagation and cultivation, etc. This process is called a "Driving Question Board[4]".

EXPLORE

During this stage of the lesson, students will conduct an investigation of the characteristics of the food crops, paying particular attention to compare sweet potatoes with the other top staple foods. Their investigations should match themes generated during their driving question board. Students may keep track and organize their data using the Food Crop Investigation Organizing Tool[5] located on page 5.

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1 https://www.fao.org/faostat/en/#home

2 https://ourworldindata.org/

3 https://docs.google.com/document/d/1EPfLtMyHCFTAIDST5D2stB3LRnQvp7V4EZsHFm3VnvE/edit?usp=sharing

4 https://www.youtube.com/watch?v=hdXFUf_rYuY

5 https://docs.google.com/document/d/1ydxrBcCma7GU70CT-8oY3PIKKevTO8o8I8G3u4EoF5k/edit

Name: _____

Data Source	Key Features *(What stands out from the data)*	Key Takeaways (How did the sweet potato measure up?)

Nutritional Content of Sweet Potatoes Comparison of Nutrients per 100g of Maize6

- Question to consider: How do sweet potatoes compare to the other staples? What trends do you notice?

Environmental Impacts of Food Production[7]

- Divide class into groups and each group be responsible for researching one environmental impact of the staples foods (carbon footprint, land use, water use, eutrophication, scarcity weighted water use.)

Crop Resilience[8]

6 https://www.researchgate.net/figure/Comparison-of-nutrients-per-100-g-portion-of-maize-with-other-major-staple-foods-for_fig5_345768071

7 https://ourworldindata.org/environmental-impacts-of-food

8 https://docs.google.com/document/d/1dCdQyeP1sKr68Pr17ls35-h-izEhIq6WI7BGuBGBEug/edit?usp=sharing

EXPLAIN

At this point in the lesson, students share their findings with the class. Students will need to listen closely to the data shared by their peers so that they can make a claim based on the evidence provided about how sweet potatoes can replace other staple crops.

- Learn more about how to support students in generating a CER[9]
- Template[10]

ELABORATE

Ask students to look at the Sustainable Development Goals[11] and discuss which goals would be positively impacted if sweet potatoes replaced Maize or Rice as a top staple food.

KANSAS SCIENCE STANDARDS ADDRESSED

HS Earth's Systems

Students who demonstrate understanding can:

HS-ESS2-7

Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth

Clarification Statement:

Emphasis is on the dynamic causes, effects, and feedbacks between the biosphere and Earth's other systems, whereby geoscience factors control the evolution of life, which in turn continuously alters Earth's surface. Examples of include how photosynthetic life altered the atmosphere through the production of oxygen, which in turn increased weathering rates and allowed for the evolution of animal life; how microbial life on land increased the formation of soil, which in turn allowed for the evolution of land plants; or how the evolution of corals created reefs that altered patterns of erosion and deposition along coastlines and provided habitats for the evolution of new life forms.

Assessment Boundary:

Assessment does not include a comprehensive understanding of the mechanisms of how the biosphere interacts with all of Earth's other systems.

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

9 https://www.edutopia.org/blog/science-inquiry-claim-evidence-reasoning-eric-brunsell

10 https://ambitiousscienceteaching.org/claim-evidence-reasoning-template-high-school/

11 https://www.undp.org/sustainable-development-goals

Science and Engineering Practices

Engaging in Argument from Evidence

Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world(s). Arguments may also come from current scientific or historical episodes in science.

- Construct an oral and written argument or counterarguments based on data and evidence. (HS-ESS2-7

Disciplinary Core Ideas

ESS2.D: Weather and Climate

- Gradual atmospheric changes were due to plants and other organisms that captured carbon dioxide and released oxygen. (HS-ESS2-6),(HS-ESS2-7)

ESS2.E: Biogeology

- The many dynamic and delicate feedbacks between the biosphere and other Earth systems cause a continual co-evolution of Earth's surface and the life that exists on it. (HSESS2-7)

Crosscutting Concepts

Stability and Change

- Much of science deals with constructing explanations of how things change and how they remain stable. (HS-ESS2-7)

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.[12]

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

12 https://www.ksde.gov/Portals/0/CSAS/Content%20Area%20(A-E)/English_Language_Arts/Kansas%20Standards%20for%20English%20Language%20Arts.pdf?ver=2023-05-17-150345-123

GRADES 9-12

Companion Texts for this study:

Digging for Sweet Potatoes
By Heather Barnes & Karen Baltimore
Also available: Digging for Sweet Potatoes Activity Book[13]

Sweet Potatoes: Growth, Development and Harvesting
By Lucas Courtois
ISBN: 97801-53618-611-6
Publication Date: 10/2020

Intraspecific Diversity as a Reservoir for Heat-Stress Tolerances in Sweet Potato
By Heider, Struelens, et.al
Publication Date 1/2021

13 https://ncfarmtoschool.com/wp-content/uploads/2020/06/sweet-potato-activity.pdf

For more information, contact:

Eryn Davis
Farm to Plate Project Coordinator
Child Nutrition and Wellness

(785) 296-5060
Eryn.Davis@ksde.gov

Kansas State Department of Education
900 S.W. Jackson Street, Suite 102
Topeka, Kansas 66612-1212

https://www.ksde.gov

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