

HARVEST OF THE MONTH - FEBRUARY / SWEET POTATOES

K-2



Kansas leads the world in the success of each student.

SEPTEMBER 21, 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

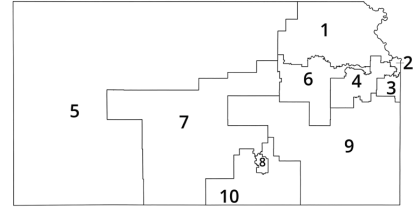
to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

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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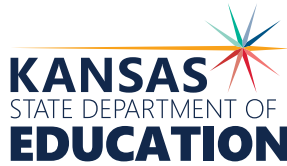


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Kansas leads the world in the success of each student.

Jan. 25, 2024

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

Pattern: a regularly repeating arrangement or sequence of events or data.

Observation: the act of noticing and recording information.

Leaves: any usually flattened green outgrowth from the stem of a vascular plant.

Roots: the part of the plant that develops underground and helps anchor the plant firmly in the soil.

Fruit: the mature ovary of a flowering plant that is edible.

Tuber: edible thickened part of the sweet potato

Stem: the main trunk of a plant.

Flower: the seed-bearing part of a plant, consisting of reproductive organs that are typically surrounded by a brightly colored petals and green sepals.

GENERAL RESOURCES

Sprouting Sweet Potatoes with Kids¹

ENGAGE

Before today's lesson, you will set up a demonstration that you will use for the next few weeks of this lesson with the intent to focus on the patterns students see when a sweet potato cycles through its growth cycle. To set up this demonstration, first cut a sweet potato in half short way. Fill a mason jar with water half way. Insert four toothpicks into the middle of the sweet potato that will allow the cut portion of the sweet potato to be submerged in water when it is placed in the mason jar. The toothpicks will allow the sweet potato to stay upright in the mason jar and allow the water to circulate in the bottom of the jar.

Ask students what they notice about a raw sweet potato. Create an anchor chart to document student answers.

Ask students what they notice about the sweet potato that is in the mason jar. Again, create an anchor chart to document student answers.

Ask students what they think will happen to the sweet potato in the water. Share your excitement of the class's observations of the sweet potato throughout the month.

Place the mason jar in a window for optimum growing conditions.

1 <https://www.pre-kpages.com/science-for-kids-observing-plant-growth-in-sweet-potatoes/>

EXPLORE

Over the course of the next few weeks, ask students to observe what they notice is happening to the sweet potato. When making observations with students, focus on the patterns of the parts of the sweet potato such as how the roots are forming, how the leaves are growing, and the changes of the water levels.

As a class, write down the amount of leaves the sweet potato is forming and the length of the roots on the class anchor chart.

EXPLAIN

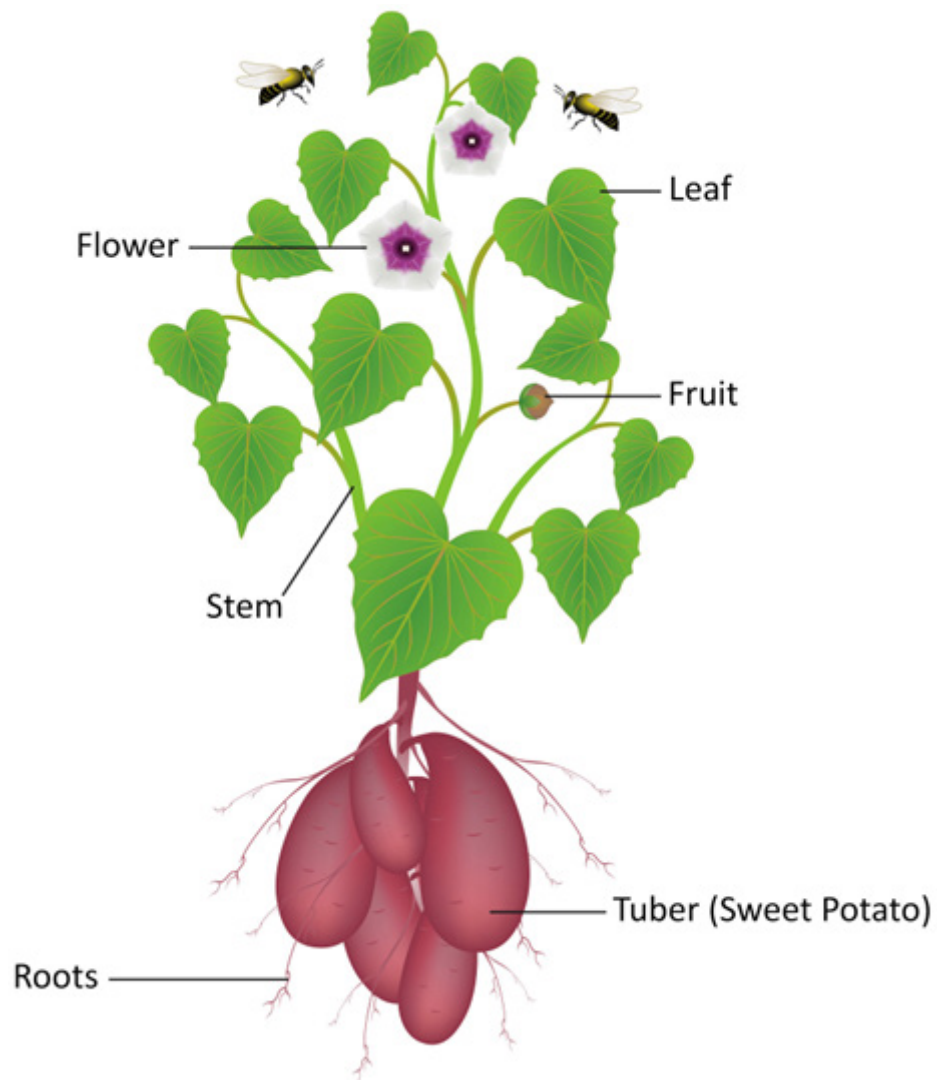
Read aloud the *Little Sweet Potato* by Amy Beth Bloom using the following read aloud protocol

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.



Use the above diagram to teach students the parts of the sweet potato. As these parts appear on the class demonstration, use sticky notes to post on the model as labels.

ELABORATE

Provide each student with a cup of water and a straw. Ask students to take a drink of the water. Ask students to think how this might be like a sweet potato using its roots to take up water so it is able to live and grow.

Use the read aloud to find the parts of the story that show how the roots are taking up water like what the students did when they drank water. The function of the roots is to take up water so the sweet potato is able to grow.

KANSAS SCIENCE STANDARDS ADDRESSED

1 Structure, Function, and Information Processing

Students who demonstrate understanding can:

1-LS1-1

Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs*

Clarification Statement:

Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.

1-LS1-2

Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive

Clarification Statement:

Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).

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. (1-LS3-1)
- Use materials to design a device that solves a specific problem or a solution to a specific problem. (1-LS1-1)

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.

Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)

Connections to Nature of Science

Scientific Knowledge is Based on Empirical Evidence

- Scientists look for patterns and order when making observations about the world. (1-LS1-2)

Disciplinary Core Ideas

LS1.A: Structure and Function

- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)

LS1.B: Growth and Development of Organisms

- Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)

LS1.D: Information Processing

- Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)

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. (1-LS3-1)

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. (1-LS3-1)

Crosscutting Concepts

Patterns

- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2),(1-LS3-1)

Structure and Function

- The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)

Connections to Engineering, Technology, and Applications of Science

Influence of Engineering, Technology, and Science on Society and the Natural World

- Every human-made product is designed by applying some knowledge of the natural world and is built by built using materials derived from the natural world. (1-LS1-1)

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