

HARVEST OF THE MONTH - FEBRUARY / SWEET POTATOES

Grades 3-5



Kansas leads the world in the success of each student.

SEPTEMBER 22, 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

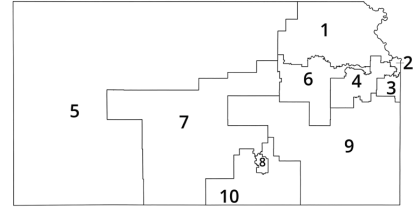
to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

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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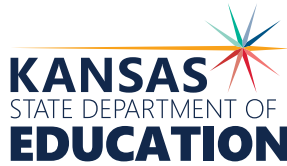


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Kansas leads the world in the success of each student.

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

Brainstorm: A time when many ideas are expressed about a single topic with the goal of getting the best idea possible.

Energy: the ability to do work.

Tuber: edible thickened part of the sweet potato

GENERAL RESOURCES

ENGAGE

Show students a sweet potato. Ask students to brainstorm about how they think the sweet potato grows. Group students into teams of three to four. Provide teams with a blank large piece of paper for groups to use for brainstorming. Provide students with five minutes to talk with their teams. Encourage students to either write a list of ideas or draw pictures of how they think a sweet potato grows.

Once time is up or notice that students are finished brainstorming, ask each group to share their brainstorm to the whole class. Create a class anchor chart of group ideas to post for the class to see. While you are creating the class anchor chart, listen for answers such as soil, water, air, and sunlight. Students might also state the need for a seed or a sweet potato plant too.

Set the objective for the class that they are going to figure out how sweet potatoes grow

EXPLORE

Ask students what we are trying to figure out. Students should be able to share that we are trying to figure out how sweet potatoes grow.

Refer back to the class anchor chart. Groups hopefully has shared that a sweet potato needs soil. Use a potato grow bag¹ to put potting soil in the grow bag.

Show students the sweet potato slip. Share with students this is the beginning of a sweet potato. Plant the slip² in the grow bag.

Ask students what was something that was also listed on the class anchor chart. Listen for student answers of either water or sunlight. If students state water, water the sweet potato plant. If students state sunlight, ask students where might be a good source of sunlight in their classroom. Students should state the best source of light is near a window.

1 https://www.amazon.com/Homeself-Aeration-Waterproof-Non-Woven-Vegetable/dp/B07DW938LK/ref=sr_1_45?crd=1FHOS5G1Y7GIL&keywords=sweet%2Bpotato%2Bslips&qid=1705332858&srefix=sweet%2Bpotato%2Bslips%2Caps%2C116&sr=8-45&th=1

2 https://www.burpee.com/sweet-potato-beauregard-prod000942.html?queryID=7c97a1fe7c785844a8092cb6f22f718e&objectID=7268&indexName=burpee_production_default_products

EXPLAIN

Once you have planted the class sweet potato plant, start a data collection anchor chart. Ask students what data the class can collect to figure out what sweet potatoes need to grow. Listen for answers such as amount of water, amount of sunlight, and observations if the sweet potato is growing.

Anchor Chart setup

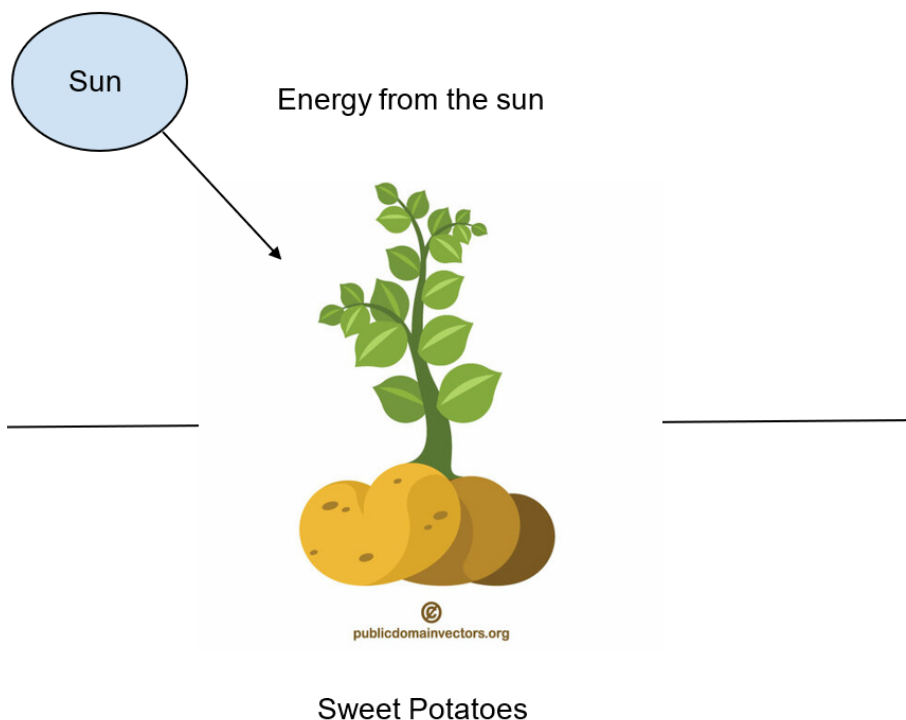
Day	Amount of water	Amount of sunlight	Observations of growth
Day 1			
Day 2			
Day 3			
Day 4			

As the sweet potato grows, students should recognize the pattern that sweet potatoes need water and light to grow. This provides the sweet potato with the energy needed to grow. The energy the sweet potato needs comes from the sun. As you are explaining this to students, draw a model of this idea.

ELABORATE

Read aloud the book *Sweet Potato Pie* by Kathleen D. Lindsey. This book is about a family in the early 1900s that uses sweet potatoes to make sweet potato pie to earn money to save the family farm. The purpose of reading this book is to spark a conversation about the energy from the sweet potato is cycled through the sweet potato pie to the people that enjoy the pie. This energy ultimately comes from the sun.

After reading aloud the book, create a class model of the cycling of energy that ultimately starts with the sun.





Sweet Potato has energy. This energy came from the sun.



The energy from the sweet potato is now in the sweet potato pie. The sweet potato pie has energy that first came from the sun.



The energy from the sweet potato pie is transferred to the people that eat the pie. This energy first came from the sun.

KANSAS SCIENCE STANDARDS ADDRESSED**5 Matter and Energy in Organisms and Ecosystems**

Students who demonstrate understanding can:

5-PS3-1

Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun

Clarification Statement:

Examples of models could include diagrams, and flow charts.

5-LS1-1

Support an argument that plants get the materials they need for growth chiefly from air and water.

Clarification Statement:

Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.

5-LS2-1

Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Clarification Statement:

Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food.

Examples of systems could include organisms, ecosystems, and the Earth.

Assessment Boundary:

Assessment does not include molecular explanations.]

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 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions.

- Use models to describe phenomena. (5-PS3-1)
- Develop a model to describe phenomena. (5-LS2-1)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

- Support an argument with evidence, data, or a model. (5-LS1-1)

Connections to Nature of Science

Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena

- Science explanations describe the mechanisms for natural events. (5-LS2-1)

Disciplinary Core Ideas**PS3.D: Energy in Chemical Processes and Everyday Life**

- The energy released [from] food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (5-PS3-1)

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

- Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1)
- Plants acquire their material for growth chiefly from air and water. (5-LS1-1)

LS2.A: Interdependent Relationships in Ecosystems

- The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1)

LS2.B: Cycles of Matter and Energy Transfer in Ecosystems

- Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1)

Crosscutting Concepts

Systems and System Models

- A system can be described in terms of its components and their interactions. (5-LS2-1)

Energy and Matter

- Matter is transported into, out of, and within systems. (5-LS1-1) Energy can be transferred in various ways and between objects. (5-PS3-1)

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