HARVEST OF THE MONTH - SEPTEMBER / TOMATOES

K-2

KANSAS STATE DEPARTMENT OF EDUCATION

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

Kansans CAN

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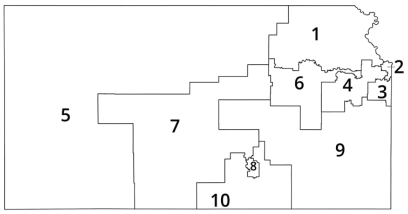

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Kansas leads the world in the success of each student.

Jan. 25, 2024

HARVEST OF THE MONTH

September / Tomatoes

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 is a round or oval fruit that is often mistaken for a vegetable. Show where fruits and vegetables are found on a MyPlate.gov poster[1]. They come in many colors include red, yellow, orange, green and even purple and pink!
- They grow on a vine.
- They are good for your heart's health.
- They can be eaten fresh and are used as an ingredient in things like juice, soup, sauces, salsa, or ketchup
  Ingredient- an ingredient is one part of a mixture.
- Show picture.

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

Optional: You could also place a tomato in a brown paper bag and let the children reach in and feel it without peeking to see if they can guess what it might be as you give the clues

1 https://www.myplate.gov/sites/default/files/2020-12/Coloring%20Sheet.pdf

VOCABULARY

Cause

Effect

Pollinator

GENERAL RESOURCES

Kansas Wheat[2]

Whole Grain Council[3]

ENGAGE

Display a tomato plant that has lots of tomatoes on the plant for the class to see. If you do not have access to a tomato plant, show a picture of a tomato plant with tomatoes growing on it. Pose the question: "Why do you think this tomato plant seems to produce more tomatoes in the warmer months like September than it does in the cooler months?" Allow students to partner share before opening to a full class discussion. Listen for answers that might suggest a potential idea of the need for the tomato plant to be pollinated by insects that only come out during the warmer months.

Ask students, "how might we figure out why this might be that tomatoes seem to produce more tomatoes in the warmer months?" Seek class ideas and post these ideas on a whiteboard or an anchor chart. Listen for answers that might lead to an investigation of growing a tomato plant inside the classroom and outside the classroom.

EXPLORE

Set up a class experiment where one tomato plant will stay growing in the classroom. Do make sure the tomato plant has access to light and water. Lead students outside of where a tomato plant has already been planted or where a plant has been placed in a location where students would have easy access to conduct observations. It is highly encouraged to purchase a tomato plant that is already starting to produce flowers and potentially a tomato on the vine of the plant.

Once a tomato plant has been placed both inside the classroom and outside the classroom, provide a set time for students to make observations of the plants. Take time each day for the next two weeks to make observations of both the inside plant and the outside plant. Try to find a time to observe the outside plant when students might see insects trying to pollinate the tomato plant outside.

Through observations, students should also notice that the tomato plant needs both light and water in order to grow. Students should also recognize that the plant outside is receiving warmer temperatures which also allows for pollinators to pollinate the tomato plant to then allow for the fruit to start to grow.

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2 https://kswheat.com/

3 https://wholegrainscouncil.org/

EXPLAIN

As a class, read the book Tomatoes Grow on a Vine By Mari Schuh. During the read aloud, point out closely the section of the book that describes pollination of the tomato plant.

ELABORATE

After the two weeks of observations of both tomato plants, bring classroom observations together in a way that all students are able to see the data.

Conduct a classroom discussion that focuses on cause and effect of the warmer temperatures that can cause more tomatoes being grown on the tomato plant outside. Some causes and effects students might notice are as follows:

- Cause: warm weather, Effect: more tomatoes being produced
- Cause: warm weather, Effect: more insects for pollination
- Cause: access to water and air, Effect: tomato plant is able to grow

At the end of the lesson, provide students the opportunity to try a taste of a tomato that the class was able to grow!

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.

KANSAS SCIENCE STANDARDS ADDRESSED

2-LS2 Ecosystems: Ineractions, Energy, and Dynamics

Students who demonstrate understanding can:

2-LS2-1

Plan and conduct an investigation to determine if plants need sunlight and water to grow.
Assessment Boundary: Assessment is limited to testing one variable at a time.

2-LS2-2

Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.*

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 K–2 builds on prior experiences and progresses to include using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.

- Develop a simple model based on evidence to represent a proposed object or tool. (2-LS2-2)

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.

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question. (2-LS2-1)

Disciplinary Core Ideas

LS2.A: Interdependent Relationships in Ecosystems

- Plants depend on water and light to grow. (2-LS2-1)
- Plants depend on animals for pollination or to move their seeds

Developing Possible Solutions

Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (secondary to K-ESS3-3)

Crosscutting Concepts

Cause and Effect

- Events have causes that generateobservable patterns. (2-LS2-1)

Structure and Function

The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)

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