HARVEST OF THE MONTH - MAY / MIXED BERRIES

Grades 3-5

KANSAS STATE DEPARTMENT OF EDUCATION

Kansas leads the world in the success of each student.

SEPTEMBER 27, 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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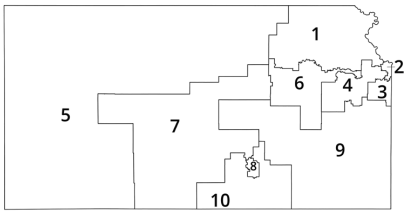

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Kansas leads the world in the success of each student.

Jan. 25, 2024

HARVEST OF THE MONTH

May / Mixed Berries

INTRODUCTION

Over the next feel 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.

- They are small, edible fruits.
- They are usually juicy, round, and brightly colored.
- They taste sweet or sour,
- They may have many small seeds.
- They are grown on trees, shrubs, bushes and on plants along the ground
- This type of food is usually high in things like vitamin c and antioxidants which help keep us from getting sick.
- You can eat them fresh, in a smoothie, or baked in muffins or even a pie!

What do you think this fruit might be? We will be learning about berries!

Some different types of berries include raspberries, strawberries, blackberries, gooseberries, blueberries, huckleberries, mulberries and currants. Have you ever tried any of these? Which are your favorite? How do like to eat them?

VOCABULARY

Seed dispersal

Seed

GENERAL RESOURCES

Students make a claim to be supported about a phenomenon. In the claim, students include the idea that plants and animals have internal and external structures that function together as part of a system to support survival, growth, behavior, and reproduction. 2 Identifying scientific evidence a Students describe* the given evidence, including: i. The internal and external structures of selected plants and animals. ii. The primary functions of those structures.

ENGAGE

Share the following story: I went to the strawberry patch this weekend to pick fresh strawberries. As I was picking the strawberries, I was wondering how did these strawberries grow right where they were in the field? I would like for your team to observe the strawberry to think about how the strawberry was able to grow in the field.

Give each group of four students a strawberry to observe for five minutes. As teams are observing the strawberry, ask the teams to write down their notices.

When students have had enough time to observe the strawberry, create a class anchor chart of what students notice about the strawberry. Focus on student observations about the seeds of the strawberry and the size of the seeds.

Ask the class, "What are some wonders you have about strawberries?" Write these wonders on a class wonder chart. The intent of the lesson is to make a claim about how the strawberry is able to grow more strawberry plants.

EXPLORE

For each student, cut a small sliver of strawberry on a paper towel. Ask students, "What are the little whitish-yellow specks on the sliver of strawberry?" Solicit student answers.

Ask students, "What is the function of the seed?" Solicit student answers. Listen for answers such as the seed helps the plant grow more strawberries. Write down this as a claim for the class.

Say, "We know these seeds are able to grow more strawberry plants which is our claim. We are going to collect evidence to support this claim. We are going to engineer a way to separate these seeds from the part we eat to then plant them. This will give us evidence to see if the function of the seed is to grow more strawberry plants"

For each group, provide them time to plan out a way to separate the seeds from the part of the strawberry that we eat. Provide student groups with materials they could use to separate the seeds. If student groups do struggle, you can lead them to use paper towels to dry out the seeds.

Students will then use those seeds to plant for evidence collection. Students will see that the seeds were able to grow new strawberry plants. Provide each group of students with a pot and potting soil to plant the seeds. Provide students with a place in a window for the plants to grow. Students can brainstorm what evidence they might collect that would support their claims. Evidence could be the measurements of the plant and observations of plant growth.

EXPLAIN

Read aloud the book The First Strawberries by Joseph Bruchac. Follow the following read aloud protocol.

ELABORATE

As a class, create an argument about what is the function of the strawberry seed. Students will use the claim they created at the beginning of the lesson. They then will use the evidence they collected from the growing of the strawberry plants to support their claim.

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

4 Structure, Function, and Information Processing

Students who demonstrate understanding can:

5-LS1-1

Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction

Clarification Statement:

Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.

Assessment Boundary:
Assessment is limited to macroscopic structures within plant and animal systems.

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

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).

- Construct an argument with evidence, data, and/or a model

Disciplinary Core Ideas

LS1.A: Structure and Function

- Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.

Crosscutting Concepts

Systems and System Models

- A system can be described in terms of its components and their interactions.

Connections to other DCIs in this grade-level: N/A

Articulation of DCIs across grade-levels:
1.LS1.A, 1.LS1.D, 3.LS3.B, MS.LS1.A

Common Core State Standards Connections: ELA/Literacy

W.4.1
Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

4.G.A.3
Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded across the line into matching parts. Identify linesymmetric figures and draw lines of symmetry

3-5-ETS1 Engineering Design

Students who demonstrate understanding can:

3-5-ETS1-1

Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost

3-5-ETS1-2

Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem

3-5-ETS1-3

Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved

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

Asking Questions and Defining Problems

Asking questions and defining problems in 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships.

- Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost.

Planning and Carrying Out Investigations

Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problem.

- Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.

Disciplinary Core Ideas

ETS1.A: Defining and Delimiting Engineering Problems

- Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.

ETS1.B: Developing Possible Solutions

- Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions.
- At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.
- Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved.

ETS1.C: Optimizing the Design Solution

- Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints.

Crosscutting Concepts

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

- People's needs and wants change over time, as do their demands for new and improved technologies.
- Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands.

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