



Kansas Corn: Farmer Nicole Breakout Box

This breakout is made possible with the support and content contributions of the Kansas Corn Commission.



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Grade Level: 1st Grade

Overview

This lesson can be used as a standalone lesson to introduce the different aspects of a family farm or be tied in as an informal assessment for the Kansas Corn: A Kernel's Adventure found at www.kansascornstem.com. During the lesson, students explore the importance of corn in their daily lives by discovering the many products made from corn, that corn is grown in Kansas, and what corn plants look like. They delve into where the seed of a corn plant is by planting different parts of the crop to test their ideas. They expand their knowledge with this Breakout by helping Farmer Nicole plant her corn and learn what products are made from corn.

Next Generation Science Standards (NGSS)

Science

- **K-LS1-1.** Use observations to describe patterns of what plants and animals (including humans) need to survive.
- **1-LS3-1.** Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- **2-PS1-1.** Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Language Arts

- **W.K.3.** Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
- **SL.1.1.** Participate in collaborative conversations with diverse partners about kindergarten and/or first grade topics and texts with peers and adults in small and larger groups.
- **SL.K.4.** Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
- **SL.1.4.** Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.

Learning Objectives

- Students will propose an answer to the question, "Why do we need farmers to grow corn?"
- Students will provide evidence that many everyday products are made from corn.
- Students will propose an answer to the question, "Where is the seed in a corn plant?" for further exploration.

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Materials

- Breakout box, both small and large
- 4-digit lock
- Word lock
- Color lock

- Print off:
 - Corn Products Word Lock Key and Worksheet
 - Corn Product Cards
 - Farmer Nicole Farm Story
 - Plant Growth Cards
 - You Broke Out Certificate

Breakout Edu Tips

If this is your first time using a Breakout Edu box, you are in for a treat. Once you've done one breakout box your students will be ready for the next time.

You can use breakout boxes as a whole class, in addition to small group. You have the opportunity to give students hints. Every box comes with at least two hint cards. If you have a higher performing group, you may want to challenge them with less hints, while a different hour may need more hints.

Having a visual timer for students while they are working is really helpful. It allows them to budget their time and when they may want to use their hints. As the teacher, you have the discretion to hide things wherever best fit in your room. Feel free to make adjustments! Just make sure the clues for the locks don't change, otherwise students may not be able to get in.

Breakout Activity

Game Name

Farmer Nicole

Game Designer

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Shane Fairchild: 6th Grade Social Studies, Junction City Middle School, USD 475

Content Areas

Life Science, Agriculture, Corn

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Recommended Ages

1st Grade

Ideal Group Size

Small groups of 3 or 4

Suggested Time

30 minutes

Story

Today, you get to help Farmer Nicole. Nicole needs your help because she has too much land to plant and can't do it alone. You get to use all the new information you learned about corn to help Farmer Nicole unlock clues so she can grow her crop of corn. What do you know about growing corn?

After Nicole harvests her corn, she will need to sell it so it can be used to make products for us to use and eat. In your studies, you have learned all about products made from corn. Do you remember some of the things made with corn?

On your table, you have all the materials you need to help Farmer Nicole Breakout and plant her corn. The big box has a word lock, color lock and 4-digit lock for you to open. Once you open those three locks, you will have to find out what is inside to finish your task. Remember to use all the materials at your table to open the locks.

Lock Combinations

The following codes will open the locks on the box.

4-Digit Lock - 4 Numbers

1, 3, 5, 7

Color Lock - 5 Colors for the color Multilock

Blue, Green, Red, White, Yellow

Word Lock - 5 Directions for the Directional Multi-lock

ASEED with A shown

Key Lock -

Teacher

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Setup Instructions

Steps

1. Print off the following resources: Farmer Nicole Farm Story, Plant Growth Cards, Corn Product Cards, You Broke Out certificate and Corn Products Word Lock Key and worksheet. The resources need to be printed in color and enough copies for the number of boxes you plan on using.
2. Change the locks to the appropriate lock combinations found in the lesson plan. If you are unsure on how to change the locks, please watch the official Breakout videos on YouTube titled, "Setting Breakout Edu Locks."
3. Grab the small Breakout box. If you are planning on a Breakout reward (e.g. a Twizzler is a fun corn-based product one could use), set it in the box before placing the key lock on the box.
4. Place the now locked small Breakout Box in the large box. Put the You Broke Out Certificate inside the larger Breakout box. Once complete, place the multi-lock mechanism on the bigger Breakout box.
5. Once you have placed the multi-lock mechanism on the larger Breakout Box, you are ready to start placing the locks associated with the lesson. It is always a good idea to double check your locks before beginning the lesson.
6. Students should be handed the following resources: Farmer Nicole Farm Story, Plant Growth Cards, Corn Product Cards and Corn Products Word Lock Key.
7. Begin by reading the story and go over the locks with the students. We have found it to be helpful for a visual representation of the Breakout timer to be running in the background. This can be found on YouTube by searching, Breakout Edu Timer.
8. Once students have broken out, you can give them the key to open the small box. If you are willing, Kansas Corn would love it if you would take a group picture with the Breakout certificates and tweet at them with its handle @kansascornSTEM.

Resources

Visit www.kscornstem.com for updated resources, free lessons and supplies.

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Reflection and Conclusion

This Breakout allows you to assess your students understanding of the lesson, *Kansas Corn: A Kernel's Adventure*. It can be used as either a formative pre-assessment or post-assessment. Whether as a pre or post-assessment, you will be able to evaluate students' understanding of plant life cycles based on their propositions of how to create a new corn plant. Do they know that farmers plant seeds and grow plants? Adjust instruction and prompts accordingly.

Questions

1. What parts of the corn plant were able to sprout new corn plants? The leaves? Tassels? Roots? Kernels?
2. If you wanted to plant corn plants, what part of the plant would you plant?
3. What does a farmer plant in her or his field in order to grow corn?
4. Can you explain what the corn plant looks like as it grows?
5. Can you name three things that are made of corn?

Any educator electing to perform demonstrations is expected to follow *NSTA Minimum Safety Practices and Regulations for Demonstrations, Experiments, and Workshops*, which are available at <http://static.nsta.org/pdfs/MinimumSafetyPracticesAndRegulations.pdf>, as well as all school policies and rules and all state and federal laws, regulations, codes and professional standards. Educators are under a duty of care to make laboratories and demonstrations in and out of the classroom as safe as possible. If in doubt, do not perform the demonstrations.

Lock Type	Lock Combination	How will they know the combo?	Where will it lead?
 <p>4-Digit Lock</p>	<p>1, 3, 5, 7</p>	<p>Using the Plant Growth Cards, the combo can be figured out by placing the pictures in the correct order (our opinion) in plant growth.</p>	<p>By unlocking this lock, they are one step closer to opening all of the combinations in the larger Breakout box.</p>
 <p>Word Lock</p>	<p>ASEED</p>	<p>The combo can be figured out by using the word lock key and worksheet. The first letter A is done for them on the word lock key worksheet.</p>	<p>By unlocking this, they are one step closer to opening all of the combinations in the larger Breakout box.</p>
 <p>Color Multilock</p>	<p>Blue Green Red White Yellow</p>	<p>The combo can be figured out by finding the pictures of products that have corn in them. They find the color around the corn product pictures and place the colors in alphabetical order to find the combination to the color lock.</p>	<p>By unlocking this lock they are one step closer to opening all of the combinations in the larger Breakout box.</p>
 <p>Key</p>	<p>Key</p>	<p>After they have opened the big box, they will need to ask you for the key to the little box. They have broken out.</p>	<p>Twizzlers are in the small box</p>

Item Type	Combination Purpose	What will they do with it?	Where will it lead?
 <p>Large Lock Box</p>		<p>Unlock the three locks that you have on the multi-lock.</p>	<p>The large Breakout box leads to the little box which has been placed inside it. The You Broke Out certificate gives instructions for the students to go see the teacher for the final key is also in the large box.</p>
 <p>Smaller Lock Box</p>			<p>A corn product like Twizzlers has been placed in the box for a reward for breaking out.</p>
 <p>UV Flashlight</p>			
 <p>UV Pen</p>			
 <p>Reflection Cards</p>			

Nicole's Farm

Today, you get to help Farmer Nicole. Nicole needs your help because she has too much land to plant and cannot do it alone. You get to use all the new information you learned about corn to help Farmer Nicole unlock clues so that she can grow her crop of corn. What do you know about growing corn?

After Nicole harvests her corn, she will need to sell it so it can be used to make the products we use and eat. In your studies, you learned all about products made from corn. Do you remember some of the things made from corn?

On your table, you have all the materials you need to help Farmer Nicole breakout and plant her corn.

Word Lock

<input type="text" value="A"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Color Lock

<input type="text"/>				
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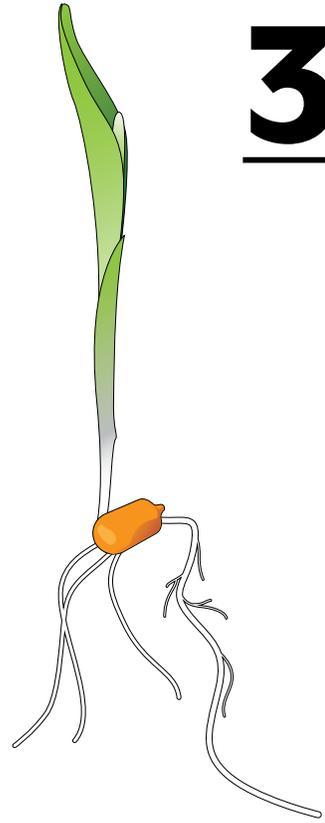
4-digit Lock

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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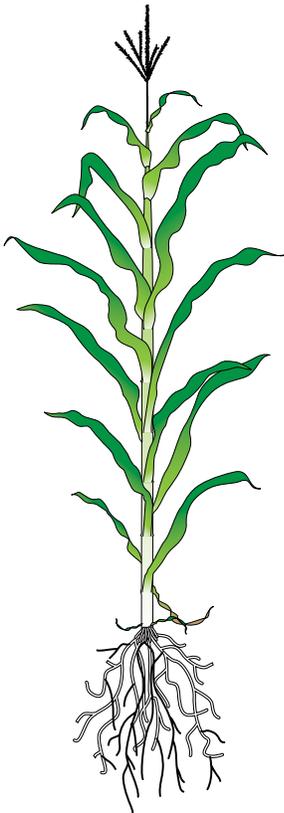
1



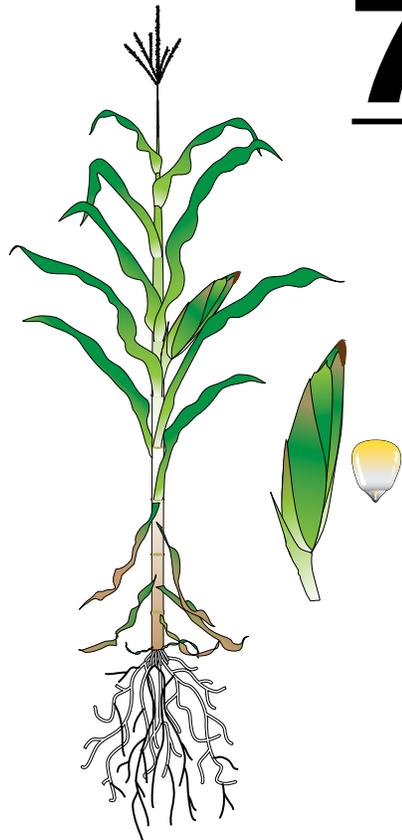
3



5



7



Is there corn in this?

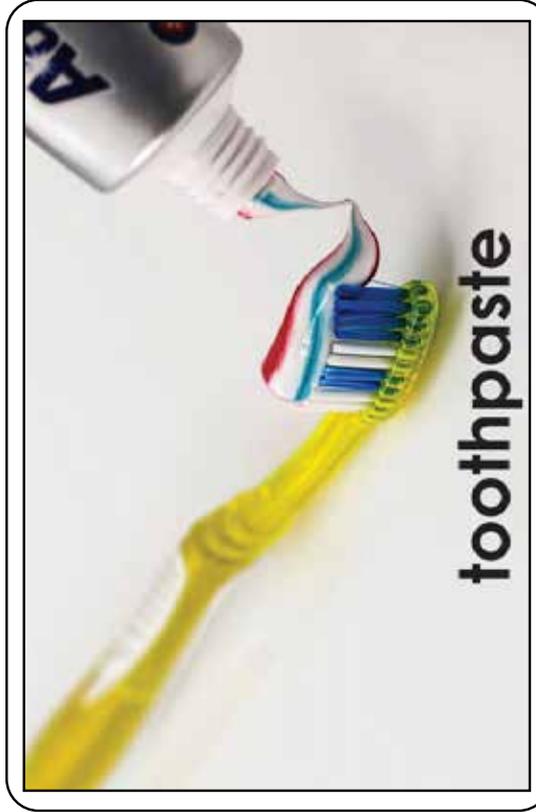


pet food

B



Is there corn in this?

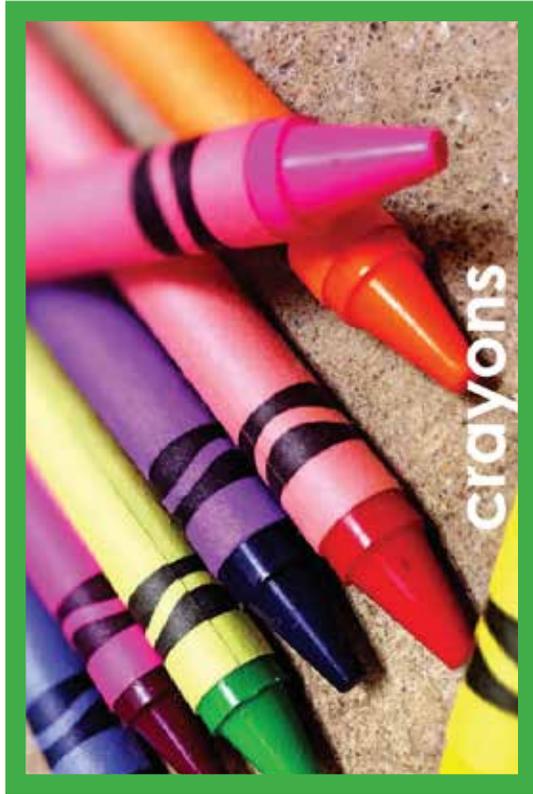


toothpaste

W



Is there corn in this?

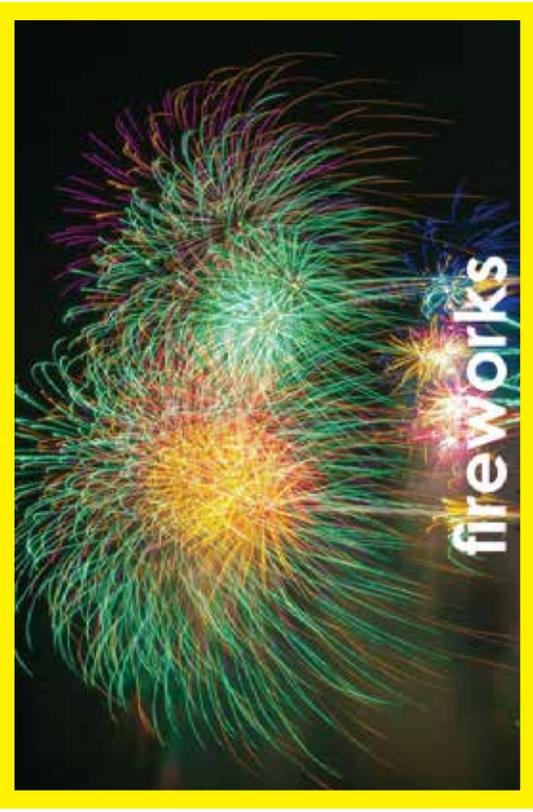


crayons

G



Is there corn in this?

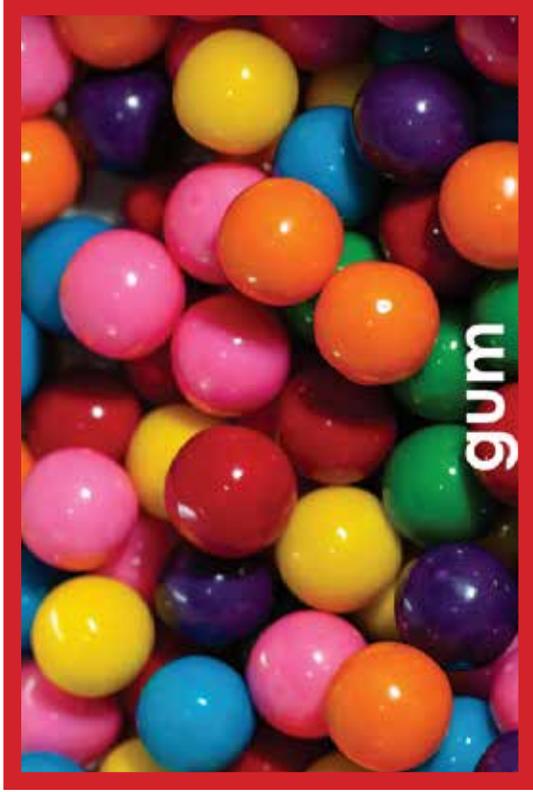


fireworks

Y



Is there corn in this?



gum

R

Is there corn in this?



penny

Is there corn in this?



wood

A



J



S



B



K



T



C



L



U



D



M



V



E



N



W



F



O



X



G



P



Y



H



Q



Z

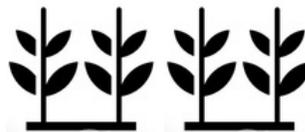
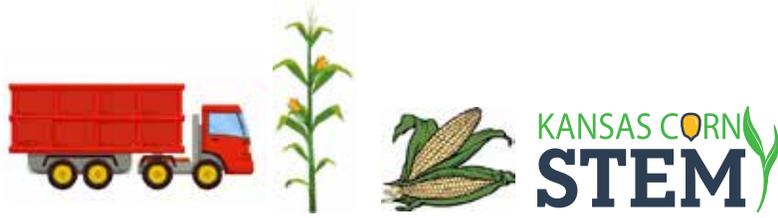


I



R





a				
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CORNGRATULATIONS

You Broke Out!

You are CORNriffic!

Take this to your teacher for the

KEY to your reward.

KANSAS CORN
STEM

