

NEBRASKA
AGRICULTURE
IN THE CLASSROOM

NEBRASKA FARM BUREAU FOUNDATION



Lunchbox Mysteries is a standard-aligned educational resource for kindergarten through second grade classrooms that highlights eight stories that feature Nebraska-grown products and where those products come from. The eight stories featured relate to Nebraska grown crops and livestock including apples, butter, ice cream, cake, pizza, peanut butter and jelly, vegetable soup, and popcorn. An engaging supplement for any elementary classroom or club. Lunchbox Mysteries is an integrated language arts resource. Use this teacher's guide to make connections to state standards with worksheets and hands-on food activities for further learning.

WHAT'S IN THE GUIDE?

- Links to acquire the books needed for each lesson.
- Recipe cards
- Hands-on extension activities

NEBRASKA STATE STANDARD CONNECTION

Lunchbox Mysteries can be utilized to support Nebraska Academic Standards including:

Reading Prose and Poetry

Central Ideas and Details | Citing relevant and thorough textual evidence to support ideas, evaluate the development of themes or central ideas in grade-level literary texts.

Kindergarten

LA.K.RP.1 With prompting and support, orally retell familiar stories, including key details, and demonstrate understanding of their central message or lesson.

First Grade

LA.1.RP.1 Retell familiar stories, including key details, and demonstrate understanding of their central message or lesson from a literary text.

Second Grade

LA.2.RP.1 Recount narratives and determine their central message, lesson, or moral.

Reading Informational Text

Central Ideas and Details | Citing relevant and thorough textual evidence to support ideas, evaluate the development of themes or central ideas in grade-level informational texts.

Kindergarten

LA.K.RI.1 With prompting and support, identify the main topic and key details in an informational text.

LA.K.RI.2 With prompting and support, identify key individuals, events, or pieces of information in an informational text.

First Grade

LA.1.RI.1 Identify the main topic and key details in an informational text.

LA.1.RI.2 Identify key individuals, events, or pieces of information in an informational text.

Second Grade

LA.2.RI.1 Identify the main topic and key details in a multi-paragraph text.

LA.2.RI.2 Describe the connections between individuals, historical events, scientific ideas, or steps in a process.

Knowledge and Ideas | Citing relevant and thorough textual evidence to support ideas, evaluate how an author's perspective or use of point of view shapes the style and meaning of grade-level informational texts.

Kindergarten

LA.K.RI.5 With prompting and support, identify basic similarities and differences between two informational texts on the same topic.

LA.K.RI.6 With prompting and support, explain the difference between facts and opinions about a topic.

LA.K.RI.7 With prompting and support, make connections between own experiences and other cultures in informational texts.

First Grade

LA.1.RI.5 Identify basic similarities and differences between two informational texts on the same topic.

LA.1.RI.6 Identify an author's opinion(s) about a text.

LA.1.RI.7 Make connections between own experiences and other cultures in informational texts.

Second Grade

LA.2.RI.5 Compare and contrast the two most important ideas presented by two informational texts on the same topic.

LA.2.RI.6 Explain an author's opinion(s) and supporting evidence from the text.

LA.2.RI.7 Compare and contrast topics in a variety of informational texts to build knowledge of cultures (e.g., history, values, beliefs, and behaviors).

Speaking and Listening

Comprehension and Collaboration | Communicate effectively and appropriately in collaborative activities for a variety of tasks, purposes, and audiences to express ideas, share knowledge, and generate new understandings.

LA K-2.SL.1 With prompting and support, participate with peers and adults in structured discussions and routines about grade specific topics and texts.

- a. Ask pertinent questions to acquire or confirm information.
- b. Demonstrate interpretation of verbal and non-verbal messages in a conversation.
- c. Converse with peers and adults in an all-inclusive manner to foster positive relationships while respecting diverse perspectives.
- d. Develop attentive listening skills (e.g., eye contact, nonverbal cues, recalling).
- e. Complete a task following one/two-step directions. (kindergarten and first grade) Complete a task following multi-step directions. (second grade)

NEBRASKA
**AGRICULTURE
IN THE CLASSROOM**
NEBRASKA FARM BUREAU FOUNDATION

Agriculture in the Classroom® is a program coordinated by the National Agriculture in the Classroom Organization and supported by the United States Department of Agriculture (USDA). In Nebraska, the Agriculture in the Classroom program is managed by the Nebraska Farm Bureau Foundation, whose mission is to engage youth, educators, and the general public to promote an understanding of the vital importance of agriculture in the lives of all Nebraskans.

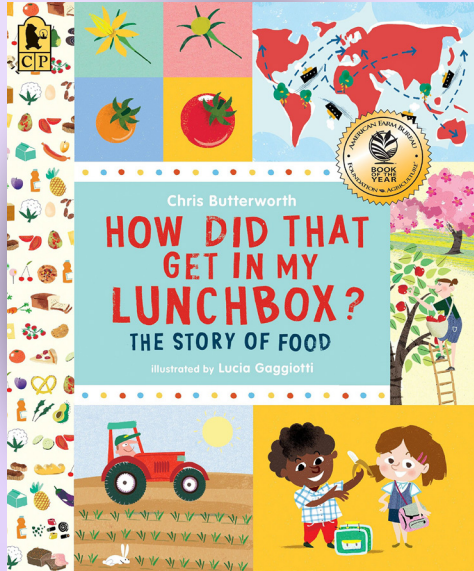
(402) 421-4747 | 5225 South 16th Street, Lincoln, NE 68512
www.nefbfoundation.org | foundationforag@nefb.org

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and participate in an activity to shake heavy whipping cream and turn it into butter to make a delicious snack.



Purpose

Students will discover journey food takes from the farm to their lunchbox.

Materials

- ***How Did That Get In My Lunchbox? The Story of Food*** book by *Chris Butterworth*
- Glass baby food jars with lid or condiment container with lid, 1 per student
- Heavy whipping cream, ½ gallon
- Sandwich size Ziploc bag, 1 per student
- Loaf of Bread, 1 slice per student
- Plastic knife, 1 per student
- Plate/napkin, 1 per student
- Salt, optional
- Music for jar shake

LUNCHBOX Mysteries

Teacher's Guide

LESSON 1

How Did That Get In My Lunchbox?

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Source: nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

Nebraska's number one industry in our state is agriculture. Agri-business is vital to our state's economy. One in four jobs in Nebraska are tied to agriculture including careers in insurance, equipment sales and repairs, technology, irrigation, engineering, transportation, food chain services and many more.

Nebraska has a wide range of soil and elevation which allows us to raise a variety of different crops and livestock including corn, soybeans, wheat, dry beans, beef cattle, pork, grain sorghum, popcorn, and eggs.

Wheat

Nebraska is the 11th largest wheat producing state in the U.S. with approximately 1 million acres in wheat production. Nebraska produces two types of wheat. Hard red winter wheat and hard white winter wheat. Hard red winter wheat is the main source of flour for loaf bread, hamburger buns and other foods. Nebraska is one of nine states producing hard white winter wheat. About 50 percent of Nebraska's wheat is exported annually

to international markets used to make Asian noodles and Middle Eastern flat breads.

Dairy

Nebraska ranks 25th in total milk production. Nebraska's dairy farms are family owned and operated. Cows are milked two to three times per day and milk is perishable so dairy farms ship out milk on a regular schedule to ensure its freshness and safety. Nebraska's dairy processors use milk to make products like butter, cheese, yogurt, ice cream, sour cream, cottage cheese and whey protein.

Vegetables

The number of Nebraska produce growers has increased 700 percent over the past decade from 78 in 2000 to more than 575 in recent years. Growing fruits and vegetables is a highly intensive enterprise that requires specialized equipment and a large labor supply. Many fruits and vegetables grown in Nebraska includes tomatoes, cucumbers, melons, pumpkins, squash, onions, berries, sweet corn, and many other types of produce.

3. Interest Approach

- a. Ask students what they normally eat for lunch.
 - Do you eat school lunch or bring your own lunch?
 - Where does the food you eat for lunch come from?
- b. Share with students that we are going to read a story called *"How Did That Get in My Lunchbox? The Story of Food."*
- c. Read the Story
 - As you read the story have students answer the questions that are asked throughout the book. You can ask your own questions to help guide answers.
 - Ask follow-up questions at the end of the story.
 - Where does our food come from?
 - Do any of the foods we talked about in this story come from Nebraska?
We grow and raise several of the foods we learned about in the story like wheat to make bread, milk from the dairy cow to make cheese, tomatoes could have been grown locally here in Nebraska, we grow a few apples in Nebraska as well.
 - Do we grow clementines in Nebraska?
We do not. We do not have the weather to grow tropical fruits.
 - Do we grow cocoa beans in Nebraska?
Nope! We must get those from other countries.
 - What are some of the jobs people do in order to grow or make the food that we eat?
We have farmers and bakers, cheese and chocolate makers, pickers, packers and truck drivers. These people all help us grow or make the food for us to eat.
 - Now that we know where some of our favorite foods come from, we are going to make our own snack!

4. Snack Activity-Butter in a Jar

- a. Ask students where butter comes from.
Butter comes from milk.
- b. Where does milk come from?
Dairy cows.
- c. What other food products come from dairy cows?
Milk, cheese, butter, yogurt, cream cheese, cottage cheese, whipped cream, etc.

d. We are going to make our own butter and enjoy a tasty snack!

Ingredients

- Empty baby food jar (or plastic condiment container), 1 per student
- Whipping cream, enough to fill each jar half full.
- Ziploc Sandwich Bag, 1 per student
- Loaf of Bread, 1 slice per student
- Plastic knife, 1 per student
- Plate/napkin, 1 per student
- Salt, optional
- Music to play while shaking up the jar

Directions

1. Take 1 jar and fill 1/2 with whipping cream and place lid on jar.
2. Place jar in the Ziploc bag and close bag.
3. Play music as the students shake the jars. This could take 5-10 minutes.
4. The butter will turn solid and buttermilk will form.
5. Empty the buttermilk from the jar.
6. Add a little salt to the butter and spread on sandwich bread.
7. Eat your tasty snack.

5. Ask Follow Up Questions and Make Connection to Agriculture

a. Where does our food come from?

Our food must come from the farm. Either as a plant or a food product that we get from an animal.

b. Can we grow food right here in Nebraska?

Yes! Nebraska farmers grow a lot of our food like corn, soybeans, wheat, dry beans, sugar beets, popcorn, potatoes, and many other types of foods!

Some foods can't grow here because our weather doesn't allow it to grow. What might some of the foods be?

EXTENSION ACTIVITIES

Homegrown in Your State: Fruits and Vegetables

www.agclassroom.org/matrix/lesson/767/

Students explore their state's specialty crops, discover how food gets from the farm to the table, and discuss the importance of eating fruits and vegetables every day.

It's a MOO-stery

www.agclassroom.org/matrix/lesson/15/

Students make observations about historic tools used on a dairy farm to store and process milk into cheese and butter.

Tops and Bottoms

www.agclassroom.org/matrix/lesson/78/

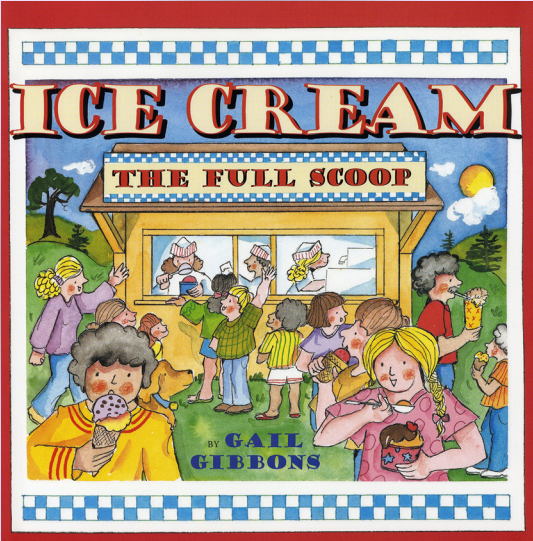
Students identify where fruits and vegetables belong on the MyPlate diagram and describe the major parts of plants-roots, stems, leaves, flowers, and fruits-according to if they are produced on the top or bottom of a plant.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and participate in an activity to shake up milk and make ice cream in a bag.



Purpose

Students will discover just how ice cream is made as they explore more about the dairy industry.

Materials

- *Ice Cream, The Full Scoop* book by Gail Gibbons
- 1/2 cup whole milk, half and half, or cream, per student
- 1 tbsp sugar, per student
- 1 tsp vanilla extract, per student
- 6 tbsp sea salt or rock salt, per student
- 2 cups of ice, per student
- Sandwich sized Ziploc bag, 1 per student
- Quart sized Ziploc bag, 1 per student
- Spoon, 1 per student
- Sprinkles *optional

LUNCHBOX Mysteries

Teacher's Guide

LESSON 2

Ice Cream, the Full Scoop

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Source: nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

“Virtually all of Nebraska’s dairy farms are family owned and operated. Dairy farms will recycle and re-use many production inputs, such as sand that is used for bedding, and water which will be used multiple times – from drinking to cleaning – before being used to irrigate crops. Since cows are milked two to three times per day and milk is perishable, dairy farms ship out milk on a regular schedule to ensure its freshness and safety.”

- Nebraska ranks 25th in total milk production.
- Milk sales account for over \$232 million of Nebraska’s annual agriculture receipts.
- Nebraska’s dairy processors use milk to make products like butter, cheese, yogurt, ice cream, sour cream, cottage cheese and whey protein.
- It takes an average of five minutes each time the dairy cow is milked. The average cow can contribute on average eight gallons of milk a day. That is about 400 glasses of milk each day!
- Milk provides over nine essential nutrients including protein, calcium, potassium, and vitamin D in every glass!

3. Interest Approach

- a. Ask students if they like to eat ice cream.
 - What is your favorite flavor?
 - Explain that there are many different flavors of ice cream!
- b. Ask students if they know where ice cream comes from.
- c. Share with students that we are going to read a story called “Ice Cream, the Full Scoop”

4. Read the Story

- a. You can ask your own questions throughout the story to clarify what the students are learning about ice cream.
- b. Ask follow-up questions at the end of the story.
 - Where does our ice cream come from?
Ice cream comes from dairy cows!
 - What do dairy cows give us?
Milk to make food products like ice cream, butter, cheese, yogurt, etc.
 - Do you think we have dairy cows in Nebraska?
Yes! We have dairy farms in Nebraska and virtually all of them are family owned.
 - How many times are dairy cows milked a day?
Dairy cows are typically milked two to three times a day and give us about eight gallons of milk a day!
 - Why do we heat the milk up before we use it to make ice cream?
We have to pasteurize it to kill any harmful bacteria and to make sure it is safe for us to eat!
 - What are different ways we can eat ice cream?
Ice cream cones, ice cream sandwiches, ice cream bars, etc.
 - What are some of the jobs people have who help make our ice cream?
We need the dairy farmer, the milk truck driver, the ice cream factory workers, the ice cream shop workers, or grocery stores to sell ice cream so we can have ice cream to eat!
- c. Now that we know how our ice cream gets to us, we are going to be ice cream makers today and make our own ice cream in a bag!

5. Snack Activity-Ice Cream in a Bag

- a. Ask students where ice cream comes from.
Ice cream comes from milk.
- b. Where does milk come from?
Dairy cows.
- c. What other food products come from dairy cows?
Milk, cheese, butter, yogurt, cream cheese, cottage cheese, whipped cream, etc.
- d. We are going to make our own ice cream in a bag!

Ingredients

- 1/2 cup whole milk, half and half, or cream, per student
- 1 tbsp sugar, per student
- 1 tsp vanilla extract, per student
- 6 tbsp sea salt or rock salt, per student
- 2 cups of ice, per student
- Sandwich sized Ziploc bag, 1 per student

- Quart sized Ziploc bag, 1 per student
- Spoon, 1 per student
- Sprinkles *optional

Directions

1. In the sandwich sized Ziploc bag, add milk, sugar, v and vanilla. Seal bag tightly.
2. In the quart sized bag, add the ice and salt.
3. Place the smaller bag inside the larger bag and seal tightly.
4. Shake the bag as hard as you can, without popping it open, for 5 minutes or until it is the consistency of ice cream.
5. Remove the smaller bag and give it a quick rinse to remove any pieces of salt. Make sure you rinse the opening as well.
6. Open the ice cream and eat it straight out of the bag with a spoon.

6. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?
Our food must come from the farm. Either as a plant or a food product that we get from an animal.
- b. Where does our ice cream come from?
It comes from dairy farms!
- c. What do dairy cows give us?
Dairy cows give us milk to make our ice cream!
- d. Do we have dairy farms right here in Nebraska?
Yes! Dairy farms are family owned. We rank 25th in dairy production in the United States.
- e. How many gallons of milk can one dairy cow give us?
One dairy cow can give us about eight gallons of milk per day!
- f. Is milk healthy for us?
Yes, it provides us with nine essential nutrients including protein, calcium, potassium, and Vitamin D!

EXTENSION ACTIVITIES

Milk or Meat? Beef or Dairy?

www.agclassroom.org/matrix/lesson/267/

Students identify the differences between beef and dairy cattle and determine the commodities produced by each type of cattle.

Chuck's Ice Cream Wish (Tales of the Dairy Godmother)

www.agclassroom.org/matrix/resource/1034/

With the help of his Dairy Godmother, Chuck is taken—poof!—on a memorable and delicious adventure to a dairy farm. He finds out exactly where ice cream comes from and gains an even deeper love and appreciation for his favorite food.

Discover Dairy

www.agclassroom.org/matrix/resource/176/

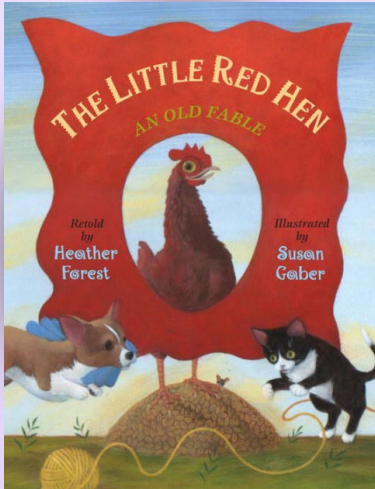
“Discover Dairy” is an educational website for teachers and students. The website includes elementary level videos about the dairy farm, lesson plans for teachers, and activities.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and participate in an activity to use wheat to make a sweet treat with microwave mug cakes!



Purpose

Students will explore the story of wheat.

Materials

- ***The Little Red Hen an Old Fable***, Retold by Heather Forest
- Access to a microwave
- Microwavable mugs or cups, 1 per student
- Forks or spoons, 1 per student
- Whisk, or spoon for stirring mix
- Measuring Cups and spoons
- Funfetti Mug Cake
 - All-purpose flour
 - Sugar
 - Baking powder
 - Milk
 - Vanilla extract
 - Vegetable oil
 - Sprinkles
- Double Chocolate Mug Cake
 - All-purpose flour
 - Sugar
 - Cocoa powder
 - Semi-sweet chocolate chips
 - Butter
 - Milk
 - Baking power
 - Eggs
 - Salt

LUNCHBOX Mysteries

Teacher's Guide

LESSON 3

The Little Red Hen an Old Fable

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Nebraska farmers grow wheat all across our state. Nebraska farmers plant two types of wheat called hard red winter wheat and hard white winter wheat. Wheat is grinded into flour to make bread, cereal, crackers, cakes, cookies, and pasta noodles. Nebraska is the 11th largest wheat producing state in the U.S. with approximately 1 million acres in wheat production.

It is called winter wheat because farmers plant their wheat in the fall, it has to go dormant in the winter, and then in the spring it will begin to grow. Farmers will harvest their wheat in the summer.

3. Interest Approach

- Ask students if they know of any food products that have wheat in them. If students do not know, follow up with the asking them if they use flour to make any foods. Maybe if they have made cake or cookies before.
 - Where does that flour come from?
Flour comes from wheat!
- Share with students that we are going to read a story called "*The Little Red Hen*"
- Read the Story

- As you read the story have students answer the questions that are asked throughout the book. You can ask your own questions to help guide answers.
- Ask follow-up questions at the end of the story.
 - Where does our food come from?
Plants or animals give us food!
 - How did the little red hen grow wheat?
She planted the seeds in the soil, then she watered the seeds, and cared for the wheat by pulling the weeds.
 - How did the little red hen harvest the wheat?
Once it is grown, she had to harvest the wheat by cutting it.
 - Do we grow wheat in Nebraska?
Yes! We grow wheat all across Nebraska.
 - How did the little red hen turn wheat into flour?
She had to grind the wheat to turn it into flour.
 - What did the little red hen make with the wheat?
She baked a cake!
 - What else could she have made with the wheat she grinded and turned into flour?
She could have made bread, cookies, pasta, crackers, cereal, etc.
- Now that we know where wheat comes from and how it grows, we are going to make our own cake!

4. Snack Activity-Cake in a Mug!

- Ask students if they know what season farmers plant their wheat in Nebraska?
Farmers typically plant their winter wheat in the fall. It needs to go dormant over winter so it can begin to grow in the spring. Farmers will then harvest their wheat in the summer.
- What ingredient in cake comes from wheat?
Flour!
- What are some foods that have flour in them?
Bread, cake, cereal, cookies, crackers, pasta, etc.
- We are making our own cake in a mug snack!

Ingredients for Funfetti Mug Cake, 1-serving per recipe.

- ¼ cup flour
- 2 TBS sugar
- ½ tsp baking powder
- ¼ cup milk
- ¼ tsp vanilla extract
- 2 TBS vegetable oil
- 1 TBS sprinkles

Directions

1. In a large mug combine all the cake ingredients except sprinkles, and whisk until smooth.
2. Stir in sprinkles.
3. Microwave on high for two minutes.
4. Let cool and enjoy your snack!

Ingredients for Double Chocolate Mug Cake-1 serving per recipe.

- ¼ cup flour
- ¼ cup sugar
- 2 TBS cocoa powder
- 2 TBS chocolate chips
- 1/8 cup melted butter
- 1/8 cup milk
- ½ tsp baking powder
- 1 egg, lightly beaten
- 1 pinch of salt

Directions

1. In a large mug, mix flour, sugar, cocoa powder, baking powder, salt.
2. Stir in milk, egg, and melted butter.
3. Place chocolate chips in the center of your mug.
4. Do not stir them in, they will sink naturally.
5. Place your cake in the microwave for two minutes, or until set.
6. Let cool and enjoy your snack!

5. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?

Our food must come from the farm. Either as a plant or a food product that we get from an animal.

- b. Can we grow food right here in Nebraska?

Yes! Nebraska farmers grow a lot of our food like corn, soybeans, wheat, dry beans, sugar beets, popcorn, potatoes, and many other types of foods!

Some foods can't grow here because our weather doesn't allow it to grow.

- c. What might some of those foods be?

Oranges, bananas, lemons, limes, cocoa beans, etc.

EXTENSION ACTIVITIES

Little Red Hen

www.agclassroom.org/matrix/lesson/27/

Students use the story The Little Red Hen to investigate wheat production and bread making. Students thresh their own wheat and grind it into flour to make bread.

Bread in a Bag

www.agclassroom.org/matrix/resource/50/

This activity details the instructions for making bread in a Ziploc bag. An excellent way to demonstrate bread-making and the properties of yeast within a classroom setting.

Pancakes!

www.agclassroom.org/matrix/lesson/534/

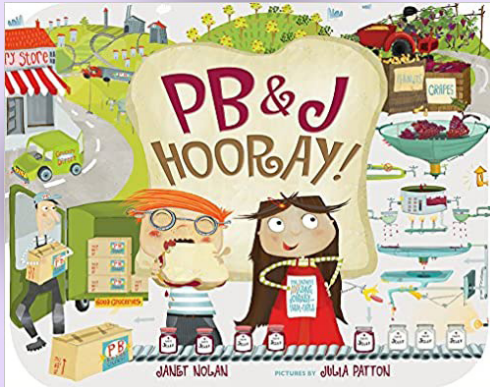
Students describe the physical properties of materials and observe physical and chemical changes as they explore the ingredients in pancakes and how maple syrup is harvested from trees.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and participate in an activity to make their very own PB & J sandwich to enjoy a snack!



Purpose

Students will follow the journey that peanut butter and jelly take to make our favorite lunchbox sandwich.

Materials

- ***PB & J Hooray!*** book by Janet Nolan
- Loaf of Bread
- Peanut butter (use sunflower butter or soy butter as an alternative)
- Jelly
- Plate, 1 per student
- Knife, 1 per student

LUNCHBOX Mysteries

Teacher's Guide

LESSON 4

PB & J Hooray!

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Sources:

nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf
www.nationalpeanutboard.org/wellness/the-journey-peanut-butter-jar.htm

Wheat

Nebraska is the 11th largest wheat producing state in the U.S. with approximately 1 million acres in wheat production. Nebraska produces two types of wheat. Hard red winter wheat and hard white winter wheat. Hard red winter wheat is the main source of flour for loaf bread, hamburger buns and other foods. Nebraska is one of nine states producing hard white winter wheat. About 50 percent of Nebraska's wheat is annually exported to international markets used to make Asian noodles and Middle Eastern flat breads.

Peanuts

Farmers in the southern states plant peanuts in the spring and harvest in the fall. Peanuts grow underground. When peanuts are harvested, they are left in windrows for two to three days to cure or dry out. It takes about 540 peanuts to make a 12 oz. jar of peanut butter. The average child will eat about 1,500 peanut butter and jelly sandwiches before he/she graduates high school.

Grapes

Grapes are grown all over the world. Grapes in the United States rely on certain climates. They need

sunshine, rainfall, and cool nights. As temperatures in the spring warm, the buds begin to emerge from the vines. After a few weeks the buds will bloom. Over summer the grapes will grow and will be ready for harvest in late summer or early fall.

3. Interest Approach

- a. Ask students what their favorite sandwich to eat is.
 - What is on your favorite sandwich?
 - Where do the items on your favorite sandwich come from?
- b. Share with students that we are going to read a story called “PB & J Hooray.”
 - How many of you like to eat peanut butter and jelly sandwiches?
- c. Read the Story
 - As you read the story have students answer the questions that are asked throughout the book. You can ask your own questions to help guide answers.
 - Ask follow-up questions at the end of the story.
 - Where does our food come from?
Plants or animals give us food!
 - Do any of the foods we talked about in this story come from Nebraska?
We grow wheat to help us make bread!
 - Do we grow peanuts in Nebraska?
We do not. Peanuts grow in the southern states!
 - Do we grow grapes in Nebraska?
Yes, there are a few grape growers in Nebraska but most of the grapes used for jelly come from other states.
 - How does our food get to the grocery store?
Delivery trucks!
 - Before the delivery trucks deliver the food to the store where does our food come from?
Bakeries and factories.
 - Before the delivery trucks pick up the food and the bakeries and factories make the food, where do our ingredients to make the food come from?
The farmers field!
 - Do you remember where flour comes from?
Wheat!
 - Where do peanuts grow?
In the soil.
 - Where do grapes grow?
On vines.
 - What do farmers need to grow our food?
They need seeds, water, soil, and nutrients from the soil.
- d. Review that farmers grow our food, it gets delivered to bakeries and factories, and then the truck drivers deliver it to the grocery store for us to purchase!
- e. Now that we know where some of our favorite foods come from, we are going to make our peanut butter and jelly sandwich!

4. Snack Activity-PB & J Sandwich

- a. Ask students where our peanut butter and jelly sandwich comes from.
It has to come from the farmer's field.

- b. Can we grow all of these foods here in Nebraska to help us make our peanut butter and jelly sandwiches?
No, we have to grow peanuts and grapes in other states.
- c. What crop do we grow in Nebraska to help us make our peanut butter and jelly sandwich?
Wheat to make the bread!
- d. What do we need to make a peanut butter and jelly sandwich?
Bread, peanut butter, and jelly.
- e. We are going to each make our own peanut butter and jelly sandwich.
Use the ingredients list and follow the instructions to make your own sandwich.

Ingredients

- Two slices of bread, per student
- Peanut butter
- Jelly

Directions

1. Take your two pieces of bread and place them on your plate.
 2. Using your knife spread peanut butter on one slice of bread.
 3. Add jelly and spread on the other slice of bread.
 4. Place both slices of bread together and enjoy your tasty PB & J sandwich!
5. Ask Follow Up Questions and Make Connection to Agriculture
- a. Where does our food come from?
Our food must come from the farm. Either as a plant or a food product that we get from an animal.
- b. Can we grow some of our ingredients right here in Nebraska?
Yes! We can grow wheat to make bread, but sometimes other states and countries grow food that we cannot grow here, like peanuts to make peanut butter, and even grapes to make jelly!

EXTENSION ACTIVITIES

The Seed Match

www.agclassroom.org/matrix/lesson/497/

Students investigate where food comes from, the parts of plants that we eat, and the difference between fruits and vegetables.

The Boy Who Changed the World

www.agclassroom.org/matrix/resource/227/

This book tells the story of Nobel Laureate, Norman Borlaug. Norman grew up as an average farm boy in Iowa, but later his work as a plant scientist reached far and wide to help improve the growth of wheat, rice, and corn all over the world. This book highlights the benefits of emerging science, but also has an underlying message to teach kids that, "Every choice you make, good or bad, can make a difference."

Amazing BREAD Processing – How It's Made Inside a Factory

www.agclassroom.org/matrix/resource/890/

Watch how wheat is processed into bread at a factory. Beginning with the harvest of the wheat on a farm and ending with slicing and bagging loaves of bread, see the automated machinery that makes bread processing on a large scale possible.

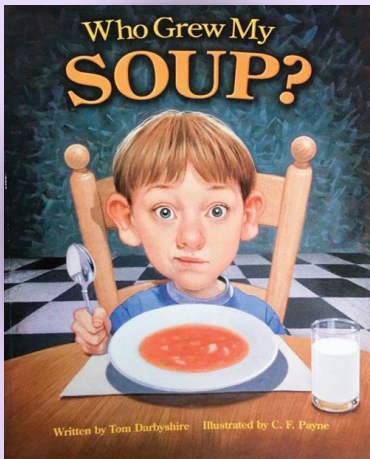
SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and participate in tasting different vegetables in a delicious snack.

Depending on the activity snack you choose, you may need to prep activity snack first or make a head of time for this lesson depending on time available. This snack activity takes an additional 45 minutes from preparation to cooking. See additional snack options.



Purpose

Students will take a journey to explore the ingredients found in vegetable soup.

Materials

- **Who Grew My Soup?** book by Tom Darbyshire
- **Author Read Aloud**

Ingredients for Fresh Veggie Snacks

Select a variety of fresh veggies for the kids to taste. A few ideas are listed below.

- Carrots
- Cherry Tomatoes
- Celery
- Cucumber
- Broccoli
- Snap Peas
- Ranch Dip or Hummus Dip

LUNCHBOX Mysteries

Teacher's Guide

LESSON 5

Who Grew My Soup?

Ingredients for Vegetable Soup Recipe

- 2 tablespoons of butter
- 1 yellow onion, diced
- 3 carrots, diced
- 2 russet potato, diced
- 8 cups, chicken, or vegetable broth
- 1 (14oz) can diced tomatoes, not drained
- 2 teaspoons salt
- ¼ teaspoon of black pepper
- 2 tablespoons tomato paste
- 1 cup alphabet pasta
- 1 cup frozen peas
- 1 cup frozen sweet corn

Optional in place of making vegetable soup

- Canned, Campbell's Vegetable Soup

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Sources:

nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf
www.nass.usda.gov/Publications/Highlights/2019/2017Census_Vegetable_Production.pdf

Nebraska's vegetable production has grown in recent years. In addition to the row crops like corn and soybeans that we grow in Nebraska,

many farmers raise vegetables. These may include many fruit and vegetable farms that diversify their marketing efforts by selling at farmers markets, roadside stands, u-pick operations and/or through wholesale and/or retail outlets.

According to the Nebraska Department of Agriculture the number of Nebraska produce growers has increased 700 percent over the past ten years from 78 in 2000 to more than 575 in recent years. They state that Nebraska has approximately 100 farmers markets, 167 roadside stands and 33 u-pick operations. Vegetables, such as tomatoes and cucumbers, melons, pumpkins, squash, onions, berries, sweet corn and many other types of produce are grown in Nebraska.

These operations are smaller operations but remain local to provide fresh produce during the spring, summer, and fall months. This highly intensive enterprise requires specialized equipment, a large labor supply and the knowledge to produce and market a profitable crop. Innovative methods such as high tunnels, mulches, cold frames, and row covers are becoming increasingly popular among growers who wish to extend their harvest. California continues to lead the nation in vegetable production followed by Florida and Idaho. These farms produce for the fresh markets and for the processing markets. These top producing vegetables include potatoes, sweet corn, lettuce, tomatoes, and snap beans.

In the story “*Who Grew My Soup*” by Tom Darbyshire, students will explore where the vegetable soup ingredients grow while making the connect back to Nebraska farms. Students will get to try some vegetables that get added to their favorite vegetable soup!

3. Interest Approach

- a. Ask students what their favorite soup to eat is.
 - What ingredients are in your favorite soup? *You can write these ingredients on the board.*
 - Where do the items in your favorite soup come from? *Lead students to the answer that these plants are grown on the farm.*
- b. Share with students that we are going to read a story called “Who Grew My Soup?”
 - How many of you like to eat vegetable soup?
- c. Read the Story
 - Read the story “*Who Grew My Soup?*” Ask questions throughout the story to engage in conversation with the students and relate to back to Nebraska vegetable production.
 - Ask follow-up questions at the end of the story.
 - Where does ingredients in our soup come from?
All the ingredients come from farms around the United States and the world. Some plants are even grown right here in Nebraska.
 - Where do carrots grow? Do we grow carrots in Nebraska?
Carrots grow underground in the soil. We could grow carrots in our own gardens at home but farmers in Nebraska do not typically grow carrots in large fields like they grow corn and soybeans. The largest carrot producing state is California.
 - Do we grow tomatoes in Nebraska?
Yes, there are a few tomato growers in Nebraska but most of the tomatoes come from California or Florida. They have longer growing seasons and can grow tomatoes on a larger farming operation.
 - What are some other vegetables that were mentioned in the story? Do an of these vegetables grow in Nebraska?

Onions, potatoes, celery, beans. Potatoes and beans grow in Nebraska grows potatoes and dry edible beans. Small farms in Nebraska may grow some of these vegetables but other states like California, Florida, Arizona and other states produce more vegetables where Nebraska produces more row crops such as corn, soybeans, wheat, potatoes, and dry edible beans.

- Who grows our soup?

Farmers! They have an important job providing food for people all over the world.

- What other vegetables could we add to our soup?

Beans, corn, peas, sweet potatoes, green beans, and more.

- d. Refer back to all the different soup ingredients that you wrote on the board. Discuss that our favorite soups come directly from the farmers' fields and farms. Ask students to identify which ingredients come from Nebraska farms.

These ingredients may include corn, soybeans, dry beans, potatoes, chicken, beef, pork, barley, wheat, and much more.

- e. Now that we know where some of our favorite ingredients in our soup come from, we get to taste some of these yummy vegetables!

4. Snack Activity-Fresh Vegetable Snack or Homemade Vegetable Soup

a. Option 1-Fresh Veggie Snack

Ingredients for Fresh Veggie Snacks

Select a variety of fresh veggies for the kids to taste. A few ideas are listed below.

- Carrots
- Cherry Tomatoes
- Celery
- Cucumber
- Broccoli
- Snap Peas
- Ranch Dip or Hummus Dip

Directions

Select a few fresh vegetables to have the kids taste test. Provide ranch or hummus dip if you would like. As the students taste their vegetables, have them use their five senses-look, smell, touch, taste and hear as they eat their fresh vegetables. This makes eating vegetables more fun!

b. Option 2-Homemade Vegetable Soup

Ingredients for Vegetable Soup Recipe

- 2 tablespoons of butter
- 1 yellow onion, diced
- 3 carrots, diced
- 2 russet potato, diced
- 8 cups, chicken or vegetable broth
- 1 (14oz) can diced tomatoes, not drained
- 2 teaspoons salt
- ¼ teaspoon of black pepper
- 2 tablespoons tomato paste
- 1 cup alphabet pasta

- 1 cup frozen peas
- 1 cup frozen sweet corn

Optional in place of making vegetable soup

- Canned, Campbell's Vegetable Soup

Directions

1. In a large stockpot or Dutch oven, heat the butter over medium heat.
2. Add the onion, carrots, celery, potatoes, and cook about 5 minutes, stirring a few times during that time.
3. Add the broth, diced tomatoes, tomato paste, salt, and pepper. Bring to a boil, then reduce the heat, cover the soup, and cook another 20 minutes.
4. Stir in the pasta and cook 5 more minutes. Stir in the peas and corn and cook about five more minutes, until the peas and corn are heated thoroughly. Enjoy!
5. Have students take some soup in their spoon, put the spoon to their lips, and then say these words, right out loud, between sips: "Who grew my soup? That's what I'd like to know. Who grew my soup? That's where I'd like to go!"

5. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?

Our food must come from the farm. Either as a plant or a food product that we get from an animal.

- b. Can we grow some of our ingredients right here in Nebraska?

- c. *Yes! We can grow corn, beans, potatoes, and a few tomatoes or carrots but most of our crops grown in Nebraska are crops like soybeans, corn for cattle, and wheat!*

EXTENSION ACTIVITIES

Eating Plants

www.agclassroom.org/matrix/lesson/145/

Students identify the structure and function of six plant parts and classify fruits and vegetables according to which parts of the plants are edible.

Fruit and Vegetable Bingo

www.agclassroom.org/matrix/lesson/347/

Students recognize the names of different fruits and vegetables and describe why they are important.

Who Grew My Soup?

www.agclassroom.org/matrix/lesson/547/

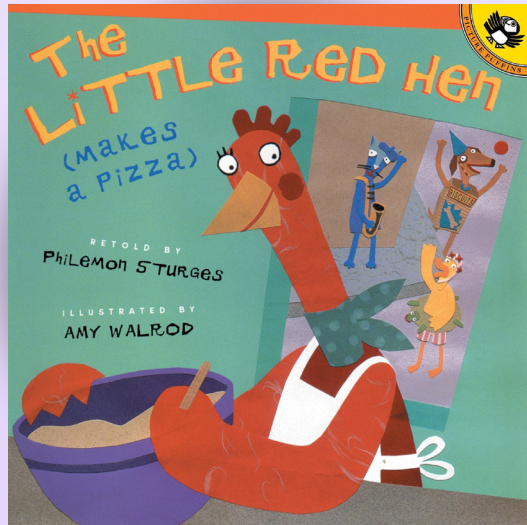
Students identify the source of the food they eat and investigate the processes and people involved in getting food from the farm to their spoon.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and make their own mini pizza.



Purpose

Students will recognize ingredients used to make a pizza.

Materials

- ***The Little Red Hen Makes a Pizza*** retold by Philemon Sturges
- Blank paper, 1 per student
- Crayons or markers
- English muffins
- Pizza sauce
- Mozzarella cheese
- Pepperoni
- Additional pizza toppings as desired
- Plates, 1 per student
- *Optional-additional pizza toppings*
- Microwave

LUNCHBOX Mysteries

Teacher's Guide

LESSON 6

The Little Red Hen Makes a Pizza

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Sources:

nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf
edis.ifas.ufl.edu/publication/FE1027
https://apps1.cdfa.ca.gov/FertilizerResearch/docs/Onion_Production_CA.pdf
www.extension.uidaho.edu/publishing/pdf/cis/cis1077.pdf
www.agmrc.org/commodities-products/fruits/olives

Nebraska's vegetable production has grown in recent years. In addition to the row crops like corn and soybeans farmers grow in Nebraska, many farmers raise vegetables. These may include many fruit and vegetable farms that diversify their marketing efforts by selling at farmers markets, roadside stand, u-pick operations and/or through wholesale and/or retail outlets.

According to the Nebraska Department of Agriculture the number of Nebraska produce growers has increased 700 percent over the past ten years from 78 in 2000 to more than 575 in recent years. They state that Nebraska

has approximately 100 farmers markets, 167 roadside stands and 33 u-pick operations. Vegetables, such as tomatoes and cucumbers, melons, pumpkins, squash, onions, berries, sweet corn and many other types of produce are grown in Nebraska.

These operations are smaller operations but remain local to provide fresh produce during the spring, summer, and fall months. This highly intensive enterprise requires specialized equipment, a large labor supply and the knowledge to produce and market a profitable crop. Innovative methods such as high tunnels, mulches, cold frames, and row covers are becoming increasingly popular among growers who wish to extend their harvest.

California continues to lead the nation in vegetable production followed by Florida and Idaho. These farms produce for the fresh markets and for the processing markets.

Tomatoes are one of the world's most consumed vegetable crops. Around 340 billion pounds of tomatoes were grown globally in 2014. That is about 12.4 million acres of tomatoes. China is the world's top producer followed by the United States and India.

Onions can be grown for many different food recipes including a favorite topping on many pizzas. Onions can be yellow, white, and red. These onions are bulb onions that grow in the soil. California is the largest producer of onions in the United States and can harvest in the spring and again in late summer. Nebraska farmers raise onions on smaller farms and sell locally to farmers markets and local grocery stores.

Mushroom production in the United States has grown in recent years. Pennsylvania is currently the top producer followed by California and Florida, but Asian countries are still the world's largest producers. There are over 300 varieties of mushrooms but only about 30 of them are grown for food production and 10 are grown commercially in the United States.

The olive industry originated in the Mediterranean countries of southern Europe. Olives were brought to South America and then to California. Olives were grown for its oil but after the markets became abundant with production, they began seeking other uses for the olives and canned olives took off. California produces 95 percent of the olives grown nationally. Olives grow on trees which make them highly variable depending on the year and the climate. Olives are a popular pizza topping for many.

Nebraska's pork industry plays an important role in Nebraska's economy. There are more than 3.8 million pigs in Nebraska, farmers across Nebraska raise pigs for pork production making it a top commodity in the state. Nebraska has the 6th largest swine herd in the United States. Pork is the most widely consumed meats in the world. Pork provides many food products including ham, sausage, pepperoni, bacon, and more making it a very versatile pizza topping.

Wheat is grown across Nebraska and it can be red or white winter wheat. Nebraska ranks 11th in the United States producing over 1 million acres of wheat each year. Winter wheat makes flour that is used to make bread, cakes, cookies, crackers, cereals and more. This winter wheat is used to make the English muffins and pizza crust.

Nebraska ranks 25th in dairy production in the United States. Dairy Farms in Nebraska are nearly all family-owned farms. Dairy cattle are milked two to three times a day and the milk they produced are found in the grocery stores within 48 hours. Milk is used to make several food products that include cheese, butter, yogurt, and ice cream.

In the story *"The Little Red Hen"* by Philemon Struges, students will explore different pizza toppings and where their food comes from making the connection back to the farm. Students will get to make their own little pizza snack.

3. Interest Approach

- a. Ask students to draw a picture of a pizza and include their favorite pizza toppings using a blank sheet of paper and crayons or markers.
 - What ingredients are on your favorite pizza? You can write these ingredients on the board.
 - Where do the ingredients used to make your favorite pizza come from? Where do they grow?
- b. Share with students that we are going to read a story called *"The Little Red Hen (Makes a Pizza)."*
 - Explain that this story explores different pizza toppings, and we will make the connection to those toppings and trace them back to the farms that grow them.
- c. Read the Story
 - Read the story *"The Little Red Hen (Makes a Pizza)"*.
 - Ask questions throughout the story to engage students in conversation about where these pizza toppings come from. Asking questions like "Where does flour come from? Where does the pizza sauce, onions, mushrooms, and pepperoni come from?", are great ways to engage in conversation.
 - Ask follow-up questions at the end of the story.
 - Where do our ingredients on our pizza come from?
All the ingredients come from farms around the United States and the world. Some plants are even grown right here in Nebraska.
 - Where does our flour that is used to make pizza crust come from? Do we grow wheat in Nebraska?
Flour is used to make crust and that flour is made from wheat. Wheat is grown across Nebraska. Nebraska ranks 11th in wheat production in the United States. The wheat grown in Nebraska is winter wheat and is a source of flour to make our pizza crust.
 - What plant helps us make pizza sauce?
Tomatoes. There are a few tomato growers in Nebraska but most of the tomatoes come from California or Florida. They have longer growing seasons and can grow tomatoes on larger farming operations.
 - Where does the pepperoni on the little red hen's pizza come from?
Pepperoni comes from pork which is the meat that comes from a pig. Pigs in Nebraska are raised for meat production, and it is a choice we can choose to eat. Nebraska has over 3.8 million pigs and Nebraska farmers raise pigs to provide pork for people all over the world.
 - Where does the cheese for the pizza come from?
Dairy cattle provide us with milk to help make the mozzarella cheese for our pizza. Nebraska ranks 25th in dairy production but nearly all dairy farms are family owned and operated.
 - Does Nebraska grow mushrooms, onions, black olives, or anchovies?
Although mushrooms do not grow in Nebraska, 23 other states produce mushrooms on a larger scale making the United States the world's second largest supplier of mushrooms.

Nebraska can grow onions, but onions are not grown on a large-scale farming operation. Most onion farms are small in Nebraska grown to support local grocery stores or farmers markets.

Nebraska farmers do not grow black olives, but California is one of the top producing olive states because it has a similar climate to the Mediterranean countries. Olives grow on trees.

Anchovies are not raised in Nebraska. They are found in the Eastern Atlantic Ocean and Indian Ocean.

- d. Refer to all the different pizza ingredients that you wrote on the board. Discuss that most of our favorite pizza ingredients come directly from the farmers' fields and farms right here in Nebraska.
- What additional Nebraska grown ingredients could the little red hen add to her pizza?
The little red hen could have beef, ham, bacon, sausage, chicken, and other local grown vegetables.
 - Now that we know where some of our favorite ingredients on our pizza, we are going to make our own little pizza snack.

4. Snack Activity-Mini Pizza

Mini Individual Pizzas

Ingredients

- English muffins, ½ slice per student
- Pizza sauce
- Mozzarella cheese
- Pepperoni
- Optional-additional pizza toppings
- Plates, 1 per student
- Microwave

Directions

1. Give each student a half of an English muffin. This will represent the crust for the pizza.
2. Add one to two spoonfuls of pizza sauce to each muffin.
3. Sprinkle mozzarella cheese over the top of your sauce.
4. Add pepperoni and additional toppings as you wish.
5. Place mini pizzas in the microwave 30 seconds to one minute to melt cheese and warm toppings.
6. Set to cool and enjoy!

5. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?
Our food must come from the farm. Either as a plant or a food product that we get from an animal.
- b. Can we grow some of our pizza ingredients right here in Nebraska?
Yes! We can grow wheat, dairy, pork, beef, chicken, and a few locally grown vegetables.

EXTENSION ACTIVITIES:

Pizza Time!

www.agclassroom.org/matrix/lesson/228/

Students use pizza as a basis for exploring agriculture, geography, and mathematics.

Tomato Trivia

www.agclassroom.org/matrix/lesson/307/

Using tomatoes as a theme, students practice the math and science skills of estimating, measuring, counting, graphing and sequencing.

This Little Pig

www.agclassroom.org/matrix/lesson/272/

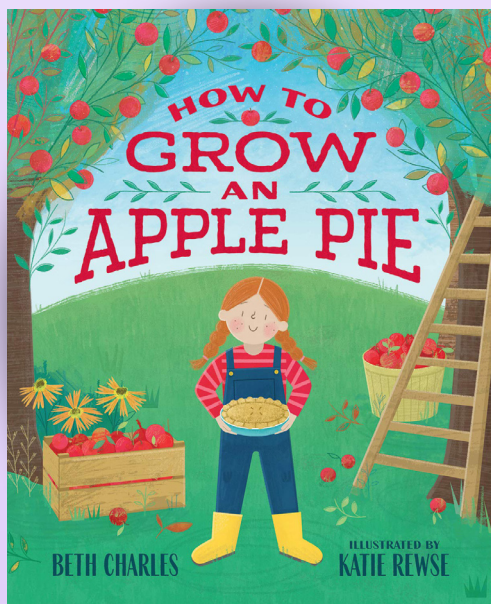
Students explore basic information about pigs and the products they provide.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and make their own mini apple pie treat. *May need to prep activity snack first or make a head of time for this lesson depending on time available. This snack activity takes an additional 45 minutes.*



Purpose

Students will follow the journey of apple production and identify ingredients used to make an apple pie.

Materials

- ***How to Grow an Apple Pie*** book by Beth Charles
- Frozen pie crusts, defrosted
- Apple pie filling
- Eggs
- Coarse sugar
- 2.5" round cookie cutter
- 3" round cookie cutter
- Baking pans
- Oven

LUNCHBOX Mysteries

Teacher's Guide

LESSON 7

How to Grow an Apple Pie

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Sources:

nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf
www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/agricultural-production-and-prices/
www.agmrc.org/commodities-products/fruits/apples
farmflavor.com/nebraska/nebraska-crops-livestock/nebraska-sugar-beets-confection-perfection/

Nebraska's agriculture industry drives the state's economy. In fact, 91 percent of the state's land is used for agriculture production in row crops and livestock. Nebraska has experienced steady growth in fruit and vegetable production throughout the years. This is a highly intensive enterprise requires specialized equipment and a large labor supply.

California, Iowa, Illinois, Minnesota, and Nebraska are the top five states with the highest value of crop sales while Washington leads the nation in apple production. Washington produced 5.4 billion pounds of apples in 2009.

There are 32 states that produce apples commercially. This totals 10.5 billion pounds of apples each year.

Apples are the most consumed fruit in the United States. The average person consumes about 26.3 pounds of fruit each year. The United States is the second largest apple producing country behind China. Each year the United States grows over 200 different varieties of apples.

Across Nebraska you will find many apple orchards and fruit stands that provide a fresh selection of apple varieties. These orchards often market their fruits locally to grocery stores and retailers right here in Nebraska as well as offering a u-pick opportunity to their communities.

Apples are used to make an assortment of products including apple pie, apple sauce, apple juice, cider, apple donuts and much more. Apples provide a healthy and nutritional option for a fresh fruit.

An important ingredient for apple pie is sugar. Nebraska produces sugar beets which make granulated sugar, powdered sugar, and brown sugar that consumers use to bake goodies. Nebraska ranks 7th in the nation for sugar beet production and averages about 1.4 million tons of production each year. Sugar beets are grown in western Nebraska due to the soil and climate of that area of the state.

Wheat is another common ingredient used for making apple pies. Wheat is grown across Nebraska, and it can be red or white winter wheat. Nebraska ranks 11th in the United States producing over 1 million acres of wheat. Winter wheat makes flour that is used to make bread, cakes, cookies, crackers, cereals and more. This winter wheat is used to make our apple pie crust.

In the story *"How to Grow an Apple Tree"* by Beth Charles, students will explore how apples grow and what it takes to make a delicious apple pie. At the end of the story students will get to make their own mini apple pie.

3. Interest Approach

- a. Ask students to think about their favorite fruit and write the answers to the following questions on the board.
 - Where does this fruit grow? Does it grow on a tree or on a bush?
 - Can we grow this fruit in Nebraska or does it need to grow in a warmer climate?
- b. Now ask the students to think of their favorite pie. Make a list on the board.
 - What ingredients do we need to make a pie? Make a list on the board.
- c. Share with students that we are going to read a story called *"How to grow an apple pie."*
 - Explain that this story explores apple production and the ingredients needed to make an apple pie. This story will make the connection back to the farm and share the journey of an apple pie from start to finish.

4. Read the Story

- a. Read the story *"How to Grow an Apple Pie"*.
- b. Ask questions throughout the story to engage students in conversation about apples and the different ingredients it takes to make an apple pie.
- c. Ask follow-up questions at the end of the story.
 - Where apples come from?
Apples grow on trees; in fact, we have apple trees right here in Nebraska. Ask the students if anyone has ever been to an apple orchard.

- How long does it take for an apple tree to be fully grown and produce apples?
It takes about six years for an apple tree to be fully grown to start producing apples.
 - What is the first thing Sophie saw on her apple tree in the spring?
She saw apple buds that turned into apple blossoms.
 - What insect did they bring in to help pollinate their apple blossoms?
Bees. Sophie waited as the bees helped pollinate the apple blossoms. Bees carry pollen which help pollinate the flowers so the apples can begin to grow.
 - What color did the tiny green apples grow and turn into?
The tiny green apples grew and started to turn red.
 - In the fall Sophie and her dad picked the apples just like the farmers in Nebraska do. Sophie was ready to make her apple pie. What did Sophie's parents help her make?
Sophie's parents helped her mix up the pie crust, roll it out, slice the apples and put spices in the crust with apples, along with sugar. She set the timer, put the pie in the oven and waited patiently for her pie to bake.
 - Where does the crust used to make the pie come from?
The crust is made from flour which comes from wheat. Farmers in Nebraska grow wheat and it is used to make flour other products such as cakes, cookies, cereals, pastas, and even the pie crust.
 - Where does sugar come from?
Nebraska farmers grow a plant called a sugar beet. These sugar beets grow in western Nebraska and provide us with sugar, powder sugar, and brown sugar. All which we use for our tasty pies and other baked goodies. Nebraska ranks 7th in the nation for sugar beet production.
 - Do farmers in Nebraska grow apples?
Yes! Farmers in Nebraska grow apples in orchard across the state. Most of these apple farms provide u-pick opportunities where you and your families can attend and pick your own apples. Some farmers sell apples to local farmers markets and grocery stores when apples are in season in the fall.
- d. Now that we know that farmers in Nebraska grow ingredients that help make apples pies, we are going to make our very own mini apple pies.

5. Snack Activity-Mini Apple Pies (45 minutes)

May need to prep or make a head of time for this lesson.

Ingredients- Servings 10

- Two 9" Frozen Pie Crusts defrosted
- 1 Can Apple Pie Filling
- 1 Egg
- Coarse Sugar
- 2.5" round cookie cutter
- 3" round cookie cutter
- Baking pans
- Oven

Instructions

1. Preheat the oven to 350F.
2. Remove the defrosted pie crusts from the tin and carefully place on the counter.
3. Use a rolling pin to gently flatten them out (but don't roll them thinner).
4. Using a 2.5" round cookie cutter (or drinking cup), cut out circles from one of the pie crusts.
(You should be able to get 9 or 10 circles).

5. Using a 3" round cookie cutter (or a slightly larger drinking cup), cut out circles from the other pie crust (again, you'll be able to get 9 or 10 circles). Slice each circle into 1/4" strips.
6. Place the smaller, 2.5" circles on a parchment lined baking sheet.
7. Scoop about 1 cup of apple pie filling into a bowl. Use a knife to cut through the filling in the bowl to make the apple chunks smaller.
8. Add a generous spoonful of apple pie filling to the middle of each heart. Make sure you leave space around the edges so you can seal it.
9. Beat the egg and add a small splash of water to it.
10. Using your finger (or a small brush), spread the egg around the edge of the circles so that it completely covers all of the exposed crust around the apple pie filling.
11. Place the 1/4" strips of pie dough onto each circle, going vertical, horizontal, vertical, horizontal, to make the lattice pattern.
12. Press down around the edges with a fork to seal it all in. Clean up the edges by pressing the 2.5" cookie cutter over each cookie.
13. Brush the egg mixture on top of each of the hearts then sprinkle with coarse sugar.
14. Bake at 350F for 25 to 30 minutes until the edges turn golden brown.
15. Remove from the oven and enjoy!

6. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?

Our food must come from the farm. Either as a plant or a food product that we get from an animal.

- b. Can we grow some of our apple pie ingredients right here in Nebraska?

Yes! We can grow the main ingredients for apple pies right here in Nebraska like our apples, sugar, and wheat!

EXTENSION ACTIVITIES

A is for Apples

www.agclassroom.org/matrix/lesson/374/

Students use their five senses to investigate apples, identify and model the parts of an apple, make applesauce, and learn how apples are grown.

Freshest Fruits

www.agclassroom.org/matrix/lesson/322/

Students determine where fruits grow and their nutritional value by completing an activity to observe the size, shape, texture, and seeds of various fruits.

Four Seasons on a Farm

www.agclassroom.org/matrix/lesson/327/

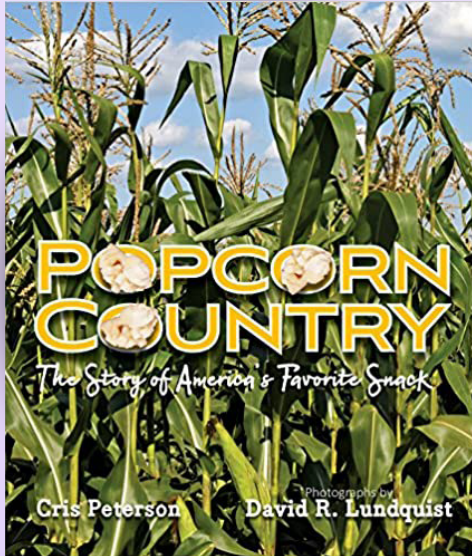
Students identify the characteristics of the four seasons of the year, investigate what causes seasons, and observe the affects changing seasons have on farms.

SNAPSHOT

Level: K-2

Time: 35 min.

Activity: Students will engage in a story and discover what makes popcorn pop and enjoy a healthy popcorn snack.



Purpose

Students will follow the journey of popcorn production from start to finish.

Materials

- **Popcorn Country: The Story of America's Favorite Snack** book by Cris Peterson
- **Popcorn on the Cob**-makes about 1 bag
- Caramel Popcorn
- Cheddar Popcorn
- White or Butter Popcorn
- Plate
- Microwave

LUNCHBOX Mysteries

Teacher's Guide

LESSON 7

Popcorn Country: The Story of America's Favorite Snack

PROCEDURES

1. Organize and Prepare Materials

2. Background Information

Source:

nda.nebraska.gov/publications/ne_ag_facts_brochure.pdf

Why is Nebraska called to the cornhuskers? Because corn can be found in almost every county in Nebraska. Nebraska ranks third in corn production producing four main types of corn called dent corn, popcorn, sweet corn, and food grade corn. Farmers plant their corn in the spring and harvest the corn using combines in the fall.

Most of the corn grown in Nebraska is called dent corn or field corn. Dent corn is grown to feed our cattle, pigs, and chickens. This corn is also used for by products to make fuel called ethanol, corn starch, corn oil, and corn syrup, which is used in products that consumers use each day. Dent corn is harvested after it begins to dry in the fields in the fall. As it dries the kernels shrink and dents appear in the kernels.

Sweet corn only makes up about one percent of the state's overall corn production. Sweet corn is tasty and sweet and is harvested in late summer when the

corn kernels are tender. Sweet corn can be found at local grocery stores and farmers markets. Sweet corn contains more sugar than other types of corn making it the tastiest choice to eat right off the cob.

Food grade corn includes corn grown for food production. Nebraska grows food grade yellow and food grade white corn. This corn is used for corn chips, tortillas, and corn cereals such as corn flakes, corn pops, and corn Chex.

The fourth type of corn grown in Nebraska is popcorn! Popcorn grows on a cob just like dent corn, sweet corn, and food grade corn but the kernels are rock hard, and must be popped to eat. Nebraska is the number one producer of popcorn in the United States growing about 34 percent of the nation's supply. That is about 360 million pounds each year. Popcorn has moisture inside each kernel. As the kernel is heated up that moisture expands turning to steam. The steam turns to liquid causing the kernel to pop creating a tasty nutritional and low-calorie snack. The kernels are then packed into bags for large events, movie theaters, or microwavable bags. The United States grows nearly all the world's supply of popcorn. Nebraska ships popcorn to other countries all over the world.

Flint is another type of corn grown in the United States, but it is not as widely or commonly grown in Nebraska when compared to dent corn, sweet corn, food grade corn, and popcorn. Flint corn can be colorful and look like popcorn, but it doesn't pop well.

In the story *"Popcorn Country, The Story of American's favorite Snack"* by Chris Peterson, students will explore popcorn production and make a tasty popcorn snack.

3. Interest Approach

- a. Ask students to think about their favorite snack that they might enjoy at a movie.
 - Where does your favorite movie snack come from?
 - What are the ingredients in your favorite movie snack? *Make a list of these ingredients on the board.*
- b. Which of these ingredients can farmers grow in Nebraska?
 - Share that many foods we enjoy grow right on farms in Nebraska. These may include products that contain wheat like cakes, cookies, brownies, and crackers. Some snacks may have corn in them like Fritos, corn chips, and Cheetos. Others may come from potatoes like potato chips. The snacks that contain sugar come from a plant; farmers grow called sugar beets. Sugar beets make sugar that we use in our sweet treats and candies that we eat. These are just a few of the plant's farmers grow to make our tasty movie snacks!
- c. Share with students that we are going to read a story called *"Popcorn Country, The Story of America's Favorite Snack"* by Chris Peterson.
 - Who likes to eat popcorn? Explain that this story explores popcorn production. This story will make the connection back to the farm and share the journey of popcorn production from start to finish.

4. Read the Story

- a. Read the story *"Popcorn Country, The Story of America's Favorite Snack."*
- b. Ask questions throughout the story to engage students in conversation about corn and popcorn production.
- c. Ask follow-up questions at the end of the story.
 - Do Nebraska farmers grow corn?
Yes! Nebraska farmers grow different types of corn like dent corn, sweet corn, food grade corn, and popcorn! Nebraska is the number one popcorn producer in the United States. Nebraska farmers grow over 360 million pounds of popcorn each year.

- When do farmers plant their corn popcorn fields?
Farmers plant their fields in the spring as the ground starts to warm up. The corn begins to grow and will reach up to 10 feet tall by the end of summer.
- When will farmers harvest their popcorn?
Farmers use a combine and will harvest their popcorn fields in the fall as the popcorn begins to dry out. The rest of the kernels will be dried after they are delivered to the popcorn bins.
- Can all corn pop like popcorn does?
No. Not all corn pops like popcorn does, popcorn has rock hard kernels which is different from the dent corn, sweet corn, and food grade corn that has more of a softer kernel.
- What causes the popcorn to pop?
When the popcorn kernels are heated up, the moisture inside each popcorn kernel expands creating steam. The steam turns to liquid and causes the kernels to pop, making a tasty nutritional snack to eat!
- Can popcorn be a nutritional snack?
Yes, popcorn is a low-calorie snack that makes it an excellent snack. Especially for one to enjoy at the movies.

d. Now that we know that farmers in Nebraska the most popcorn in the United States, we are going to sample different flavors of popcorn!

5. Snack Activity-Popcorn Taste Test

Ingredients

- **Popcorn on the Cob**-makes about 1 bag
- Caramel Popcorn-enough to share for all students
- Cheddar Popcorn- enough to share for all students
- Buttered Popcorn-enough to share for all students
- Paper plates, 1 per student
- Microwave

Instructions

1. Show the class the popcorn cob. Ask them if they know what kind of corn it is? (If you do not have a popcorn cob, show the class a container of Jiffy Pop popcorn or a bag of microwave popcorn. Ask the students what they think is inside the packaging.)
2. With your students, pop popcorn right off the cob. Place the cob in a paper bag, fold the top of the bag down twice to secure the top, place in the center of a microwave, and heat on high power for 1-1/2 to 3-1/2 minutes (time will vary with the wattage of the unit). Stop the microwave when fast popping slows to 1-2 seconds between popping. Carefully open the bag. The cob is very HOT! Note: some kernels may not pop due to uneven heat distribution in the microwave. (If you are popping Jiffy Pop over a hot plate or microwave popcorn, follow the directions on the packaging.)
3. Ask the students to describe what they observe. Discuss the steam that is present the moment the bag is opened.
4. Give each student a piece of the popped popcorn to observe. Ask the students what differences they observe between the un-popped and popped popcorn.
5. Ask the students, "How does popcorn pop?" Have them recall what they learned from the story.
6. Explain that popcorn can have many different flavors, but we must add ingredients to the popcorn to get the taste we desire. For example, someone may want popcorn to taste salty or even sweet.

7. Pass out paper plates to each student. Tell the students that they are going to get to taste three to four different flavors of popcorn.
8. Pass out the different flavors of popcorn for each student.
9. As you go through each flavor of popcorn have the students predict what it will taste like. Will it be sweet, salty, plain, or maybe a specific flavor like butter or cheddar?
10. Enjoy the remaining popcorn snack!

6. Ask Follow Up Questions and Make Connection to Agriculture

- a. Where does our food come from?

Our food must come from the farm. Either as a plant or a food product that we get from an animal.

- b. Can we grow popcorn right here in Nebraska?

Yes! In fact, Nebraska is the number one producer of popcorn in the United States.

EXTENSION ACTIVITIES

Get Popping

www.agclassroom.org/matrix/lesson/642/

Students discover how popcorn is grown and explore the phenomenon of how popcorn pops.

Farming in a Glove

www.agclassroom.org/matrix/lesson/66/

Students observe how a seed sprouts and investigate the conditions necessary for germination to occur.

My Little Seed House and Seed Book

www.agclassroom.org/matrix/lesson/233/

Students observe the growth and development of seeds and explore what conditions are necessary for seeds to germinate.