



Kansas Corn: Seasons

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Kansas Corn: Seasons

Grade Level: PreK

Unit Overview

Centered around the “We Grow Corn, Seasons on a Kansas Family Farm” book, children will learn about the four seasons and growing corn while using their cognitive and fine motor skills. This unit can be used for teachers in a daycare or classroom setting.

Kansas Early Learning Standards

- ATL.p4.3: Stays with a task for at least five minutes.
- ATL.p4.4: Carries out tasks, activities, projects, or experiences from beginning to end.
- ATL.p3.11: Identifies a problem and attempts multiple ways to solve it, including working with others as part of a team, with some adult assistance.
- ALT.p4.15: Understand what is real and what is make-believe.
- CL.L.p3.1: With prompting and support asks and answers simple questions about the story content.
- CL.L.p3.2: Uses pictures and illustrations to tell and retell part of the story.
- CL.IT.p3.3: Exhibits curiosity and interest in learning new vocabulary.
- M.CC.t.1: Verbally counts in sequence to 3.
- M.CC.p3.1: Counts in sequence to 10.
- M.CC.p3.3: Places objects in one-to-one correspondence during play situations.
- M.MD.p3.1: Demonstrates an understanding that objects can be compared by one attribute.
- S.mi.3: Shows interest in living things and observes and/or engages with them in a respectful way.
- S.p3.4: Understands that living things need air, water and food.
- S.p3.6: Makes observations and communicates findings with others.
- S.p4.7: Observes and explains how plants and animals respond to changes in the environment and in seasons.
- S.t.1: Demonstrates an understanding of basic cause and effect.
- S.t.4: Begins to identify traits of living things.
- S.t.5: Demonstrates an understanding that people and animals need food and water to live
- SED.SD.p3.4: Follows rules and simple directions (1-2 steps).
- SED.PD.p3.9: Completes own goal directed activity and recognizes accomplishments while learning rules.
- SED.SD.p4.5: Displays socially competent behavior with peers (e.g., helping sharing taking turns).
- SS.p3.5: Creates representations of familiar places through various materials (e.g., builds a fire station with blocks, draws a picture of a home).

Materials

Note: Many of these lessons use some of the same materials and/or contain reusable materials. None of these lessons are considered a craft project for the children to take home. The materials are to be saved for future learners.

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- “We Grow Corn, Seasons on the Kansas Family Farm” book
- Sweet corn kernels (from a can)
- Dent corn kernels
- Popcorn kernels
- Indian corn kernels
- Ear of Corn (Indian or dent)
- Paper plate per child
- Glue (optional)
- Green/Yellow Wikki Stix (reusable) or markers
- Scissors
- Matching Card Set
- Playdough Mats
- Containers of Playdough
- Alternative materials: small counters
- Water
- Clear container or plate big enough for an ear of corn
- 10 yellow wooden beads per brown pipe cleaner
- 4-6 pipe cleaners per child
- Newspaper
- Tape
- Potting soil
- Corn kernels or seedlings
- Small baggies with twist ties
- Spray bottle
- Small can or container
- Two clear glasses
- Club soda (carbonated water)
- Water (still)

“We Grow Corn, Seasons on a Kansas Family Farm” Book

To start the unit the teacher will read the book to all children in a whole group setting. While reading the book the teacher can stop and ask leading questions about the information on the page. To expand learning the teacher can decide how they would like to use the lessons that go along with the book.

Theme Unit: For a theme unit the lessons can be used daily throughout a week or two weeks. Centers in the classroom can be geared around corn. Each day during read aloud time, read the “We Grow Corn” book, or specific pages outlined in each lesson, followed by the activity.

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Science Day: One day a week for four to five weeks have a “Science” day. On this day the teacher would do one of the lessons provided.

Order of Lessons

In each lesson specific pages of the book will be highlighted. Reread the “We Grow Corn” book to bring attention to the topic for that day. Each of these lessons build on each other.

- Lesson 1: What kind of corn is it? (Pg T5-T7)
- Lesson 2: Life Cycle of Corn (Pg T8-T9)
- Lesson 3: Matching Cards (Pg T10-T11)
- Lesson 4: Playdough Mats (Pg T12-T18)
- Lesson 5: Sprouting Corn (Pg T19-T20)
- Lesson 6: A Kernel is a Seed (Pg T21-T22)
- Optional Lesson 1: Build a Terrarium (Pg T23-T24)
- Optional Lesson 2: Will it Sink or Float? (Pg T25-T26)

Safety Considerations

- Do not put corn kernels or beads in ears, nose or mouth.
- Do not throw the corn kernels.
- Do not eat the Play-Doh.
- Be aware of student allergies to corn or seeds treated with chemicals. (Untreated seeds are provided)

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Lesson 1: What kind of corn is it?

Purpose

Children will gain an understanding of four different types of corn. These four types of corn may be referenced throughout the rest of the lessons.

Setting

Large or Small group

Type of Activity

Science

Developmental Domain

Cognitive

Kansas Early Learning Standards

- ATL.p4.3: Stays with a task for at least five minutes.
- ATL.p4.4: Carries out tasks, activities, projects, or experiences from beginning to end.
- ATL.p3.11: Identifies a problem and attempts multiple ways to solve it, including working with others as part of a team, with some adult assistance.
- CL.IT.p3.3: Exhibits curiosity and interest in learning new vocabulary.

Materials

- Dent, sweet, popcorn and Indian corn cob pictures from card set
- Sweet corn kernels (from a can)
- Dent corn kernels
- Popcorn kernels
- Indian corn kernels
- Ear of Corn (Indian or dent) for observation only (also will be used in Lesson 5)
- “We Grow Corn, Seasons on the Kansas Family Farm” book

Preparation

Set the stage for the lesson.

- “There are four different types of corn kernels that we will be learning about today. Today you will be a scientist and will be making observations with your eyes and hands. Your job is to figure out the difference between these corn kernels.”

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- Show them the butcher paper with the chart. Explain that scientists write down their observations and see if there is a pattern.
- Example below.

Types of Corn				
	Dent Corn	Sweet Corn	Popcorn	Indian Corn
Color				
Texture				
Ear of Corn Photo				
Kernel				
Where have I seen it?				

Set Up

- Place the four types of cob pictures on the table for children to see. These photos are part of your matching card set.
- Place the four types of kernels on the table for children to see.
- On butcher paper, make a chart to write in children's observations.

From the Book

Reread page 22 from the book with focus on the four types of corn.

Vocabulary Word

Kernel: The seed found on a corn cob.

- Introduce the vocabulary word and write it on the board or paper. Ask children if they have ever heard this word before. Read the definition and then ask the children if they know what this means.
- Show children the dent or Indian corn cob. Explain that each yellow or colored kernel is a seed. Break off one kernel. Explain that if they were to take this kernel and plant it in the ground, it would grow a new corn plant. NOTE: Do not take off many kernels, this cob is used in Lesson 5: Sprouting Ear of Corn.
- Have they seen kernels before? If so, where?
- Children may have knowledge already from living or knowing someone on a farm or they may talk about the kernels they see after popping popcorn.
- Leave time for discussion.

Procedure

Show children the corn cob provided in your kit. It will be either dent corn or Indian corn. Give them a chance to feel it and look at the cob all over. Ask children if they can identify the stuff on the table that goes with that kind of

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corn. Can they match the kernels with the cob and cob photos? Ask questions to help lead the observation and to fill out the chart.

Dent Corn (Picture or cob)

- What color do they see?
 - Deep yellow, a dent at the top of the kernel. This would be a great time to explain that dent corn got its name from the dent at the top of the kernels.
- What does it feel like?
 - Hard. This would be a great time to explain that a scientist's word for what it feels like is texture.
- Where have they seen this type of corn before?
 - In a corn field? Some may not have seen this kind before, explain this is the most common corn grown in Kansas.

Sweet Corn

- What color do they see?
 - Yellow and white kernels
- What does it feel like?
 - Not hard. Have them think about when they have eaten it, it is juicy and soft.
- Where have they seen this type of corn before?
 - On their table. They have eaten it before.

Popcorn

- What color do they see?
 - Yellow but smaller than the dent corn kernels.
- What does it feel like?
 - Hard
- Where have they seen this type of corn before?
 - In a bag of popcorn, at a grocery store.

Indian

- What color do they see?
 - Can be multiple colors like dark yellow, light yellow, red, purple.
- What does it feel like?
 - Hard
- Where have they seen this type of corn before?
 - Decoration in the fall, in Thanksgiving books.

Review

At the end of the lesson, go back over the chart. State the different types of corn names and how they can tell the difference between them.

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Lesson 2: Life Cycle of Corn

Purpose

Children will gain an understanding of the life cycle of a corn plant.

Setting

Large or Small Group

Type of Activity

Art

Developmental Domain

Cognitive

Kansas Early Learning Standards

- ATL.p4.3: Stays with a task for at least five minutes.
- ATL.p4.4: Carries out tasks, activities, projects, or experiences from beginning to end.
- S.p4.7: Observes and explains how plants and animals respond to changes in the environment and in seasons.
- CL.IT.p3.3: Exhibits curiosity and interest in learning new vocabulary.

Materials

- Paper plate per child
- Glue (optional)
- Green/Yellow Wikki Stix (reusable) or markers
- Scissors
- Kernels
- “We Grow Corn, Seasons on a Kansas Family Farm” book

Preparation

Explain and discuss with the children the growth stages of corn starting with a corn kernel (seed) to growing into a large corn plant that produces more corn.

Set Up

- New to using Wikki Stix? These can be reused so after the activity is over you can collect the Wikki Stix to use again.
- Gather all the materials needed for this activity.

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- Wikki Stix can be used if you have them, if not glue will work fine.
- Divide the paper plates into fourths using a marker.
- Make the life cycle plate ahead of time as an example for children to use.

From the Book

Reread pages 9-20 from the book that focuses on corn growth from a seed to a plant.

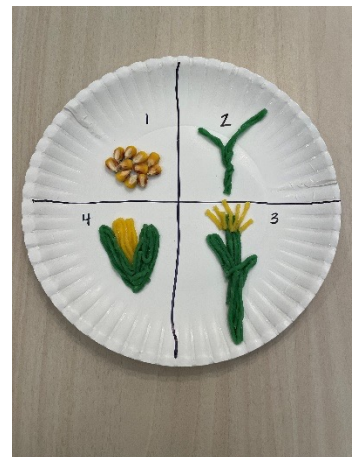
Vocabulary Word

Life Cycle: stages or steps that a living thing goes through.

- After reading the pages talk about the vocabulary word, life cycle. Have children help explain the stages in a human's life. Then explain the stages in a caterpillar's life.
- During this activity, children will be learning about the life cycle of a corn plant. How it starts out as a seed and then grows to an adult plant.

Procedure

1. The life cycle begins in the upper left corner.
 - Have the children cut small pieces of Wikki Stix with scissors and place real corn kernels on top of the Wikki Stix inside the upper left corner of the plate. No glue is necessary as the corn kernels will adhere to the Wikki Stix. If no Wikki Stix then glue can be used.
2. The life cycle progresses to the upper right portion of the plate and contains the sprouting corn plant.
 - In the upper right portion of the plate the children can make a small sprout using the green Wikki Stix. If no Wikki Stix then use a green marker.
3. The lower right portion of the plate should contain a corn stalk with silks/tassels.
 - In the lower right portion of the plate, the children create a larger green stem with leaves to resemble the corn stalk and cut small pieces of yellow Wikki Stix for the silk/tassels. If no Wikki Stix then use green and yellow markers for this.
4. The lower left portion of the plate should contain an ear of corn.
 - To complete the life cycle, the children can make an ear of corn on the lower left-hand portion of the plate. If no Wikki Stix then use markers to make your corn plant.
5. Label the life cycles. Children can use a marker or if the teacher would rather make labels on their own. The labels will be 1, 2, 3, 4 to reflect the first through fourth stage of the corn plant.



Review

After the life cycle has been made, go through all four stages while children point to each section of the plate. Talk about how each section looks different.

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Lesson 3: Matching Cards

Purpose

In a game format, children will use their skills to match similar cards. The cards will create conversations about corn through the use of pictures.

Setting

Small Group or Individual

Developmental Domain

Cognitive Domain

Kansas Early Learning Standards

- ALT.p4.15: Understand what is real and what is make-believe
- SED.SD.p3.4: Follows rules and simple directions (1-2 step)
- SED.SD.p4.5: Displays socially competent behavior with peers (e.g., helping sharing taking turns)
- CL.L.p3.1: With prompting and support asks and answers simple questions about the story content
- CL.L.p3.2: Uses pictures and illustrations to tell and retell part of the story

Materials

- Matching Cards
- “We Grow Corn, Seasons on a Kansas Family Farm” book

Preparation

- Introduce the cards included in the kit. Example: talk about all the season cards together. Talk about all the equipment cards together.
- Teacher will show what a possible match is and how it is an exact pair of the original card. Example: Tractor will match with Tractor

From the Book

Ask the children if they recognize any of the pictures. Have the book available to remind them that they saw the same photos in the book. If a child comes across a picture they do not recognize you can reference the book.

Procedure

- Lay one set of cards on the table in an array. The other set of cards will be shuffled and laid face down.
- The children will pick up one card that is facedown. They will then find the match to their picture. Once the match has been found the child will keep it. Ask the child what their picture is. Can they explain what

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is on the card? If not, help them through this process.

- Proceed through the stack of cards while the children take turns.

Additional Variations

- Memory Game: lay both of the cards face down on the table. Children will take turns turning two over at a time to see if they have a match. Children will collect their matches as they get them.
- Lay one set of cards down on the table face up. The teacher will ask the children, one at a time, to find different things on the cards. Example: find a season card, find an equipment card, find a card that starts with a /P/ sound.

Review

As the children become more familiar with the cards ask them questions to connect the photos on the cards with what they learned in the book. Examples: “Find the card of the type of corn that is used to feed animals?” “This is the spring season card, what do farmer do in the spring?” “In what season does the farmer use the combine?”

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Lesson 4: Playdough Mats

Purpose

Children will work on their fine motor skills and create conversations about corn through use of pictures and activities using playdough mats.

Setting

Small Group or Individually

- It is suggested that children be introduced to the mats with an adult, so children understand what is being expected of them for each mat. After children are comfortable with the mats, they can transition to independent activities.

Developmental Domain

Physical and Cognitive Domain

Kansas Early Learning Guidelines

- M.CC.t.1: Verbally counts in sequence to 3
- M.CC.p3.1: Counts in sequence to 10
- M.CC.p3.3: Places objects in one-to-one correspondence during play situations

Materials

- Playdough Mats
- Containers of Playdough
- “We Grow Corn, Seasons on a Kansas Family Farm” book

Preparation

- Select playdough mats for each child (or allow for personal choice)
- Gather playdough
- Have “We Grow Corn” book as a reference for the playdough mats
- Model how to roll, pound, or make a snake from the playdough

From the Book

Have the book available so if a child comes across a picture they do not recognize they can reference the book.

Procedure

For each section of the book a different playdough mat can be used. The teacher will review the section and then share the corresponding mat.

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Questions:

- What do you see on your mat?
- How is this used to grow corn?
- Have you ever seen one of these?

Prepare: Tools

From the Book

- Pages 5-6
- Farmers use many different types of tools throughout the year, especially in the winter. During the winter when it is cold outside, farmers use their time to fix equipment and prepare for the year.

Activity

- The children will snake the playdough and cut/place inside the bubble letter (H C G) for each tool presented.
- After the child is done making the bubble letters the teacher will go over the letters and talk about what sound each letter makes. Have the children repeat the sounds of each letter.
- The teacher will then say, point to the computer. Have the children repeat, computer.
- Ask this question: What sound do you hear at the beginning of computer?
- Ask the child to move the C to the computer.
- Ask the child how a farmer would use the computer on the farm.
- Continue with the rest of the tools: hammer and gloves.

Prepare: Equipment

From the Book

- Pages 7-8
- Farmers use many different types of equipment to plant and harvest/cut corn. Look at their wheels, they are all different sizes.

Activity

- Children will use playdough to make a ball and pound it flat to make a circle.
- The children will make circles of playdough to match the size of the circles on the mat. Each of the circles represents wheels for the farm equipment.
- Children may have to try a couple of times to make a circle that will match the size of each wheel. During this time ask children if their circle is too big or too small. Work on the concept of size during this exploration time.
- After the child is done making the wheels encourage the children to count the wheels by placing a finger imprint in each of the circles. This counting can be done individually or as a small group.

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- The teacher can also talk about the farm equipment and what each type of equipment is used for on the farm. The book can be a good reference for the different types of farm equipment.

Plant: One Seed One Plant

From the Book

- Pages 9-12
- Farmers use a planter to plant all their corn seeds. Those corn seeds will grow into a corn plant. Each corn plant will grow a LOT of seeds! Show the children the bottom of page 12 and how the seed grows.
- Then look at page 17 and the ear of corn. Explain that each of those corn kernels is a corn seed!

Activity

- To begin, children will be asked to make small balls of playdough using 1 color of playdough. These small balls will be put at the bottom of each corn plant to represent the seed. Children will make 6 small playdough balls.
- After the seeds have been planted, talk to the children about how this one seed can grow an ear of corn. Each ear of corn is full of a LOT of seeds!
- Children will then be asked to make ears of corn out of yellow playdough. Children will match their ears of corn to those on the playdough mat.
- The teacher will take the time to help the children count the seeds again. Then the group will count the ears of corn. Ask the question: Do we have more seeds or more ears of corn?
- Now it is time to harvest the corn! Children will be encouraged to pick the ears of corn and place it at the bottom of the mat. One ear will go in each square. After harvesting the corn, encourage children to count their ears of corn.

Plant: Room to Grow

From the Book

- Pages 9-12
- Farmers use a planter to help them plant their corn. Do you see all those rows? In each row corn seeds are being planted. That is going to be a lot of corn plants!

Activity

- To begin, children will make several small playdough balls. This will represent seeds.
- The first row that is on the mat will be used as an example of how to plant the seeds.
- The teacher will model what to do.
- Place one seed at the front of the row. Place your pointer finger down next to the seed. Leaving your finger there, plant the next seed on the other side of the finger. Continue doing this along the line.
- The seeds should all be equal distance apart. Talk to the children about when a tractor plants seeds, they

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have to plant the seeds an equal distance apart to allow room for each plant to grow.

- After the line is filled with seeds, the teacher can encourage the children to press the seeds down as they count to see how many seeds they planted.
- Children can continue planting on the additional rows.

Patrol: Day and Night

From the Book

- Pages 13-16
- Farmers throughout the summer monitor their corn plants and watch them closely to see if it is growing like they should. Corn grows very fast!

Activity

- To begin, have the children snake out a yellow line and a green line.
- Match the yellow playdough to the yellow ruler on the mat. Have children cut off the playdough where the ruler ends. Do the same with the green playdough.
- Ask the following questions:
 - Which line is bigger? Which is smaller?
- Point to the corn plant that is bigger. Now point to the corn plant that is smaller.
- The teacher can explain that corn plants grow very quickly. A corn plant can grow two inches in one day! Explain that the smaller plant was that tall in the morning when the sun came up. Then the bigger corn plant is how tall it was by the end of the day when the sun went down.
- This mat can help explain day and night. Talk about what the children have done for the day and what they will do at night. During that time the corn plant has grown taller.

Patrol: On the Lookout

From the Book

- Pages 13-16
- There are many dangers that can hurt a corn plant. Farmers must be on the lookout for these dangers. That is called patrolling. Talk about each of the dangers.

Activity

- After reading the section in the book the children should have examples of what can harm corn and why farmers patrol their crops. What dangers do they see in the picture? Insects, drought (which means no water) disease and weeds.
- Talk to the children about these dangers and ask them what kind of harm they would do to the plants. Can they name other dangers that are not on the mat?
- On the right side of the mat, ask the children to make any dangers they can think of, out of playdough,

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and put on the corn plant.

- Children can place insects in the magnifying glass circles. How do insects damage corn plants?
- Additional common damages to corn:
 - Animals that eat corn like deer or raccoons
 - Bad storms like hail, wind or too much rain

Pick: Picking Corn

From the Book

- Page 17
- Look at this ear of corn. What do you notice? Do you see all those corn kernels? All of those kernels must be taken off the cob so the farmer can use them. Farmers use a machine called a combine but today you will use your hands!

Activity

- To begin, have the children make several, similar sized, yellow playdough balls. The teacher will model this. After several have been made, tell the children to watch as the teacher places the playdough balls into the husk of the plant. As the teacher places them in a line, encourage the children to do the same. Then continue to the next row of playdough balls. When the husk is filled, talk to the children about how these playdough balls represent corn kernels.
- If you have a large tweezer, children can use those to pick the corn kernels off of the cob.
- Follow up activity: if children are able to, they can count the corn kernels. Counting can be done in a couple of ways.
 - Children can count the kernels as they take the kernels off of the cob with the tweezers.
 - Children can smash the kernels down as they count.

Pick: Storage

From the Book

- Pages 17-20
- When it is time to harvest, farmers need to use a lot of different types of equipment to harvest and move their corn. Looking at pages 17-20 talk about each of the steps with the children.

Activity

- To begin, have children make small balls that will represent corn kernels.
- The first step of harvest is to pick the kernel off the cob. Those kernels are stored in the top of the combine until it is full. Have the children put some of their small balls on top of the circles in the combine. What shape are their balls? Circle! The combine is full. Where does the corn get moved to next?

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- When the combine is full it empties the corn into a grain cart. Have the children move their kernels to the grain cart. Is the grain cart full? No! They will need to add and make more small balls to fill the grain cart. Was there more corn in the grain cart or in the combine? Grain Cart! What shape is the grain cart? Triangle! The grain cart is full. Where does the corn get moved to next?
- When the grain cart is full it empties the corn into a truck. Have the children move their kernels to the truck. Is the truck full? No! They will need to add and make more small balls to fill the truck. Was there more corn in the truck or in the grain cart? Truck! What shape is the truck? Rectangle! The truck is full. Where does the corn get moved to next?
- When the truck is full it empties the corn into a grain bin. Have the children move their kernels to the grain bin. Is the grain bin full? No! Children do not need to fill the grain bin but point out that it may take several trucks full of corn to fill the grain bin. Can more corn be stored in the grain bin or in the truck? Grain bin! What shape is the grain bin? Square! The corn will be stored in the grain bin until it is ready to be used.

Purpose: Dent Corn

From the Book

- Pages 21-24
- Dent corn is used to make many different products that we use every day. Looking at pages 21-24, what are some products made from corn? Did you know dent corn was in them?

Activity

- After reading the section about dent corn, ask the children what dent corn is used for. The teacher can use the pictures from the book to help with the review.
- After reviewing, the teacher will ask the children to create one of the ways dent corn is used, out of playdough. Example, a child might make a car and then talk about how gasoline is made from corn. Another example is a child can make a cow and talk about how dent corn is fed to cows for their food.
- This is a creative time for children. Have them place their items in the empty circle on the mat.

Purpose: Seasons

From the Book

- Pages 1-4 and 25-26
- Farmers are busy all year. Each season they have a different job to grow corn.

Activity

- This mat will be used as an overall review of the book. The mat is broken up into the four seasons. Starting with winter, the teacher will review in the book what farmers do in the winter. Then children, using playdough, will make something a farmer does during the winter. Have them place it on the area of the mat that represents winter. Example: the child might make a wrench because farmers work on their equipment.

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- Continue to spring. Example: a child might make corn seeds for planting.
- Summer example: a child might make an ear of corn or a tall corn plant.
- Fall example: the child might make a combine for harvesting.
- Finally have the children snake out the letter P and place the letter on the mat. This P is for Purpose. What is the purpose of growing corn? Have them remember what products are made from corn and how corn is used.
- This mat is a fun way to review what the children have learned throughout the lessons.

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Lesson 5: Sprouting Ear of Corn

Purpose

For children to gain an understanding that each kernel on the cob is a seed that can grow.

Setting

Small or Large group

Type of Activity

Science

Developmental Domain

Cognitive

Kansas Early Learning Standards

- CL.L.p3.1: With prompting and support, asks and answers simple questions about the story content
- M.MD.p3.1: Demonstrates an understanding that objects can be compared by one attribute
- S.t.1: Demonstrates an understanding of basic cause and effect
- S.p3.6: Makes observations and communicates findings with others

Materials

- Ear of Indian or Dent Corn
- Water
- Clear container or plate big enough for an ear of corn
- “We Grow Corn, Seasons on a Kansas Family Farm” book

Preparation

- The teacher will prepare a space in the classroom where the corn can remain “undisturbed” for at least 10 days.
- The teacher can ask questions like:
 - Have you ever felt corn like this? Is it hard or soft? Do you think you could eat this corn? Who do you think eats this kind of corn?
 - What do you predict will happen to the corn when we soak it in the water?

From the Book

Reread pages 10-12 from the book. Focus on the growth of corn from a seed to a plant.

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Procedure

- Lay the ear of corn in a container and add enough water to cover just the bottom of the container. (Note: adding more water may lead to too much mold growth and not enough sprouting.)
- Observe and check on the corn dish every day. Remember to check the water every day and add enough water to keep the ear of corn plant laying in water.
- After about a week, there should be some noticeable sprouts beginning to appear. (You may notice the sprouting kernels are beginning to come loose from the cob.
 - Remind them of the activity they did in Lesson 2 about the life cycle of corn. Ask the children to describe what is happening. As they see the corn start to grow roots and sprout remind them that this is what is usually happening under ground as the corn seed starts to germinate (starts to grow).
- After another 10 days pass you will see the ear of corn beginning to sprout with green shoots coming up from both sides where it was exposed to water. (You may experience some molding during this process but limit the water to just the bottom of the container)
 - Remind them of the activity they did in Lesson 2 about the life cycle of corn. Ask the children to describe what is happening and what stage of corn growth the kernels are in.
- Now the kernels are loose enough to pluck off the cob.
- You now have seedlings ready to plant in soil or in a terrarium activity.
 - Ask children: Why is it important that we transplant these seeds/kernels to a terrarium, or pot with soil? Soil provides nutrients and food for the corn to keep growing. Without soil the plant will die.

Extension Activity

- Refer to the Optional Lesson 1: Terrarium to teach the children how to create a terrarium and how to transplant the seedlings to soil.
- If you subscribed to receive the Mystery of Corn Readers, at the end of this lesson use the “The Secret of Soil” reader. This extends the learning about the importance of soil.

Review

When a corn seed is in the ground, we don't see what is happening to the seed as it starts to grow. This activity allows for the children to see every stage the corn kernel goes through to become a plant. To end the lesson ask the children “Each one of these plants will grow into a big plant and will produce what?” Another ear of corn!

Photo of Completed Activity



Kansas Corn: Seasons

Grade Level: PreK

Lesson 6: A Kernel is a Seed

Purpose

Children will experience making their own beaded corn representation while learning that each bead represents a corn kernel which is a seed.

Setting

Small Group

Type of Activity

Fine Motor

Developmental Domain

Cognitive and Fine Motor

Kansas Early Learning Standards

- SS.p3.5: Creates representations of familiar places through various materials (e.g., builds a fire station with blocks, draws a picture of a home)
- SED.SD.p3.4: Follows rules and simple directions (1-2 steps)
- SED.PD.p3.9: Completes own goal directed activity and recognizes accomplishments while learning rules

Materials

- 10 yellow wooden beads per brown pipe cleaner
- 4-6 pipe cleaners per child
- “We Grow Corn, Seasons on a Kansas Family Farm” book
- Note: the wooden beads and pipe cleaners are to be saved and used again with future children

Preparation

The purpose of this activity is to show the children that each bead represents a corn kernel. Each of these corn kernels is a seed to make more corn plants.

Set Up

- Gather sets of 10 yellow beads per pipe cleaner (40-60)
- 4-6 brown pipe cleaners per child
- Have an example of finished craft for children to see as they make their own.

Kansas Corn: Seasons

Grade Level: PreK

From the Book

Before beginning the lesson, reread page 17. Use the information on page 17 to show what a corn cob looks like. Focus the discussion on the kernels and how those kernels will be removed in the combine.

Vocabulary

Kernel: The seed found on a corn cob.

- Ask the children if they can define the word? This vocabulary word was introduced in lesson one and has been used in many of the previous lessons.
- Show children a picture of a corn cob, page 17 of the book or the sprouting corn. Remind them that every kernel is a seed.
- Set the stage for the activity: “Today we are going to make our own ears of corn that will have many kernels.”

Procedure

- Have the children count out 10 yellow beads. Once they have a group of 10 beads, have them put those 10 on the brown pipe cleaner. Bend the end of each completed pipe cleaner to keep the beads in place.
- Have children do this 4-6 more times based on how many supplies you have available.
- When all pipe cleaners are completed, twist the sets together, creating a symbolic corn cob.

Review

Review with children that each bead represents a corn seed. Ask them if they remember what name we give to that corn seed....a kernel.



Kansas Corn: Seasons

Grade Level: PreK

Optional Lesson 1: Build a Terrarium

Purpose

Children will learn how to make a biodegradable pot out of recycled materials. Children will learn the importance of choosing materials which are good for our environment while continuing to produce a healthy crop.

Setting

Small Group

Developmental Domain

Cognitive Domain

Kansas Early Learning Standards

- S.mi.3: Shows interest in living things and observes and/or engages with them in a respectful way
- S.t.4: Begins to identify traits of living things
- S.t.5: Demonstrates an understanding that people and animals need food and water to live
- S.p3.4: Understands that living things need air, water and food
- S.p3.6: Makes observations and communicates findings with others

Materials

Per child:

- Newspaper
- Tape
- Potting soil
- Corn kernels or seedlings
- Small baggies with twist ties
- Spray bottle
- Small can or container

Preparation

- Gather materials.
- Cut newspaper into 3" x 10" strips. Measurements do not need to be exact but need to be longer versus shorter. A longer strip will make a sturdier pot.

Procedure

- Take the precut newspaper strip and align the top of the strip with the top of the can or small container. Wrap the newspaper around the can, making sure the ends overlap. Be careful not to wrap the newspaper so tightly.

Kansas Corn: Seasons

Grade Level: PreK

- Push in the bottom of the overhanging paper strip and place the bottom onto the base of the can.
- Optional: Paper tape or biodegradable glue can be used to hold the pot closed.
- Remove the pot from the can, place a small piece of tape on the bottom of the paper pot.
- When all pots are made, proceed with filling and planting. You can transplant the seedlings from Lesson 5: Sprouting Ear of Corn or use corn kernels.
- Place newspaper pots in a baggie, spray the pot/plant 20 sprays of water or until moist.
- Blow air into the baggie, twist it shut and secure with the twist tie.
- Place “terrariums” in a container and set in the sun.
- While your children are waiting on their corn kernels to sprout and/or grow, see if your bag has condensation. If so, use this as an opportunity to talk about the water cycle.
 - If you subscribed to receive the Mystery of Corn Readers, at the end of this lesson use the “Miracle of Water” reader. This extends the learning about the water cycle.
- When the newly emerged corn plant is about to touch the top of the bag, remove the newspaper pot from the baggie and put the newspaper pot directly in the ground.

Review

Using recycled material, such as newspaper, as a pot for the children’s corn is a great example to teach them about what is biodegradable and why it is good for the environment. Remind the children that over time the newspaper will become soil. Did you know that there are products like pots, forks, cups, etc that are made from corn that are biodegradable?

Kansas Corn: Seasons

Grade Level: PreK

Optional Lesson 2: Will it Sink or Float?

Purpose

Children will gain an understanding of how different liquids affect the buoyancy of corn (the ability to sink or float).

Setting

Large or Small group

Type of Activity

Science

Developmental Domain

Cognitive

Kansas Early Learning Standards

- ATL.p4.3: Stays with a task for at least five minutes
- ATL.p4.4: Carries out tasks, activities, projects, or experiences from beginning to end
- ATL.p3.11: Identifies a problem and attempts multiple ways to solve it, including working with others as part of a team, with some adult assistance
- CL.IT.p3.3: Exhibits curiosity and interest in learning new vocabulary
- S.t.1: Demonstrates an understanding of basic cause and effect

Materials

- Two clear glasses
- Club soda (carbonated water)
- Water (still)
- Two kernels of sweet corn
- Two kernels of dent corn
- Optional: Two pieces of popcorn
- Optional: Two kernels of Indian corn
- “We Grow Corn, Seasons on a Kansas Family Farm” book

Preparation

- Place two cups of liquids (carbonated water and still water) and the different types of corn; sweet corn kernels, dent corn, popcorn and Indian corn on the table.
- On a piece of butcher paper make a graph to record your results.
 - At the top, “Sink or Float”

Kansas Corn: Seasons

Grade Level: PreK

- Write sweet corn, dent corn, popcorn and Indian corn in different rows on the left.
- Make an X under “Sink” or “Float” for each of the types of corn as you do your experiment.

From the Book

Reread page 22 from the book. It talks about the four types of corn. Focus on the types of corn you have available for the activity.

Vocabulary Word

Buoyancy: the ability to float in water, air, or other liquids.

- Introduce the vocabulary word and write it on the board or on a piece of paper. Ask children if they have ever heard this word before. Read the definition and then ask the children if they know what this means.
- Explain that buoyancy is when something can float. Use the example of them being in a pool with a floaty or an astronaut in space floating in the spaceship.

Procedure

- Prior to starting the experiment ask children to make observations about the liquids in front of them. Children should be able to state that each is clear. One cup is not moving while the other cup has bubbles floating to the top.
- Ask children to explain what it means to float. If children do not know then refer to being in a swimming pool with a floaty on. Then ask them what it means to sink. If they do not know then refer it to throwing a rock into a lake. Do they see that rock again after throwing it in?
- Before dropping each kernel of corn into the two types of water, have each child predict if it will float or sink. The teacher will drop the kernel of sweet corn into the still water and see what happens. Next, the teacher will drop a fresh kernel into the carbonated water and observe the result. As you are doing the experiment, take the time to teach the children how to record the results.
- Repeat with the dent corn, popped corn and Indian corn.
- What observations can the children make from the experiment and their graph? Have time for discussion.
- Discuss how the bubbles in the carbonated water help the corn to float.

Review

To finalize the lesson, talk again about the vocabulary word. What made the kernels float or become buoyant? Explain that it was due to the carbonation of the water. The bubbles from the carbonated water attaches to the corn causing the corn to become more buoyant (able to float.)