HISTORIC ST. MARY'S CITY
A MUSEUM OF HISTORY & ARCHAEOLOGY AT MARYLAND'S FIRST CAPITAL

LESSON PLAN FOR TEACHERS

THE IMPORTANCE OF CORN IN COLONIAL MARYLAND

3RD-5TH GRADES

PHYSICAL ADDRESS

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Introduction

Purpose:
In this lesson, students will get a glimpse of life in colonial Maryland by learning about basic colonial cooking with the most common food staple—corn. Students will walk through the process of making corn meal out of kernels by pounding the corn, how flour was sifted, and could be made in to corn cakes or corn bread, as well as used in pottage. Students will learn why corn replaced wheat and other grains in the Marylanders' diets, and what else they ate to supplement their diet. Students will learn about the history of corn as a plant native to the Americas and how the Yaocomaco people shared this knowledge with the early Marylanders.

Additional Activities:

- Will allow students to use their newfound knowledge to engage in a math word problem challenge.
- Students will even have an opportunity to make their own corncakes at home with a modern-day recipe.
- Students can grow corn and conduct a science experiment in the classroom or at home.

Time Frame:

Pre-Video Activity: 10-15 minutes
Video: 5 minutes
Post-Video Activity: 20+ minutes (depends on how many additional activities you decide to do; several activities can be performed independently by students and over the course of time)

Maryland State Standards

Social Studies (Grade 4, Unit 1):

RI.4.1 – Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.4.2 – Determine the main idea of a text and explain how it is supported by key details; summarize the text.

W.4.1 – Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

W.4.2 – Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

W.4.3 – Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

W.4.4 – Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

SL.4.1 – Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

SL.4.2 – Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Mathematics:

Gr. 3 Unit: Multiply & Divide within 100

Gr. 3 Unit: Represent & Solve Problems Involving Multiplication and Division

Gr. 4 Unit: Use the Four Operations with Whole Number to Solve Problems

Science:

5-LS1-1 From Molecules to Organisms: Structures and Processes: Support an argument that plants get the materials they need for growth chiefly form air and water.

3-LS4-3 Biological Evolution: Unity and Diversity: Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

Vocabulary & Concepts

- **Colonists**: Europeans coming to settle in the New World. In the English colonies, like Maryland, most colonists coming to setter were from England; however there were also some who came from the Netherlands, France, and elsewhere.
- **Plantation**: In the 17th century, “plantation” referred to a plot of conquered land on which plants, such as tobacco, were being grown.
- **Indentured Servant**: Someone who entered into a contract with someone else, wherein they had their voyage paid for in exchange for work. The indentured servant would promise to work for a set number of years (typically 5-7 years). Once they finished their indenture, they were promised freedom dues, which comprised of 50 acres of land, an axe, two hoes, a suite of clothes, and three barrels of corn.
- **Enslaved Labor**: Someone who is enslaved and made to work for some-one else without pay for their entire life. In the early 1600s, European colonists enslaved Native people and people of African descent. By the end of the 1600s, Maryland colonists enslaved people from Africa in increasing numbers. Maryland Colonists also passed laws that said the condition of slavery can be passed down to one's children.
- **Seasoning**: This was when new arrivals to the colony would undergo a period of illness because they were not yet immune to local diseases.
- **Yaocomaco**: A small tribal group of the Piscataway Confederation that were the original occupants of the St. Mary's City site.

Materials & Resources

Materials:

- **Appendix 1 -** Pre-video Reading: Welcome to the Maryland Colony (begins on page 14)
- **Appendix 2** - Where does corn come from? (begins on page 18)
- **Appendix 3** - Math Word Problem Challenge (begins on page 22)
- **Appendix 4** - Colonial Corn Cake Recipe: How to make your own corn cake (begins on page 26)
- **Appendix 5** - Science Experiment: How does corn grow? (begins on page 29)

Resources:

Barrat, John. “Corn entered Southwest U.S. first along highland route, DNA shows,” Smithsonian Insider, posted on February 24, 2015, accessed on July 8, 2020, https://insider.si.edu/2015/02/corn-entered-southwest-u-s-first-along-highland-route-dna-study-shows/.

Carr, Lois Green, Russell R. Menard, Lorena S. Walsh. Robert Cole’s World: Agriculture and Society in Early Maryland. Chapel Hill: University of North Carolina Press. 1991.

Seib, Rebecca, and Helen C. Rountree. Indians of Southern Maryland. Baltimore: Baltimore Historical Society. 2014.

Walton C. Galinat, “The Evolution of Corn and Culture in North America,” Economic Botany 19, no.4 (Springer on behalf of New York Botanical Garden Press: 1965): 350-357.

Teacher Background

Godiah Spray Tobacco Plantation Background:
The Godiah Spray Tobacco Plantation is partially based on research presented in *Robert Cole's World*, by Lois Green Carr, Russell Menard, and Lorena Walsh. Robert Cole immigrated to Maryland in 1652 with his family and their servants. He died in 1662 after nearly quadrupling his wealth, leaving six children and, depending on the time of year, four or five servants. He was a devout Catholic, who charged the guardian of his children to bring them up in the Catholic religion "as they shall the contrary [face] the Dreadfull Day of Judgment." Cole left an inventory and will in 1661, and the guardian of his children left a farm account from 1662–1673. The Plantation is based on these accounts. Cole was a successful, but not a wealthy planter; the monetary distance between him and the major leaders of the colony was significant. Although he arrived with more capital than did most 17th-century immigrants, he can represent the aspirations of all who hoped to take advantage of the opportunities in Maryland.

Although Godiah Spray is our "John Doe" of the mid-17th century, we treat the Spray family as actual historical figures. However, not all of the details are based strictly upon Cole's life and inventory. For instance, Cole lived near where Leonardtown is today, so some details of his life have been altered to fit a plantation near St. Mary's City. The plot of land where the Plantation is situated today belonged to Daniel Clocker in the mid-17th century. Therefore, the character Godiah Spray is a combination of Robert Cole, Daniel Clocker, and a variety of other early Marylanders.

Enslaved & Indentured Labor:
In the 17th century, "plantation" referred to a plot of conquered land on which plants, such as tobacco, were being grown. The term later—in the 18th

and 19th centuries—became associated with large, southern estates run by enslaved labor. That is not to say that slavery didn't exist in the Maryland colony during the 1600s. It certainly did. However, it had not yet become institutionalized at this time, meaning that it wasn't until the end of the century that laws were beginning to be passed that made slavery race-based, and made the condition one for life and one that was passed down to children.

Slavery has existed throughout human history and was practiced in the Middle East, North Africa, sub-Saharan Africa, in the New World, and in the Iberian Peninsula. However, the cruel chattel slavery, that we are familiar with today, was different than these other forms of slavery and had its roots in the 1600s. The English were familiar with how the Spanish and Portuguese enslaved native peoples in their respective colonies; however, they could not emulate it to the same extent because the English needed to rely on good diplomatic relations with neighboring tribes. This still did not prevent some native people from being enslaved. Importation of enslaved Africans began within the first decade of the establishment of the Maryland colony, but due to the cost relative to that of an indentured servant, the numbers of enslaved Africans remained low for the first half of the century. As the dependence upon indentured labor was replaced by that of enslaved labor, more laws were passed to set out the foundations of the institution of chattel slavery. In 1664, a law passed by the colonial legislature made slavery into a race-based system in which Africans or people of African descent were enslaved for life and passed that status to their children. Laws passed in the 1660s and 1670s further dehumanized the enslaved population, and by the mid-1700s almost all bound laborers in St. Mary's County were enslaved. This remained true until the American Civil War brought an end to American slavery.

Indentured servants and ex-servants were the backbone of the 17th-century labor force. Seventy to eighty-five percent of the immigrants to Maryland came as indentured servants. An indentured servant was a person who typically chose to enter into a contract in which their transportation to Maryland or other colonies was paid for by another person. The indentured servant repaid this debt by working for a set number of years. The terms of service depended on a variety of things. Indentures typically lasted for five to seven years. However, a child would be indentured until they became an adult, therefore remaining in indenture for a much longer period of time. Inversely, if a person possessed certain skills, they could negotiate a contract for just 2-4 years. Once free, these former indentured servants worked to become landowners and importers of servants themselves.

Many former indentured servants became landowners, but many others died before achieving this goal. Life expectancy of all immigrants was extra-ordinarily low; often one in five new colonists died within the first year of arrival. This is because they had no immunity to various diseases and the added effects of a new climate; this is often referred to as the seasoning. Malaria was particularly widespread. Ironically, Europeans brought the disease with them and infected the local mosquitoes, which are the vector for spreading the disease. Malaria was not often fatal, but it weakened a person's immune system, making him/her more susceptible to other diseases such as influenza and dysentery.

Family Life:

Because of the shortage of women, (approximately three men for every one women in the late 1650s/early 1660s) not every man could marry and have

children. Some men lived and died as inmates (freeman servants) in the households of other men. Some went into partnership with other men to establish households and plantations, something that did not happen in 17th-century England. Widows remarried quickly, creating more opportunities for men to marry than the oversupply of men would otherwise have permitted. Remarriage created complex family structures.

Since men and women married late (had to finish their indenture first) and died young (diseases such as malaria and dysentery, as well as climate and physical demands), they had few children, and nearly half of those did not reach maturity. Most marriages did not produce enough children who lived long enough to have children of their own to replace the parent couple.

Family structure was patriarchal. In English common law, when a woman married, her property became the property of her husband. She could not make contracts in her own name since her earnings, if any, belonged to him. In return, he owed her support, and if she survived him, she was entitled to the use of one third of his land for her life and one third of his movable property outright. However while she was married, she was subject to her husband's rule. Nevertheless, the family was the place where women had prime importance. Without a woman in the household, life was very uncomfortable for men in the Chesapeake. The economic contributions of a wife were substantial.

Most 17th-century Chesapeake houses were small, post-in-the-ground wooden structures consisting of one or two rooms, possibly with lofts above. They were covered with clapboard, often leaked badly, and soon rotted away if not kept in repair. Their chief advantage was that they could be built

cheaply and quickly. Even some prosperous people lived in such houses, although they might have windows with glass instead of shutters, brick chimneys instead of wattle and daub (sticks and mud), and wooden floors instead of well-packed earth. A wealthier man might add a room after awhile, but he was just as likely to build a second house like his first one if he wanted more space. Most 17th-century planters did not usually have outbuildings for dairying, smoking meat, or for privies, such as those that began to appear in the 18th century.

Food Preparation:

Corn was the mainstay of the diet. It should be explained that corn alone does not provide a balanced diet, but produces a vitamin deficiency disease called pellagra. Pellagra symptoms are skin rashes, diarrhea, and other gastrointestinal problems. Adding beans or peas to the diet, as American Indians did, helped to counteract these problems. In the absence of mills, corn had to be ground using a mortar and pestle to make the cornmeal for mush, hominy, and corn cakes. Grinding, or pounding, corn took a great deal of time, about ten minutes per cup. Four cups was the daily ration for an adult male. Supposing half rations for the children, it took many hours of grinding a day to supply corn for the Spray household. All those who were not working in the fields (including young children) took turns pounding corn. This task was so unpleasant that freed servants who hired themselves out sometimes stated in their contracts that they would not pound corn.

Diet in the 17th-century Chesapeake included plenty of protein from **fish, beef, pork, deer**, and various small animals. Meat and fish could be broiled, roasted, fried, or stewed with corn in one-pot meals. At busy times of year, one-pot meals were typical.

Colonists ate "**sallets**" and **fruits** in season. A sallet referred to any vegetable served separately, which could be greens, roots, or other produce from the garden. Oil and vinegar could be used as dressing. Wild strawberries, raspberries, persimmons, poke greens, and purslaine were also available.

Uncured **cheese** could be made fairly easily. Dairying was time consuming, and not many households had the equipment for making butter or cheese in a press.

Milk and **cider** were the available drinks in season. Colonists would harvest apples, pears, quince, and peaches; they could dry the fruit to preserve it and all of them could be made into cider. The cider can also be turned into vinegar as well; which was used for cooking, medicine, cleaning, and pickling. Water was all that was available year round, a subject of complaint, especially during the early years of settlement.

Lesson Plan

Pre-video Activity:

Students will read a short "advertisement" where they will be introduced to what life was like in the Maryland colony. Have the students read it as if they live in the 1600s, and determine whether or not they want to live in the Maryland colony (see Appendix, found on page 14).

Video: Have students watch the video.

Post-Video:

Questions/Answers:

- Why was corn grinding so important?
  - **Answer:** Corn was a big part of the colonists' diet, and would often eat it after the corn had been ground into a flour or meal.
- In a household, who would typically be grinding corn?
  - **Answer:** Either the children, indentured servants, or people who were enslaved. If someone was unmarried and had their own household, they would have to grind their own corn on top of all their other work.
- What food could be made out of corn?
  - **Answer:** corn cakes, corn bread, corn mush, hominy, and in pottage.
- What other foods might the colonists have eaten aside from corn?
  - **Answer**: Other foods could include: fish, beef, pork, deer, fruits, "sallets" (vegetables), milk, and possibly butter and soft cheese.

Activity:

Have students do the "Where does corn come from?" Activity (see Appendix, found on page 18).

Additional Activities: (These can be added on if the teacher wishes to extend the lesson and/or as activities that students can perform individually for homework or for an independent project)

- Math Word Problem Challenge (see Appendix, found on page 22)
- Colonial Corn Cake Recipe: How to make your own corn cake (see Appendix, found on page 26)
- Science Experiment: How does corn grow? (see Appendix, found on page 29)

Appendix 1

Pre-Video Reading: Welcome to the Maryland Colony

Welcome to the Maryland Colony

HISTORIC ST. MARY'S CITY
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Name: _____ **Date:** _____

Pretend that you live in England in the 1600s. You see the advertisement below trying to encourage you to settle in the new colony of Maryland. Read the advertisement and answer the following questions to see if you would like to start a new life in the Maryland colony.

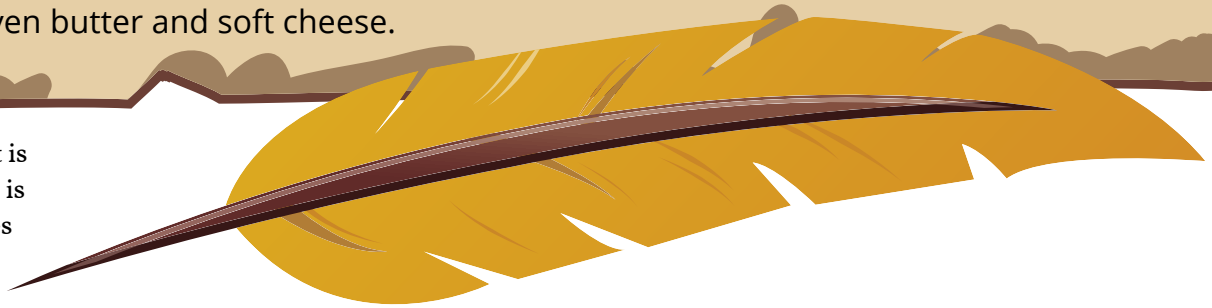
Welcome to the Maryland Colony:

Are you looking for adventure, are you a younger child who won't inherit any land, are you hoping for a better life for yourself? If so, look no further than Maryland!

If you aren't able to pay for your own voyage over, no problem! Enter into contract as an indentured servant. You will have your voyage paid for in exchange for working for a few years (somewhere between 4-7 years usually). And on top of that, once you finish your indenture, you will be given 50 acres of land, an axe, two hoes, three barrels of corn, and a new pair of clothes.

Wonder what life would be like? Here's what to expect:

- You may experience the "seasoning" when you first arrive. You could catch some new world diseases, get really sick, and may even die.
- There are a lot more men in the colony than women (about three men to every one woman), so not every man can get married and have children.
- Most houses are small, wooden buildings with one or two rooms. If you are successful at growing tobacco (which is used as money in Maryland), you may have windows, a brick fireplace, and even wooden floors in your house!
- The Yaocomaco introduced us to a new plant called corn, which can produce about 800 kernels per ear, which is far better than English wheat, rye, barley, and oats. If we're not growing tobacco to make money, we're growing corn to have for food.
- Other food includes: fish, beef, pork, deer, fruits, "sallets" (vegetables), milk, and sometimes even butter and soft cheese.



Note: This advertisement is not a primary source, but is a made-up ad to give clues about life in Maryland.

Welcome to the Maryland Colony

HISTORIC ST. MARY'S CITY
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Questions:

1. If you lived in England in the 1600s, would this advertisement make you want to settle in Maryland? Why or why not?

2. What would you be most excited about? Explain.

3. What would you be most worried about? Explain.

4. Based on what you've learned about the types of food the colonists in Maryland were eating, do you think you would have liked eating like a colonist? Why or why not?

Welcome to the Maryland Colony

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Questions:

5. What are the positives and negatives of living in colonial Maryland based on this information? Fill out the chart below.

Positives:	**Negatives:**

Appendix 2

Where does corn come from?

Where Does Corn Come From?

HISTORIC ST. MARY'S CITY
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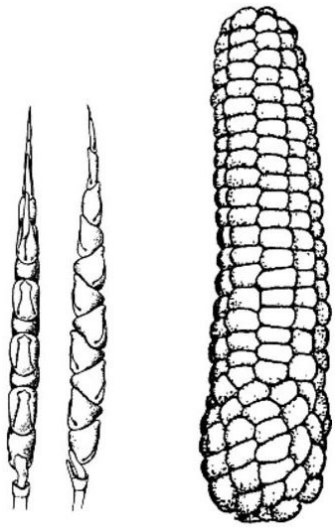
Name: _____ **Date:** _____

Take a look at the timeline below to learn about where corn came from.

9,000 years ago - Corn, or *maize*, came from present-day Mexico. It started as a grass called *teosinte*. Early farmers began to grow it and would look for plants that grew more kernels. They would plant these kernels to grow more plants with the same traits (this means more plants that are the same—have more kernels). By doing this, early farmers transformed small ears into what we know today as corn. This took several thousand years!



Teosinte **Modern Corn**

4,000 years ago - Corn spread to what is now the US Southwest (Arizona and California).

1,300-600 years ago - Corn spread across what is now the US, all the way up to New England. By this time, Woodland Indians were beginning to grow more crops for food aside from just relying on hunting and gathering. Groups start to live in one place, and communities are larger.

1634 AD (almost 400 years ago) - English colonists arrive in what is now Maryland. The Yaocomaco were growing corn, beans, and squash.

The Yaocomaco taught the English how to grow corn. They would gird trees—this is where you cut off a ring of bark all the way around the tree. This kills the tree and it loses all of its leaves. They would then plant corn in mounds all around the tree roots. They would grow beans and squash along with the corn—these are called the "Three Sisters." The beans would grow up around the corn stalk and the squash would grow around the base and keep away weeds.

Where Does Corn Come From?

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Below is a **primary source** written by Father Andrew White. A primary source is from the time period that you are studying—it could be a journal or a photograph. Father Andrew White was a Jesuit priest who sailed on the *Ark* in 1634. He wrote a journal during the trip, called *Voyage to Maryland*, and he wrote about how the Yaocomaco people ate a lot of corn.

They live for the most part on a mush, which they call pone, and hominy. Both are made from corn, and they add at times fish, or whatever they have obtained by hunting or fowling.

-Father Andrew White

Once you have finished reading from Father Andrew White's journal, answer the following questions.

1. Why do you think the first people who began to farm corn would want to look for and plant ears that had more kernels?

2. Why do you think the Yaocomaco would gird trees so that they would die when they were planting corn?

Where Does Corn Come From?

HISTORIC ST. MARY'S CITY
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3. Based on what you know about what the colonists in Maryland were eating, how similar or different was their diet to that of the Yaocomaco?

4. Why did the colonists choose to grow corn instead of European grains like wheat, barley, rye, and oats?

5. Father Andrew White mentioned corn by name in his journal. We know that corn originated in the Americas, and wasn't a plant that was brought over with the English. How would Father Andrew White already know that the plants the Yaocomaco were growing and eating were called corn when he first arrived in Maryland?

6. Let's imagine that you are a farmer. You want to improve your corn crop so that each ear of corn has more kernels and tastes sweeter. How would you go about making changes to your crop over time? Explain.

Appendix 3

Math Word Problem Challenge

Math Word Problem Challenge

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Name: _____ **Date:** _____

It takes 10 minutes to grind 1 cup of corn.

Adults eat 4 cups of corn a day, and children eat 2 cups of corn a day.

There are 5 adults in your household (both of your parents, and 3 indentured servants), and there are 8 children (you and your 4 siblings, and 3 indentured servants).

Using the information to the right, answer the following questions to see how long it will take you to grind corn.

1. How many cups of corn need to be ground every day to feed everyone in the household? _____

2. How long will you have to grind corn to make enough flour for everyone to eat today? _____

Math Word Problem Challenge

HISTORIC ST. MARY'S CITY
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3. What if some other children offer to help you?

   a. If 1 other child offers to help you, and you split the work equally, how long will it take you to grind all of the corn? _____

   b. What about if 2 children help you? _____

   c. What about if 5 children help you? _____

   d. What about if all 8 of you work together to grind the corn? _____

Math Word Problem Challenge

HISTORIC ST. MARY'S CITY
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(Answers for Teachers)

1. (5 adults x 4 cups of corn) + (8 children x 2 cups of corn) = (20)+ (16) = 36 cups of corn
2. 36 cups of corn x 10 minutes each = 360 minutes total = 6 hours total
3. If you had helpers:
    a. 1 helper + yourself (2 total corn grinders): 360 minutes/2 workers = 180 minutes = 3 hours total per person
    b. 2 helpers + yourself (3 total corn grinders): 360 minutes/3 workers = 120 minutes = 2 hours total per person
    c. 5 helpers + yourself (6 total corn grinders): 360 minutes/6 workers = 60 minutes = 1 hour total per person
    d. All children work (8 total corn grinders): 360 minutes/8 workers = 45 minutes total per person

Appendix 4

Colonial Corn Cake Recipe: How to make your own Corn Cakes

How to Make Your Own Corn Cakes

HISTORIC ST. MARY'S CITY
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Name: _____ **Date:** _____

Take a look at the ingredients and instructions below to make your own corn cakes at home!

Ingredients:

- Oil (canola, olive, or butter)
- Corn meal
- Pepper
- Salt
- Water

Instructions:

1. Make sure that you have adult supervision.
2. Boil water.
3. When the water boils, pour enough hot water into the corn meal to make dough. You may need to add more corn meal if the dough is too runny, or water if the dough is too dry and won't hold together. The amount of water and corn meal depends on how many corn cakes you want to make.
4. Season dough with salt and pepper to taste
5. Roll the dough into a ball.
6. Break off pieces and form them into patties and let them sit. They should be firm but not crumbly.
7. Once you make all of your corn cakes, fry them in a skillet using the oil or butter.

How to Make Your Own Corn Cakes

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After you finish making and trying your corn cakes, answer the following questions.

1. What does the corn cake smell and taste like? Do you like it or dislike it?

2. How easy or hard was it to make the corn cakes without specific measurements for the corn meal and water? Did it take a while to get the dough right?

Appendix 5

Science Experiment: How does corn grow?

Science Experiment: How Does Corn Grow?

HISTORIC ST. MARY'S CITY
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(For Teachers)

Objectives:

- Students will hypothesize how corn grows.
- Students will maintain a journal where they will record their observations over time. This can include pictures or drawings.
- Students will present their results and discuss whether or not their hypotheses were correct or incorrect. What did they learn?

Before Experiment:

- Ask students if they have ever grown anything before.
- Ask students what they think plants need to grow.
- Explain to students the following: **experiment, hypothesis, observations, variables, control, analysis, scientific method.**
- Have the student hypothesize (either as a class or individually) about the following:
  - How tall will the corn stalk be?
  - How many ears of corn will each plant produce?
  - How long will it take for the plant to grow?
  - What does the plant need to grow?
  - Additional (if you would like to go more in depth, keep in mind that you will need to establish a control):
    - Will the plant grow better in the shade or the sun?
    - Will the plant grow better in sandy soil, rocky soil, potting soil, or a mix of all three?
    - Will the plant grow better with fertilizer or without fertilizer?

Materials:

- Cob of dry field corn
- Clear glass or plastic jars with lids
- Paper towels
- Sunny window
- If you want to transfer your plants to a planter before transplanting them outside, otherwise you can skip these materials and can transplant your corn plants outside after they have rooted:
  - 5 gallon container
  - Soil, sand, and rocks to fill container

Science Experiment: How Does Corn Grow?

HISTORIC ST. MARY'S CITY
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Directions:

1. Remove the corn kernels from the corn cob.
2. Prepare a clean glass or plastic jar by lining the sides with a damp paper towel, and stuffing the center with more damp paper towels.
3. Place individual kernels between the lining paper towel and the glass/plastic sides of the jar. Place the kernels pointed end down (this is the side the roots will grow from).
4. Screw on the lid and place in sunny window.
5. Rotate jar each day so all kernels get sunlight.
6. Record your observations each day in your journal. Have students predict what will happen next.
7. Transplant once corn kernel has rooted. If you want to transplant the corn outside into a garden you may do so. You can also transplant to a 5 gallon container to grow the plants indoors for longer before transplanting them outside.
8. If you choose to use the container:
    a. Put a thin layer of rocks at the bottom.
    b. Mix dirt, sand, and potting soil, and fill container to about 4 inches from the top.
    c. Once the corn stalks get to be about 3-4 inches tall, you can transfer them outside.
9. Water your plants regularly.
10. When stalks reach 7-8 feet tall, they should produce 1-2 ears of corn each.