Harvest of the Month: Blue Corn

6-8th Grade

Vocabulary:

- Germination
- Antioxidants
- Dry Farming
- Heirloom
- Anthocyanins
- Cornmeal
- Subsistence Farming

Engage:

- Begin by reading *The Blue Corn Maiden: A Hopi Legend* narrative together as a class.
- Explain to students that this story has been passed down since time immemorial, carrying both the wisdom of agriculture and the power of storytelling. These teachings remind us how food connects people, culture, and survival.
- As students listen, encourage them to jot down agriculture key words or ideas that stand out to them. These will be words that capture the heart of the story.

Explore and Explain:

- Activity 1: **Indigenous Language Vocabulary Sheet**
  - Use the attached vocabulary sheet to help students learn important words about Blue Corn and Dry Farming. As they work through the activity, support them in exploring these words in English and Native languages – either their own or a friend's.
- Optional Activity: Corn and Corn Color Indigenous Vocabulary
  - Begin this lesson by showing students two key segments from the documentary "More Than Planting a Seed" (7:28-10:50 and 12:38-14:30). These clips provide essential insights into traditional Hopi corn farming practices and their cultural significance. After viewing, facilitate a whole-class discussion that encourages students to share their observations about Hopi agricultural traditions. Guide the students in discussion to explore and identify what they learned about Hopi corn farming techniques and cultural practices, then prompt them to compare these methods with conventional farming approaches they may be familiar with. This comparative analysis enables students to recognize the unique characteristics of Hopi dry farming and understand the integral relationship between agricultural practices and cultural identity within Hopi communities.
- Activity 2: **Build a Model of Traditional Hopi Corn Farming**
  - Create small groups of students. Students should sketch their model designs showing corn mounds, deep root systems, and rainwater collection. Provide materials such as shoebox lids, sand or dirt, modeling clay, straws or sticks for corn stalks, blue yarn for water flow, and small craft items to represent seeds and soil layers. As students build their 3D models of a Hopi cornfield, encourage them to clearly demonstrate seed depth, soil layering, and moisture movement through

the desert landscape. Have students add labels identifying key features like "deep planting," "grouped seeds," and "moisture retention." Conclude with group presentations where each team explains how these traditional techniques enable corn to survive in arid conditions.

Elaborate

- Show students the Indigi-Genuis: Blue Corn Mush video. After viewing, facilitate a class discussion using these guiding questions: What makes blue corn special? How does juniper ash change the mush? What does this teach us about tribal knowledge and science?
    - Discussion Points to Highlight:
        - Blue corn's nutritional properties and cultural significance.
        - The chemical process of nixtamalization (alkaline treatment with ash).
        - How tribes developed sophisticated food science through observation and experimentation.
        - The relationship between traditional knowledge and modern scientific understanding.
    - Learning Objective: Students will recognize that tribes' food preparation techniques represent advanced scientific knowledge developed through generations of careful observation and experimentation.
- Activity 3: **Indigenous Food Science Challenge**
    - After viewing the *Indigi-Genius:* Blue Corn Mush video and discussing how juniper ash transforms the corn through nixtamalization. Have students complete the Indigenous Food Science Challenge. This activity enables students to explore other traditional food science techniques and apply traditional knowledge to create their own innovative snack concepts, thereby reinforcing that tribes have developed sophisticated scientific practices through careful observation and experimentation.

Evaluate

- Activity 4: **The Blue Corn Maiden and Hopi Dry Farming review worksheet/quiz**
    - Review the course materials by having students complete a short worksheet on lessons learned.

Suggested Lesson Activities:

- Native Language Vocabulary
- Optional: Corn and Corn Color Native Vocabulary
- Build a Model of Traditional Hopi Corn Farming
- Indigenous Food Science Challenge
- The Blue Corn Maiden and Hopi Dry Farming

Additional Educator Resources:

- More than Planting a Seed
- Blue Corn Mush: Indigi-Genuis (Video)
- Blue Corn State of Mind (Article)
- Acoma Blue Corn Restored to its Community of Origin

The Story of the Blue Corn Maiden

For Grades 6-8: Please feel free to modify these lessons as needed to fit the needs of your students.

Long ago, the Hopi people lived in a village on top of a high mesa, surrounded by desert cliffs and vast, open skies. They were skilled farmers, growing many types of corn: yellow, red, white, and blue. Each kind of corn had a spirit, called a Corn Maiden, who cared for the crops. The kindest and most gentle of all was the Blue Corn Maiden. Wherever she walked, blue corn grew tall and strong. Its kernels were sweet and full of energy, giving the people strength and nourishment. The Hopi loved the Blue Corn Maiden. They sang songs to her, told stories about her, and gave thanks for the food and life she brought.

One cold day, Winter Katsina came down from the mountains. His mask was carved from ice and frost, and the winds that followed him froze rivers and chilled the desert air. When he saw the Blue Corn Maiden, he was amazed by her grace, her kindness, and the life she brought to the land. “Come with me to my snowy home,” Winter Katsina said. “Stay where it is quiet, still, and cold.”

Blue Corn Maiden did not want to leave her people or the warm sun that kissed the fields, but Winter Katsina’s magic surrounded her like a swirling snowstorm. Soon, she was carried away to his icy cave high in the mountains. The world she loved – the fields, the children, the warm breeze – was gone, replaced by silence and frost.

In Winter Katsina’s cave, Blue Corn Maiden felt lonely. She missed the laughter of children playing in the fields, the smell of wet earth after rain, and the green shoots of corn reaching toward the sun. Though Winter Katsina treated her with kindness, he could not bring warmth or life to the frozen world outside.

Back on the mesa, the Hopi people grew hungry. Their corn could not grow, and their fields lay under frost. They prayed and sang songs for the Blue Corn Maiden to return, believing in her power to bring food, life, and hope back to the land.

One day, Summer Katsina arrived. He carried warmth, sunlight, rain, and the promise of life. When he learned that the Blue Corn Maiden was trapped, he was furious. The two Katsinas met in the middle of the world.

Winter blew his icy winds, and Summer sent warm rain and golden sunlight. The two forces battled, swirling around mountains, rivers, and fields.

Finally, they realized the world needed both of them: the cold for rest, the warmth for growth, the stillness for preparation, and the rain and sun for life. They agreed that each had a role to play, and neither could be replaced.

From that time forward, Blue Corn Maiden would stay with Winter Katsina for half the year, during which the land rested under snow and ice. Then she would return to her people for the

other half of the year, bringing sunlight, rain, and tall, vibrant blue corn. The Hopi celebrated her return with songs, dances, and planting ceremonies, knowing that life and abundance would follow her wherever she walked.

And this is why the seasons change. When the wind is cold, it is because Blue Corn Maiden is resting in Winter Katsina's home. When the corn grows tall and the sun warms your face, she has returned to the mesa, bringing life, nourishment, and hope. She reminds the Hopi people – and all of us – that caring for the land, being patient through hard times, and giving thanks for the harvest are part of the cycle that keeps life and culture alive.

The Nutritional Value of Blue Corn

Blue corn is special not just for its cultural importance, but it also has unique nutritional and scientific qualities. Its deep blue-purple color comes from anthocyanins, which are antioxidants that protect cells in the body from damage. These antioxidants are like "superheroes" in food, helping to keep the body healthy and strong. Blue corn contains more of these compounds than yellow corn, making it especially nutritious.

Traditional Hopi cooking also uses juniper ash when making blue corn mush. The ash changes the chemistry of the corn, improving its flavor, texture, and nutritional value. This is an example of Indigenous science, utilizing natural processes and knowledge passed down through generations to create healthier and more sustainable food.

Blue corn also has deep cultural meaning. The story of The Blue Corn Maiden illustrates how corn ties people to the land, the seasons, and their community. Corn is more than food; it is a symbol of life, growth, and survival, and caring for it is a way to honor cultural traditions.

Growing Blue Corn, the Hopi Way

The Hopi people have been growing blue corn for thousands of years, utilizing methods that are in harmony with the dry, desert environment. One key technique is dry farming, which means growing crops without irrigation. Instead of relying on constant watering, Hopi farmers carefully prepare the soil, select the best seeds, and plant at the right time to take advantage of seasonal rainfall.

Hopi farmers also save heirloom seeds from the healthiest plants. These seeds are passed down from generation to generation, carrying not only the plant's genetics but also the knowledge of which crops grow best in their environment.

Planting patterns and spacing are also very important. Hopi farmers plant their corn in ways that conserve water, protect the plants from harsh sun and wind, and encourage strong growth. They use small tools and sometimes even hand-plant seeds to make sure each kernel has the best chance to thrive.

These techniques aren't just about farming; they are deeply connected to culture and community. Stories like The Blue Corn Maiden teach respect for the land, patience, and the importance of caring for crops that feed families.

Indigenous Languages and Vocabulary

Look up each vocabulary word. Write each meaning in your own words in the "Definition" column. Then, in "Indigenous Language," write the term in your Native or Tribal language, or a similar phrase. If you don't know yours, use a peer's or look one up. Practice pronunciation too.

Blue Corn, Hopi Dry Farming

Example: Example: Germination – when a seed starts to grow; Navajo: ch'ééh nílhįįh; Lakota: icage.

Vocabulary	Definition	Indigenous Language/Context
Germination		
Antioxidants		
Dry Farming		
Heirloom		
Anthocyanins		
Cornmeal		
Subsistence Farming		

Build a Model of Traditional Hopi Corn Planting

Design and build a 3D model that shows how Hopi farmers plant corn in dry, desert environments using traditional techniques for water conservation and soil health.

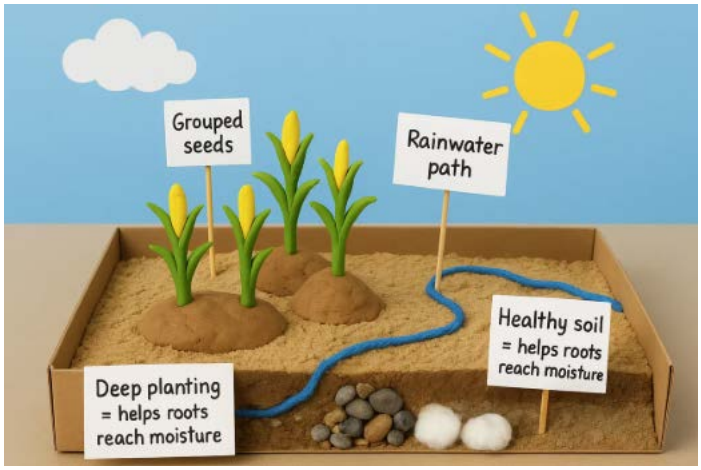
Materials:

- Shoebox lids or shallow trays (as "fields") Sand or dirt
- Modeling clay or playdough (to shape mounds)
- Straws, pipe cleaners, or sticks (to represent corn stalks)
- Blue yarn or string (to represent rainwater flow)
- Small pebbles, cotton balls, or craft materials (to represent soil, seeds, or moisture)
- Labels or index cards

Steps:

1. Learn and Observe: Watch the "More Than Planting a Seed" clip (5:09–5:50) and review the Hopi Seed Planting Instructions. Discuss how Hopi farmers plant corn deep in the ground and in clusters to help retain water.
2. Plan the Model: In small groups, have students sketch their model showing how corn is planted in hills or mounds, how roots grow deep, and how rainwater might collect around the plants.
3. Build the Model: Using the provided materials, students create a physical model of a Hopi cornfield—showing seed placement, soil layering, and water movement through the desert landscape.
4. Label and Explain: Students add labels or captions describing each feature (e.g., "deep planting," "grouped seeds," "moisture retention").
5. Share and Reflect: Each group presents their model and explains how the traditional planting method helps corn survive in a dry climate.

Example:



Indigenous Food Science Challenge

Your Mission: Create an awesome snack inspired by Indigenous food science!

Research in small groups, finding one traditional Indigenous food method that uses science. Pick from: soaking, which makes food easier to digest, fermenting, which preserves food and adds good bacteria, grinding, which breaks down nutrients so your body can use them, smoking, which preserves food and adds flavor or drying, which concentrates nutrients and makes food last longer

Write 2-3 sentences: What does your method do? Why is it important?

Design an Innovative and Delicious Snack: Create an original snack using your research!

Your snack needs:

- A catchy name
- Indigenous Food Ingredients, like blue corn, amaranth, wild rice, quinoa, squash seeds, maple syrup, mesquite, chia seeds
- Explain how your technique makes the snack nutritious, great tasting, last longer, and/or easier to digest.
- Share your snack idea with the class.
- Explain the science behind it.
- If time allows, create a mock up container for your snack and flier on how it would be advertised.

Example: "Chia Power Balls"

- Ingredients: Chia seeds, maple syrup, dried berries
- Science Twist: Soaking chia seeds releases nutrients and creates a gel that holds everything together
- Why it's cool: Ancient Aztec warriors ate chia for energy!

Remember: Indigenous peoples are scientists who developed amazing food techniques through careful observation and experimentation over thousands of years!

The Blue Corn Maiden and Hopi Dry Farming

Name: _____ **Date:** _____

Part 1: Multiple Choice

Circle the correct answer.

1. What gives blue corn its blue/purple color?

- a) Food coloring
- b) Anthocyanins (antioxidants)
- c) Special soil
- d) Juniper ash

2. What is dry farming?

- a) Growing crops in a greenhouse
- b) Growing crops without irrigation, using seasonal rainfall
- c) Drying crops in the sun
- d) Planting corn in sand

3. Who took the Blue Corn Maiden away from the Hopi people?

- a) Summer Katsina
- b) A desert spirit
- c) Winter Katsina
- d) The Wind

4. What are heirloom seeds?

- a) Seeds bought from stores
- b) Seeds passed down through generations
- c) Seeds that only grow in winter
- d) Seeds that don't need water

Part 2: True or False

Write T for True or F for False.

_____ 5. Juniper ash changes the nutritional value of blue corn mush.

_____ 6. The Hopi people grew only one type of corn: blue corn.

_____ 7. Blue corn has more antioxidants than yellow corn.

_____ 8. Winter Katsina and Summer Katsina fought until one of them won completely.

_____ 9. The Blue Corn Maiden stays with Winter Katsina all year long.

_____ 10. Dry farming techniques help Hopi farmers conserve water in the desert.

Part 3: Short Answer

Answer in 2-4 complete sentences.

11. Why is the Blue Corn Maiden story important to Hopi culture?

12. How does the story of the Blue Corn Maiden explain why seasons change?

13. Name TWO ways the Hopi people show respect for the land when growing corn.

Answer Key (For Teachers)

1. b | 2. b | 3. c | 4. b | 5. T | 6. F | 7. T | 8. F | 9. F | 10. T