Michigan
Agriculture in the Classroom

Make-N-Take Booklet

A guide to hands-on activities to be used at fairs, farmers' markets or community events.

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Growing Bracelets

Purpose: Students will create “growing” bracelets while learning about the essential elements that plants need to grow and thrive.

Background: This lesson introduces students to the basic requirements for plant growth through a hands-on activity. By engaging in this activity, students will understand the importance of nurturing plants, linking the story to real-life plant care.

Michigan Ag Facts: Michigan produces more than 300 commodities commercially, making it one of the most agriculturally diverse states in the nation.

Materials per student:

- One pipe cleaner
- Six pony beads (yellow, brown, blue, clear, green, red)

Activity:

1. Distribute a pipe cleaner and six beads (yellow, brown, blue, clear, green, red) to each student.
2. Have students add the yellow bead (sunlight), explaining the importance of sunlight for plant growth.
3. Add the brown bead (nutrients), blue bead (water), and clear bead (air), representing the essentials plants need.
4. Place the green bead (plant) and finally the red bead (care) to symbolize the nurturing required.
5. Help students twist the ends of their pipe cleaner to form a bracelet.
6. Review what each bead represents (sun, nutrients, water, air, plant, care).

Comprehension Questions:

Grades K-2: What does each bead represent?
Grades 3-5: Why is sunlight important for plants?

Resource:

- https://oregonaitc.org/lessonplan/growing-bracelets-lesson-plan/

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Garden in a Bag

Purpose: Students will explore the conditions necessary for plant germination by growing seeds in a bag.

Background: Plants need water, air, light, and nutrients to grow successfully. By observing seed germination in a controlled environment, students gain a hands-on understanding of these essential requirements and their role in gardening and agriculture.

Michigan Facts:
Michigan's diverse agriculture depends on healthy soil, water, and sunlight to support over 300 crops grown across the state.

Materials per student:

- Ziplock bag
- Cotton Ball
- Bean seeds (2-3 per bag)
- Water
- Markers

Activity:

- Prepare the Bag:
  - Wet the cotton ball until damp (not soaked).
  - Place the cotton ball in the bag.
- Add Seeds:
  - Position the bean seeds on top of the cotton ball, ensuring they're visible from the outside.
- Seal and Label:
  - Seal the bag.
- Hang in Sunlight:
  - Attach the bag to a sunny window or wall.
  - Observe the seeds over the course of a week, noting changes and discussing the conditions needed for germination.
  - Discuss the conditions needed for germination and plant growth.

Comprehension Questions:

- Grades K-2: What do plants need to grow successfully?
- Grades 3-5: What might be your role in farming and agriculture?

Resource:

- https://www.miagclassroom.org/matrix/resource/83/

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Dirt Babies

Purpose: This lesson is an interactive way to bring germination and the stages of plant development to life.

Background: Why is it that you can cut grass with a lawn mower? The interesting thing about grasses is that their apical meristem, or point of growth, is below ground. Therefore, you can cut the above-ground portion of grass and it will continue to grow. So, you can cut your dirt baby's "hair" and watch it will grow back!

Michigan Ag Facts:

- Michigan has a variety of soil types, including sandy, loamy, and clay soils, which contribute to its diverse agricultural output.

Materials per student:

- knee high stockings (1 per student), grass seed (~2 cups), potting soil, baby food jars or small plastic cups (1 per student), spoon, googly eyes, glue, red felt or foam

Activity:

- Wash and dry baby food jars.
- Turn the top of the stocking down until the toe is exposed.
- Place several pinches of grass seed in the top of the stocking.
- Add one large scoop of potting soil on the top of the seed. (About one cup.)
- Gently shake the stocking to settle the grass seed and soil firmly in the toe. Knot the stocking to hold the soil in place. (The toe of the stocking becomes the top of your baby's head.)
- Cut a mouth from red felt or craft foam.
- Attach googly eyes and mouth to the dirt baby's head.
- Allow time for eyes to dry. Gently water the top of the dirt babies head and the rest of the stocking.
- Place the top end of the stocking in a clean baby food jar or cup so that the dirt baby's head rests on the rim of the jar. Add water to the jar and place it in a well-lit spot. Fill jar with water as needed.
- Your dirt baby should begin to grow hair in about seven days. It really grows fast, so be ready to give your baby a haircut.

Comprehension Questions:

- Grades K-2: What kind of seed do we use to grow our dirt baby's hair?
- Grades 3-5: If your dirt baby stops growing, what might be a reason why?

Resource:

- https://faitc.org/wp-content/uploads/2023/09/Dirt-Babies-1.pdf

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Michigan Agriculture in the Classroom

Edible Soil

Purpose: Students will learn about soil layers and explore the importance and function of each layer.

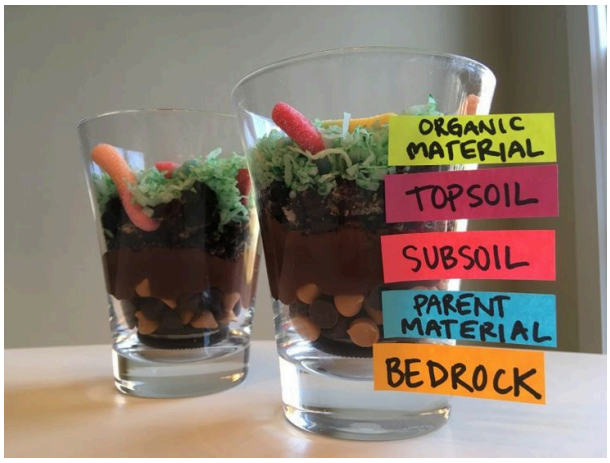
Background: Soil is an essential resource for agriculture, supporting plant growth, providing nutrients, and retaining water. The color of soil reflects its properties, such as organic matter, mineral composition, and moisture content. Understanding soil diversity helps farmers make informed decisions to grow healthy crops and maintain sustainable practices.

Michigan Facts:

- Michigan's diverse soil types contribute to its ranking as a leader in agricultural production.
- Michigan is a top producer of crops like cherries, blueberries, and beans, which rely on specific soil conditions to thrive.

Materials per student:

- Clear plastic cup
- Spoons
- Oreos
- Chocolate and Butterscotch Chips
- Chocolate Pudding
- Crushed Oreos
- Gummy Worms (optional)
- Green dyed shredded Coconut



Activity:

- Introduction:
  - Discuss the importance of healthy soil and its layers.
- Steps to making Edible Soil
  - Bedrock: Place a whole Oreo at the bottom of the cup. The Oreo represents bedrock, a solid, undisturbed mass.
  - Parent Material: Add a tablespoon of chocolate and butterscotch chips. These represent parent material, which is broken-down bedrock.
  - Subsoil: Add a tablespoon of chocolate pudding. The pudding represents subsoil, which is rich in minerals.
  - Topsoil: Add a tablespoon of crushed Oreos. The crushed Oreos represent topsoil, which is rich in nutrients and supports life. (Optional: Add gummy worms.)
  - Organic Material: Add a tablespoon of green-dyed shredded coconut. This layer represents organic material, made up of decomposed plant and animal debris.

Comprehension Questions:

- Grades K-2: How many layers of soil are there?
- Grades 3-5: Why is soil essential in agriculture?

Resource:

- https://www.agintheclassroom.org/soil/posts/soil-cereal-stack
- https://www.learningresources.com/blog/diy-earth-day-edible-soil-layers/

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Soybean Seed Dissection

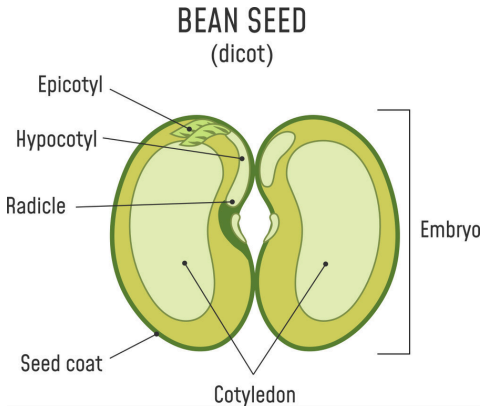
Purpose: Students will explore the anatomy of a soybean seed by dissecting it, identifying its key parts, and learning about how soybeans grow.

Michigan Ag Facts:

- Michigan produced 105 million bushels of soybeans in 2022; a value of $1.55 billion.
- Soybeans are Michigan's top ag commodity export. In 2022, $236 million of Michigan soybeans were exported around the world.
- Lenawee, Sanilac, and Saginaw counties are Michigan's top soybean producers.

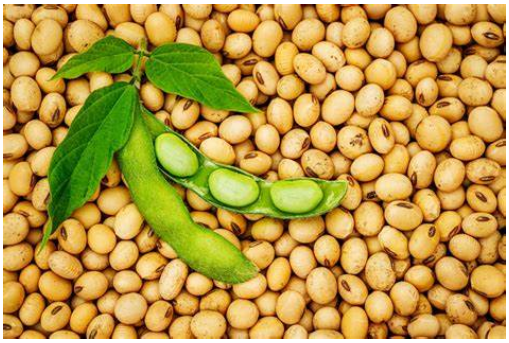
Materials per student:

- One soaked soybean seed
- Tweezers or small tools for dissection
- Soybean plant image or actual soybean plant
- Soybean Commodity Card (optional)



Activity:

- Provide each student with a soaked soybean seed. Explain the three main parts: seed coat, cotyledons, and embryo.
- Guide students through the dissection:
- Peel off the seed coat, explaining its protective role.
- Split the seed in half, identifying the cotyledons and their role in providing food for the sprouting plant.
- Locate the tiny embryo, the part that will grow into a new soybean plant.
- Discuss how these parts work together to support the growth of the soybean plant.



Comprehension Questions:

- Grades K-2: What is inside a soybean seed?
- Grades 3-5: What is the role of the seed coat?

Resource:

- https://www.miagclassroom.org/matrix/lesson/79/

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Wheat and Flour Exploration: Making Play Dough

Purpose: Students will explore wheat industry by learning how wheat is grown, harvested, and processed into flour, followed by a activity of how to use flour to make play dough.

Michigan Ag Facts:

- Michigan farmers produced 34.4 million bushels of wheat in 2022 for an economic impact of $269 million.
- Wheat is grown on about 500,000 acres across the Great Lakes State and in 75 of Michigan's 83 counties.

Materials per student:

- Flour
- Salt
- Water
- Ziplock bags

Activity:

- *Introduction:*
  - Explain how wheat is grown and harvested in Michigan.
  - Discuss the importance of wheat in the production of flour and other food products.
- Making Play Dough:
  - In a ziplock bag, mix:
  - ¼ cup flour
  - 2 tablespoons salt
  - 2 tablespoons water
  - Knead the mixture inside the bag until it forms a dough-like consistency.
- *Conclusion:*
  - Discuss how Michigan wheat farmers contribute to the food supply by growing crops that are processed into everyday products like bread, pasta, and other foods.

Comprehension Questions:

- Grades K-2: What is wheat used for?
- Grades 3-5: What is the first step in turning wheat into flour?

Resource:

- https://www.miagclassroom.org/matrix/lesson/628/

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Maple Syrup Exploration

Purpose: Students will explore the process of making maple syrup, a key agricultural product of Michigan, by understanding how sap is collected and boiled down to create syrup.

Background: Maple syrup is produced from the sap of sugar maple trees during the early spring. Producing syrup involves tapping trees to collect sap, which is then boiled to evaporate water and concentrate the sugars into syrup.

Michigan Ag Facts:

- Michigan is the fifth-largest maple syrup producing state.
- Forty gallons of maple sap are required to make on gallon of syrup
- Maple syrup production in 2022 for Michigan was 195,000 gallons.

Materials per student:

- Small clear plastic cup (to represent the bucket)
- Small bottle of maple syrup (or maple-flavored syrup)
- Pretend “tree tap” (could be a straw or small wooden dowel)
- Sugar content comparison chart (for sap vs. syrup)
- Spoon for tasting

Activity:

- *Introduction:* Start by explaining how sap is collected from sugar maple trees and the importance of temperature fluctuations (freezing nights and warmer days) in this process.
- *Demonstration:* Show students how a maple tree is tapped by inserting a straw or dowel into a pretend tree (this could be a poster or cardboard cutout). Place the plastic cup underneath to collect “sap.”
- *Sap to Syrup Conversion:* Provide students with a sample of syrup and explain that 40 gallons of sap make just 1 gallon of syrup. Discuss the boiling process that removes water from the sap to produce syrup.
- *Tasting & Observations:* Let students taste a small spoonful of maple syrup and have them record their observations about the flavor, texture, and sweetness compared to what they imagine sap might taste like.
- *Discussion:* Wrap up by discussing the importance of maple syrup to Michigan’s agricultural economy and local communities.

Comprehension Questions:

- Grades K-2: What is maple syrup made from?
- Grades 3-5: What process turns sap into maple syrup?

Resource:

- https://www.miagclassroom.org/matrix/lesson/672/

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Bee Habitat

Purpose: Students will learn about the importance of bees to agriculture by constructing a simple bee habitat and understanding pollination's role in growing crops like apples and blueberries.

Background: Bees are essential pollinators for many crops, including apples, cherries, and blueberries. Without bees, many of these crops would not produce fruit, impacting both the environment and the economy. Creating bee-friendly habitats can help support bee populations, which are under threat from habitat loss.

Materials per student:

- Small cardboard tube or paper towel roll
- Hollow bamboo sticks or straws
- Twine or string
- Scissors and glue
- Pollinator plant seeds (optional)

Activity:

- *Introduction:* Explain the role of bees in pollinating Michigan's crops and why they are important for the state's agriculture.
- *Build a Bee Habitat:* Students will construct a simple bee habitat by cutting the cardboard tube and filling it with hollow bamboo sticks or straws, creating a shelter for bees to lay their eggs.
- *Decorating and Placement:* Students can decorate their habitats and discuss where they would place them in their school garden or at home to encourage bee activity.
- *Pollinator Planting (optional):* Planting pollinator-friendly plants around the habitat will further support bees.
- *Discussion:* Wrap up by discussing the challenges bees face and how supporting bee habitats helps protect Michigan's agriculture.

Comprehension Questions:

- Grades K-2: What do bees do to help plants grow?
- Grades 3-5: How does the bee habitat you made provide for the bees?

Resource:

- https://www.agintheclassroom.org/pollinator/posts/build-a-bee-hotel/

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Parts of Apple

Purpose: Students will identify the various parts of an apple and understand their functions.

Background: Apples have been a part of Michigan's heritage and landscape for generations. Understanding the anatomy of an apple—including its skin, flesh, core, seeds, stem, and calyx—helps students appreciate how apples grow and their nutritional benefits. This lesson focuses on identifying each part and its function, fostering a greater awareness of apples in our diet and agriculture.

Michigan Ag Facts:

- Apples are one of the largest and most valuable fruit crops in Michigan.
- In 2022, 1.36 billion pounds of apples were harvested in Michigan, ranking second in the nation.
- Michigan apples are harvested August through October, but with controlled-atmosphere storage technology, they are available nearly year-round.

Materials per student:

- Whole apple
- Cutting board
- Apple slicer
- Knife
- Apple Parts Cards (one set per classroom)

Activity:

- *Introduction:* Explain the purpose of each part of an apple (skin, flesh, stem, seeds, calyx).
- *Demonstration:*
  - Use an apple slicer to cut an apple in half and discuss the visible parts.
  - Peel one slice to show the skin and explain its protective role.
  - Discuss the flesh, stem, seeds, and calyx while placing the corresponding Apple Parts Cards next to each part.
- *Group Activity:* Have students label their own apple parts using Apple Parts Cards and discuss the role of each part.

Comprehension Questions:

- Grades K-2: What are the three colors of apples we looked at today?
- Grades 3-5: Which apple did you like the best, why?

Resource:

- https://www.michiganapples.com/

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Fruit & Vegetable Bingo

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

Background: A diet rich in fruits and vegetables is essential for human health. Understanding their nutritional value, classification, and how to prepare them is just as important as consuming them. Fruits and vegetables should replace unhealthy foods in our diets rather than simply be an addition.

Michigan Ag Facts:
Michigan is a top producer of many fruits and vegetables, including apples, cherries, cucumbers, onions, peaches, asparagus, and potatoes.

Materials per student:

- Fruit and vegetable bingo cards
- Dried Beans or corn kernels
- Fruit and vegetable picture cards
- Fruits or vegetable of your choice

Activity:

- Introduction:
  - Explain the difference between fruits and vegetables.
  - Discuss the importance of including fruits and vegetables in a balanced diet.
- Bingo Game:
  - Distribute Bingo cards to students.
  - Randomly call out the names of different fruits and vegetables.
  - Students cover the corresponding images on their Bingo cards using dried beans or corn kernels.
  - The first student to complete a row yells "Bingo!" and wins.
- Giveaway:
  - Reward each participant with a fruit or vegetable of your choice.

Comprehension Questions:

- Grades K-2: What is the difference between a fruit and a vegetable?
- Grades 3-5: Why is it important to have fruits and vegetables in your diet?

Resource:

- https://agclassroom.org/matrix/lesson/347/

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Pumpkin Pie in a Bag

Purpose: Students will make a no-bake pumpkin pie while learning about pumpkins as a versatile food.

Background: Pumpkins are native to the Americas and are related to the cucurbit (gourd) family. This means that the pumpkin is related to plants like watermelon, cucumbers, and zucchini squash. What do all these plants have in common? The plants have a fleshy and leathery skin surrounding the fruit. They also contain a lot of seeds. Some are small but most are large. Some have hollow insides like gourds and pumpkins, and some are solid like watermelons and cucumbers.

Michigan Ag Facts:

- In 2022, Michigan generated $16.4 million from the production of 93.1 million pounds of pumpkins. Michigan pumpkins are used for processing and jack-o-lanterns.
- Pumpkins are harvested in Michigan beginning in September through October.

Materials per Person:

- Ziploc bags (1 per person)
- 2 TBS Instant vanilla pudding mix
- 1/2 cup Milk
- 1 TBS canned pumpkin pie
- Whipped topping (optional)
- Plastic cups for serving or serve right in bag
- Spoons

Activity:

- Combine Ingredients in a Bag:
  - Distribute Ziploc bags and ingredients to each person.
  - Add milk and instant pudding mix to the bag. Seal the bag and knead it for about 1 minute.
  - Add pumpkin pie. Seal the bag and knead for 2 more minutes until fully mixed.
- Add Topping:
  - Add a dollop of whipped topping (optional).

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Comprehension Questions:

- Grades K-2: What does the pumpkin pie in a bag taste like?
- Grades 3-5: What are the main ingredients we used to make pumpkin pie in a bag?

Resource:

- https://cdn.agclassroom.org/media/uploads/2017/01/11/Pumpkin_Pie_In_A_Bag.pdf

Pumpkin, Pumpkin

Purpose: Students will identify the parts of a pumpkin.

Background: Pumpkins are native to the Americas and are related to the cucurbit (gourd) family. This means that the pumpkin is related to plants like watermelon, cucumbers, and zucchini squash. What do all these plants have in common? The plants have a fleshy and leathery skin surrounding the fruit. They also contain a lot of seeds. Some are small but most are large. Some have hollow insides like gourds and pumpkins, and some are solid like watermelons and cucumbers.

Michigan Ag Facts:

- In 2022, Michigan generated $16.4 million from the production of 93.1 million pounds of pumpkins. Michigan pumpkins are used for processing and jack-o-lanterns.
- Pumpkins are harvested in Michigan beginning in September through October.

Materials per student:

- Orange or white paper plates (2 per student)
- Construction paper (brown, light and dark green, yellow, orange)
- Yarn (brown or green)
- 5 pieces 6-8” long, scotch tape
- Scissors
- Stapler





Activity:

1. Use cardboard patterns to trace each shape out of proper paper or copy directly onto proper paper (seed- brown, leaf-dark green, blossom-yellow, small pumpkin-light green, large pumpkin-orange.)
2. Tape 1 piece of yarn to inside of paper plate (eating side.)
3. Staple 2 plates together (top or eating sides together) at edge. Leave opening about 1/3 diameter of plate. Yarn should be extended out of the opening.
4. Staple and tape each side in order with yarn in between each piece.
5. Once assembled, stack shapes nicely and place in opening of pumpkin. Starting with seed, slowly pull shapes out of pumpkin as story is told about how pumpkins grow.

Comprehension Questions:

- Grades K-2: What color is a pumpkin usually, what are some other colors?
- Grades 3-5: What are some plants that are similar to pumpkins, what are they?

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Resource:

- Florida Ag in the Classroom

Cranberry Bog Simulation

Purpose: Students will learn about cranberry farming in Michigan by simulating a cranberry bog and understanding how cranberries are harvested using water.

Background: Although Michigan's cranberry production is smaller than in other states, cranberries are grown in wetland areas in the northern Lower Peninsula. Cranberries grow on low vines in bogs and are harvested by flooding the fields, allowing the berries to float to the surface for collection.

Michigan Ag Facts:

- Michigan's cranberry farms are concentrated in wetland areas.
- Cranberries are harvested by flooding the bog, which makes the berries float.
- Cranberries are rich in antioxidants and are often used in sauces, juices, and dried snacks.

Materials per student:

- Large plastic bin (to represent a cranberry bog)
- Red balls or small red objects (to represent cranberries)
- Water
- Small net or scoop

Activity:

- *Introduction:*
  - Discuss how cranberries are grown in Michigan and explain the unique method of harvesting them by flooding the bogs.
- *Bog Simulation:*
  - Fill the plastic bin with water and place the red balls or small red objects inside to represent cranberries. Using small nets or scoops, students will "harvest" the cranberries by collecting them from the water.
- *Discussion:*
  - Explain why cranberries float when the bog is flooded and how farmers use this method to make harvesting easier.
- *Conclusion:*
  - Talk about the health benefits of cranberries and how Michigan cranberry farms contribute to the state's agriculture.

Comprehension Questions:

- Grades K-2: Where do cranberries grow?
- Grades 3-5: Why do cranberries float when the bog is flooded?

Resource:

- https://miagclassroom.org/matrix/lesson/857/
- https://www.youtube.com/watch?v=XZPXQ7nw_9Y

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Butter-Making

Purpose: Students will learn about the dairy industry in Michigan by making butter and discussing the nutrition cows need to produce milk.

Background: Dairy production plays a vital role in many regions, with milk from dairy cows being used to create a variety of products like butter, cheese, and yogurt.

Michigan Ag Facts:

- Michigan is home to more than 400,000 dairy cows on about 900 dairy farms located throughout the state.
- With each cow producing on average 27,430 pounds of milk per year, Michigan is first in the United States for production of milk per cow.

Materials per student:

- Small jar with a lid (mason jar or baby food jar)
- Heavy cream
- Salt (optional)
- Bread or crackers for tasting
- Worksheet on dairy products and their uses

Activity:

- *Introduction:* Talk about Michigan's dairy industry and how milk from cows is turned into products like butter, cheese, and yogurt.
- *Butter-Making:*
  - Pour a small amount of heavy cream into the jar (about halfway full).
  - Have students shake their jars for about 5-10 minutes until the cream turns into butter. (Optional: add salt for flavor).
  - Once the butter has formed, spread it on bread or crackers and taste the final product.
- *Conclusion:* Discuss how dairy products are made and how Michigan's dairy farms contribute to the state's economy. Optionally, students can complete a worksheet about the different products made from milk.

Comprehension Questions:

- Grades K-2: What are some ways you use butter?
- Grades 3-5: How are dairy products made?

Resource:

- https://www.miagclassroom.org/matrix/resource/28/

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Animals on the Farm

Purpose: Students will learn about farm animals and the products they produce through interactive activities.

Background: Farm animals, such as cattle, sheep, pigs, and chickens, play a crucial role in agriculture. They provide essential food products like milk, meat, and eggs, as well as valuable by-products, including wool and leather. Understanding these connections helps students appreciate the importance of livestock on modern farms.

Michigan Ag Facts:

- Michigan is a leading state for livestock production, including dairy, beef, and poultry.
- Many farms in Michigan are family-owned and contribute significantly to local economies.

Materials per student:

- Farm Animal Pictures
- Product from animals
- Animal coloring masks
- Crayons or markers

Activity:

- Farm Animal and Products
  - Have students identify which product came from which animals.
  - Animal Product Match Game
    - Use a pocket chart to match animal product cards with animal pictures.
- Animal Mask
  - Color animal face masks and discuss the products from those animals. (Animal Mask can be ordered off oriental trading)

Comprehension Questions:

- Grades K-2: What are some animals that live on farms?
- Grades 3-5: What products do each of the following farm animals provide: cows, pigs, sheep, and chickens?

Resource:

- https://www.miagclassroom.org/matrix/lesson/861/

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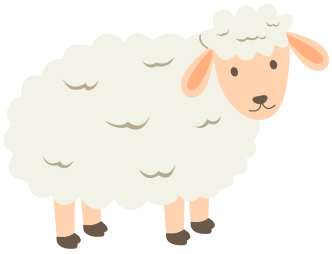
Flockship Bracelets

Purpose: Students will create a bracelets while learning about raising sheep and harvesting their wool.

Background: This lesson introduces students to the process of caring for sheep and turning fiber into wool products.

Michigan Ag Facts: Michigan farmers shorn 4370,000 pounds of wool in 2021. The total value of Michigan wool is $200,000



Materials per student:

- String/yarn
- Scissors
- Pony beads (yellow, blue, red, white, purple, green, pink, orange)

Activity:

- Distribute Materials:
  - Give each student a string and six beads in the following colors: yellow, blue, red, white, purple, green, pink, and orange.
- Add Beads & Learn:
  - Yellow Bead (Feed): Sheep need food, water, and shelter to survive. Sheep feed is often made of corn and soybean meal.
  - Blue Bead (Water): The most important nutrient for any animal is water. Mature sheep drink between 1-3 gallons of water a day.
  - Red Bead (Shelter): Sheep need shelter for protection from weather and predators.
  - White Bead (Shearing): Sheep's wool needs to be cut, just like haircuts for people! This is called shearing and happens about once a year.
  - Purple Bead (Scouring): Wool is washed in hot water and soap to remove dirt and grease. Lanolin, a natural byproduct, is collected for use in cosmetics.
  - Green Bead (Carding): Wool carding opens up the wool fibers and prepares them for spinning. This is often done with a set of combs.
  - Pink Bead (Spinning): Wool spinning twists raw wool fibers into yarn.
  - Orange Bead (Weaving): Once wool is spun into yarn, it can be woven into clothing like sweaters or mittens.

Comprehension Questions:

Grades K-2: What does each bead represent?

Grades 3-5: What is carding?

Resource:

- https://www.agintheclassroom.org/fiber/posts/flockship-bracelets/

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The Life Cycle of a Chicken

Purpose: Students will create a visual of the chicken life cycle and understand the stages from egg to adult chicken.

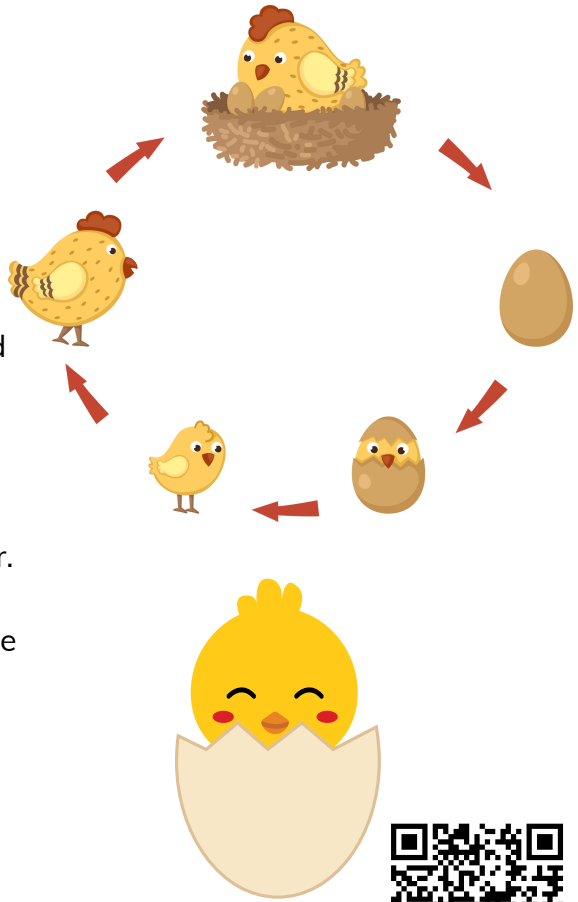
Background: Chickens are one of the most common animals raised on farms worldwide. They provide eggs, meat, and feathers, all of which are used in food production and other industries. Chickens go through a fascinating life cycle, starting from an egg and hatching into a chick, growing into a chicken, and, depending on their breed and purpose, either becoming layers of eggs or raised for meat.

Michigan Ag Facts:

- Michigan ranks seventh in production of eggs with more than 16.8 million laying hens that produce 5.1 billion eggs per year.
- There are eight egg farm families with 17 farms spread throughout Michigan.

Materials per student:

- Paper plate
- Crayons or colored pencils
- Scissors, glue
- Construction paper



Activity:

- Discuss the Chicken Life Cycle:
  - Explain the stages: Egg, Chick, Young Chicken, and Adult Chicken.
- Create the Visual:
  - Give students a paper plate.
  - Have them cut out images of an egg, chick, young chicken, and adult chicken from construction paper.
- Glue and Color:
  - Students will glue the pictures in a circle around the paper plate to represent the life cycle.
  - Color the rest of the plate for decoration.
- Label:
  - Add the stage names (Egg, Chick, Young Chicken, Adult Chicken) around the circle.

Comprehension Questions:

- Grades K-2: What is the first stage in a chicken's life?
- Grades 3-5: What are the four stages in the chicken life cycle?

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Resource:

- https://www.miagclassroom.org/matrix/lesson/245/

Flower Power

Purpose: Students will explore and identify the different parts of a flower, understanding their roles in plant reproduction, particularly in pollination and seed production.

Background: Flowers are essential for plant reproduction. They contain both male and female parts that work together to produce seeds. The male parts (stamens) produce pollen, which is transferred to the female pistil during pollination. The pistil holds the ovary, where seeds develop after fertilization. Pollinators, such as bees, move pollen from one flower to another, helping plants reproduce. This process is vital for producing fruits and seeds.

Michigan Facts:

- In 2022, there were more than 500 floriculture producers in Michigan.
- Michigan led the nation in seven floriculture crops, including begonias, petunias, geraniums, marigolds, impatiens (other), impatiens, and New Guinea impatiens.

Materials per student:

- Fresh flowers (1 per student or group, such as lilies, roses, sunflowers, etc.)
- Flower dissection handouts
- Scissors
- Clear tape
- White cardstock or construction paper
- Parts of a Flower poster (for reference)
- Markers, crayons, or colored pencils
- Magnifying glasses (optional)

Activity:

- Introduction to Flower Parts:
  - Begin with a quick discussion using the Parts of a Flower poster, explaining the function of each flower part:
    - Stamens produce pollen (male).
    - Pistil receives pollen and holds the ovary (female).
- Flower Dissection:
  - Give each student a flower. Instruct them to carefully cut and separate the flower parts.
  - Using magnifying glasses (if available), students will identify and tape the stamen, pistil, and other parts onto their construction paper.
  - Students should label each part of the flower.

Comprehension Questions:

- Grades K-2: What part of the flower makes pollen?
- Grades 3-5: What is the role of the stamen in the flower?

Scan for more Information

Resource:

- https://www.miagclassroom.org/matrix/lesson/223/

Arbor Day Bookmark

Purpose: Students will create a bookmark to celebrate Arbor Day.

Background: In 1970, President Richard Nixon officially recognized Arbor Day as a national observance. The word "Arbor" comes from Latin, meaning "tree." This day is dedicated to the planting, care, and conservation of trees. In the U.S., Arbor Day is celebrated annually on the last Friday of April.

Michigan Ag Facts:

- There are 14 billion trees in Michigan. Michigan has about 20 million acres of forest, covering about 53% of the State.

Materials per student:

- Strip of cardstock paper: 5½" x 8½"
- Pencil
- Crayons or colored pencils
- Optional: stickers (apples, cherries, acorns, flowers, leaves, etc.)

Activity:

1. Observe trees in nature.
2. Pass out materials to each student.
3. Students place their hand, wrist, and part of their arm on the cardstock, so it covers most of the paper. Trace with a pencil. This represents the tree trunk and branches.
4. Color the tree trunk and branches brown.
5. Use crayons, colored pencils, or stickers to decorate the tree with native leaves, fruits, or flowers.
6. Write "Arbor Day" and the year on the bookmark.

Comprehension Questions:

- Grades K-2: What colors did you use to color your tree?
- Grades 3-5: What is Arbor Day dedicated to?

Resource:

- *Florida Ag in the Classroom*

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Michigan Agriculture in the Classroom

Tree Bark/Leaves Rubbings

Purpose: Students will create rubbings of tree bark and leaves, then identify the types of trees represented in their rubbings.

Background: Understanding the different types of trees and their characteristics fosters appreciation for nature. Rubbings allow students to observe details in bark and leaves, helping them identify tree species based on their unique patterns and shapes.

Michigan Ag Facts: With a rich history of forests and forest products, Michigan boasts 20 million acres of sustainably managed forests and the fifth-largest timberland in the nation, growing nearly twice what is harvested.

Materials per student:

- White paper
- Crayons (unwrapped)
- Leaves from different tree species
- A variety of tree barks
- Magnifying glasses (optional)

Activity:

- Introduction
  - Briefly discuss the importance of trees for oxygen production, habitat, and beauty.
  - Show examples of different leaves and bark, introducing basic tree identification methods.
- Activity
  - Tree Bark Rubbing
    - Instruct them to place white paper against the tree trunk and rub gently with a crayon to capture the bark's texture.
  - Leaf Rubbing
    - Have them place a leaf under a sheet of paper and rub over it with a crayon to create a leaf rubbing.
  - Matching and Identifying
    - Match leaf rubbings to the corresponding tree bark rubbings.
    - Help students identify the tree species based on their rubbings, discussing key characteristics like leaf shape and bark texture.
- Wrap-Up
  - Review what students observed and learned about tree identification.

Comprehension Questions:

- Grades K-2: What did you notice about the bark and the leaves, was there a certain texture, color, or shape?
- Grades 3-5: What is the importance of trees?

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Resource:

- https://agclassroom.org/matrix/search_result/?search_term=trees&findlesson=on&findresource=on&maxlessons=25&maxresources=25

Michigan Agriculture in the Classroom

Tree Treasures

Purpose: Students will explore various products made from trees and their uses in daily life.

Background: Trees are a vital natural resource in Michigan, contributing to industries such as paper, construction, and food production. From apples and maple syrup to paper and furniture, trees provide essential products that we use every day.

Michigan Facts:

- Michigan has about 20 million acres of forest, covering about 53% of the State.
- There are 14 billion trees in Michigan.

Materials per student: Small bag of items made from trees (e.g., paper, wooden spoon, apple, rubber band, pencil, cardboard).

Activity:

- Introduction:
  - Ask: “What products do we use every day that come from trees?”
  - Share Michigan facts: Michigan has over 20 million acres of forests, which provide timber, food, and other materials.
- Hands-On Exploration:
  - Distribute a small bag of tree-related items to each student.
  - Students will sort the items into categories:
    - Food (e.g., apple, maple syrup).
    - Paper (e.g., notebook, tissues).
    - Wood (e.g., pencil, wooden spoon).
    - Other (e.g., rubber band).
  - Discuss how each item comes from trees and its role in daily life.
- Discussion:
  - Highlight how trees are renewable resources and how Michigan’s forests support both the environment and the economy.

Comprehension Questions:

- Grades K-2: What are some products that come from trees?
- Grades 3-5: What are some products that come from trees, what are they used for?

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Resource:

- https://miagclassroom.org/matrix/search_result/?search_term=forestry&findlesson=on&findresource=on&maxlessons=25&maxresources=25&grade%5B%5D=K%2C1%2C2&grade%5B%5D=3%2C4%2C5

Nature Display

Purpose: Students will collect items in nature to display on a tree cookie to hang on the wall.

Background:

- Each ring of a tree represents one year of growth.
- Tree rings are made up of cells that are dead, but act like tunnels for transporting water to other growing cells. Much of the trunk is devoted to water transportation because of the quantity of water needed by all the growing parts of large trees.
- When a cross section of a tree is taken, it is often referred to as a "tree cookie" due to its shape. The first year of growth is at the center of the tree cookie, while the last year's growth is where the wood meets the bark.

Michigan Ag Facts:

- Michigan has a rich history of forests and forest products.
- Michigan boasts 20 million acres of sustainably managed forests and the fifth-largest timberland in the nation, growing nearly twice what is harvested.
- Forests in Michigan are managed for timber production, wildlife habitat, watershed protection, biodiversity conservation, and recreation.

Materials per student:

- Tree cookie (approximately 4" x 5")
- White glue
- 10 small natural items (e.g., acorns, sturdy leaves, small twigs)
- Small container for collecting items

Activity:

- Students gather 10 small items from nature, making observations along the way. Use a small container to collect nonliving or things that used to be living. Items should be about the size of their thumb.
- Students sort and compare objects acquired from the nature hike.
- Observe tree cookie.
- Place a generous amount of glue on the tree cookie.
- Place some or all items on the glue.
- Let dry.

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Comprehension Questions:

- Grades K-2: What things did you notice while being in nature?
- Grades 3-5: What does one ring of a tree represent?

Resource:

- *Florida Ag in the Classroom*

Reindeer Feed Store

Purpose: Students will learn how agriculture supports animal nutrition and holiday traditions by creating reindeer feed, fostering appreciation for farming and its role in the community.

Background: Reindeer, like other animals, require proper nutrition to stay healthy and energized. This lesson uses the concept of preparing "reindeer food" as a way to introduce agricultural concepts, such as the importance of hay, corn, and oats in animal diets. The activity also ties into Christmas traditions, sparking curiosity and engagement.

Michigan Facts:

- Michigan is a significant agricultural state, producing corn, oats, and hay, which are important feeds for livestock.

Materials per student:

- A small plastic bag (to hold reindeer feed).
- Handful of hay (for roughage).
- A small scoop of oats (for protein).
- A small scoop of dried corn (for energy).
- Instruction sheet with reindeer nutrition facts.
- Festive labels or markers for decorating the bag.

Activity:

- Introduction:
  - Discuss the role of agriculture in feeding animals.
  - Share facts about Michigan's agricultural production and its importance to livestock.
  - Explain the connection to Santa's reindeer and their long journey.
- Hands-On Activity:
  - Students create their own "reindeer feed" bags.
  - Guide students to measure out hay, oats, and corn into the bag, explaining the role of each component in the reindeer's diet.
  - Allow students to decorate their bags with festive labels or drawings.
- Discussion and Reflection:
  - Discuss how the materials represent the importance of agriculture in our lives.
  - Relate the activity back to local farming, highlighting Michigan's contributions.
  - Spark a conversation about sustainable practices in farming and caring for animals.
- Wrap-Up:
  - Students can take their reindeer feed bags home to sprinkle outside on Christmas Eve.
  - Share how traditions like this highlight agriculture's presence in festive celebrations.

Comprehension Questions:

- Grades K-2: What do reindeer eat?
- Grades 3-5: What is the role of agriculture in the reindeer's diet?

Michigan
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