



WHAT'S GROWING ON IN VIRGINIA

Virginia Foundation for Agriculture in the Classroom
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About the Newsletter

What's Growing On In Virginia? is a semiannual publication for Virginia educators and those who want to connect children with agriculture through education.

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Corn is one of the grains grown in Virginia.



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WHAT'S GROWING ON in Virginia

AGRICULTURE IN THE CLASSROOM • FALL 2017 / VOLUME NO. 2

Oats



Barley



Wheat



Oats, wheat and barley are important Virginia commodities.

Wheat grown in this region is raised primarily for grain. It also is grown in the state's Piedmont and Valley regions for grain and livestock feed.

Because it is planted from September to November, it is called winter wheat. It is ranked among the commonwealth's top 20 agricultural commodities, according to the Virginia Department of Agriculture and Consumer Services, with total farm cash receipts of about \$75 million annually.

Virginia farmers seeded 190,000 acres last fall, with 135,000 to be harvested for grain.

There are six types of wheat: hard red winter, hard red spring, soft red winter, hard white, soft white and durum. The wheat's protein and gluten content determine the end product. Most Virginia wheat is soft red winter wheat, which can be used in flour for different types of breads, crackers, cakes and pastries.

Barley production in Virginia yielded 804,000 bushels in 2016, according to the National Agricultural Statistics Service.

Coarse grains

"Coarse grains" generally refers to cereal grain other than wheat and rice. In Virginia, the coarse grains that farmers raise most are corn and milo.

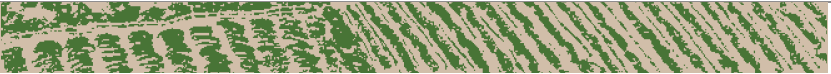
Small, but mighty— grains are a big commodity in Virginia

Small grains are versatile crops that are grown on many acres of Virginia farmland and include wheat, barley and oats.

Wheat is grown on more land worldwide than any other crop and is a close third to rice and corn

in total world production. It is grown in nearly every state, and because it is such a versatile crop it is harvested somewhere in the world every month of the year.

In Virginia, wheat is primarily grown in the Coastal Plain region, between Richmond and the Chesapeake Bay.



Corn for grain is among the state's top 10 agricultural commodities. Most corn in Virginia is raised for animal feed. According to VDACS, Accomack County leads Virginia in corn production with more than 2.8 million bushels last year. Virginia farmers harvested 50.32 million bushels of corn during the 2016 harvest.

The majority of corn grown in the United States is field corn. It contains 85 percent starch and can be used to make everything from livestock feed and ethanol to corn syrup, sweeteners and industrial products such as molded plastics and tires.

Field corn is different from sweet corn, which is purchased at grocery stores on the cob or canned or frozen. It also differs from popcorn, which is a special kind of corn with a moisture content that makes it pop when heated.

Milo is raised in smaller amounts than corn and is used for animal feed—mostly for cattle and hogs.

Planting and harvesting grains

Most small grains such as wheat, barley and oats are planted in the fall in Virginia. Wheat often is planted in a rotation with corn and soybeans, and the fall plantings keep farm fields in production during winter months. Small grains also serve as cover crops that reduce erosion and retain soil moisture during the winter, when the plants go dormant. They revive, grow and are harvested late the following spring.

Field corn is planted in the spring and harvested in the summer to early fall in Virginia. Sweet corn also is planted and harvested at the same times.



Milo is a coarse grain grown on some Virginia farms.

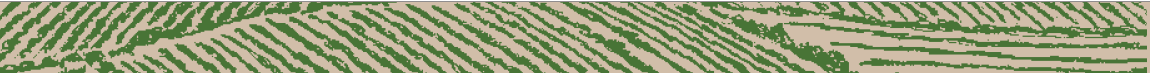
BONUS ACTIVITY

Make Bread in a Bag

Bread, in one form or another, has been one of humans’ principal foods since the earliest of times. Archaeologists have uncovered ancient Egyptian tombs containing loaves and rolls baked more than 5,000 years ago. It’s likely that even before that time, around 10,000 B.C., people were eating a crude form of bread, a flat bread that was a baked combination of flour and water.

Directions:

- 1. Preheat oven to 350°.
- 2. In a one-gallon zip-top plastic bag, mix:
 - ½ cup all-purpose flour
 - 1 package or 2¼ teaspoons yeast
 - ½ cup warm water
 - 2 tablespoons sugar
- 3. Close the bag, and take turns kneading it with your fingers until the ingredients are completely blended. Leave the bag closed, with contents in a corner, and let the dough rest 10 minutes. Then add:
 - 2 cups whole wheat flour
 - ¾ cup warm water
 - 1 tablespoon vegetable oil
 - 2 teaspoons salt
- 4. Mix well, then add enough additional all-purpose flour to make the dough stiff—about 1 to 1½ cups. Close the bag, and knead it. Add more flour until the dough no longer sticks to the bag.
- 5. Let the dough rest 5 minutes. Spray clean hands (You also may wear food service gloves and spray the gloves) with non-stick cooking spray, and open the bag. Form the dough into a loaf, and place it in a loaf pan or onto a baking sheet. Remember that the dough will grow 1½ times larger, so if you are baking multiple loaves, leave space between them on the sheet.
- 6. Allow the bread to rise 30-45 minutes. Bake for 30-35 minutes. Enjoy!



CONTENT AREA

Sciences: Life Processes

Objective: Children will identify the needs of farm animals.

Materials:

- Small, jewelry-size, clear plastic bags
- Yarn or pipe cleaners
- Hole punch
- Blue glitter (or substitute blue shredded paper)
- Red or gray construction paper
- Brown shredded paper
- Googly eyes
- Cornmeal or grits

LESSON PLAN Pre-K

Animal Care Farm Charm

Background Knowledge

Farmers who raise animals such a cows, chickens, turkeys, sheep or hogs are called livestock producers. It is the farmers’ job to take good care of their animals. Animals rely on farmers to provide them with food, water, shelter and care to keep them healthy. In turn, people rely on farm animals for food and clothing.

All animals share the same basic needs of food and water. Some farm animals may graze on pastureland and might be provided with extra hay or silage. Silage is made when a plant such as corn or grass is cut, finely chopped and packed tightly to store. A farmer will carefully choose the correct type and combination of grains for his or her animals in order to give them the best possible nutrition. Additionally, farmers provide their animals with plenty of clean water.

Farmers also provide their animals with shelter to protect them from severe weather and to keep them safe. Lastly, in order to keep their animals healthy, farmers will seek the help of veterinarians. Veterinarians are doctors who take care of animals and make sure they stay healthy. Some veterinarians take care of pets like dogs or cats, while others, called large animal veterinarians, specialize in the care of farm animals.

Procedure

- 1. Make a list of animals’ needs such as air, food, shelter, water and space (habitat). Discuss how farmers provide these needs to their animals.
- 2. Have each student pick a favorite farm animal. Give each student a small jewelry bag with a hole punched above the zip.
- 3. Have them open the bag and give it a puff of air. This represents the air that the animal needs.
- 4. Next, place a pinch of blue glitter in the bag. This represents fresh water.
- 5. Place a pinch of cornmeal or grits in the bag. This represents the crushed grain that most farm animals eat. Also place some brown shredded paper in the bag. This represents cut grass, or hay, that farm animals may eat.
- 6. Cut a small square from a piece of red or gray construction paper, and put in the bag. This represents the barn or other shelter for the animal.
- 7. Last, place a googly eye in the bag, because farmers keep an eye on their animals’ health and well-being.
- 8. Thread the yarn through the hole at the bag’s top for a necklace, or use a pipe cleaner to make a bracelet.



CONTENT AREA

SOL: Social Studies 1.7, 2.7

Objective: for students to:

- Identify natural, human and capital resources and to understand job specialization.

Materials

- *The Tortilla Factory* by Gary Paulsen
- Construction paper
- Scissors

For extension lesson:

- Hot plate (and frying pan) or electric skillet
- Water
- Gallon-size zip-top plastic bags
- Measuring cup
- Masa harina corn flour (sold in the Hispanic aisle of grocery stores, Maseca is a common brand)
- Spatula
- Ice cream scoop
- Rolling pin (also can use produce cans)
- Salt, optional

LESSON PLAN Elementary School

The Tortilla Factory

Background Knowledge

Corn is grown on every continent except Antarctica. In Virginia, most corn that is grown on farms is used for animal feed and ethanol. In addition to food for animals, corn is found in numerous foods that we eat every day. Corn also can be used to make inedible products such as plastic mugs or even diapers.

Procedure

1. Begin by reviewing the definitions for natural, human and capital resources.
2. Pass out a sheet of construction paper to each student. Instruct them to first fold it in half “hot dog style.” Next fold each side in so that they overlap and create 3 sections. Crease and open.
3. Place the paper (still with the “hot dog fold” in place) on the desk with the fold at the top. Next, open the paper enough to cut just the top piece of the paper along the 2 creases (See next page for examples).
4. Label the front of each section with natural, human and capital resources.
5. Open each flap, and on the back of each flap instruct students to write the definition for that resource and to draw a picture of it that will help them remember it.
6. Read the book *The Tortilla Factory* aloud to students.
7. Have students brainstorm the many different resources listed and illustrated in the book that are used to create a product—tortillas.
8. Have students sort the brainstormed resources into the correct categories on their foldables.
9. Ask students to consider a popular pair to tortillas—salsa. Is it likely that salsa would be made at the same factory as the tortillas in the book? Why or why not? Introduce the topic of job specialization.

Extension

Take the story a step further by making your own tortillas in the classroom. As you make them, have students identify the natural, human and capital resources you are using. As an alternative to the method described below you may decide to divide students into teams. Have each team be responsible for a step in the tortilla-making process (The teacher should always be in charge of the cooking). Discuss job specialization and how it makes your classroom tortilla factory more efficient.

Each batch of tortillas will serve about 15, depending on the size of your tortillas.

Directions:

1. In a large plastic bag place 2 cups of corn flour, one cup of water and a pinch of salt (optional). Have students take turns kneading the bag to create a soft



Label the front of the paper with natural, human and capital resources.



Inside each flap and on the back of each flap is an area for students to define and draw the resources.

dough (the consistency of Play-Doh). You may have to add a bit more water, but be careful not to make it too wet, as it will become too sticky.

2. Pass out a large plastic bag to each student. Have them write their name in permanent marker along the edge. Next cut the plastic bag on all but one side, so that it will open like a book.
3. Once the dough is ready, use an ice cream scoop to place an egg-size scoop of dough inside each student's bag. Have students take turns using a rolling pin (Cans will work too) to roll their dough into a thin, flat circle.
4. Heat your electric skillet, or frying pan on a hot plate, over medium heat. Have students take turns bringing their tortillas to you. Open the bags, and place the tortillas on the skillet. Cook for about a minute, until the ends begin to curl up. Flip, and cook for about another minute until golden brown. When finished, transfer back to their plastic bag, and let cool.
5. Bring in salsa and/or cheese, and have a tortilla-tasting party!



In this example, the student defined human resources as a farmer, factory workers and a truck driver.

BONUS
ACTIVITY

Make Your
Own Cattle
Feed

Just like people, farm animals need to eat balanced diets. Animal nutritionists help farmers determine the best diet and amount of food for their livestock. Animals require different diets depending on type of animal, and grains such as corn and soybeans often play an important role.

Cattle feed typically involves hay for fiber, corn for carbohydrates, minerals such as calcium and salt, and soybeans for protein.



Directions:

1. Make your own “cattle feed” by mixing the following into a bowl:
 - Mini-wheat cereal = hay
 - Popcorn = corn
 - M&M's = minerals
 - Dry-roasted edamame = soybeans
2. Use a plastic cup to scoop individual portions for each child. Enjoy with a large glass of water, because farm animals need plenty of fresh water too!

More wheat, please!

- Most people think of food items such as bread, pasta and cereal when they think of wheat. Did you know that wheat also can be found in cosmetics, pet foods, paper, soap and trash bags? Wheat is everywhere!
- For an up-close look at a wheat harvest check out the video, America's Heartland: Wheat Harvest at americasheartland.org/episodes/episode_214/wheat_harvest.html. This 30-minute video shows the culmination of months of planning, planting and hard work.



Corn is pollinated by the wind.



Insects such as bees pollinate fruits like these strawberries.

Pollination

Did you know there are two types of pollination? Wind pollination benefits grass crops such as corn and wheat, and insect pollination benefits fruits and vegetables.

Wind-pollinated crops include wheat, rice, corn, rye, barley and oats. Trees such as pines, spruces and firs also can be pollinated by the wind.

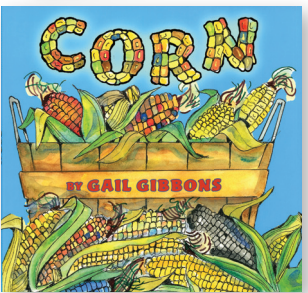
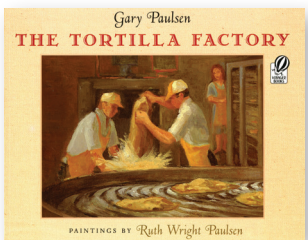
Insect-pollinated plants include fruits and vegetables with buds or flowers on them such as cucumbers, strawberries and pumpkins. These plants have adapted to have showy flowers, nectar and scents that entice pollinators.

LITERARY CORNER

The Tortilla Factory,
Gary Paulsen, Harcourt
Children's Books, ISBN:
0152928766

The Grain Group,
Helen Frost, Capstone Press,
ISBN: 0736805389

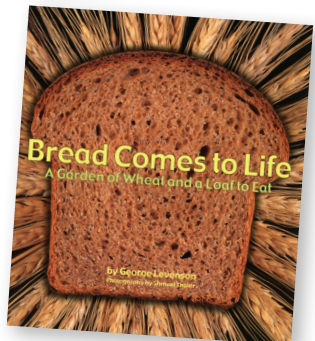
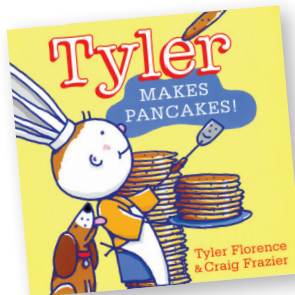
Corn, Gail Gibbons,
Holiday House, ISBN:
0823422453



Tyler Makes Pancakes,
Tyler Florence and Craig
Frazier, HarperCollins, ISBN:
0062047526

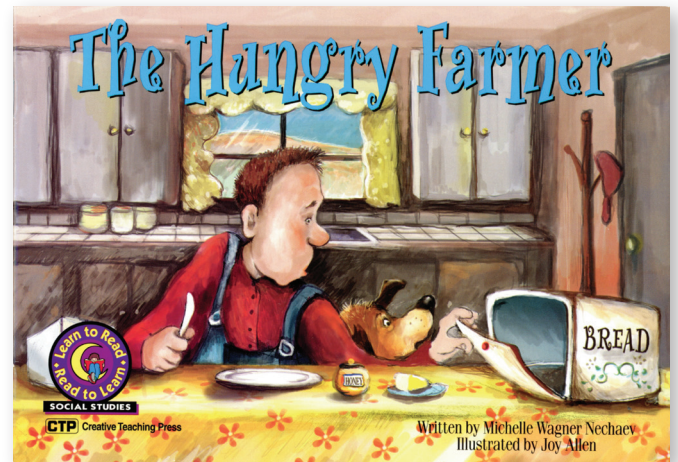
Bread Comes to Life,
George Levenson, Tricycle
Press, ISBN: 1582462739

Grains, Nancy Dickmann,
Heinemann, ISBN:
1432939807

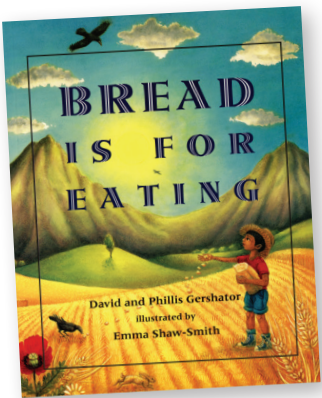


Pancakes, Pancakes!,
Eric Carle, Simon &
Schuster Books for Young
Readers, ISBN: 0887082750

The Hungry Farmer,
Michelle Wagner Nechaev,
Creative Teaching Press,
ISBN: 157471340X



Bread is for Eating,
David and Phillis Gershtator,
National Geographic
School Pub., ISBN:
0805057986



PROGRAM HIGHLIGHTS

Teacher of the Year applications available

If you have an innovative approach to incorporating agriculture into your classroom, we hope you'll apply for Agriculture in the Classroom's 2018 Teacher of the Year recognition. The recipient will receive a \$500 stipend and a trip to the National Agriculture in the Classroom Conference June 26-29 in Portland, Maine. A program overview and application are available at AgInTheClass.org. Applications are due by Nov. 1.

AITC website updates

Have you checked out our new website yet? AgInTheClass.org received a facelift this summer. It is full of even more classroom resources and lessons and has a fresh, new look. Check it out today!