WHAT'S GROWING ON in Virginia

AGRICULTURE IN THE CLASSROOM • FALL 2019 / VOLUME NO. 2

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Pumpkins and apples provide fun pick-your-own opportunities.

Fall fun on the farm

Kick off the season with pleasing pumpkins and appetizing apples.

Apples and pumpkins are two crops that are popular and plentiful in the fall. They come in a variety of colors and sizes.

A fun fall activity for the whole family is picking apples or pumpkins at a local farm. To find a pick-your-own operation near you, visit **virginiagrown.com**.

Apples are plentiful and popular

Apples are a popular fruit. In fact, Americans eat more apples than any other fruit. The average American consumes about 65 apples per year.

There are more than 7,500 varieties of apples in the world and about 2,500 varieties grown in the U.S. You can find apple trees in all 50 states, but for efficient fruit production trees require a cold period called vernalization. Vernalization takes place during the cold winter months while an apple tree is dormant. Without this cold period, apple trees will not develop sufficient flower buds to produce a good crop of apples.

The top apple-producing states are Washington, New York and Michigan, which get plenty of cold weather. Virginia ranks fifth in the nation for apple production, with 687 farms growing apples on 10,879 acres. It is estimated that 225 million pounds of apples were grown in Virginia in 2017.

Apple trees require full sunlight and well-drained soil. Most apples are ready to harvest in the late summer or early fall.

In Virginia, different varieties of apples can be found locally from July through April, according to the Virginia Department of Agriculture and Consumer Services.

Apples are a nutritious snack.

Apples are delicious!

Apples grow on trees, and their skin can be green, red, pink or yellow depending on the variety. They are used in recipes for desserts, salads and main courses, and for making apple juice, cider, vinegar and applesauce.

An apple can be divided into several parts. The skin covers and protects the apple's flesh and seeds. The flesh is the sweet part of the apple. The stem is what attaches the apple to its tree, bringing it water and nutrients. The seeds can be used to grow new apple trees. The calyx is what is left of the apple blossom.

Did you know? Honeybees are commonly used to pollinate apple trees. Nearly all varieties of apples require cross-pollination, meaning pollen from a different variety of apple tree is needed to produce fruit.

Pumpkins come in a variety of colors, shapes, sizes

The pumpkin is a fruit, botanically speaking, but is considered a vegetable. Most pumpkins grown today are sold for decorating and carving. Some types of pumpkins are grown for cattle to eat.

They come in a variety of sizes and shapes, from mini pumpkins, which are the size of apples, to giant ones that weigh more than 200 pounds. Some pumpkins are gray or pale green, but most are yellow or orange or even white. Pink is the newest pumpkin color.

They often are marketed as an ornamental crop, and the primary sales window is usually late September through Halloween. Many people buy pumpkins to use as fall decorations or to carve into jack-o'-lanterns. In Virginia, 384 farmers raise pumpkins on 3,184 acres.

Pumpkins grow on vines that trail along the ground.

Growing pumpkins

Pumpkin flowers are large and yellow. The size of a pumpkin depends on water, temperature, insects, disease, pollination, fertility, soil type, plant population and weeds. Pumpkins are ready for harvest when they are the right color and have the correct rind readiness.

Pumpkins belong to the cucurbits family of vegetables, which also includes melons, cucumbers, gourds and summer and winter squash. All of these grow on vines.

Pumpkins can be used in pies, soups and other dishes, and the edible seeds are a popular snack that's fun to make at home.

Pumpkins (and gourds) come in a variety of fun colors, shapes and sizes.

Pumpkin history

The pumpkin is one of a handful of foods we still eat today that are native to North America. American Indians used them as food and medicine. They dried pumpkin shells to use as bowls or containers to store grains and seeds. They also flattened strips of pumpkins, dried them and made mats.

Pumpkins were a main part of the Pilgrims' daily diet because they could be stored for several months if left uncut and kept in a cool, dry place. Colonists made the first pumpkin pies by slicing off pumpkin tops, removing the seeds, filling the insides with milk, spices and honey, then baking them in hot ashes.

Did you know? The bright orange color of pumpkins indicates they are loaded with the important antioxidant beta-carotene—one of the plant carotenoids the body converts to vitamin A. Current research indicates a diet rich in foods containing beta-carotene may reduce the risk of developing certain types of cancer, and offers protection against heart disease and some degenerative aspects of aging.

Pumpkins are grown throughout Virginia, so consumers can easily find locally grown varieties.

Time to harvest corn, soybeans

Corn and soybeans are two of many crops harvested in the fall.

Fall is the time when farmers are busy harvesting corn and soybeans. In the U.S., field corn is harvested in August through the end of November. Soybeans follow a similar timeline, with harvest beginning in late September and ending in November.

Corn is an incredibly important crop around the world, and the U.S. is the world's largest producer and exporter nation of the crop. While corn is a staple food item, it also is the main ingredient in the production of ethanol, a gasoline additive.

Farmers can choose which crops to plant on their land each year. Therefore, the price of soybeans is often a factor in the corn crop. When soybeans become more expensive than corn on a historical basis, farmers tend to plant more beans and less corn.

The U.S. is the most influential producer of soybeans in the world.

Soybeans often are crushed and made into soybean meal and soybean oil. Soybean meal is used for animal feed, and soybean oil is a key ingredient in many common food products and is used for cooking.

Other crops harvested in the fall include cotton, peanuts, numerous vegetables, pears and pecans.

Join a farmer for harvest!

Want to see an apple or corn harvest in real-time? Search "Farm Life 360" on YouTube, and watch AITC's 360 video of an apple harvest or corn chopping.

CONTENT AREA

SOL: Science: K.7, K.9, 2.4, 3.4, 3.8, 4.4

Objective: for students to:

- Create a model showing the stages of apple growth.
- Identify the steps in the life cycle of an apple.

Materials

- *Apples* by Gail Gibbons (or you may substitute another book about apples)
- Red, green or yellow paper plates (one per student)
- White paper plates (cut in half, one per student)
- Staplers
- Tape
- Crayons or markers
- Scissors
- Yarn (about one yard per student)
- Template (available in the Plant and Animal Life Cycles lesson collection at **AgInTheClass.org**)

The Apple Chain incorporates crafts and apple books!

LESSON PLAN

The Apple Chain

Background Knowledge

Virginia growers produce an average of 8 million to 10 million bushels of apples per year. Virginia apple varieties include Red Delicious, Fuji and Granny Smith. Many apples in Virginia are grown in the Shenandoah Valley.

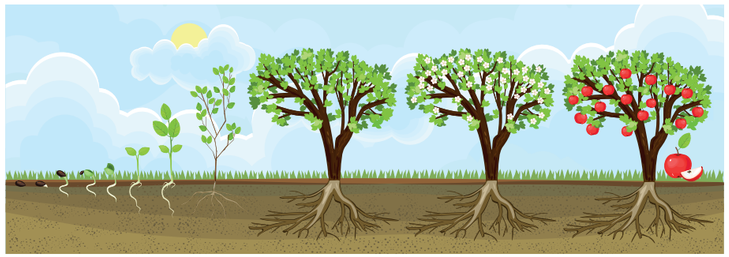
Procedure

1. Begin the lesson by asking students to brainstorm the apple products they enjoy.
2. Next, read *Apples* (or another book on apples) aloud to students.
3. Ask students to identify the steps involved in apple growth. Write these on the board, and put them in the correct order.
4. Now tell students that they are going to create a model for the life cycle of an apple.
5. Pass out one red paper plate and one white half paper plate to each student, as well as templates, yarn and art supplies.
6. Staple the half plate to the back of the red plate, forming a pocket.
7. Color the template images (seed, tree, blossom, bee and apple).
8. Cut out images, and label them.
9. Place them in order on the desk.
10. Attach them, in order, to the yarn using tape or a stapler.
11. Attach the yarn to the half plate by stapling the end closest to the apple image. The seed image should be the farthest away.
12. Place the chain in the pocket. Have students get into pairs, and then take turns pulling each step out and explaining that stage to their partner.

Extension

"An apple a day keeps the doctor away." Ask students to research the nutritional value of apples to support this well-known phrase.

References: Lesson adapted for Illinois Agriculture in the Classroom.



CONTENT AREA

SOL: Science: Investigation

Fine Motor: Manipulative Movement

Objective: for students to:

- Explore the insides of a pumpkin.
- Identify seeds.

Materials:

- Orange paper plates
- Yellow, gold or orange yarn
- Pumpkin seeds
- Pumpkin
- Sandwich-size clear baggies
- Orange tissue paper or napkins
- Tape

Here are two options for Pumpkin Discovery (see alternative).

LESSON PLAN

Pumpkin Discovery

Background Knowledge

A perennial fall favorite, pumpkins are grown in many different places in Virginia and are harvested from September through November. To ensure a fall harvest, seeds are planted from mid-June to July. Most Virginia pumpkins are used as fall decorations, while others may be used in pies, breads, soups or stews. Although they are 90 percent water, pumpkins are high in potassium and vitamin A.

Prepare for the lesson by pre-cutting a large hole out of an orange paper plate for each student.

Procedure

1. Bring in a pumpkin, and slice off the top. Invite students to look at and feel the inside of the pumpkin. Have them describe what they see/touch.
2. Pull out a few seeds for students to see. Discuss the importance of seeds to plants.
3. Pass out a pre-cut orange paper plate to each student. This is their pumpkin.
4. Next give each student a baggie. Tell them that they will place items in the baggie to represent what they saw inside the real pumpkin.
5. First place strips of orange tissue paper or napkins to represent the flesh. Then place strands of yellow yarn for the pulp. Lastly, add pumpkin seeds. Attach bag to plate.
6. **Optional:** Add a stem and vine to the top.

Alternative

You also may have students glue the yarn and seeds directly to an un-cut orange paper plate.

BONUS ACTIVITIES

Songs

Two Red Apples

(TUNE: *This Old Man*)

Way up high,

In a tree, *(raise hands over head)*

Two red apples smiled at me. *(smile)*

So I shook that tree as hard as I could, *(pretend to shake a tree)*

Down came the apples,

Mmmm they were good! *(Rub tummy)*

A Little Apple Seed

(TUNE: *Itsy Bitsy Spider*)

Once a little apple seed was planted in the ground.

Down came the raindrops, falling all around.

Out came the big sun, bright as could be.

And that little apple seed grew to be an apple tree!

I'm a Little Pumpkin

(TUNE: *I'm a Little Teapot*)

I'm a little pumpkin,

Orange and round.

Here is my stem,

And there is the ground.

When I get all cut up,

Don't you shout!

Just pop me open, and scoop me out!

Apple Tree Engineering

Provide students with a cardboard toilet paper roll (for younger children, provide one roll, for older children, you may cut one into segments and require them to stack) and green pipe cleaners.

Instruct students to construct an apple tree with the supplies. Next, hand out red, yellow, green or pink pom poms, which will serve as apples. Have students figure out how many "apples" their trees can hold.

Pumpkin Pie in a Bag

Directions:

1. Place one zip-top gallon freezer bag inside another.
2. Place the following ingredients in the inner freezer bag (Or you may choose to have the children measure and add):
   - 2 ⅔ cups cold milk
   - 2 4-ounce packages instant vanilla pudding
   - 15-ounce can pure pumpkin
   - 1 teaspoon cinnamon
   - ½ teaspoon ground ginger
3. Seal both bags, and have students take turns squeezing the bags to mix the ingredients.
4. Put a thin layer of graham cracker crumbs at the bottom of small plastic cups—one for each child.
5. Cut one corner off the inner freezer bag, and squeeze the contents evenly into the cups. Enjoy!

BOOK CORNER

Apples, Jacqueline Farmer, Charlesbridge, ISBN: 9781570916953

Apple Countdown, Joan Holub, Albert Whitman & Company, ISBN: 9780807503980

Apple Fractions, Jerry Pallotta, Scholastic Inc., ISBN: 9780439389013

Golden Delicious: A Cinderella Apple Story, Anna Egan Smucker, Albert Whitman & Company, ISBN: 9780807529874

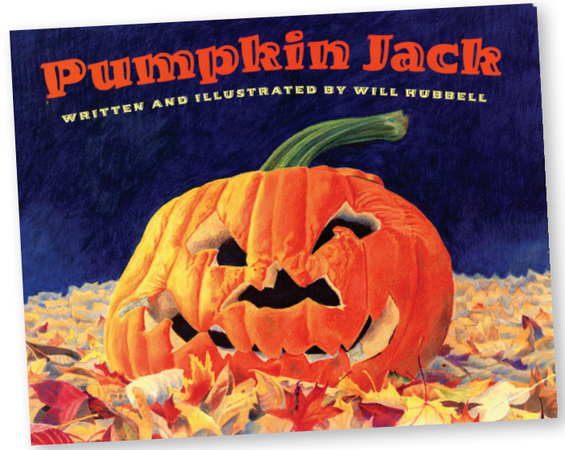
Pick a Circle, Gather Squares: A Fall Harvest of Shapes, Felicia Sanzari Chernesky, Albert Whitman & Company, ISBN: 9780807565384

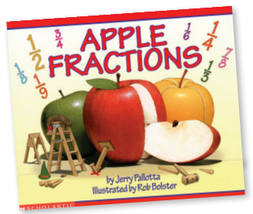
Pick a Perfect Pumpkin, Robin Koontz, Picture Window Books, ISBN: 9781404863910

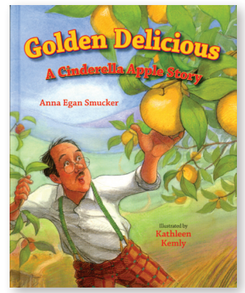
Pumpkin Circle, George Levenson, Tricycle Press, ISBN: 9781582460789

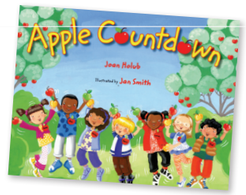
Pumpkin Jack, Will Hubbell, Albert Whitman & Company, ISBN: 9780807566664

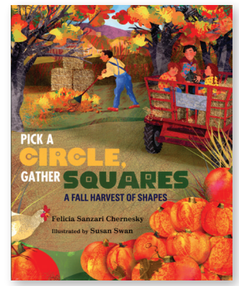
Seed, Sprout, Pumpkin, Pie, Jill Esbaum, National Geographic Society, ISBN: 9781426305825

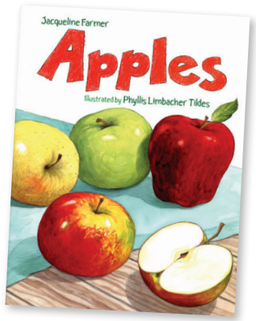












PROGRAM HIGHLIGHTS

Check out Agriculture in the Classroom's grants

Virginia AITC encourages teachers to integrate agriculture into their daily curriculum. To celebrate and support teachers who do so, AITC offers its Teacher of the Year Award, as well as Garden, Agriculture Experience and STEM grants.

In 2018, Virginia AITC awarded more than $30,000 in grants.

For more information on these programs, including deadlines and applications, visit **AgInTheClass.org**.

WHAT'S GROWING ON IN VIRGINIA
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Apples and pumpkins are *What's Growing On in Virginia* right now!

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For additional information and activities, visit our website at **AgInTheClass.org** or call **804-290-1143**