

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 elementary and middle school teachers, published by Agriculture in the Classroom

**Program Coordinators:** Tammy Maxey, Lynn Black

**Editorial Staff:** Kathy Dixon, Pam Wiley

**Graphic Designers:** Maria La Lima, Bill Altice

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# What's Growing On In Virginia?

AGRICULTURE IN THE CLASSROOM

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## People pick pumpkins for pies, pleasure and paring into jack-o'-lanterns

**E**ach year, Virginians compete in the State Fair of Virginia's giant pumpkin contest. But blue ribbons aside, why do farmers in the commonwealth grow pumpkins?

Pumpkins are an important specialty crop in Virginia and, with the right soil conditions, are fairly easy to grow.

More than 2,000 acres are grown on 244 farms annually. The scale of production ranges from as little as an acre to several hundred acres per grower.

Pumpkins are marketed as an ornamental crop, and the primary market window is usually late September through Halloween. Most people buy pumpkins to carve them into jack-o'-lanterns.

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

Examples of popular pumpkin varieties include Howden, Magic Lantern, Autumn Gold, Prize Winner and Baby Bear. But there are many more cultivars from which to choose. Pumpkins usually are classified according to size by weight, from the smallest (miniatures) to the largest (mammoth). Color, shape, stem size and seed characteristics are other considerations in classifying pumpkins.

Historically, pumpkins have been grown on conventionally tilled fields. This system allows for easy planting and cultivation with machinery and promotes good crop growth. There are some disadvantages to this method, however, including soil erosion on slopes; high rates of weed germination; soil splashing on pumpkins; and potentially muddy conditions at harvest.

Research at Virginia Tech has shown that a no-till production system is preferable for slopes and rolling terrain and results in significantly cleaner pumpkins at harvest. No-till crop production eliminates plowing of the ground, which increases the amount of water and nutrients in the soil and helps prevent erosion. Many growers have adopted this system.



A third production option is to grow the crop in a plasticulture system, which utilizes plastic mulch strips over raised beds in conjunction with drip irrigation. Pumpkins usually are not grown on plastic because of their relatively low crop value and the cost associated with plasticulture. However, if a farmer is already growing a summer crop, such as cabbage or strawberries, on plastic, it could be economical.

Many Virginia farms offer pick-your-own pumpkin patches, and some offer a complete agritourism package: a day on the farm where you can pick a pumpkin, take a hayride, navigate through a corn maze, pet farm animals, ride a pony or launch a pumpkin from a cannon or catapult.

# Pumpkin Nutrition

The bright orange color of pumpkins indicates that they are loaded with the important antioxidant beta-carotene—one of the plant carotenoids the body converts to vitamin A. Current research indicates that 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.

## Bonus Activities

### Make Pumpkin Pudding Pie

#### Directions:

1. Place one zip-top gallon freezer bag within another.
2. Add the following ingredients (You also may choose to have the children measure and add) into the inner freezer bag:
  - 2 2/3 cups cold milk
  - 2 4-ounce packages instant vanilla pudding
  - 1 15-ounce can pure pumpkin
  - 1 teaspoon cinnamon
  - 1/2 teaspoon ground ginger
3. Seal both bags, and have students take turns squeezing them 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 of the inner freezer bag, and squeeze the contents evenly into the cups.
6. Enjoy!



### Make Your Own Corn Maze

Many pumpkin patches also offer corn mazes in the fall. Have your students create their own on construction paper by gluing scraps or brown construction paper or small pieces of straw in a pattern.

### Pumpkin Estimation

Have students estimate a pumpkin's circumference (distance around its middle) by cutting a piece of yarn the length of their estimation. Then take turns putting the strings around the pumpkin to see whose guess came closest. Next, have students estimate the pumpkin's weight and the number of seeds inside.

1 cup of cooked, boiled,  
drained pumpkin without salt equals:

Calories: 49	Zinc: 1 mg
Protein: 2 grams	Selenium: .50 mg
Carbohydrates: 12 grams	Vitamin C: 12 mg
Dietary fiber: 3 grams	Niacin: 1 mg
Calcium: 37 mg	Folate: 21 mcg
Iron: 1.4 mg	Vitamin A: 2650 IU
Magnesium: 22 mg	Vitamin E: 3 mg
Potassium: 564 mg	

# Giant pumpkin growers compete at State Fair championship

Every year at the State Fair of Virginia, pumpkins are front and center as giant pumpkin growers compete for the blue ribbon. Last year Davis Wells of Mechanicsville in Hanover County won the contest with a fruit weighing in at 452 pounds. Wells said this is the second year he's entered a pumpkin in the competition. "It's amazing, because it starts from a little seed that you put in the ground. You don't throw it in the ground, you place it there and feed it and take care of it. "You really have to take care of the pumpkin," Wells said. "July was really dry, and then in September we had a lot of rain. I lost a 650-pound pumpkin during all the rain in September."



Seventeen-month-old Alex Stanley is delighted with the 2012 State Fair of Virginia giant pumpkin winner.

## LESSON PLAN >> PRESCHOOL

# Paper Bag Pumpkin Patch

## 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.

Many Virginia pumpkin farmers sell their pumpkins directly to the public in the fall and allow people to come pick their own pumpkins. Often, they also offer hayrides and corn mazes. To find a pick-your-own pumpkin farm near you, visit [viriniagrown.com](http://viriniagrown.com).

## Procedure

1. Begin by reading a book about pumpkins (See suggestions in the Literary Corner on page 7). Point out how and where pumpkins are grown.
2. Have students color or paint the top 2 to 3 inches of a paper lunch bag green or brown to represent the stem.
3. Color or paint the remainder of the bag orange.
4. Stuff the bag with scrap paper or old newspapers.
5. Twist the top of the bag closed.
6. Wrap a green pipe cleaner around the stem to secure it.
7. Cut out leaves from green construction paper, and hole punch each.
8. Thread the leaves onto the pipe cleaner.
9. Curl the remainder of the pipe cleaner using your finger or a pencil to finish the vine.
10. "Plant" a pumpkin patch by placing completed pumpkins on the floor in rows.
11. Have students line up, and call out directions for them, such as "Skip between the pumpkin rows" or "Count while hopping to each pumpkin."

## Extension

Bring in roasted pumpkin seeds for students to taste, or roast them together as a class.

## Virginia Pumpkin Facts

- In 2007, 252 farms planted pumpkins.
- Growers harvested 2,075 acres of pumpkins that year.
- The top pumpkin-producing locality in Virginia is **Carroll County**, with 518 acres of pumpkins planted in 2007.



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LESSON PLAN >> ELEMENTARY SCHOOL

# Pumpkin Patch Math

### Background Knowledge

Pumpkins are an important specialty crop for Virginia, with more than 2,000 acres of pumpkins and gourds grown annually. Most Virginia pumpkins are grown for ornamental use during the fall and especially around Halloween. Virginia farmers produce approximately 5.3 million large pumpkins each year!

In order to be ready for a fall harvest, farmers typically plant their pumpkin crops in early summer, around mid-June to July. Pumpkins like the warm summer soil and require plenty of water. They also need lots of space for their vines and help from bees to pollinate their blossoms.

### Procedure

1. Have students work individually or in pairs.
2. Distribute a copy of the hundreds chart to each student or pair of students along with a handful of the candy corn and pumpkins.
3. Tell students they will be planting corn and pumpkins on their charts.
4. Call out clues, and have students place the candy on the correct numbers (See sample clues below).
5. Review the concepts presented in the clues. Ask volunteers to give you the number or numbers that answer each clue, to check for understanding.

### Sample Clues

#### Patterns

- Alternate corn with pumpkins on a few numbers, and then ask what will come next in the pattern.
- Greater than/less than
- Pumpkins on number that is 6 less than 40
- Corn on number that is 10 greater than 34

#### Geometry

- Place candy on numbers to create angles, ray, line, line segment, square, rectangle, trapezoid, parallelogram, etc.

#### Place value

- Corn on number with a 7 in the tens place
- Pumpkin on number with a 3 in the ones place
- Corn on number with an 8 in the ones place and 3 in the tens place

#### Computation

- Pumpkin on the number that is the sum of 12 and 76
- Pumpkin on number that is the difference between 99 and 57
- Corn on number that is the product of 2 and 10

- **SOL:**
  - Number and number sense
  - Computation and estimation
  - Geometry
  - Patterns, functions and algebra
- **Objective:**
  - to count numbers to 100; identify 5s and 10s; identify numbers greater or less than; and answer basic addition and subtraction questions.
- **Materials:**
  - Copy of a hundreds chart for each student or pair of students
  - Candy corn and candy pumpkins

Download the full lesson at  
[AgInTheClass.org](http://AgInTheClass.org)



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# Pumpkin Chart Math –

Use the chart to answer the following questions.

- 1. List the following pumpkins in order of size, going from smallest to largest.  
Cannon Ball, Munchkin, Prizewinner
- 2. Myra grew 3, 15 pound Magic Lantern pumpkins and 4, 4 pound Baby Bear pumpkins. How many total pounds of pumpkins did Myra grow? Max grew a Gold Medal pumpkin, who grew the most pounds of pumpkins?
- 3. Lindy is making pumpkin pies for all of her friends. She needs 10 pounds of pumpkin, approximately how many Mystic Plus pumpkins will she need?

SIZE	TYPE
Giant (>50 lbs)	Big Max; Dills Atlantic Giant; Prizewinner
Extra Large (30-50 lbs)	Howden Biggie; Gold Medal (at wider spacing, see below)
Large (18-30 lbs)	Aladdin (PM1); Gladiator (PM) Gold Gem; Gold Medal (at closer spacing); Merlin (PM); Super Herc (PM)
Medium (12-18 lbs)	Magic Lantern (PM); Magician (PM, ZYMV2); Sorcerer; Mystic Plus; Howdy Doody
“Pie” (4-8 lbs)	Cannon Ball (PM); Mystic Plus (PM); Hybrid Pam
Small (1-4 lbs)	Iron Man (PM, hardsides); Lil’ Ironsides (hard-shell); Baby Bear; Baby Pam; Trickster; Touch of Autumn
Miniature (<1 lb)	Apprentice (PM, hard-shell); Bumpkin; Little October; Jack-Be-Little; Wee-Be-Little; Munchkin
White (10-15 lbs)	Casper; Lumina
White (miniature <1 lb)	Baby Boo



Magic Lantern



Casper



Howden Biggie



Baby Bear



Cannon Ball



Jack-Be-Little

LITERACY CORNER

## Books emphasize farm-grown fruits and vegetables

Did you know you can now search AITC’s online booklist by subject? Visit us online at [AgInTheClass.org/Teachers/Literacy](http://AgInTheClass.org/Teachers/Literacy), and find the perfect book to complement your lessons.

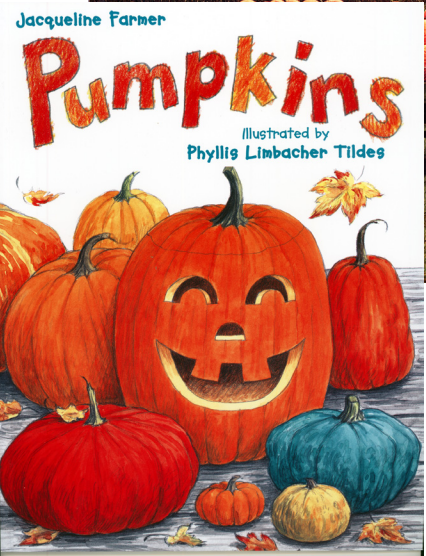
*Pick a Perfect Pumpkin*, Robin Koontz, Picture Window Books, ISBN: 1404863915

*Pumpkin Circle: The Story of a Garden*, George Levenson, Tricycle Press, ISBN: 1582460787

*Pumpkin Jack*, Will Hubbell, Albert Whitman & Company, ISBN: 0807566667

*Pumpkins*, Jacqueline Farmer, Charlesbridge Publishing, ISBN: 1570915581

*Pumpkins*, Ken Robbins, Roaring Brook Press, ISBN: B004AP9TOY



## AITC Program Highlights

### New curriculum available online

Visit [AgInTheClass.org](http://AgInTheClass.org) to download AITC's latest curriculum unit, “Jump Start Your School Garden.” This resource was created to help educators integrate the use of a garden—whether it is outdoors or an indoor container garden—into their science and mathematics curriculum. Additionally, tips and suggestions have been added for schools that plan to begin a garden or enhance an existing one.

### AITC wants to hear from you

Have you used AITC lessons in your classroom? Do you have a great resource you would like to share? AITC wants to hear from you! Visit our Facebook page, Virginia Agriculture in the Classroom, to share. And be sure to “like” us so you’ll be the first to know about our newest resources.