

# What's Growing On?

2024-25



AGRICULTURE IN THE CLASSROOM

[virginia.agclassroom.org](http://virginia.agclassroom.org)

## Explore Virginia Agriculture

**C**ome along for a tour of Virginia's countless commodities!

The road to Virginia agriculture is vast. With almost 39,000 farms and 7.3 million acres of farmland across the state, you'll find something growing at every stop along your journey—like pastures full of grazing cattle, treasure troves of tomatoes,

fields of corn and waterways teeming with oysters.

With Virginia's unique geography, farmers can produce a wide variety of commodities. From the mountains to the shore, the state's varying topography, soil and climate make up one of the most diverse agricultural landscapes in the country.

Many Virginia commodities

and products rank in the top 10 nationally, including apples, broilers, peanuts, pumpkins, seafood and turkey.

Discover the world of endless agriculture as you travel from west to east with your Virginia agriculture map. Take in the sights along the way, and thank the farmers who grow the food, fuel and fiber we use every day!





# Beef

**Y**our journey begins in Southwest Virginia, where you'll find stunning sights of the Appalachian Mountains and grazing cattle dotting the hillsides!

Grown in every county in Virginia, beef cattle and calves are the state's second largest agricultural commodity—with almost 1.3 million animals on 17,402 farms in 2022. The most common breeds in Virginia are Hereford, Angus and Simmental.

Request a copy of the *Kid Chef: Beef* recipe book!



Cattle are ruminants, which are animals with stomach compartments that aid in digestion. This unique digestive system allows them to eat feed that would otherwise go unused. They are able to eat grass and other forages that are inedible to humans and other animals, and then their meat provides people with high-quality, protein-rich food.







**Y**our scenic tour continues through the Shenandoah Valley, where you'll spot an abundance of chickens and turkeys.

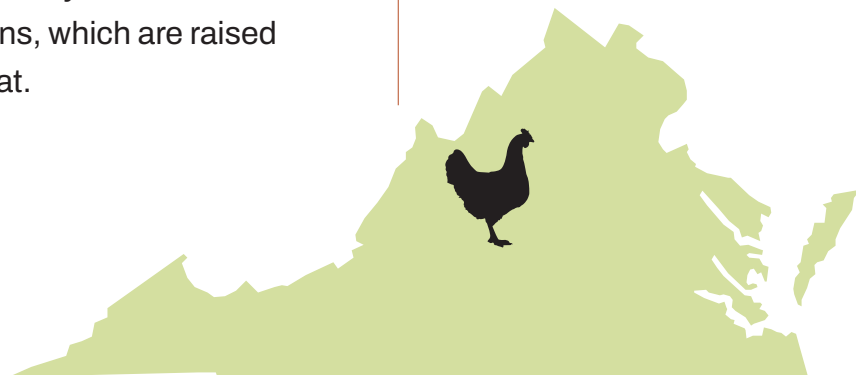
Rockingham and Augusta counties lead the way in Virginia poultry production—generating over half of the state's poultry sales in 2022. Poultry includes eggs, turkeys and broiler chickens, which are raised for meat.

### Did you know?

An egg's shell color is determined by the hen's breed and not by quality, nutrients, flavor or cooking characteristics. The yolk's color depends on the hen's diet. If she eats yellow corn or alfalfa meal, the yolk is medium yellow. If she eats barley or wheat, it's a lighter yellow. If she eats white cornmeal, it's almost colorless.

### TRY THIS! Engineering for Eggs

Try this new twist on the egg drop experiment by challenging students to use various materials like cotton balls, artificial feathers, pipe cleaners and construction paper to build a hen's nest. Nests should be constructed on top of empty aluminum cans. Place a raw egg in a sandwich bag and drop it from a uniform distance onto each group's nest. See whose nest was best engineered to protect the egg!





# Tomatoes



**Y**ou may catch a bit of tomato fever while traversing Central and Eastern Virginia, where the unique sandy soil produces tomatoes that taste like no other.

While grown in greenhouses, gardens and fields across the state, tomatoes are considered a delicacy here—especially in Hanover County, where around 30,000 people flock to the Hanover Tomato Festival every July.

## Fruit or Vegetable?

In scientific terms, the fruit is the part of the plant that holds seeds. Many of the foods we commonly call vegetables are actually fruits, like squash, eggplant, cucumber and peppers.

While the tomato can botanically

be classified as a fruit, it's officially categorized as a vegetable in the U.S.

When tariffs were placed on vegetables in the late 19<sup>th</sup> century, tomato importers argued tomatoes shouldn't be taxed. The matter was resolved in the 1893 Nix vs. Hedden case, when the Supreme Court declared the tomato a vegetable by use—since it's generally served with dinner and not dessert.







# Pizza Garden Fractions

## Standards of Learning

Math 1.3, 2.3, 3.3

## Objective

*Students will:*

- Identify the parts of a set that represent fractions
- Compare fractions
- Name and write fractions represented by a model

## Materials

- White paper plates
- Rulers
- Pencils, crayons and/or markers
- Images of wheat, tomatoes, herbs and other plants that can be found on a pizza

## Background Knowledge

Review basic ingredients used to make a pizza: Dough (made from flour, which is made from wheat seeds), tomato sauce (tomatoes), herbs (basil, oregano and parsley leaves) and cheese (milk from cows). Other ingredients may

include peppers (sweet or hot), onions, mushrooms, spinach, pepperoni and sausage. Discuss which ingredients are grown in a garden. Make a list sorting the plant ingredients from the others.

## Procedure

1. Tell students they are going to be Pizza Garden Designers. Discuss which pizza ingredients come from plants, and review what plants need to grow.
2. Give each student a plate.
3. Ask them to fold the plate in half, and then open it up.
4. Have them lay a ruler along the fold line, and mark it with a pencil.
5. Ask students to fold the plate in half in the opposite direction, and open it up.
6. Repeat step 4. The plate is now divided into fourths and ready to be designed as a pizza garden.

7. Have the students draw or paste a picture of **wheat** in one quarter of the plate.
8. Then have the students draw or paste a picture of **tomatoes** in one quarter of the plate.
9. Next have students draw or paste a picture of **herbs** in one quarter of the plate.
10. Finally, have them draw or paste a picture of another plant ingredient in the last quarter section.
11. Label each ingredient with the plant name and the proper fraction.
12. Older students can fold plates into eighths or measure and draw lines for thirds and sixths. Additional ingredients may be added for each fraction.



# Explore Virginia Agriculture

Agriculture is  
Virginia's **largest**  
private industry.



About **97%** of Virginia farms  
are owned and operated by  
individuals or families.

A dairy cow produces about  
**8 gallons of milk a day**.  
Check out this robotic dairy.



Meet a large animal  
**veterinarian**, and  
learn how she takes  
care of cattle.



**Virginia's top  
commodities**  
include broilers,  
beef cattle/calves,  
turkeys, dairy  
and soybeans.

Virginia has almost **1,000**  
**hog farms**. Discover  
more about pork.



On average, one U.S. farm  
**feeds 166 people** annually.  
Discover the many ways your life  
is impacted by agriculture daily!



Cattle



Pumpkins



Sheep



Eggs



Christmas Trees



Dairy



Hay



Turkeys



Apples



Equine



Grapes



Corn



Wheat



Broiler Chickens



Tomatoes



Soybeans



Seafood



Potatoes



Hogs



Nursery Products



Peanuts



Cotton



Lumber

Thanks to our sponsors!



**Soybeans and corn** are  
two of Virginia's **top crops**.  
Learn more by visiting  
these Virginia farms.



Floriculture  
routinely ranks in  
the **top 10** of  
Virginia commodities.  
Tour this Orange  
County nursery.



**Peanuts** are **legumes**,  
not nuts. Learn more  
about this tasty crop.



Did you know American  
**paper money is 75% cotton**? Visit a Virginia  
cotton farm to learn more.



# Seed Buddy



## Standards of Learning

Science: K.7, 1.4, 2.4

## Objective

*Students will:*

- Investigate the germination of seeds
- Investigate plant needs

## Materials

- Seeds, any type will work
- Small plastic bags
- Cotton balls
- Pipe cleaners
- Hole punch
- Water

## Background Knowledge

A seed is the start of a new plant. Seeds are covered in a coating that keeps the tiny leaves and roots safe from harm. A seed contains food for the new plant to use until it grows big enough to reach sunlight and the plant can make its own food. A seed's germination is dependent on moisture, temperature, and light. Many of the foods we eat come from plants, and most of these plants start out as seeds.

To germinate or sprout, seeds need warmth, moisture and air.

Seeds remain dormant and will not germinate until the proper conditions are present. Seeds vary greatly in germination rate, the amount of time needed for plant maturity, and growing conditions. Some seeds like radishes only need 4-6 weeks to grow, while corn and soybeans require several months.

## Procedure

1. Define the term germination, and discuss what a seed needs to germinate.
2. Provide each student with a small plastic bag with a hole punched at the top, above the zipper. Instruct students to blow a puff of air into the bag, as seeds need air.
3. Wet a cotton ball to give the seed moisture.
4. Place the wet cotton ball inside the bag.
5. Place two seeds on top of the dampened cotton ball.
6. Zip the bag shut. Place a pipe cleaner through the punched hole. Students may wear their seed buddies to keep them safe and warm. Alternatively, the seed buddies may be

hung in a window.

7. The seed should soon swell from moisture and germinate in about 3-5 days.
8. Over the next 3-5 days, make observations and record in a science journal.







## Corn and Soybeans

**A**s you continue east, you'll find two of Virginia's top crops growing in abundance.

Corn and soybeans thrive in Central Virginia. Essex, Caroline, Hanover and King and Queen counties harvested 15% of the state's corn for grain in 2022. Essex and Hanover counties also harvested the most soybeans.

Soybean and corn planting rotates from year to year to maintain good soil health. Soybeans are legumes, which return nitrogen to the soil. As corn uses lots of nitrogen from the soil, soybeans usually are planted next. A grass crop is often included in the rotation too. Wheat and other small grains like barley or oats serve as cover crops to reduce erosion and retain soil moisture during the winter.



Corn and soybeans can be found in a multitude of products you use every day, including cooking oil, candy, salad dressing, animal feeds, biodiesel, plastics, cosmetics, dyes, crayons, lotions and much more!





# Cotton & Peanuts

**Y**our journey continues south into cotton and peanut paradise!

Different plants require different growing conditions. Cotton and peanuts thrive in the warmer climate and sandy soil of Virginia's Southeast.

Virginia peanuts consistently rank in the top 10 nationally, with 198 farms harvesting over 117 million pounds of peanuts in 2022. Cotton is also among the state's most valuable crops, with 254 farms harvesting almost 197,000 bales.

## Peanuts are not nuts!

They are legumes, which are dry fruits contained within a pod. Other legumes include beans and peas. Peanut plants flower above the ground while fruit flowers below. To harvest peanuts, they are dug up, shaken and laid back on the ground to dry for 2-3 days.



Scan here to  
request free  
cotton bolls for  
your class!





# Aquaculture

KATHY DIXON

Last year, Agriculture in the Classroom took teachers on a traveling workshop to spots along Virginia's Eastern Shore, including the Virginia Institute of Marine Science, to learn more about the science of aquaculture.



Your tour concludes on Virginia's Eastern Shore, where you'll see sandy beaches and waters flourishing with some of our favorite seafoods!

Virginia is the top oyster producer on the East Coast. Not only do they contribute \$40 million annually to the state's economy, but they also help keep the state's waterways healthy. One oyster can filter up to 50 gallons of water a day!







## What's Growing On?

Virginia Foundation for Agriculture in the Classroom

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### About the Newsletter

*What's Growing On?* is an annual publication for Virginia educators and those who want to connect children with agriculture through education.

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