

What's Growing On?

2023



AGRICULTURE IN THE CLASSROOM

virginia.agclassroom.org

Who Grew My Lunch?

Just like you, your lunch foods have stories too!

No matter what's for lunch today, all our favorite lunch foods started on the farm. While some travel great distances to end up in your lunchbox, others may have come from a farm near you—especially with over 41,000 farms in Virginia and one of the nation's most diverse agriculture industries.

Items like apples, yogurt, potato chips and bread were brought to you by farmers in a variety of ways—picked from an apple tree, milked from a dairy cow, or harvested from a tuber or wheat grass.

Open your lunchbox and discover the exciting stories behind your favorite foods. Learn how hardworking farmers produce the products that help nourish your bones, muscles and minds every day.



Wheat

If you packed a sandwich today, your bread's story began on a wheat farm. Wheat is a grain that is ground into flour to make things like bread, pasta, cereal and crackers.

In Virginia, wheat is primarily grown in the Coastal Plain and is mainly raised for grain. It also is grown in the Piedmont and Valley for grain and livestock feed.



Try this!

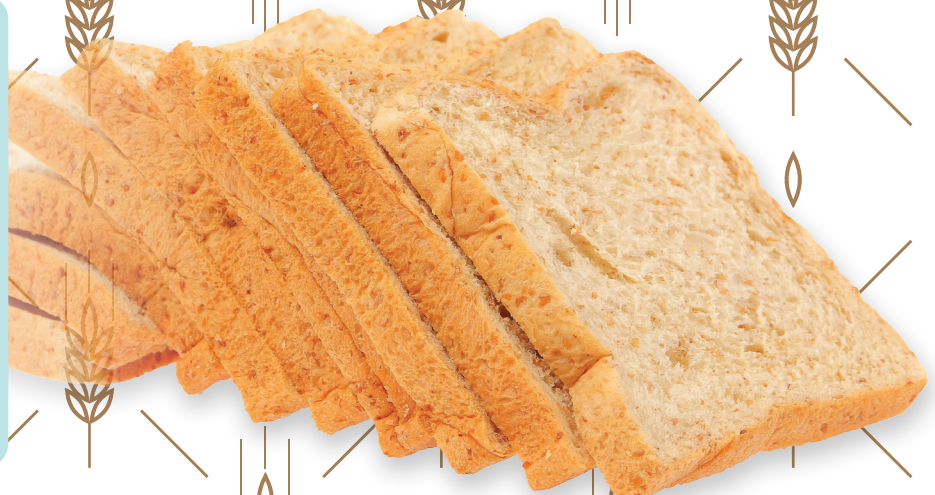


Wheat Grinding

Teach your students how wheat is transformed into flour to make various foods. To create your own flour, place wheat seeds in a pepper grinder and grind over a bowl. Alternatively, use a mortar and pestle. Give each child a turn

grinding wheat, and discuss how it is processed today compared to hundreds of years ago. Ask students if they have enough flour for one loaf of bread, which needs about four cups.

Bread has been one of humans' principal foods since the earliest of times. Archaeologists uncovered ancient Egyptian tombs containing loaves and rolls baked more than 5,000 years ago. Even earlier, around 10,000 B.C., humans likely were eating a flat bread baked with flour and water.



Turkey

Perhaps your sandwich contains turkey lunch meat—an excellent source of lean protein.

Broad Breasted White turkeys, the breed most common in grocery stores, are often raised indoors for protection against airborne bacteria, viruses and

diseases carried by migratory birds. Indoors, the flock also is protected from predators and the birds live in a temperature-controlled environment. They are fed a diet of corn and soybean meal mixed with a supplement of vitamins and minerals.



Did you know?

In a letter to his daughter, Benjamin Franklin described the turkey as “a true original native of America.” While it wasn’t selected as our national symbol, he felt the turkey was a “respectable bird.”

In the 1950s, Rockingham County adopted the nickname, “Turkey Capital of the World.” Today, this region still leads the state in turkey production with around 112 turkey farms.

Apples

Does your lunchbox include apple slices, apple juice or apple sauce? If so, you're not alone—Americans eat more apples than any other fruit, with the average person consuming about 65 apples a year. There are over 7,500 apple varieties worldwide and 2,500 types grown in the U.S. The most common types grown in Virginia include Red Delicious, Granny Smith and Fuji. Virginia ranks fifth nationally in apple production, with many orchards in the Shenandoah Valley.



Did you know?

If planted from seed, it would take about 15 years for an apple tree to grow. Most are grown by grafting buds onto root stocks, the parts of the tree roots still attached to the trunk.



Try this!

Apple Tree Engineering

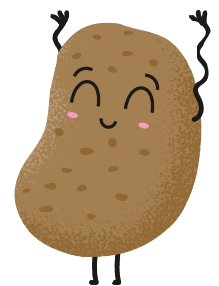
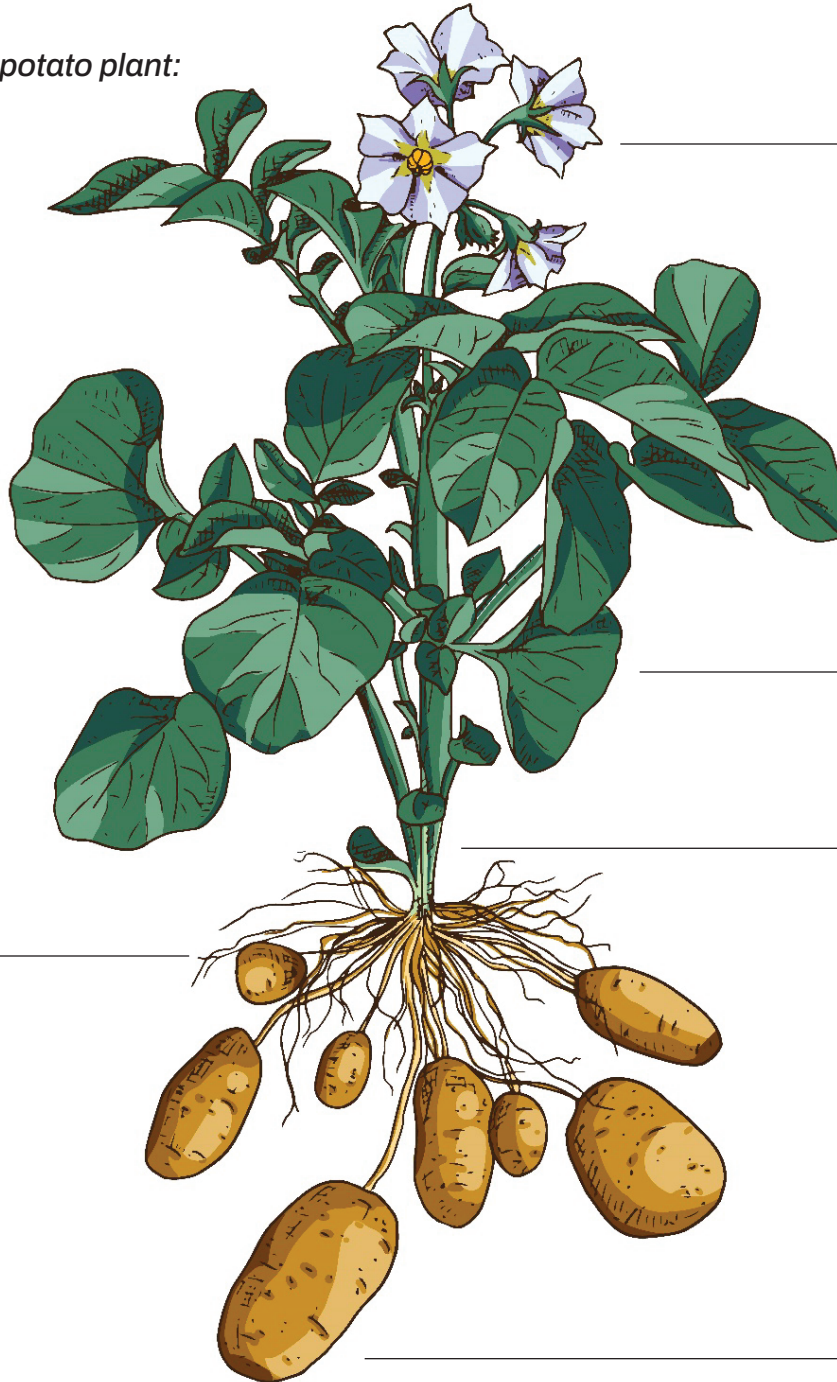
Provide students with green or brown pipe cleaners and a cardboard toilet paper roll. For younger children, provide one roll; for older children, cut one into segments and ask them to stack them. Tell students to construct an apple tree with the supplies. Next, hand out red, yellow, green or pink pompoms to serve as apples. Challenge students to figure out how many "apples" their trees can hold.

Potatoes

Potatoes were originally grown in the Andes Mountains in South America. Today, nine potato growers on Virginia's Eastern Shore produce about 90% of the state's spuds.

Label the parts of the potato plant:

- FLOWERS
- LEAVES
- STEM
- ROOTS
- TUBERS



Russet potatoes are the most commonly used potatoes in the U.S. and are used to make french fries. In 1995, potato plants were taken into space with the space shuttle Columbia marking the first time any food was ever grown in space.

Farm to Lunchbox

Z Z S A N D W I C H C E G G O
 V E R P O T A T O Z X D R M W
 S O F F A B F U N Z Q X A B I
 N K R Y L F A R M E R Q I C W
 S S U U W Q D K M Z Z I N A L
 L Y I Y A H L E M R E Q C M P
 M O T N P Q S Y V A D A I R Y
 U G K Y R I H O O Y H Y P R U
 Q U O L O G X K F N L L B A R
 L R E V T U O T W H E A T Q A
 A T D J E Z V Z Z A P P L E O
 O N M I I Z S R P U I P Q D P
 I G P M N J X N M I L K M Z M
 D R J V E G E T A B L E M W V
 M B J X F U P N T R K Q A V H

APPLE
 FRUIT
 POTATO
 TURKEY
 YOGURT

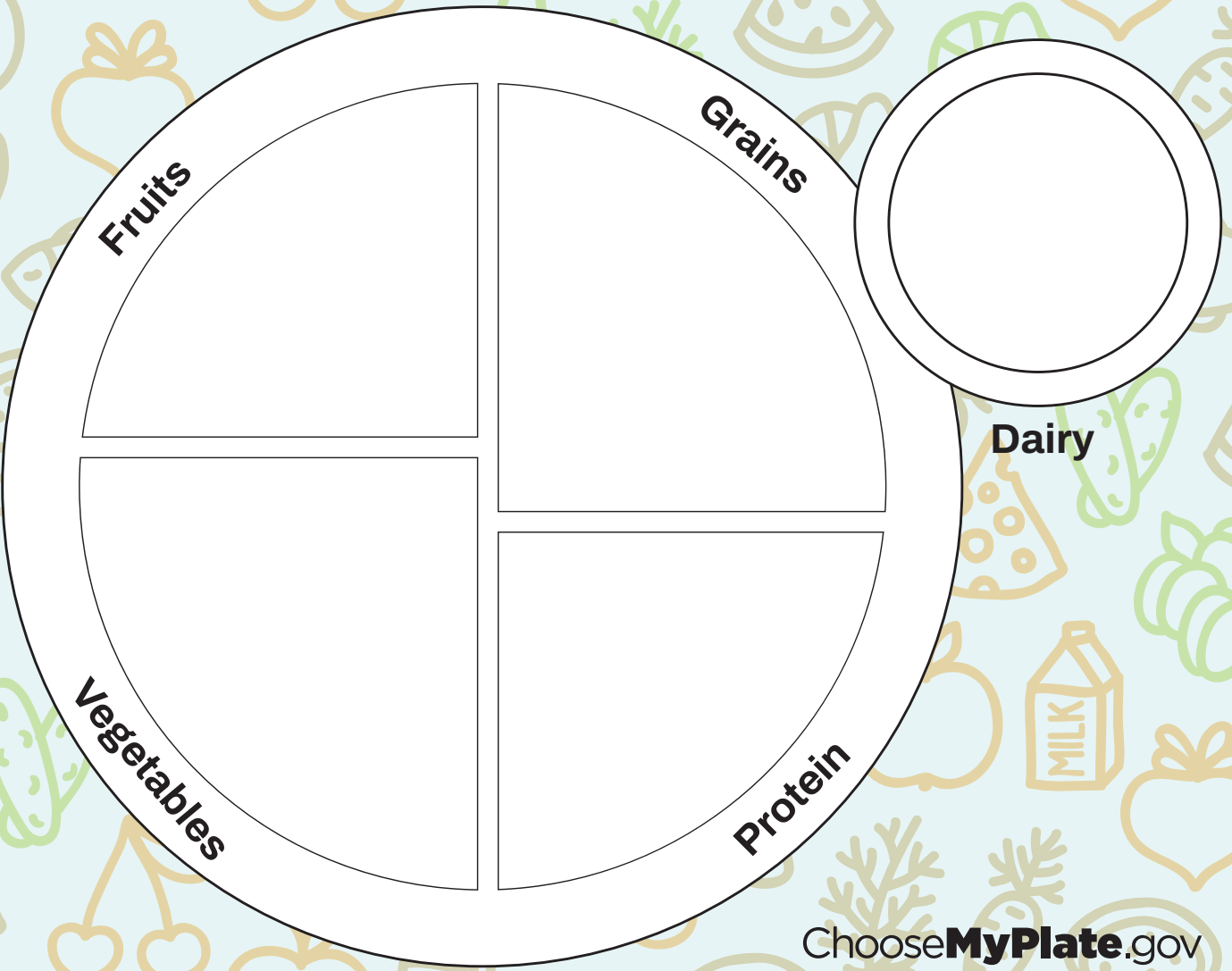
DAIRY
 GRAIN
 PROTEIN
 VEGETABLE

FARMER
 MILK
 SANDWICH
 WHEAT

Help get your food from farm to plate!

Take the correct path from farm product to meal item.





Choose **MyPlate**.gov

Farmers provide delicious and nutritious foods for your plate!

Fill your plate by drawing your favorite foods, from each food group, in the correct spots.



Graphing My Plate

STANDARDS OF LEARNING

Health K.1, 1.2, 2.2, 2.5, 3.1, 3.2, 4.1

OBJECTIVE

The student will be able to:
Understand the nutritional components of the My Plate food guide.

Draw a bar graph and develop conclusions regarding it.

MATERIALS

- My Plate poster(s)
- Food labels
- 1" square graph paper
- Crayons or markers

BACKGROUND KNOWLEDGE

My Plate is a nutritional guide published by the United States Department of Agriculture (USDA). It serves as a tool to encourage students to make healthy food choices. Eating a variety of foods including protein, grains dairy, fruits, and vegetables will ensure that your body has the nutrients it needs.

In this lesson students will be analyzing food labels that they have collected at home. These may include such things as the label off of a jar or bottle or a cut out ingredient list from a boxed or bagged product. Prior to the lesson challenge each student to bring in at least 5 labels representing foods that they may eat in a typical week. You may choose to allow them to make their own label for raw foods such as apples or carrots by drawing a picture and labeling the item on a piece of paper.

PROCEDURE

1. Divide students into groups of 3 or 4 to represent a "family."
2. Give each group a set of labels in no particular order.
3. Have each group sort their labels into the 6 food groups using the main ingredient in each item. Point out that by reading the ingredient list you can determine the top ingredient in the product as it

will be the one listed first.

You may choose to have a 7th food group" for miscellaneous items such as soft drinks and "junk food."

4. Using one-inch square graph paper, have students create a bar graph, showing the foods eaten by their "family". One square inch will equal one label for each category. Color the squares to coordinate with the colors of My Plate.
Orange = grain;
green = vegetable; red = fruit;
blue = dairy; purple = protein (meat/beans)
5. Students will write a summary about the graph and food consumed by their family group.
6. Have students cut their graphs apart in strips according to the food group and glue them onto a larger bar graph on the board.
7. Have students write a summary of the graph. Does the graph represent a balanced diet? Why or why not?

Dairy

Whether in the form of milk, yogurt or a cheese stick, there are many tasty dairy items that may be in your lunchbox. All of these are excellent sources of calcium for building strong bones and teeth.



Where does my milk come from?

Track where your milk comes from by visiting whereismymilkfrom.com and typing in the dairy code on your carton or container—often found near the expiration date. You also can use this online tool for other dairy products like ice cream, coffee creamer and cottage cheese.

How do robotics and dairy cows go together?

Scan the QR code for a virtual tour of Marshall Dairy Farm. Learn how this family farm uses the latest technology to care for their herd and give us nutritious milk. You'll get an inside peek at how milk goes from cow to cup and the special ways dairy farmers care for their cows.



Butter Lab

STANDARDS OF LEARNING

Science: K.1, 1.1, 2.1, 2.3, 3.1, 4.1, 5.1

OBJECTIVE

The student will:

Conduct an experiment to observe and record physical change Identify states of matter

MATERIALS

- Heavy whipping cream (room temperature)
- Measuring cup or teaspoon
- Marbles
- Small plastic cups with lids
- Timer
- Science notebook or recording sheet

BACKGROUND KNOWLEDGE

Milk fresh from the cow has both cream and milk mixed together. The cream is less dense than the milk, so the cream rises to the top where it can be skimmed off. The milk left behind after the cream is skimmed off is called skim or fat-free milk. Whole milk that you might buy in the grocery store is homogenized to keep the milk and cream mixed together.

Butter is a dairy product made when cream is churned to separate the buttermilk from the butterfat. Churning the cream forces the fat globules to slam into one another. If they hit each other with enough force, they will stick together, the fat collection becoming bigger and bigger with

each extra globule. After enough churning, the fat globules form a chunk of butter. What remains is a watery liquid with small butter grains floating in it. This is called “buttermilk” and is drained off and saved for other purposes. The butter is pressed and kneaded into a solid mass to remove any remaining pockets of buttermilk or water. Butter remains a solid when refrigerated, but softens to a spreadable consistency at room temperature, and melts to a thin liquid consistency at 32–35 °C.

PROCEDURE

Organize students into groups. Provide each group with 2 small cups with lids, one marble, measuring cup and timer.

Each group will begin by measuring 1 ounce (one fluid ounce equals 6 teaspoons) of cream into their jar.

After checking to see that the jars are sealed tightly, the groups will start their timers and begin shaking their jars. Group members may take turns shaking and you may want to play music to encourage their movement. While they are shaking remind students to be observing the properties of the contents of their jar. What does it sound and look like at the beginning, middle, and end?



The jar's contents will go through 3 stages – beginning as a liquid, then becoming a solid as the fat and milk solids stick together, lastly the solution will separate into a liquid and a solid, with a “rock” of butter surrounding by buttermilk.

They should stop their timers and record the time when they have solid butter at the bottom of the jar and buttermilk on top.

Next tell them you will be adding a marble to the next trial as an agitator. Have them form hypotheses on whether this will affect the time it takes for the cream to become butter. Repeat the steps above and record their observations and findings.

You may choose to provide crackers to taste their freshly made butter.



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