



SC Farm Bureau
Ag in the Classroom
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May 2023 Monthly Book
My Grandpa, My Tree, and Me
By Roxanne Troup
Illustrated by Kendra Binney
Grade Levels: K-8
Google Slides: [CLICK HERE](#) or scan

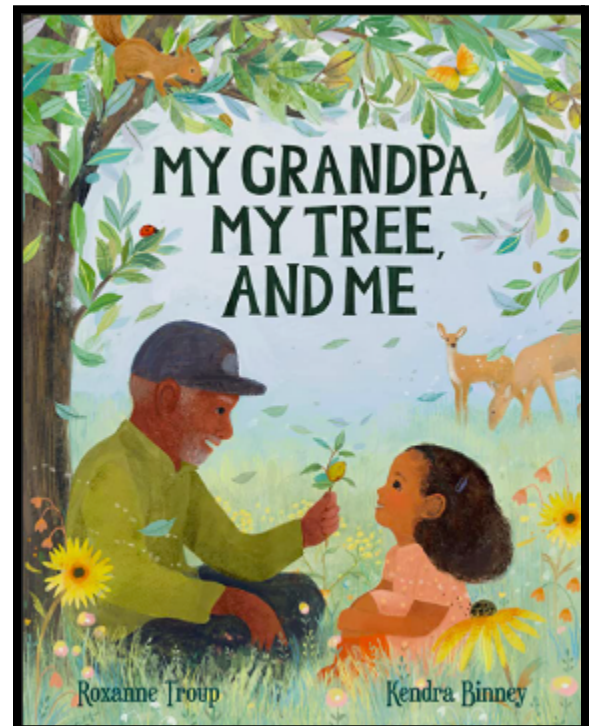


Book Summary:

- Throughout the orchard the young girl will watch as her grandpa cares for each tree, but takes special care and time with one tree in particular. This tree is special because it was planted when the young girl was born. This tree gets the most special care. In this book you will learn how the grandpa cares for the trees in his orchard throughout many seasons. They collect the pecan treasures and make a delicious dessert to share together.

Did you know? (Ag Facts)

- The pecan capital of the world is Albany, Georgia, which boasts more than 600,000 pecan trees.¹
- The name “pecan” is a Native American word that was used to describe nuts requiring a stone to crack.¹
- Pecan trees are native to North America and over 80% of the world’s pecan crop comes from the United States.¹
- About 78 pecans are used in the average pecan pie.¹
- Pecan trees can live to be over 200 years old.¹



Background Agricultural Connections:

- Wild pecans have been esteemed since colonial times, and homesteads and plantations had groves of the trees, but the nuts weren't grown commercially until the late 1800s. In the early 20th century, Boone Hall Plantation had the largest pecan grove in the country. Today, pecans are a multimillion-dollar crop in South Carolina.²
- Pecans are used extensively in Lowcountry cooking, especially in desserts such as cobblers and pies and candies such as pralines and pecan brittle. They also grace the top of the sweet potato casserole traditionally served at Thanksgiving.²
- The pecan is a drupe, a fruit with a single stone or pit (which we consider the "nut") surrounded by an outer husk. This husk forms in summer and first appears as a thick, green, leathery covering. In the fall, it hardens and turns brownish-black, eventually splitting apart to release a mature nut that falls to the ground between September and November.²
- The Orangeburg Pecan Company was founded in 1939 and is a family owned corporation in Orangeburg, S.C. and owned by Marion H. Felder. He operates one of the largest produce growing farms in South Carolina.³
 - At first the pecans were sold in-shell during the Fall Harvest season. In the fall of 1939 he began cracking and shelling pecans.³
 - <https://vimeo.com/108380685>³
- The Yon family owns a farm in Ridge Springs, South Carolina where they grow and harvest pecans. They also own a small business that specializes in pecans (gourmet pecan candy, and pecan pies, among other treats⁹). Their store is called The Nut House. Check them out: <https://nuthouseandcountrymarket.com/about-us/>
- Pecans are the only nut native to North America. Originally found growing along the Mississippi River Valley, they were an important part of Native American Diets. The word "pecan" comes from the French interpretation of an Algonquin word meaning "nut". Pecans are known for their buttery flavor and heart-healthy benefits, and their wood is also used to make furniture, cabinetry, and sporting goods.⁴
- Pecan trees can live over 100 years, making them an important agricultural crop. The commercial pecan industry wouldn't exist if not for the ingenious idea of a man called Antoine. Antoine was an enslaved gardener who developed a grafting technique that allowed growers to produce large, thin-shelled pecans on hardy wild stock. Thanks to Antoine's idea, modern pecan growers have developed over 1,000 different varieties of pecans and use them to produce more than 300 million pounds of pecan nuts every year.⁴
- It takes a magnificent tree to produce a great-tasting nut. Pecan trees usually range in height from 70 to 100 feet, but some trees grow as tall as 150 feet or higher. Native pecan trees—those over 150 years old—have trunks more than three feet in diameter.⁷
- Pecans come in a variety of sizes—mammoth, extra large, large, medium, small, and midget. They also come in several forms including whole pecans, pecan halves, pieces, granules, and meal.⁷
- Southern pecan pralines are a Charleston staple!
 - <https://chstoday.6amcity.com/southern-pecan-pralines>
 - Read about the origin history of the praline: <https://www.theatlantic.com/entertainment/archive/2020/01/the-history-behind-one-of-americas-most-beloved-desserts/604405/>

Book Discussion:

- Describe the process of harvesting pecans.
- Describe the relationship of the young girl and her grandpa.
- What is the theme of this book? Provide evidence to support your idea.

Agricultural Vocabulary:

- **Pecan Scab** - A fungus that attacks the leaf and husks of pecan trees, reducing their crop.⁴

- **Ladybird Beetles** - Commonly Called ladybugs, these little insects eat crop-damaging pests like aphids.⁴
- **Aphids** - Tiny bugs that suck sap (the food that plants make for themselves) from leaves and stems; too many aphids can kill a plant.⁴
- **Harvester** - A large machine used to harvest crops. There are different types of harvesters for different types of crops. Some are pulled behind a tractor; others are driven by a farmer.⁴
- **Hopper** - A large bucket-like container attached to a harvester that collects the crop as it is harvested.⁴
- **Fertilize** - add minerals to the soil so plants grow better⁵
- **Irrigate** - watering crops without rain (like with sprinklers)⁵
- **Cultivar** - a variety of plant created by breeding⁵
- **Dormant** - a plant that is alive but not growing (often happens in winter)⁵
- **Orchard** - a garden of fruit or nut trees⁵
- **Prune** - to cut a plant to increase its growth⁵
- **Fruiting** - the time of year when plants grow⁵
- **Growing season** - when a plant bears fruit⁵
- **mechanical tree shaker**: a device used to shake a fruit tree during harvest⁷
- **pecan**: a smooth pinkish-brown edible nut with an edible kernel that grows on trees in the southern United States and Central America⁷
- **pecan harvester**: a machine used to separate pecans from leaves, sticks, and other debris⁷
- **pecan sweeper**: a machine used to sweep pecans, leaves, and sticks into a windows⁷
- **graft**: a shoot or twig inserted into a slit on the trunk or stem of a living plant⁷
- **husk**: a dry outer covering of some fruit, seeds, or nuts⁷

Activities:

(ALL GRADES)

English Language Arts (ELA)

- **Thank A Farmer - Send a thank you note to a local farmer**⁵
 - Everything we eat is grown or produced by hard-working farmers and ranchers like the family in this book. Read more picture books about where our food comes from (see [Feeding Minds Press](#) or Who Made My Lunch? series from [Amicus](#)). Have your class write and mail thank you notes to a local farmer. Find farmers in your area through your state university extension office and/or your state's farm bureau. You can also send the notes to the [Ag Foundation](#), who will forward them on your behalf.
- **Pecan Pie Recipe Study/Collection**⁵
 - Recipes are great for teaching math! Copy a pecan pie recipe on the board. (One is provided below.) As a class, identify each number. Discuss/review the difference between whole numbers and fractions. Group the numbers by type. Then talk about the purpose of numbers in a recipe: They represent size measurements. Define measurement. Experiment with measuring cups and spoons to determine which numbers are largest, smallest, etc. Order each number by size on a number line.
 - Pecan Pie Recipe (by the numbers)
 - 1 pie crust
 - 3 large eggs, beaten
 - 1/2 cup light corn syrup
 - 1/2 cup brown sugar, packed
 - 1/2 cup granulated sugar
 - 1/4 cup unsalted butter, melted
 - 1 teaspoons vanilla extract
 - 1/2 teaspoon salt

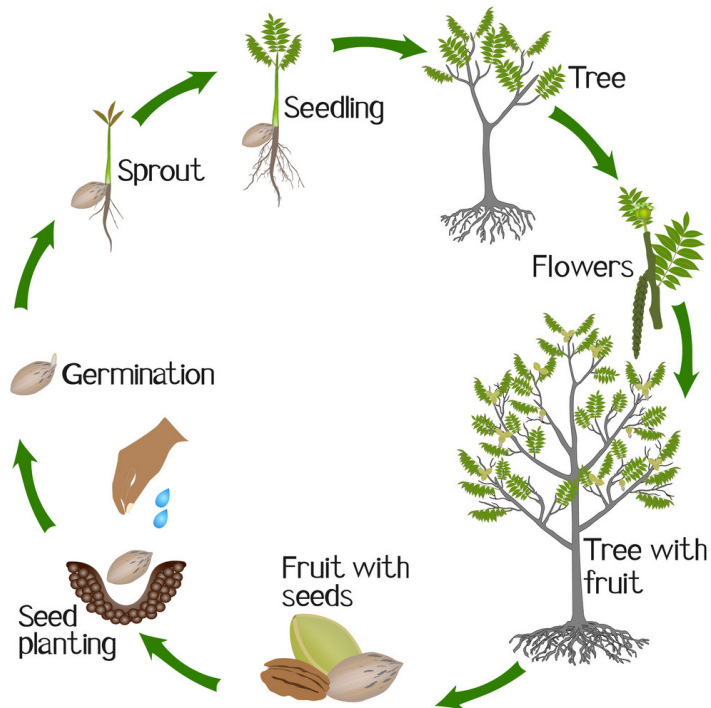
- 1/4 teaspoon cinnamon
 - 1 1/2 cups pecans, chopped
 - 1/3 cup pecan halves (for the top)
 - If no one is allergic, enjoy treats from your favorite pecan recipe. <https://pin.it/2XGwM5L>
- Collect pecan pie recipes and compare and contrast the differences in the recipes.
- Make a class pie recipe book
- **Holiday Graphing Activity⁵**
 - Pecan vs. Pumpkin
 - Different parts of the country serve different kinds of pies for the holidays. Ask students to tally and graph the class favorite using the questions below.
 - What type of pie does your family serve? Create a bar graph of responses. Choose the top three pies. Vote on which pie is your favorite. Create a pie graph of responses.
 - Compare
 - Review the linked graph with the class. Ask students to identify the information it represents. How does this compare with the class graphs? Do the class graphs support the information in the "national" graph? Do you think the "national" graph is accurate? Why or why not?
 - <https://pressroom.geappliances.com/news/america-s-favorite-holiday-pies>

Science

- **Seasonal Sort and Sequence⁵**
 - My Grandpa, My Tree, and Me highlights the life-and-harvest cycle of pecan trees.
 - Read the book with your class. Identify each season represented in the text.
 - Sort & Sequence
 - Use the attached worksheets to sort each pecan producing activity by season. Have students color the pecan tree to show how the tree changes throughout the year. Cut out each season, and staple them together to create a flipbook. [CLICK HERE](#) to access the materials needed for this activity.
- **Agricultural Technology Exploration⁵**
 - Healthy pecan trees can live and produce fruit for over 100 years, so growers work hard to protect trees from insects and disease. The best way to do that is to mimic the growing conditions found in the pecan's native habitat—hot weather with plenty of rain and deep, well-drained soil.
 - Review the elements plants need to survive.
 - Discuss how growers might care for pecans in other habitats. (In arid climates, pecans require regular irrigation and fertilizer. In humid climates disease is common, so growers spray for pecan scab.) Research technologies that help farmers do their jobs. How might new technology affect pecan farming?
 - <https://education.nationalgeographic.org/resource/impact-technology-agriculture>
 - <https://aqclassroom.org/matrix/lesson/691/>

- **Life Cycle Exploration⁶**

- Have students create a poster of the life cycle of a pecan! Use the slide to explain each part of the cycle.
- Website to explore the life cycle: https://www.ehow.com/info_7746440_life-cycle-pecan-tree.html
- <https://bustlingnest.com/pecan-tree-growth-stages/>



Math

- **Adding/Subtracting/Multiplying/Dividing**

- Use the slide with pecan images or provide pecans for your students to use for this activity.
- Have students build arrays and then write the corresponding multiplication equation or repeated addition.
- Adapt this activity to best suit the needs of your students

Social Studies and ELA

- **Pecan History Research Project⁵**

- Modern pecan cultivars wouldn't exist if not for the ingenious idea of a man called Antoine. Antoine was an enslaved gardener at Oak Alley plantation in Louisiana. There he developed a grafting technique that allowed growers to produce large, thin-shelled pecans on hardy wild stock. In 1876, his pecans were showcased at the Philadelphia Centennial Exhibition—and won! Just a few years later, growers from all over the country began using Antoine's grafting technique and the pecan industry was born.
- Many such inventions/discoveries can be credited to enslaved or formerly enslaved men and women.
- Research
 - Research Antoine or another enslaved/formerly enslaved inventor.
 - Ned, inventor of cotton scraper (slave master, Oscar Stewart)

- Benjamin Montgomery, inventor of steamboat propeller for shallow water
 - Henry Boyd, inventor of Boyd bedstead
 - Sarah Goode, inventor of folding cabinet bed and first Black woman issued a US patent
 - Ellen Eglin, inventor of clothes wringer for washing machines
- Present and share their story
 - Write a news article/advertisement
 - Find/write a picture book about the inventor and do a dramatic reading
 - Create a lapbook/digital flipbook
 - Work with a partner to "interview" the subject

Geography⁵

- **Map it out!**⁵
- Pecans are the only tree nut native to North America. Originally found growing along the Mississippi river valley, pecans were an important part of Native American diets. Today, the pecan tree is grown commercially throughout the southern United States and Mexico. But pecans are also grown in backyards as far north as Illinois! Pecans grow best in hot climates that get plenty of rain and have deep, well-drained soil.
- Map it out:
 - Print out a map of the [United States](#). Review each geographic area and color the southern states.
 - Label each state that grows pecans. Have students mark where they live with a large star, then answer the following questions:
- Discussion Questions
 - Do you live in a pecan-producing state?
 - What makes your area good/not good for growing pecans?

Music

- **Fall Playlist Creation**⁵
 - Highlight a few lyrical phrases in the story and talk about the feelings they evoke.
 - Have each student choose one phrase and its associated feeling from the book, and create a music playlist that evokes the same feeling.
 - Compile selections from each playlist to create a whole-class playlist for the fall season. Talk about how music and other senses can enliven our writing.
 - Listen to the playlist each time the class does a writing activity to remind them to write with their senses

Stem Art

- **Build a noisemaker**⁵
 - Protect your garden with a recycled noisemaker/wind chime.
 - Materials: You'll need a stick, craft wire and cutters, acrylic paint, and a variety of metal objects of different sizes (washers, canning lids and rings, craft bells, bottle caps, etc. If you use canning lids or bottle caps, you may also need a metal punch). Feel free to add other outdoor-friendly craft supplies like wood or plastic beads for more color.
 - Steps
 - Paint & seal your metal objects
 - Spray, sponge, and fleck as desired.
 - Seal with clear spray paint or ModPodge.

- Cut a length of wire 24" long
 - Bend it in the middle; wrap at least 3" of both ends of the wire to opposite ends of your stick to form a triangle.
- Lay your objects out
 - Alternate sizes, colors, and shapes.
 - Add beads/bells as desired.
- Cut various lengths of wire.
 - String objects.
 - Twist knots into the wire to keep objects from sliding.
- Wrap each wire onto your stick
 - Keep the wires close enough that the objects will clang in the wind.
- Hang on a tree branch and enjoy!

Pecan Exploration - Pecan Tree Grafting⁷

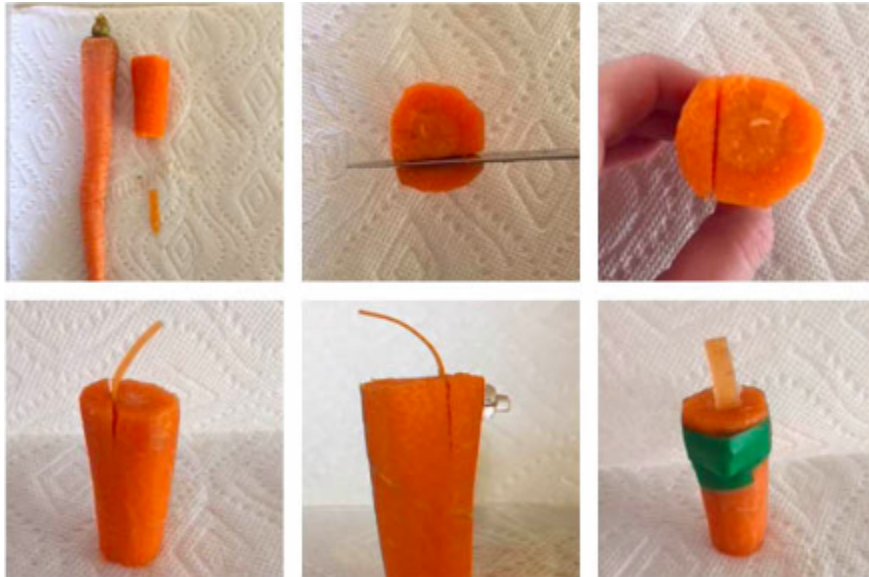
● Introduce Topic - Engagement

- Provide each student with a pecan (in shell), and ask them to open it.
- After they try, explain that "pecan" comes from the Algonquin word which means "a nut that requires a stone to crack." Pass out a rock to each student, and ask them to use the rocks to open the pecans.
- Using the [Think-Pair-Share](#) technique, ask the students the following questions:
 - Was it hard to crack the pecan shell without smashing it?
 - Are the tiny pecan pieces easy to eat?
 - How can the shell be cracked without breaking the nut?
- Distribute a copy of the [Pecan Value Math Activity](#) handout to each student. After completing the activity, ask the students, "Why do you think the pecan halves are more expensive?"

● Explore and Explain

- Show the students the [Grafting Pecans](#) video.
- Ask the students if they know what the farmer in the video was doing. Guide the students to understand that the farmer was grafting a pecan tree.
- Pass out a copy of the [From Orchard to Pecan Pie](#) reading sheet to each student. Have the students perform a [close reading](#) of the text.
- Ask the students why farmers graft pecan trees. (*With pecan trees, the varieties with high-quality nuts often have weak roots. Varieties with strong roots have poor-quality nuts. To get high-quality nuts on strong roots, pecan farmers insert a scion—a young shoot or twig of a plant—from a high-quality nut variety into a strong rootstock—a living plant—variety.*)
- Explain to the students that they are going to practice the process of grafting using carrots to represent the scion and rootstock.
- Give each student a 1" (2.54 cm) long carrot piece, a 2-3" (5.08-7.62 cm) long carrot stick, a plastic knife, a thumbtack, and the [Grafting a Pecan Tree](#) activity sheet.

- Following the directions on the [Grafting a Pecan Tree](#) PowerPoint Slides, have the students practice the process of grafting.
- Ask the students to draw and label their finished graft on the *Grafting a Pecan Tree* activity sheet.



Pecan Production⁷

1. Give each student a [United States Pecan Production Map](#). Allow them to visit the [American Pecans](#) website to gather the information needed to complete the map.
2. Organize the students into small groups. Refer them back to their copy of the *From Orchard to Pecan Pie* reading sheet from *Activity 1*. Ask the students to work together with their group to highlight all of the sentences that discuss the pecan production process.
3. Distribute one set of [Pecan Production Sequencing Cards](#) to each group. Instruct the groups to sequence the cards to show the steps it takes to get pecans from the orchard to their table in the correct order. Have the students check their work by comparing the order of the cards with the sentences they highlighted.
4. View the [Pecan How Does it Grow?](#) video to show the students the process of growing and harvesting pecans.

Pecan Nutrition⁷

1. Ask the students, "What types of things do you need to consider when choosing a healthy snack?" After hearing their responses, emphasize the importance of choosing snacks that are high in protein, low in sugar, and under 350 calories.

2. Pass out a copy of the [This or That](#) activity sheet to each student. Ask them to choose which snack is healthier by looking at the nutrition facts on the activity sheet, and then explain why they made that choice in the space provided. After the students have completed their writing, ask a few students to share. Reveal that choice one is pecans and choice 2 is a cupcake.
3. Ask the students to describe how pecans can be used in different foods (salads, pecan crusted chicken, sweets, and pecan oil). Explore the "Pecan Recipes" section of the [I Love Pecans website](#) to discover more ways pecans can be used.
4. Set up a trail mix station that includes measuring cups and spoons and bowls of pecans, pretzels, banana chips, raisins, Cheerios, and any other trail mix snacks. Provide each student with a snack-sized plastic bag and a copy of the [Making Trail Mix! Recipe Sheet](#).
5. Have students measure out at least 4 snacks (1 must be pecans), and mix them together in the plastic bag. Then, have them record the recipe on their recipe sheet.

Elaborate

- Pecan trees are wind-pollinated. To explain how this type of pollination works, place glitter or confetti in a pile with a box fan behind it. Tack sticky paper up on a wall two feet away. After explaining how pecan trees pollinate with wind, turn on the fan to see how the glitter (representing the pollen) sticks to the paper (representing the flowers). Students can measure and graph how much pollen travels from 2 ft (60.96 cm), 3 ft (91.44 cm), and 4 ft (1.21 m) away. (Caution: The glitter will make a mess. A tarp is recommended.)
- Take a field trip to a pecan orchard in person or by viewing the [Field Trip! Pecans Part 1](#) and [Field Trip! Pecans Part 2](#) videos.

Review

After conducting these activities, review and summarize the following key concepts:

- Pecans are grown in 15 states in the southern United States.
- The pecan varieties with high-quality nuts often come from trees with weak roots. Varieties with strong roots have poor-quality nuts. To get high-quality nuts on strong roots, pecan farmers graft a scion from a high-quality nut variety into a strong rootstock variety.
- Pecans are a natural high-quality source of protein. They contain 19 vitamins and minerals, no cholesterol, and are low in carbohydrates.

Extension Activities:

- Burn a Pecan: <https://southcarolinamatrix.agclassroom.org/matrix/resource/254/>
- Field Trips: <https://southcarolinamatrix.agclassroom.org/matrix/resource/197/>
- Cracking Open the Story of Nuts: <https://southcarolinamatrix.agclassroom.org/matrix/lesson/764/>
- [A Home Run for Peanuts](#)⁸
- [A Picture Book of George Washington Carver](#)⁸
- [A Pocketful of Goobers](#)⁸
- [Burn a Peanut- Count Calories](#)⁸
- [From Peanut to Peanut Butter](#)⁸
- [George Washington Carver for Kids: His Life and Discoveries, with 21 Activities](#)⁸
- [George Washington Carver: Ingenious Inventor](#)⁸
- [In the Garden with Dr. Carver](#)⁸
- [One Thousand Black Walnuts](#)⁸
- [Producepedia](#)⁸
- [The Little Plant Doctor: A Story About George Washington Carver](#)⁸
- [The Secret Garden of George Washington Carver](#)⁸
- Pecan Pie and Baby by Jaqueline Woodson

- 100 Pecans for Tabitha
- The Pecan Tree by Matt Robinson
- Sammy and the Pecan Pie by Sean Covey
- Antoine of Oak Alley: The Unlikely Origin of Southern Pecans and the Enslaved Man Who Cultivated Them by Katy Morlas Shannon

Sources:

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