



What's Growing On In Virginia?
Virginia Foundation for Agriculture in the Classroom
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What's Growing On In Virginia?

THIS ISSUE

- 3 PB&J Sandwich
- 5 Nitrogen Needs
- 7 AITC Highlights

AGRICULTURE IN THE CLASSROOM

SPRING 2016 / VOLUME 27 NO. 1



It's nutty how much Americans love peanuts

Two U.S. presidents have grown them, an astronaut took one to the moon, and at least one former president said his favorite sandwich ingredient includes them.

They are peanuts, and Virginia farmers have been growing them since the early 1840s. Thomas Jefferson and Jimmy Carter also grew peanuts. And former President Bill Clinton said one of his favorite sandwiches is peanut butter and banana, which also is reported to have been a favorite of Elvis Presley!

Virginia's world-renowned peanuts are grown in Southeast Virginia's sandy soil where the climate is ideal for producing large peanuts. Because of their large kernels, Virginia peanuts have been nicknamed the "Cadillac" of peanuts.

Peanuts grown in Virginia account for about 15 percent of total U.S. production. Virginia-style peanuts are grown mainly in Southeast Virginia, northeastern North Carolina, South Carolina and west Texas. Virginia peanuts are popular in all-natural peanut butter and frequently are sold at ballparks.

But peanuts—despite their name—are not nuts! They are legumes, which are dry fruits contained within a pod. Legumes include alfalfa, beans, peas and peanuts. Many people are surprised that peanuts don't grow on trees like pecans or walnuts. In fact, peanut plants flower above the ground and fruit below the ground.

Virginia-grown peanuts are produced in about eight Virginia counties. They typically are planted in May and harvested at the end of September or the first part of October.

The first commercial crop of peanuts in the United States was produced in 1842 in Sussex County by Dr. Matthew Harris.

The Peanut Wizard

The peanut became a significant U.S. agricultural crop in the early 1900s when the boll weevil destroyed the South's cotton crop. Following a suggestion of Dr. George Washington Carver, peanuts replaced cotton in the South as the money crop. Peanuts not only provided an alternative to cotton farmers suffering from the effects of the boll weevil, they also improved



How much peanut butter do Americans eat?

- The average American consumes more than 6 pounds of peanuts and peanut butter products each year.
- The average child will eat 1,500 peanut butter and jelly sandwiches before he or she graduates from high school.
- Peanut butter is consumed in 94 percent of U.S. households.
- Americans eat enough peanut butter in a year to make more than 10 billion peanut butter and jelly sandwiches.
- The amount of peanut butter eaten in a year could wrap the earth in a ribbon of 18-ounce peanut butter jars one and one-third times.

SOURCE: NATIONAL PEANUT BOARD

Virginia Peanut Board
Virginia Peanut Growers
Association



About the Newsletter

What's Growing On In Virginia? is a semiannual publication for Virginia educators and those who want to connect children with agriculture through education.

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the quality of the soil, which had become depleted of nutrients.

To encourage both consumption and planting of peanuts, Carver developed more than 300 uses for the legume. In addition to a variety of food uses such as mayonnaise and coffee, he proved that peanuts could be used in cosmetics, insecticides, glue and rubber! Carver's efforts earned him the nickname "The Peanut Wizard," and peanuts played a major role in revitalizing the South's agricultural economy.

Bonus Activities

Peanut Wizard Biography Chain

Directions: Paste or draw a picture of Dr. George Washington Carver on the back of a paper plate. Staple half of another paper plate to the back to form a pocket. Cut several pieces of brown construction paper to look like a peanut (five per student). Have students write a fact from Carver's life on each "peanut." Tape the peanuts to a piece of yarn, and then connect to the paper plate. The peanut chain can be stored in the pocket.



Four main types of peanuts

Runner peanuts - these are uniform in kernel size and are most commonly used for making peanut butter. They are typically grown in Alabama, Georgia, Florida, Oklahoma, South Carolina and Texas. They account for 80 percent of U.S.-grown peanuts.

Virginia peanuts - these are the largest of all peanuts and are often used in gourmet snacks. Virginia peanuts account for about 15 percent of total U.S. production and are grown mainly in Southeast Virginia, northeastern North Carolina, South Carolina and west Texas. Virginia peanuts are popular in all-natural peanut butter.

Spanish peanuts - these are known for their red skins. They have small kernels and are used predominantly in peanut candy, salted peanuts and peanut butter. Their reputation of having the nuttiest flavor when roasted is due to their higher oil content. Spanish peanuts are typically grown in Oklahoma and Texas and comprise 4 percent of U.S. production.

Valencia peanuts - these have three or more kernels per shell, have a sweet flavor and are commonly used for all-natural peanut butter. Also, they are favorites for boiled peanuts. Valencias are grown mainly in New Mexico and comprise less than 1 percent of U.S. peanuts.

SOURCE: NATIONAL PEANUT BOARD

He developed over 300 uses for the peanut.

In addition to peanuts he worked with clays, seeds, and sweet potatoes.

He encouraged farmers to plant peanuts because they replenish nitrogen in the soil.

He was known as the "Plant Doctor."

known as the

Peanut Math

- It takes about 540 peanuts to make one 12-ounce jar of peanut butter. About how many peanuts will it take to make 3 jars? About how many peanuts would be needed to make one 6-ounce jar?
- One peanut plant produces about 40 peanuts. About how many peanut plants are needed to make one 12-ounce jar of peanut butter?
- The average American consumes 6 pounds of peanuts and peanut butter products each year. How many total pounds would that mean your class consumes each year?
- Take a vote in your class—how many people prefer crunchy to smooth peanut butter? How many do not like it at all? Use tally marks to count the votes, and then display your findings on a bar graph.

LITERARY CORNER

A Weed is a Flower: The Life of George Washington Carver, Alike, Aladdin, ISBN: 0671664905

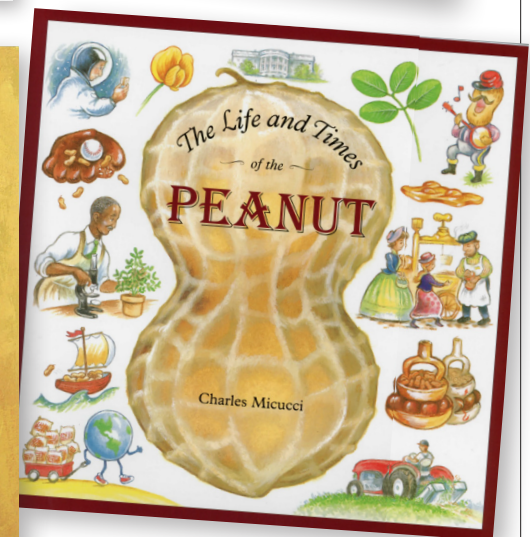
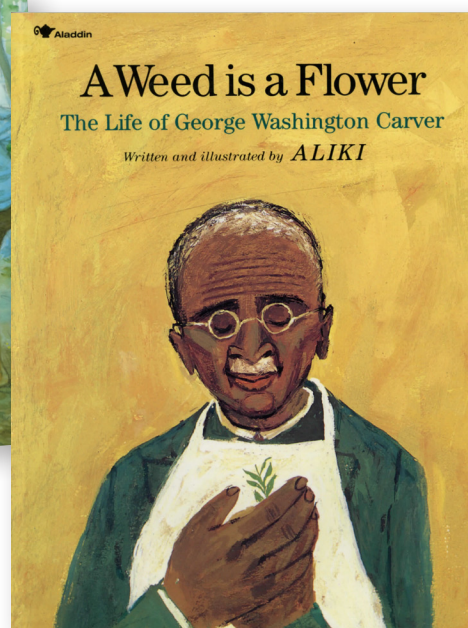
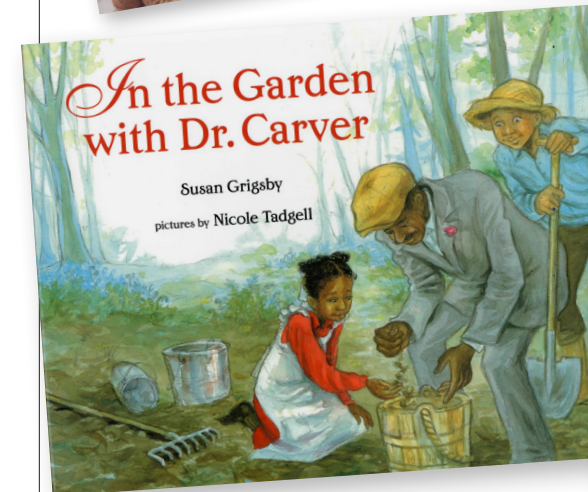
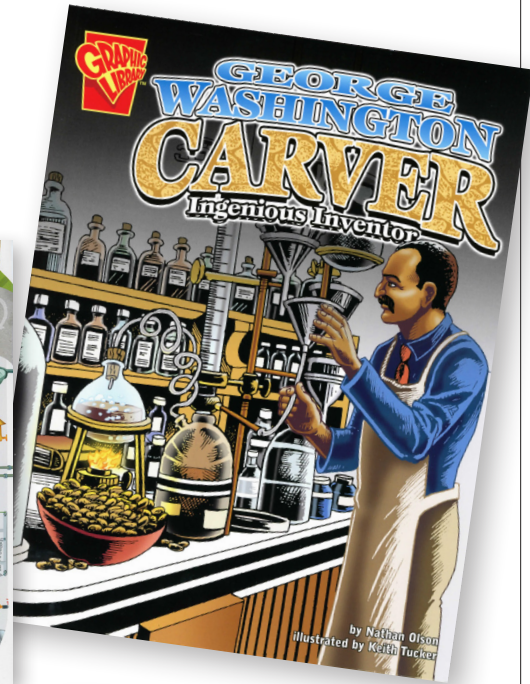
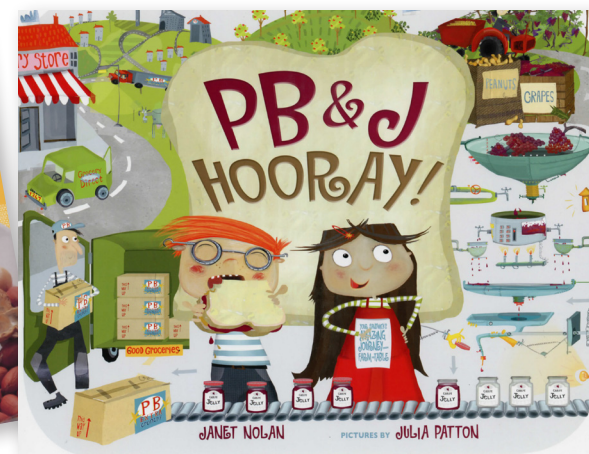
PB&J Hooray!: Your Sandwich's Amazing Journey from Farm to Table, Janet Nolan and Julia Patton, Albert Whitman & Company, ISBN: 0807563978

George Washington Carver: Ingenious Inventor, Nathan Olson and Keith Tucker, Capstone Press, ISBN: 0736868844

In the Garden with Dr. Carver, Susan Grigsby and Nicole Taddell, Albert Whitman & Company, ISBN: 080753630X

The Life and Times of the Peanut, Charles Micucci, HMH Books for Young Readers, ISBN: 0618033149

Peanuts (What's for lunch?), Claire Llewellyn, Children's Press, ISBN: 051626222X



AITC Program Highlights

Celebrate agriculture this March

National Agriculture Week will be celebrated March 13-19. During the week—and all year long—help educate students using fun, educational games and lessons that can be found on MyAmericanFarm.org. Students will enjoy the interactive computer games and simulations, while teachers and parents will find lessons and activities to incorporate agriculture into daily lessons.



PEANUTS: BY THE NUMBERS

- It takes about 540 peanuts to make a 12-ounce jar of peanut butter.
- There are enough peanuts in 1 acre to make 30,000 peanut butter sandwiches.
- By law, any product labeled peanut butter in the United States must be at least 90 percent peanuts.
- The world's largest peanut butter factory produces a quarter-million jars every day.
- Four of the top 10 U.S.-manufactured candy bars contain peanuts or peanut butter.
- Americans spend almost \$800 million a year on peanut butter.
- Peanuts contribute more than \$4 billion to the U.S. economy each year.

SOURCE: NATIONAL PEANUT BOARD

Peanut life cycle starts in April and ends in the fall

Peanuts are planted after the last frost in April and through May. Farmers plant specially treated peanut kernels from the previous year's crop, tucking them in the soil about 2 inches deep and with rows about 1 to 2 feet apart. From planting to harvesting, the growing cycle of a peanut is about four to five months. A good crop requires about 120 to 140 frost-free days.

Seedlings poke out of the soil about 10 days after planting. They grow into a green, oval-leaved plant which is about 18 inches tall. Unlike most plants, the peanut flowers above the ground and fruits below ground.

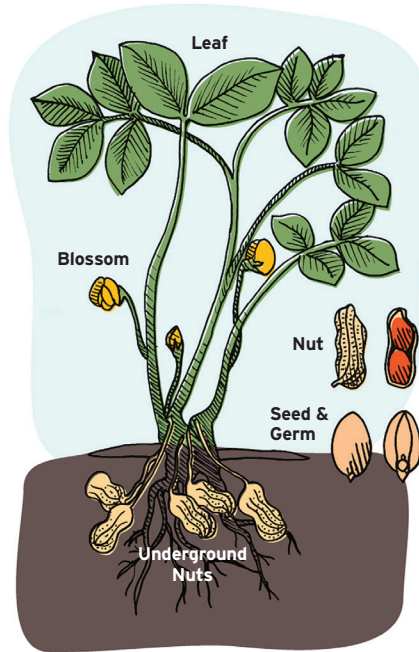
Yellow flowers emerge about 40 days after planting. When the flowers pollinate themselves, the petals fall off as the peanut ovary—called a peg—begins to form. The peanut embryo is in the tip of the peg, which penetrates the soil. As the embryo matures, it forms a peanut.

The plant continues to grow and flower, eventually producing 40 or more peanut pods.

Peanut plants need 1½ to 2 inches of water each week. If rain doesn't meet those needs, the plants need to be irrigated. Peanut roots absorb nitrogen from the air and provide nutrition to the plant and soil.

When the peanuts are ready for harvest, farmers wait for ideal conditions—not too wet and not too dry. They use a digger with blades that run 4 to 6 inches under the ground, loosening up the plants and severing the roots.

Behind the digger is a machine called a



shaker that lifts the plant from the soil and gently shakes it, then lays the plant back down with peanuts facing up and leaves facing down.

Peanuts must be dried before they can be stored, so they usually are left in the field two or three days before being picked up with a combine. A combine separates the peanuts from the vines and places them into a hopper on the top of the machine. The vines are deposited back into the field. The freshly dug peanuts are then placed in peanut wagons for further curing.



Harvested peanuts are dug up, shaken and then laid back on the ground to dry for two to three days before they are picked up by a combine.

● **Content area:**
Language: following directions and sequencing

● **Objective:**
to follow directions to correctly sequence the steps in making a peanut butter and jelly sandwich.

● **Materials**

- sequencing cards
- construction paper
- glue sticks
- scissors
- template, attached
- tape
- scissors
- markers or crayons
- water

LESSON PLAN >> PRE-K

Let's Make a Peanut Butter and Jelly Sandwich

Background Knowledge

Peanut butter and jelly is a tasty lunch, and it is packed with protein to keep your body strong. Farmers produce each of the ingredients for this super sandwich, including wheat, peanuts and grapes. However, Virginia peanuts are typically enjoyed whole, rather than in peanut butter.

This lesson is a great way to celebrate National Peanut Butter and Jelly Day on April 2!

Procedure

1. Sing the "Peanut Butter and Jelly" song with your students. You also may have them act out the verses (*Variations of the song exist*).

"Peanut, peanut butter." Then whisper, "jelly."
"Peanut, peanut butter." Then whisper, "jelly."
"First you take the peanuts and you smash 'em, you smash 'em. You smash 'em, smash 'em, smash 'em." (Imitate smashing peanuts)

"Then you take the peanut butter and you spread it, you spread it. You spread it, spread it, spread it." (Imitate spreading peanut butter)

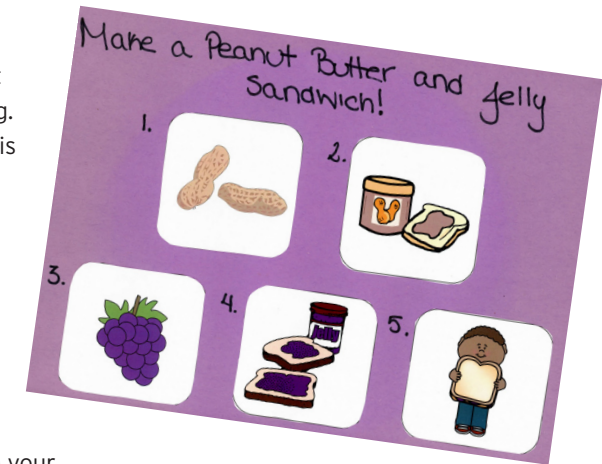
"Peanut, peanut butter." Then whisper, "jelly."
"Peanut, peanut butter." Then whisper, "jelly."
"Then you take the grapes and you squish 'em, you squish 'em. You squish 'em, squish 'em, squish 'em." (Imitate squishing)

"And then you take the jelly and you spread it. You spread it, you spread it, spread it, spread it." (Imitate spreading)

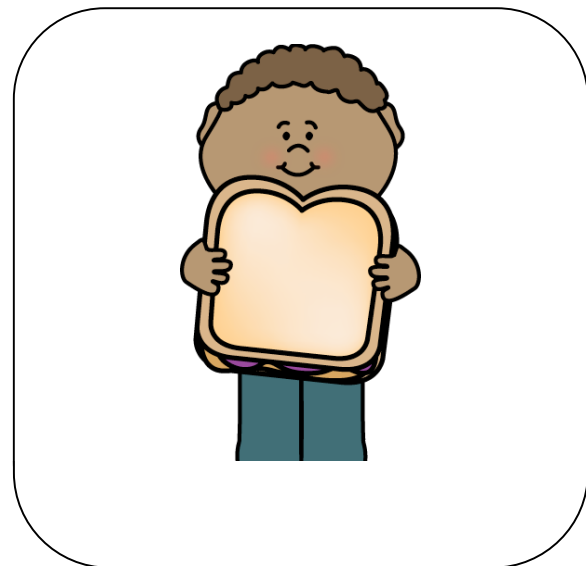
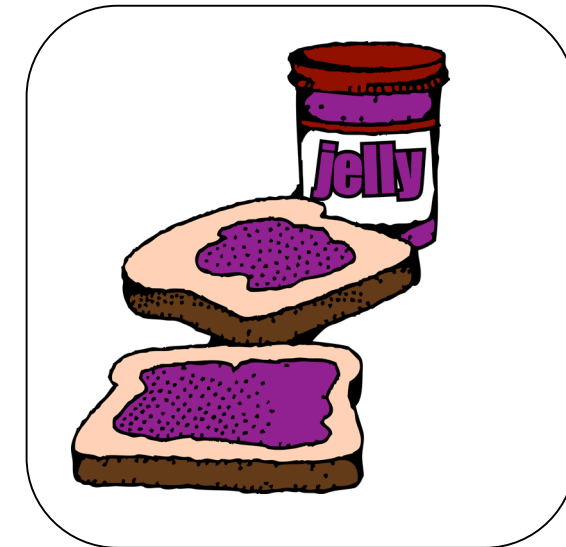
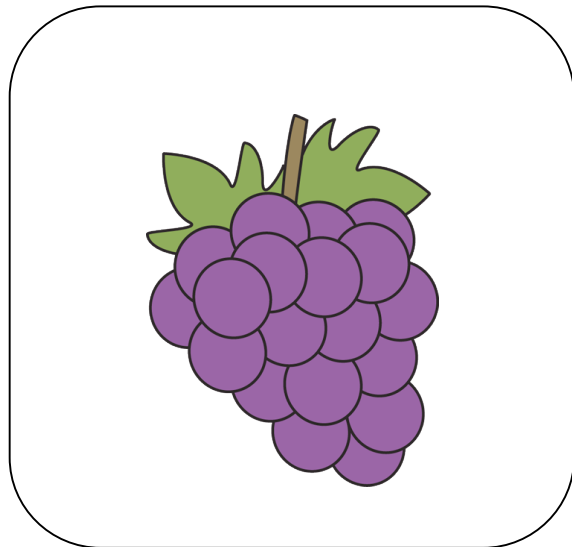
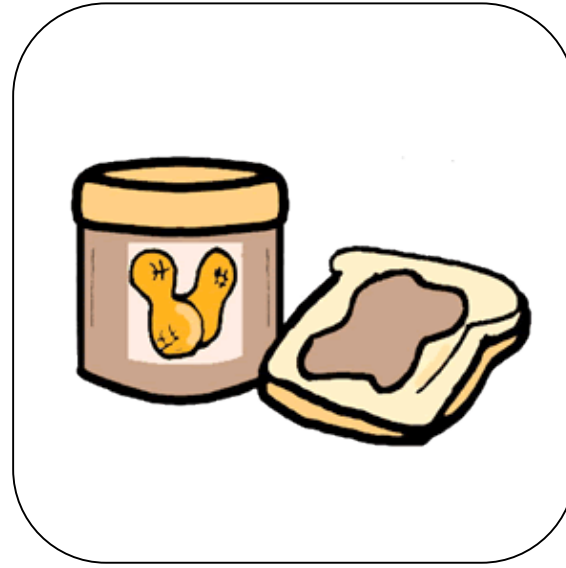
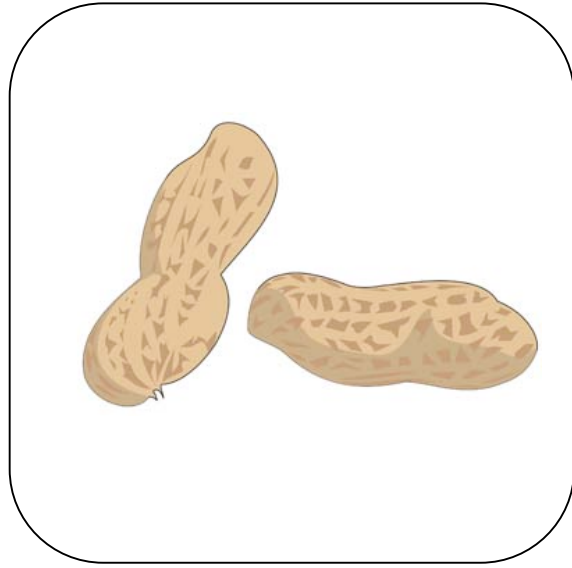
"Peanut, peanut butter." Then whisper, "jelly."
"Peanut, peanut butter." Then whisper, "jelly."
"Then you put the bread together and you eat it, You eat it, you eat it, eat it, eat it." (Imitate eating).

2. After singing the song several times, pass out the sequencing cards (Depending on their age, students can cut them out, or the cards can be pre-cut), construction paper and glue sticks.

3. Have them correctly sequence the steps making a peanut butter and jelly sandwich, then glue the cards in the correct order onto the construction paper.



Sequencing Cards



LESSON PLAN >> ELEMENTARY SCHOOL

Nitrogen Needs

● **SOL:** Science 2.4, 4.4

● **Objective:**

to identify the conditions necessary for seeds to germinate and investigate the importance of nitrogen to plant growth.

● **Materials**

- clear plastic cups
- bean seeds
- soil
- paper napkins (bright colors allow you to better observe seed growth)
- water

● **Background Knowledge**

Dr. George Washington Carver is known as “The Peanut Wizard” because of his extensive work with peanuts. In fact, he developed over 300 different uses for peanuts. He did this work as a way of encouraging Southern farmers to grow peanuts instead of cotton. At that time in the South, cotton had been king. However, cotton uses a lot of nitrogen from the soil in order to grow. When planted in the same field year after year, it depletes soil nutrients, making the soil unproductive.

Peanuts are a legume and help replenish the nitrogen in soil. Nitrogen is in all living cells—plant, animal and human. It is an essential nutrient for plant growth. Like phosphorus and potassium, nitrogen is a primary macronutrient because plants absorb large amounts of it in order to grow. Plants need nitrogen because it allows proteins, fruits, seeds and chlorophyll to carry out photosynthesis. If a plant is lacking nitrogen, it often lacks flowers and root growth. A plant with adequate nitrogen is better able to utilize water from rainfall and maintain moisture in the soil. Farmers take soil samples that are studied in a laboratory to determine the amount of usable nitrogen in the soil. This helps a farmer determine whether to apply additional nitrogen—in the form of fertilizer—to the soil.

● **Procedure**

1. Review with students the conditions necessary for plant growth and germination.
2. Discuss how Dr. George Washington Carver encouraged farmers to rotate their cotton crops with crops such as peanuts, soybeans or sweet potatoes to replenish the nitrogen in the soil, thus keeping the soil healthy.
3. With partners or in groups, students will plant six bean seeds two different ways. The first way is to fill a clear plastic cup with soil. Then place three bean seeds about an inch down in the soil and up against the side of the cup (The seed should be visible when looking at the side of the cup).
4. The second way they will plant the seeds is to take another clear plastic cup and open up a paper napkin. Push the paper napkin down into the cup so that it covers the bottom and comes up the sides. Use a spray bottle to wet the napkin at the bottom of the cup (The water will wick up the sides).
5. Place the remaining three seeds in between the napkin and cup so that the seeds are visible when looking at the side of the cup.
6. Have students record observations about the different growing environments and make predictions about seed germination and plant growth.
7. Over the next 2-4 weeks (until the plants have developed leaves) have students record the amount of water that they give each cup, and continue to observe and record plant growth and appearance.
8. Point out that the leaves on the plants grown in soil are darker green than the leaves on the plant grown without soil because they received nitrogen.

