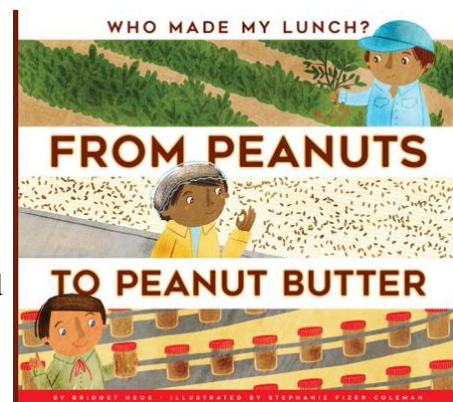


January 2020 Book of the Month

From Peanuts to Peanut Butter

By: Bridget Heos

Do you know where peanut butter comes from? Peanuts, of course! But how are peanuts grown, and where are they grown? How are they harvested? How do peanuts become peanut butter? In *From Peanuts to Peanut Butter*, you'll travel with the peanut from planting, harvesting, and processing. Then you'll see the peanuts get ground into peanut butter, and a few steps in between landing on your plate!



Fun Facts

- Peanuts are one of the star ingredients in a Snickers bar, and each bar contains about 16 peanuts. About 100 tons of peanuts go into making the 15 million Snickers bars that are produced by Mars, Inc. every day.¹
- Peanut butter/peanut paste is the leading use of peanuts produced by the U.S.; followed by snack nuts and in-shells; and finally, candy and confections.¹
- George Washington Carver, the renowned scientist and researcher, first recognized the value of peanuts as a cash crop.¹
- Although peanuts come in many varieties, there are four basic market types: runner, Virginia, Spanish, and Valencia.¹
- North Carolina ranks fifth in the nation for peanut production.²
- NC is home to 1,400 peanut farms.²
- The three leading counties for peanut production in North Carolina are Bertie, Martin, and Pitt due to the fact that peanuts grow best in sandy, loamy soils.²

Vocabulary

Combine: machine that does a combination of jobs, separating parts of a plant for harvesting.

Digger: machine that digs up peanut plants and lays them in a row.

Grinder: machine that crushes something into tiny particles.

Kernel: part of a peanut that can be eaten.

Pod: part of some plants in which seeds grow.

Roast: to cook at high heat.

Shelling Plant: building in which nut or peanut shells are removed.

Interest Approach—Engagement¹

1. Ask your students if they can tell you what protein does for their bodies. Allow students to draw on their prior knowledge to recognize that protein helps build and repair muscles in their body.
2. Ask your students, “What kinds of foods contain lots of protein?” Students will likely list various meat products. Meat comes from animals and has an abundant supply of protein. Ask your students if they can think of a protein-rich food that comes from a plant. If students cannot guess, give them some or all of the following clues until they guess *peanut butter*.

- a. This food can be spread on bread.
 - b. Many people like to eat it with apples, celery, or bananas.
 - c. It is made by cooking and crushing a specific type of nut until it is a smooth and creamy texture.
 - d. You can make a sandwich using this food, jelly, and bread.
3. Explain to your students that peanut butter is a good source of protein in our diets. It is processed or made from peanuts. Today, your students are going to learn about the peanut!
 4. Read *From Peanuts to Peanut Butter* to the students.

Discussion Questions

Ask the students to answer the following questions after reading *From Peanuts to Peanut Butter*.

1. Where are peanuts grown? (What kind of climate?) Are they grown outside of the United States? If so, where?
2. Describe how peanuts form on the plant.
3. What type of farm machines are used to harvest peanuts? How does this equipment work to harvest the nuts?
4. Where do the peanuts travel after they are harvested?
5. What's the first machine used at the shelling factory?
6. Why is peanut butter a light brown color?
7. What part of the peanut is saved to be used as feed for pigs?
8. What is the tiny lump inside the peanut called? What animal likes this part of the peanut?
9. What ingredients are in peanut butter?
10. What happens to the peanuts after they are chopped for the peanut butter?

Research Questions¹

1. When does a farmer plant peanuts, and how long is the growing cycle? (plants in April or May; growing cycle is four to five months long)
2. Name some states that grow peanuts. (Georgia, Florida, Alabama, North Carolina, Texas, South Carolina, Mississippi, Virginia, and Oklahoma)
3. About how many uses for the peanut did George Washington Carver find? (over 300)
4. Name something Carver developed from peanuts. (Answers can include: shaving cream, leather dye, coffee, ink, shoe polish)

Ask the students to answer the following questions. These questions may require some research from viable sources on the internet or encyclopedias from the library.

Peanut Fun Facts—Addition³

Add the numbers below. Each answer equals a letter. Use the letters to fill in the blanks for the peanut fun facts.

$1 + 2 = \underline{\quad} S$	$4 + 3 = \underline{\quad} E$	$3 + 2 = \underline{\quad} T$	$5 + 1 = \underline{\quad} L$
$1 + 1 = \underline{\quad} G$	$2 + 2 = \underline{\quad} H$	$3 + 5 = \underline{\quad} R$	$5 + 5 = \underline{\quad} O$
$1 + 0 = \underline{\quad} U$	$4 + 5 = \underline{\quad} W$		

1. The peanut $\frac{\quad}{3} \frac{\quad}{4} \frac{\quad}{7} \frac{\quad}{6} \frac{\quad}{6}$ is like a pea pod.
2. Peanuts have protein to make you $\frac{\quad}{2} \frac{\quad}{8} \frac{\quad}{10} \frac{\quad}{9}$.

3. Peanuts came from $\frac{\quad}{3} \frac{\quad}{10} \frac{\quad}{1} \frac{\quad}{5} \frac{\quad}{4}$ America.

Peanut Fun Facts—Subtraction³

Subtract the numbers below. Each answer equals a letter. Use the letters to fill in the blanks for the peanut fun facts.

$$\begin{array}{llll} 2 - 1 = \underline{\quad} & \text{U} & 6 - 3 = \underline{\quad} & \text{D} & 7 - 2 = \underline{\quad} & \text{E} & 8 - 6 = \underline{\quad} & \text{M} \\ 9 - 5 = \underline{\quad} & \text{A} & 10 - 2 = \underline{\quad} & \text{R} & 7 - 1 = \underline{\quad} & \text{N} & 8 - 1 = \underline{\quad} & \text{I} \end{array}$$

1. Peanuts grow $\frac{\quad}{1} \frac{\quad}{6} \frac{\quad}{3} \frac{\quad}{5} \frac{\quad}{8}$ the ground.
2. On average, we eat $\frac{\quad}{6} \frac{\quad}{7} \frac{\quad}{6} \frac{\quad}{5}$ pounds of peanuts a year.
3. Another $\frac{\quad}{6} \frac{\quad}{4} \frac{\quad}{2} \frac{\quad}{5}$ for peanuts is “goobers.”

Peanut Allergies¹

The occurrence of peanut allergies in the United States has grown significantly. Some peanut allergies are very serious health concerns. Prior to completing any of these activities, be aware of any allergies in your classroom or school and what measures should be taken to avoid allergic reactions.

Peanut Plant Parts¹

1. Pass out the *Peanut Plant Activity Sheet* (in **Links** section, and attached to this activity sheet) to the students. As a group, label the parts of the peanut plant.
2. Use *From Peanuts to Peanut Butter* pages 6 and 7 for another visual.

Planting Peanut Seeds¹

Materials:

- Large, clear plastic drinking cups
 - Small, round plastic or paper plates
 - Sand or sandy loam soil
 - 3-5 raw peanuts per student (**Note:** These are available at health food stores. Peanuts that have been roasted or blanched will not sprout.)
 - Plastic spoons
 - Permanent marker
 - Paper towels
 - Water
 - Pen or pencil
 - Several pots (12 inches in diameter or a ten-gallon aquarium)
1. Recall with the students information from the book *From Peanuts to Peanut Butter* about how peanuts are planted by a farmer, and what farmers use as seeds for planting peanuts. (peanut kernels)

2. Have students follow these directions for planting peanut seeds. You may wish to demonstrate the steps as they follow along with their own cups. (Note: Peanut seeds should be soaked overnight before planting.)
 - a. Get a cup. Write your name on it with a permanent marker.
 - b. Make a small drainage hole in the bottom of your cup with a pen or pencil (with teacher's help).
 - c. Fill your cup with soil to within one inch of the top of the cup.
 - d. Plant three to five peanuts about two inches deep in the soil. Press the soil firmly, but do not pack the soil.
 - e. Fold a paper towel into a square and moisten with water. Place the paper towel under the plastic cup.
 - f. Then, place your paper towel and cup on a paper or plastic plate.
 - g. Place the cup and plate in a warm spot on a window sill.
 - h. Record observations daily on the *My Peanut Plant Growth Worksheet* (in **Links** section and attached to this activity sheet).
3. Keep plants in a warm room and expose them to as much direct sunlight as possible.

Homemade Peanut Butter¹

Have student enjoy peanut butter and crackers while they are completing the activities. Use the following recipe to make homemade peanut butter.

1. Measure 1 cup of peanuts and put in blender.
2. Measure 1 ½ teaspoons peanut oil and put in blender.
3. Cover and blend for approximately 3 minutes.
4. Scrape sides of blender with a spoon and push peanuts to the bottom of the blender.
5. Cover and blend for 3 more minutes.
6. Scoop out of blender and enjoy on crackers or celery.
7. Compare the homemade peanut butter to store brands.

Links

- Peanut Plant Activity Sheet (worksheet)
https://naitc-api.usu.edu/media/uploads/2015/06/15/Peanut_Plant_Activity_Sheet.pdf
- My Peanut Plant Growth Worksheet
https://naitc-api.usu.edu/media/uploads/2015/06/15/My_Peanut_Plant_Growth_Chart.pdf
- How It's Made—Peanut Butter (video)
<https://www.youtube.com/watch?v=uh752bxHEeU&safe=active>

Sources

1. https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=266&search_term_lp=peanuts
2. <https://nsjonline.com/article/2019/03/murphy-to-manteo-north-carolina-is-a-leader-in-peanuts/>
3. https://www.agclassroom.org/ny/resources/pdf/activities/2/peanut_math.pdf

K-5 Subject Areas

Reading, Speaking and Listening, Mathematics, and Science

Common Core/Essential Standards

Reading

- **RL.K.1** With prompting and support, ask and answer questions about key details in a text.
- **RL.1.1** Ask and answer questions about key details in a text.
- **RL.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RL.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- **RL.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
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- **RI.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

Speaking and Listening

- **SL.K.4** Speak audibly and express thoughts, feelings, and ideas clearly.
- **SL.1.4** Produce complete sentences to describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- **SL.2.4** Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent and complete sentences.
- **SL.3.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly in complete sentences at an understandable pace.
- **SL.4.4** Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; adjust speech as appropriate to formal and informal discourse.
- **SL.5.4** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; adapt speech to a variety of contexts and tasks.
- **SL.K.2** Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
- **SL.1.2** Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- **SL.2.2** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- **SL.3.2** Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.4.2** Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.5.2** Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Mathematics

- **NC.K.OA.2** Solve addition and subtraction word problems, within 10, using objects or drawings to represent the problem, when solving:
 - • Add to/Take From-Result Unknown

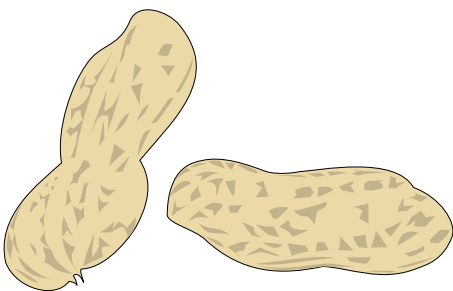
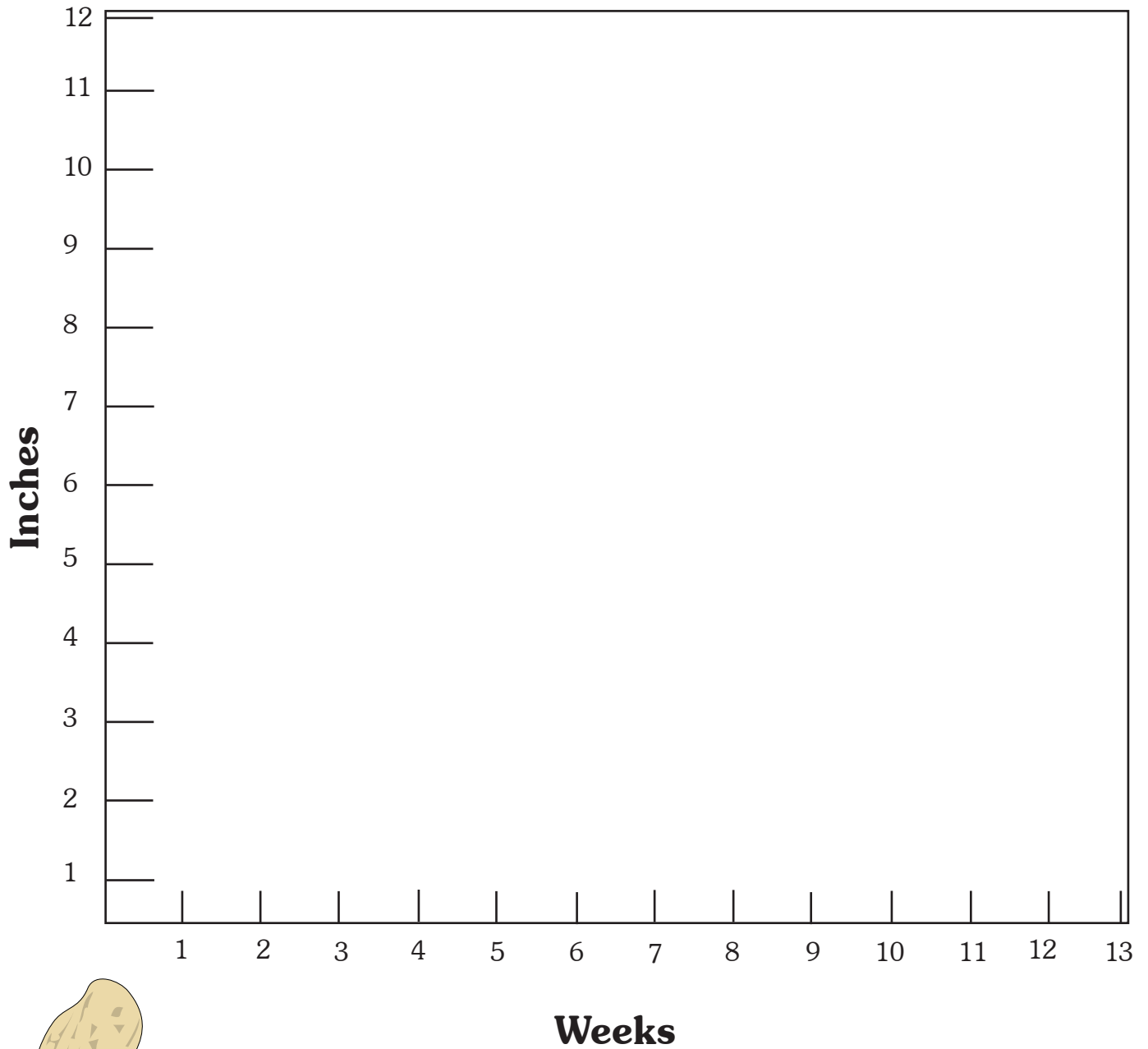
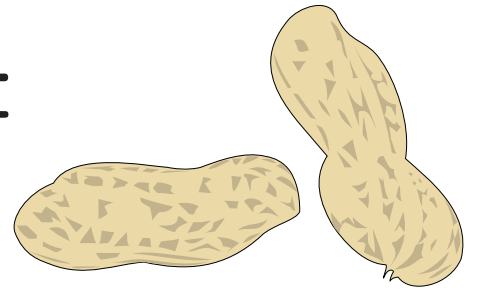
Science

- **1.L.1.1** Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
- **1.L.2.1** Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth.
- **3.L.2.1** Remember the function of the following structures as it relates to the survival of plants in their environments:
 - • Roots – absorb nutrients

- • Stems – provide support
 - • Leaves – synthesize food
 - • Flowers – attract pollinators and produce seeds for reproduction
- **3.L.2.2** Explain how environmental conditions determine how well plants survive and grow.
- **3.L.2.3** Summarize the distinct stages of the life cycle of seed plants.

Name _____

My Peanut Plant Growth Chart



Name _____

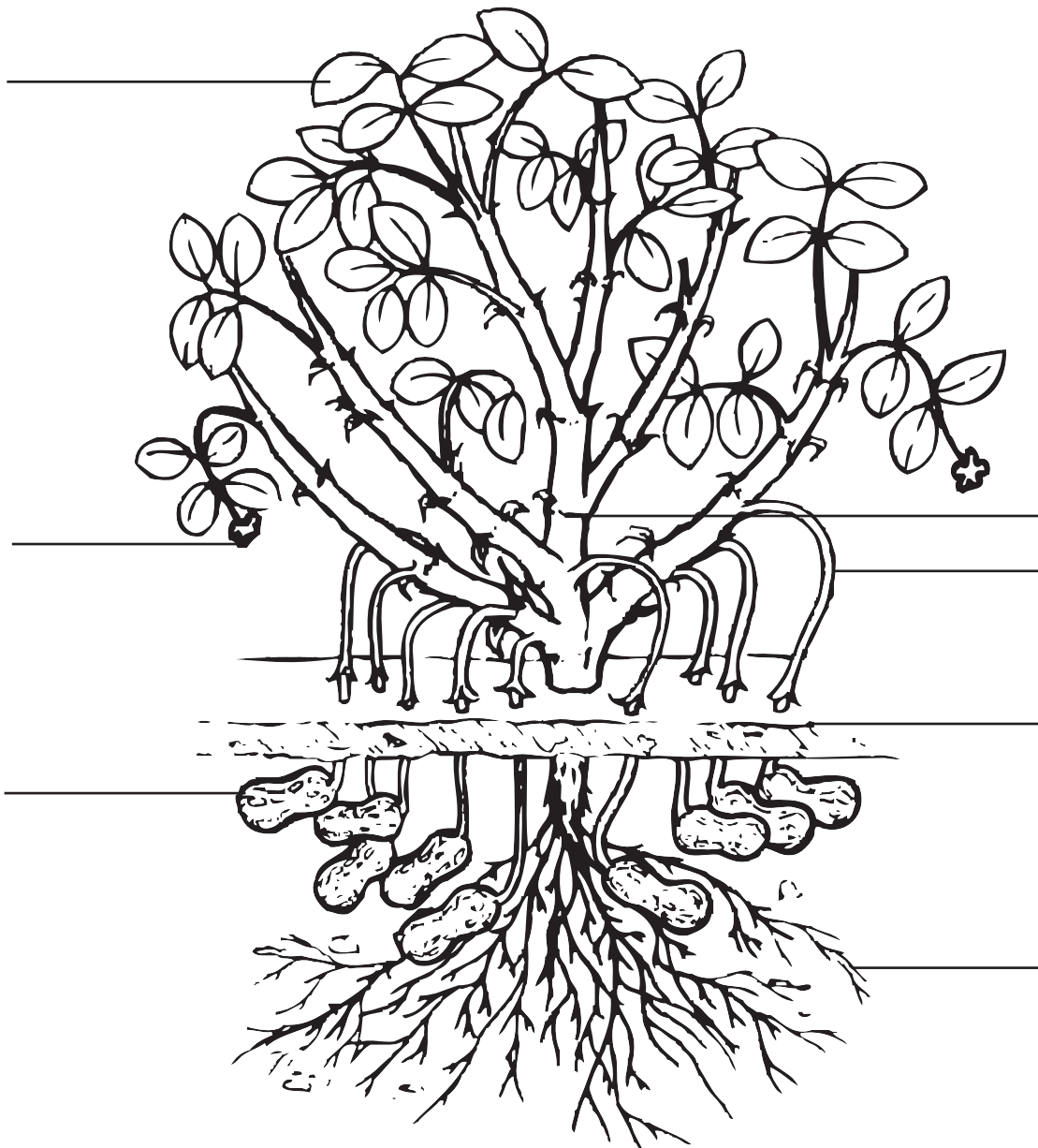
Peanut Plant

Can you label the parts of the peanut plant below?

Root
Peanut

Peg
Ground
Leaf

Bloom
Stem



Peanut Plant

Answers

Can you label the parts of the peanut plant below?

Root
Peanut

Peg
Ground
Leaf

Bloom
Stem

