

# In a Nutshell

## TARGET AUDIENCE

Students in grades 3 through 6. Since the program is designed for students with a wide span of abilities, you may need to adapt the lessons to suit the needs of your group.

## FOOD ALLERGIES

Today, some schools are concerned about having peanuts and some other foods on the premises because of food allergies. If you have questions about peanut or other food allergies, or would like guidance on how to address these allergies at your school, please feel free to contact the National Peanut Board at [www.nationalpeanutboard.org](http://www.nationalpeanutboard.org).

## GETTING STARTED

To introduce these activities, see how much your students know about peanuts and peanut butter. Display the poster and review the facts with your class to introduce the program. Poll students to see how many of these facts surprised them.

These peanut facts will be used throughout the activities. For example, Activity Two will explain to students why peanuts are considered to be legumes (their fruit, the peanut, comes in a pod). In addition, Activity Five challenges students to solve a series of math problems using these facts and figures.

Your students might also wish to copy these facts and spread the word by sharing them with their families.

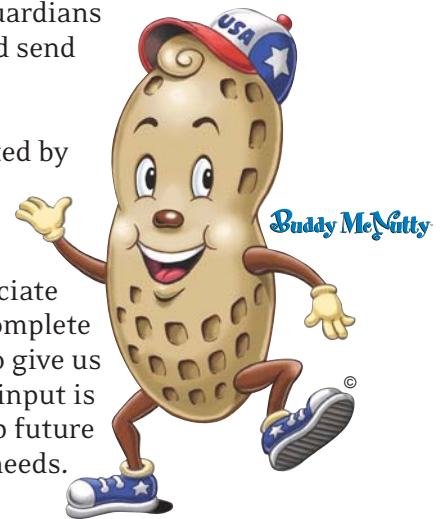


## DEAR EDUCATOR,

Would you be surprised to learn that adults actually eat more peanut butter than kids do? And did you know that peanuts are nutritious and naturally cholesterol-free legumes, not nuts? Legumes are fruits with shells or pods that contain seeds.

To teach kids about this popular American food, the National Peanut Board and Lifetime Learning Systems have created “In a Nutshell,” a cross-curricular, educational program for kids in grades 3 to 6. The program is designed to supplement your social studies, language arts, and math curricula. The activities introduce kids to the history of peanuts, the peanut plant, and peanut farming. One activity focuses on the nutritional value of peanuts and peanut butter—a convenient energy source. Another activity asks kids to solve a series of math problems using fun facts about peanuts and peanut butter. Additional lesson ideas have been included to help you enhance your classroom curriculum. You will also find a reproducible letter for parents and guardians with recipe tips that you can copy and send home with your students.

Although these materials are protected by copyright, you have permission to make copies for educational purposes. Feel free to share them with your colleagues, too. We would also appreciate it if you would take a moment and complete the enclosed reply card and survey to give us your feedback on the program. Your input is important and will help us to develop future educational materials to meet your needs.



We hope that you and your students enjoy learning about peanuts and the peanut industry.

## SPREAD THE FUN!



**National Peanut Board™**  
Representing the USA's 25,000  
peanut farmers and their families

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If you are interested in finding out how to order peanut planter kits and a video on how peanut butter is made, log onto [www.nationalpeanutboard.org](http://www.nationalpeanutboard.org).

## ACTIVITY ONE: Tracing Their Roots

This activity is designed to educate students about the origins of the peanut and peanut butter. Copy and distribute the activity sheet, and then read the activity as a class, or have students read it independently. Using a wall map, trace the path peanuts took before arriving in the United States. After students label the 15 states that produce peanuts, check your class map as a group to make sure that the states are labeled correctly, and students have the correct capitals.

## ACTIVITY TWO: Follow That Seed

To help students understand the peanut growth and harvesting process, this activity describes the life cycle of the peanut plant. It also includes a brief description of how peanut butter is made. Copy and distribute the activity sheet to your class. Read the passage as a group and review the diagrams to ensure that students understand the elements of the plant. Have students work independently to answer the questions. You may wish to grow peanuts in your classroom to further enhance this lesson.

### Answers:

1. four: Runners, Virginias, Spanish, Valencia
2. peg
3. 120-160 days after they are planted
4. digger-inverter, digger-shaker, combine, wagon
5. Peanut plants flower above ground, but produce pods below ground.

## ACTIVITY THREE: A Day in the Life of a Peanut Farmer

Begin this activity by brainstorming with your class what they think a peanut farmer's job entails. Write their answers on the blackboard. Next, copy and distribute the activity sheet, which is an interview with a farmer, Dee Dee Darden. After reading the interview, ask your students if they were surprised by any of Mrs. Darden's answers. How many of their answers were confirmed by Mrs. Darden? You might also ask kids to imagine they are peanut farmers and think about the following:

- You are getting ready to plant your peanut crops. What do you need to take into consideration? (e.g., weather, rainfall, soil quality, crop rotation, etc.)
- You have the chance to buy 100 more acres of farmland. What do you need to think about when making your decision? (e.g., whether you have enough equipment and personnel; money; the size and the quality of the land, etc.)
- How would you want your peanut crops to be used?

After reading the activity, have students think about the skills involved in peanut farming and create a help wanted ad for a peanut farmer. Older students might do additional research and create a resumé for a fictitious peanut farmer, which would also reflect the skills involved in farming.

## ACTIVITY FOUR: Spread the News— Peanuts Are Nutritious!

Not only are peanuts and peanut butter tasty, they are also nutritious and a good, convenient source of energy. This activity provides information on some of the nutrients found in peanuts and peanut butter, and it also explains how they fit into the USDA Food Guide Pyramid. Copy and distribute the sheet and review it with your class. Students should then use a separate sheet of paper to create and illustrate a meal using peanuts or peanut butter. The meal should contain one item from each of the food groups.

## ACTIVITY FIVE: Peanuts by the Pound

This activity integrates fun facts about peanuts and peanut products into math word problems. Copy and distribute the activity sheet. You might wish to have students work in groups to complete the page, as some of the problems are challenging. Once done, have students use the facts to create their own word problems and exchange them with their classmates.

### Answers:

1. 13,500 peanuts
2. 810 peanuts
3. 7,500,000 a month; 91,250,000 a year
4. answers will vary (class size x 1,500)
5. per square foot: 5.65 lbs. peanut butter, 2.32 lbs. jelly; per square inch: 0.47 lbs. peanut butter, 0.19 lbs. jelly
6. 12,000 pods
7. 2.09 pounds
8. 3,000,000 sandwiches
9. 7,187 minutes and 3 seconds
10. 320,000,000 jars

## PARENT/GUARDIAN LETTER

To help remind parents about the nutritious value of peanuts and peanut butter, copy and send this note home with your students. The letter offers parents tips on easy ways to provide their kids with nutritious snacks and add protein to their diets in a fun way.

## EXTENSION LESSONS

**The Life of Dr. George Washington Carver**—Read about Dr. George Washington Carver, or have students research information about his life as well as the more than 300 uses he discovered for peanuts. When done, students can create posters or 3-dimensional sculptures to honor Dr. Carver.

**The 411 on Peanuts**—Visit the National Peanut Board's web site to find more interesting facts about peanuts and peanut butter. Students can use the facts they learn to create word searches, crossword puzzles, or trivia cards.

**Peanut Power**—As a follow-up to Activity Four, have students research what other nutrients peanuts and peanut butter have, and why these nutrients are important.

**Visit a local peanut farm**—Coordinate a class trip to a peanut farm.

**The Peanut Poll**—Have students investigate all the items in which peanuts or peanut products are found, such as candy, paper, and oils. They might also poll their classmates and families to find their favorite peanut products (such as candy bars, shelled vs. not shelled, etc.).

**Our Peanut Cookbook**—Create a class recipe book that includes creative ways to eat peanuts and peanut butter. Kids could brainstorm ideas, and then write and illustrate their recipes. For example, kids might create peanut butter pizzas in which they top a defrosted pizza shell with peanut butter, add their favorite toppings, and bake according to the instructions on the pizza shell.

**I Prefer to Be Called a Legume!**—To add an element of creativity, have students imagine that they are a peanut and write an essay describing their life from the peanut's point of view.

**It's a PB&J Sandwich—Or Is It?**—Ask your students to write the directions for making a peanut butter and jelly sandwich. Using props, act out their directions. Interpret the directions literally—if kids write "put the peanut butter on the bread," place the jar on the slice of bread. Explain that you are not attempting to joke about what the kids have written, you are simply demonstrating how it can be difficult to write clear, concise directions.

## BIBLIOGRAPHY AND RESOURCES

- [www.nationalpeanutboard.org](http://www.nationalpeanutboard.org)—The National Peanut Board's web site is full of information on peanuts and peanut butter.
- [www.buddymcnutty.com](http://www.buddymcnutty.com)—Buddy McNutty, the National Peanut Board's mascot, has a site with lots of fun activities for kids.
- [www.healthykids.com](http://www.healthykids.com)—Healthykids.com has information for adults on nutrition.
- [www.kidshealth.org](http://www.kidshealth.org)—The Nemours Foundation's web site for kids and adults has information on a variety of health topics.
- [www.nal.usda.gov:8001/py/pmap.htm](http://www.nal.usda.gov:8001/py/pmap.htm)—The USDA's food guide pyramid
- [www.usda.gov/oo/entirebook.htm](http://www.usda.gov/oo/entirebook.htm)—The USDA's activity book on Dr. George Washington Carver
- *A Picture Book of George Washington Carver*, by David A. Adler

# 1 TRACING THEIR ROOTS

Peanuts are very popular in the United States, but they didn't originate in this country. In fact, they took an interesting route to get here. Peanuts originated in either Peru or Brazil in South America. Explorers brought them as far north as Mexico and then back home to Spain. From there, traders took peanuts to Africa and Asia. Peanuts were then transported to the U.S. from Africa on slave ships. So, while they originated in South America, peanuts visited a few other continents before making their way to the United States.

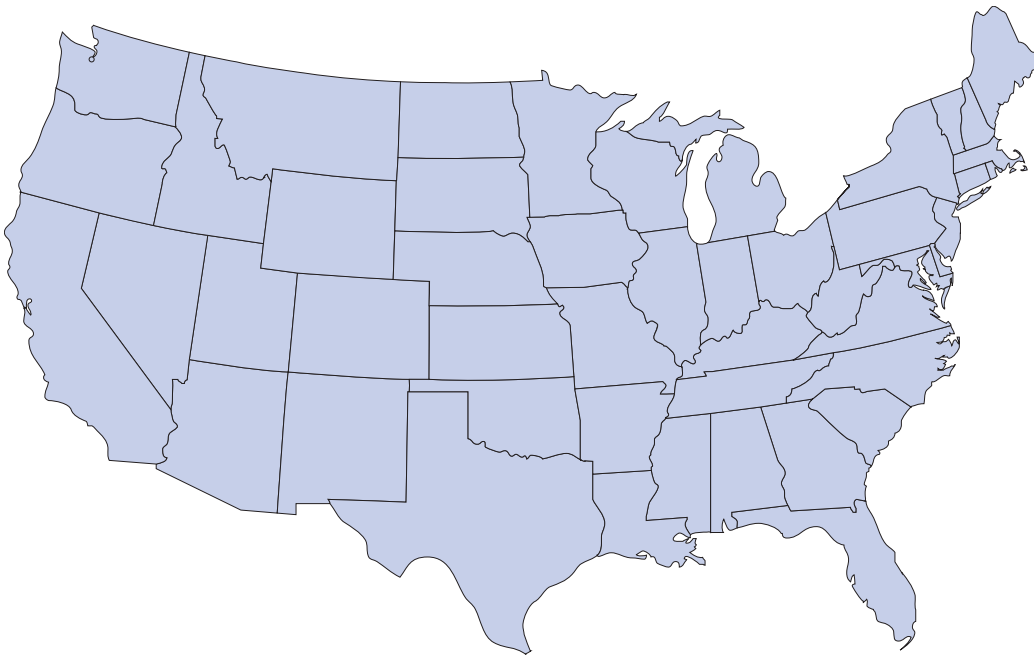
In the 1800s, peanuts were grown and sold in South Carolina. Farmers found them difficult to grow and harvest, and they were not very popular. Many people con-

sidered peanuts to be food for livestock. Their popularity increased, however, when soldiers started eating them during the Civil War.

In the early 1900s, new machinery and farming techniques introduced by Dr. George Washington Carver made it easier to plant and harvest peanuts. People's interest in the crop began to grow and they wanted peanut oil, roasted peanuts, and peanut butter. Dr. John Harvey Kellogg secured the patent for his "nut butter" in 1895, but peanut butter really took off after it was introduced to Americans at the 1904 Universal Exposition in St. Louis. Today, the peanut industry adds \$4 billion to the U.S. economy yearly.

**DID YOU KNOW...**  
**Argentina, China, India, and the U.S. are the largest producers of peanuts?**

**There are 15 states in the U.S. where farmers grow peanuts that they sell to processors and manufacturers who make peanut butter and peanut snacks. The nine major producers are Georgia, Texas, Alabama, North Carolina, Florida, Virginia, Oklahoma, New Mexico, and South Carolina. Louisiana, Arizona, Arkansas, Mississippi, California, and Tennessee are minor producers. On the map, find and label these 15 states (use their two-letter abbreviations).**

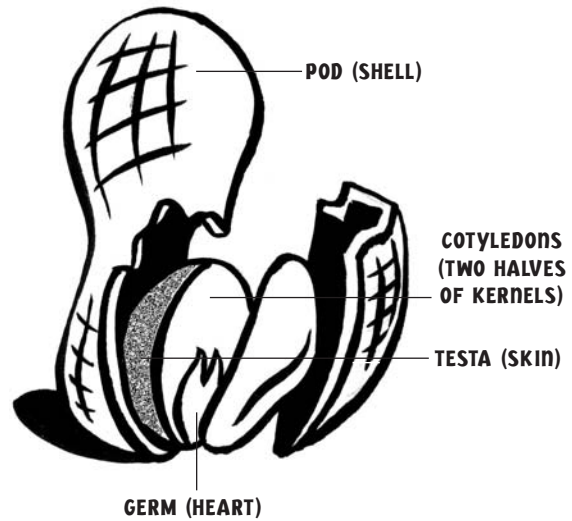
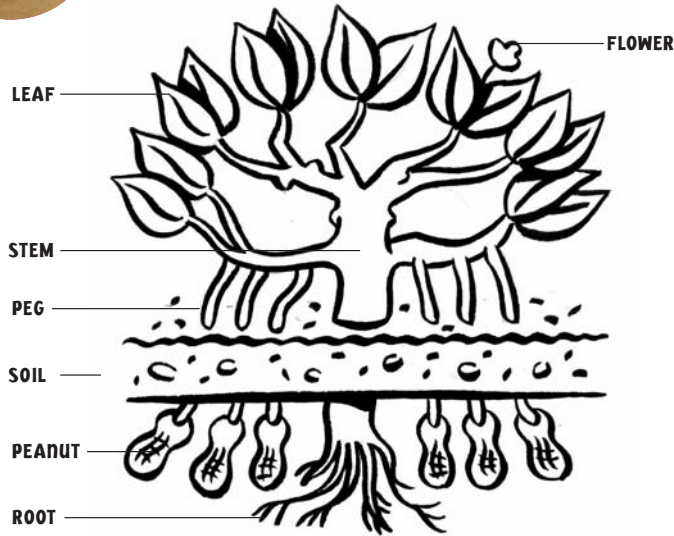


**Take a look at the map. Do you see any patterns? What do you think these 15 states have in common?**

**Ready for a challenge? On the back, write the capitals of each of these 15 states.**

2

FOLLOW THAT SEED



Did you know that peanuts are not nuts? Peanuts are actually legumes, like beans and peas. Legumes are fruits that come in a shell or a pod with seeds inside. Most peanut pods have two seeds. These seeds are the peanuts we eat. There are four types of U.S.A.-grown peanuts: Runners, Virginias, Spanish, and Valencia.

Peanuts are planted in April and May when the soil is about 65-70 degrees. Peanut farmers plant kernels (actual peanuts) from the previous year. After about 10 days, seedlings break through the soil and the plants begin to grow. Peanut plants have oval-shaped leaves and grow to be about 18 inches tall. The unique thing about peanut plants is that they grow flowers above ground, but the peanut grows underground. Flowers bloom after about 40 days. Once the flowers pollinate and lose their petals, the base of the flower then forms a type of stem called a *peg*. The peg heads toward the ground and pushes itself into the soil. The peanut pod then begins to grow underground at the tip of the peg.

Peanuts are harvested about 120 to 160 days after they are planted. Harvesting peanuts is a two-step process. First, a machine called a *digger-inverter* loosens the plants and cuts their roots. A *digger-shaker* lifts the plant from the ground, shakes off the soil, and turns the plant upside down to dry. After the plants dry for a few days, a machine called a *combine* separates the peanuts from their vines. Peanuts are then placed in a *wagon* to dry. This is called *curing*. Once cured, peanuts go through a cleaning and inspection process. They might then be shelled and packaged, or sold to a peanut butter manufacturer.

**USE YOUR KNOWLEDGE OF PEANUTS TO ANSWER THESE QUESTIONS.**

1. How many types of peanuts are found in the U.S. and what are they called?  
\_\_\_\_\_
2. From what part of the plant do peanut pods grow?  
\_\_\_\_\_
3. When are peanut plants ready to be harvested?  
\_\_\_\_\_
4. What machines are involved in peanut harvesting?  
\_\_\_\_\_
5. Why are peanut plants different from other fruit plants?  
\_\_\_\_\_

**HOW IS PEANUT BUTTER MADE?**

**Peanuts that are used for peanut butter are shelled, roasted, and cooled. Then the skins are removed, the kernels are split, and the hearts are removed. The peanuts are cleaned again and sorted. Once sorted, they are usually ground and mashed twice. The peanuts are first ground by themselves, and then they might be ground again with very small amounts of salt, sweetener, and a stabilizer. The stabilizer helps keep the peanut butter fresh. At least ninety percent of peanut butter is peanuts.**

## 3

## A DAY IN THE LIFE OF A PEANUT FARMER

Can you imagine what it would be like to be a peanut farmer? Dee Dee Darden doesn't have to imagine—she is a peanut farmer. Mrs. Darden is a graduate of Virginia Tech and has been in the farming business for several years. We asked Mrs. Darden a few questions about her job. Take a look at what she had to say.



Mrs. Darden (on left in back), her husband Tom, and daughter Carrie

### How long have you been in the peanut farming business?

All of my life! I was born on a peanut farm, married a peanut farmer, and actively work every day on our family farm.

**Where is your farm?** Our farm is located outside of Smithfield, Virginia—the Tidewater area.

**How large is your farm?** We farm around 600 acres. We grow peanuts, cotton, wheat, soybeans, and corn. We also have cattle.

**What is the hardest part about being a peanut farmer?** The long hours. In the spring we are planting, and in the fall we are harvesting. It is very difficult sometimes to be a mother, grandmother, and a farmer.

**What skills do you need to be a peanut farmer?** You need math skills to help figure crop budgets and to determine the correct amount of chemicals to use. You need to have good reading skills to understand proper use of chemicals and equipment, and you need mechanical skills to operate and work machinery.

**Describe your average day.** Every day is different and busy. Some days are spent working on budgets and paper work. Some days are spent working on equipment, doing routine repairs and inspections. Other days are spent preparing the soil to plant the crops. We also spend days planting, spraying for weeds and insects, and finally harvesting the crops.

**What do you consider the most important piece of equipment?** The planter. We have different planters for different crops, but this is the most important piece of equipment to make sure the seeds are planted at the right depth and distance apart.

**What types of things could destroy a crop? What do you do if this happens?** Insects and diseases could destroy crops. We scout our crops weekly to check

for insects and worms that could eat our crops, and for diseases that could greatly reduce our yields. We use different types of insecticides and fungicides as needed when problems develop.

**What do you do with the peanuts you harvest?** Our peanuts are sold to a large processor. Most of the peanuts in the U.S.A. are used to make peanut butter and candy. Our Virginia peanuts are used in snacks and “in-shell” or “ball-park” peanuts.

### WHO WAS DR. GEORGE WASHINGTON CARVER?

**Dr. George Washington Carver is known as the father of the peanut industry. He discovered that if farmers planted different crops every few years, it would be better for the soil and would help the crops grow better. This is known as crop rotation. For example, farmers might alternate between planting cotton and peanuts. Dr. Carver also discovered more than 300 uses for peanuts, including shampoo and ink!**

### DID YOU KNOW...

- the average peanut farm is about 100 acres? That's equal to 4,356,000 square feet.
- one acre can produce two tons of peanuts? That's 4,000 pounds.

**4**

**SPREAD THE NEWS—PEANUTS ARE NUTRITIOUS!**

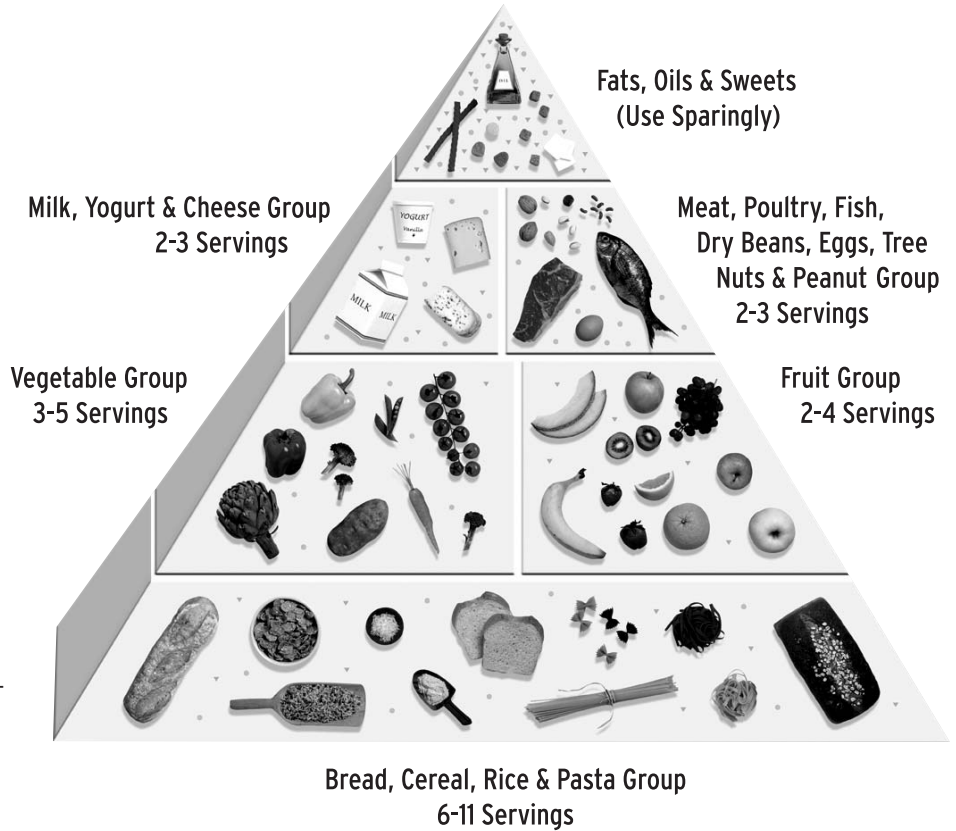
**Did you know that Americans eat more than 600 million pounds of peanuts and 700 million pounds of peanut butter each year? Did you also know that peanuts and peanut butter are nutritious?**

It is important to eat healthy, well-balanced meals every day. The foods we eat contain nutrients, which are minerals and vitamins. Our bodies use the nutrients for fuel (energy) and to help us grow and develop. The U.S. Department of Agriculture (USDA) created a food guide to help us plan what kinds of food we should eat in order to get the nutrients we need each day.

Peanuts and peanut butter are part of the “meat” group because they are high in protein like meat, fish, poultry, and eggs. Protein is very important because it gives us energy and it repairs our muscle tissue. Peanuts and peanut butter have lots of other important nutrients, too. They are good sources of phosphorus, magnesium, and niacin, which give our bodies energy and help make them stronger. Peanuts are also a good source of thiamin and folate.

Take a look at the Food Guide Pyramid. On a separate piece of paper, create a nutritious meal that includes peanuts or peanut butter. Be sure to include something from each of the food groups except “fats, oils, and sweets.” Be creative—no plain PB&J on the menu.

Keep in mind that two tablespoons of peanut butter or 1/3 cup of peanuts each count as one serving, and are considered to be one ounce of “meat” on the pyramid. Each of these servings contains about 7-8 grams of protein.



Source: U.S. Dept. of Agriculture Center for Nutrition Policy and Promotion

**DID YOU KNOW THAT PEANUTS AND PEANUT BUTTER...**

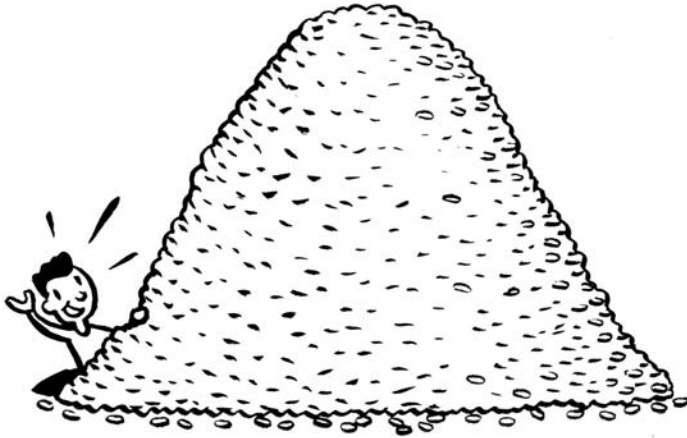
- **are cholesterol-free? Cholesterol is found in all body cells. Our bodies produce cholesterol, so it's important not to eat too much of it.**
- **have “good” fat? Our bodies need fat. But, some fats are better than others. Peanuts and peanut butter are high in good fat called *unsaturated fats*.**

**CHECK OUT THE USDA'S FOOD GUIDE PYRAMID AT**

[www.nal.usda.gov:8001/py/pmap.htm](http://www.nal.usda.gov:8001/py/pmap.htm)

**5**

**PEANUTS BY THE POUND**



**CHECK OUT**  
[www.buddymcnutty.com](http://www.buddymcnutty.com)  
**for fun games and activities.**

**Now that you are in the know about peanuts and peanut butter, use your knowledge and math skills to solve these word problems. Use the back or a separate piece of paper to show your work.**

1. If it takes 540 peanuts to make a 12-ounce jar of peanut butter, how many peanuts would you need to make 25 jars?

\_\_\_\_\_

2. If it takes 540 peanuts to make a 12-ounce jar of peanut butter, about how many peanuts would it take to make an 18-ounce jar?

\_\_\_\_\_

3. The largest peanut butter factory produces 250,000 jars of peanut butter every day. How many jars is that a month (30 days)? A year (365 days)?

\_\_\_\_\_

4. If the average child will eat 1,500 peanut butter and jelly sandwiches before graduating from high school, how many sandwiches would your class eat before graduating?

\_\_\_\_\_

5. The world's largest peanut butter and jelly sandwich was created in Oklahoma City, Oklahoma, on September 7, 2002. It covered 62 square feet, and contained 350 pounds of peanut butter and 144 pounds of grape jelly. On average, how much peanut butter and jelly were used per square foot? Per square inch? (Round to the nearest hundredth.)

\_\_\_\_\_

6. If the average peanut plant produces 40 pods that grow into peanuts, how many peanuts would 300 plants produce?

\_\_\_\_\_

7. Americans eat about 600 million pounds of peanuts a year. If the population is 287,041,000, what is the average number of pounds of peanuts each person eats a year? (Round to the nearest hundredth.)

\_\_\_\_\_

8. There are enough peanuts in one acre to make 30,000 peanut butter sandwiches. If the average peanut farm has 100 acres, how many peanut butter sandwiches could be made from the farm's entire crop?

\_\_\_\_\_

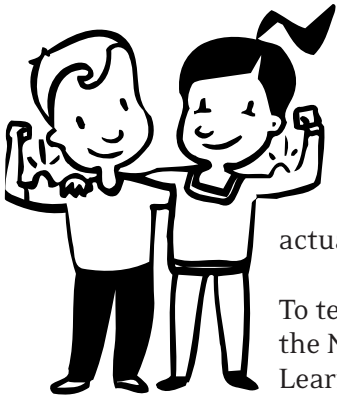
9. Tom Miller used his nose to push a peanut to the top of Pike's Peak in 4 days, 23 hours, 47 minutes, and 3 seconds. Convert this to minutes and seconds.

\_\_\_\_\_

10. Americans spend \$800 million a year on peanut butter. If the average jar costs \$2.50, how many jars could be bought for this amount of money?

\_\_\_\_\_

Sources: *The World Almanac for Kids 2003*. World Almanac Education Group, 2002. [www.nationalpeanutboard.org](http://www.nationalpeanutboard.org)



## Dear Parents and Guardians,

Who do you think loves peanuts more—kids or adults? The nutritious and naturally cholesterol-free legume is popular among kids and adults alike. Adults actually eat more peanut butter than kids do.

To teach kids about these classic favorites, the National Peanut Board and Lifetime Learning Systems have created “In a Nutshell,” an educational program distributed to your child’s teacher. Through engaging activities, your child has been learning about the history and nutritional value of peanuts and peanut butter, and peanut farming. They have also been learning fun facts. Ask your child to share these facts with you—you might be surprised!

One fact that your child has learned is that peanuts and peanut butter are good sources of protein and other nutrients. They are also cholesterol-free and low in saturated fat. A one-ounce serving of peanuts has protein, phosphorus, magnesium, copper, thiamin, niacin, and folate. Two tablespoons of peanut butter are packed with protein, magnesium, phosphorus, and vitamin E. These nutrients help our bones and blood, regulate our body functions, and provide us with energy. Adding peanuts or peanut butter to a meal or snack is a great way to boost the protein in your diet and your child’s. We have added some simple ideas to help you share these classic, nutritious treats with your kids.

Sincerely,



**National Peanut Board™**

Representing the USA’s 25,000 peanut farmers and their families

**Lifetime Learning Systems®, Inc.**

A Division of Weekly Reader

## COOLING, REFUELING PEANUT PARFAIT

HERE’S WHAT YOU NEED:

- A clear container
- 1 cup lemon or vanilla yogurt
- 1 cup of your favorite fruit (blueberries, strawberries, bananas, etc.)
- 4 teaspoons peanuts, whole or chopped

DIRECTIONS:

1. Wash fruit. If needed, chop or slice into bite-sized pieces. An adult should do the cutting.
2. Measure 1/4 cup of yogurt and place it on the bottom of the cup.
3. Place 2 tablespoons of fruit on top of the yogurt.
4. Place 1 teaspoon of peanuts on top of the fruit.
5. Repeat steps 2, 3, and 4, layering yogurt, fruit, and peanuts until you reach the top.

## TRY THESE OTHER FUN, TASTY PEANUT AND PEANUT BUTTER SNACKS.

- Stir peanut butter into hot cereal to add protein with a twist.
- Warm peanut butter in the microwave, spoon over frozen yogurt or waffles, and top with peanuts.
- Combine equal parts of peanut butter, crunchy whole-grain cereal, and raisins. Use as a spread on tortillas or apple slices.
- Chop peanuts and toss them into side dishes such as rice, fruit or green salads, and vegetables. Peanuts add a little crunch and a bunch of nutrients—protein, folate, and vitamin E.
- Make peanut butter pizzas. Defrost frozen pizza shells, spread peanut butter to cover, add toppings such as raisins, marshmallows, chocolate chips, pineapple, and jam, and bake according to the pizza dough instructions.



**For more recipes and snack ideas, and for more information on the nutritional benefits of peanuts and peanut butter, check out [www.nationalpeanutboard.org](http://www.nationalpeanutboard.org).**

  
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