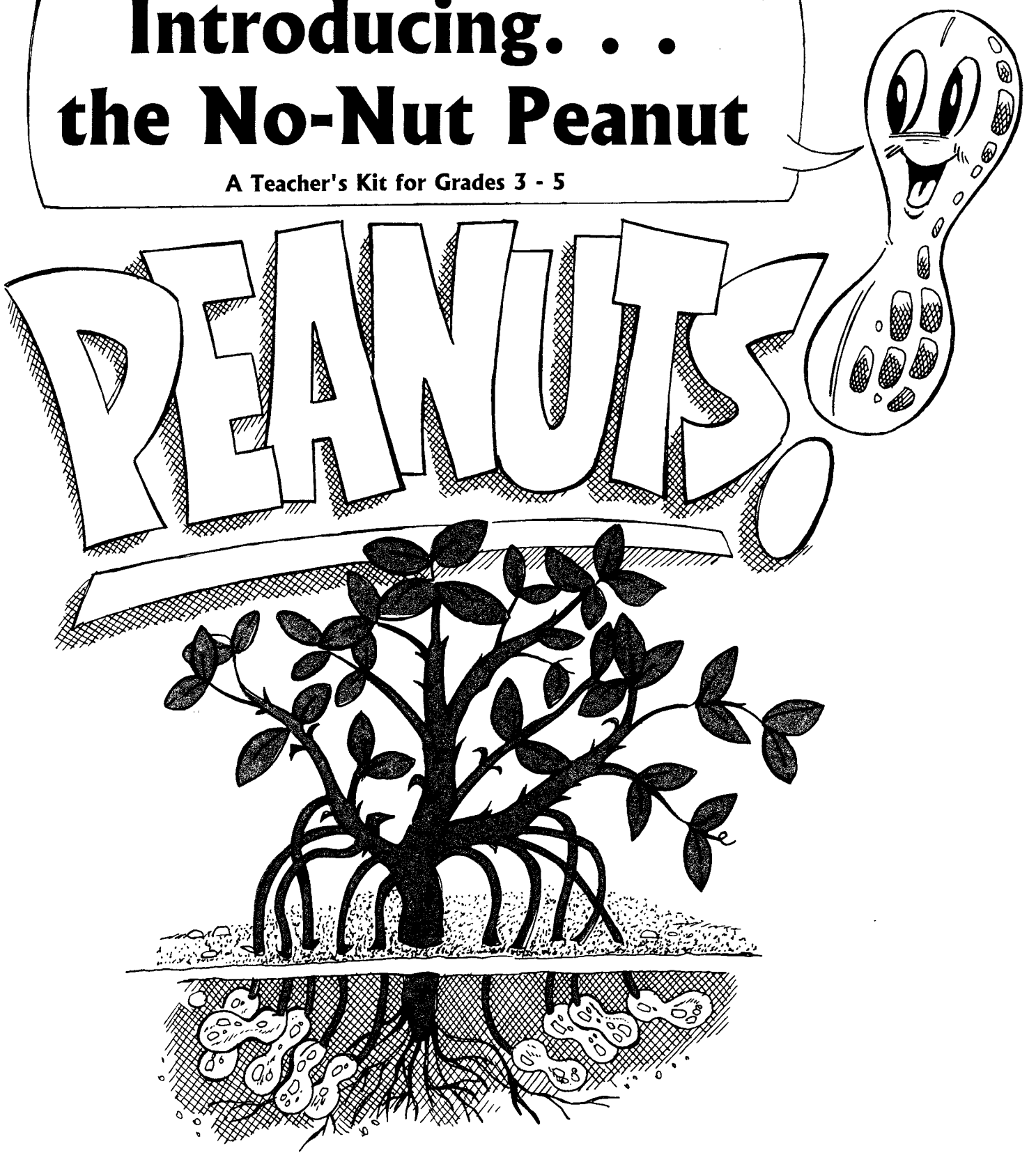
Introducing. . . the No-Nut Peanut

A Teacher's Kit for Grades 3 - 5



Teacher's Guide

Introducing the No-Nut Peanut

The peanut probably has more aliases than any other food. It has been called a goober, guinea seed, pinda, pistache de terre, groundnut, monkey nut, earthnut, manilla nut and more. But make no mistake, the peanut is not a nut, even though it has been tagged with a number of "nutty" names. The peanut is a legume that grows underground. It can rightly be called a ground pea because it belongs to the pea family.

This well-traveled legume, originally from South America, has made its way to countries around the world. It has even traveled into outer space in the form of space sticks made from peanut butter.

The Origins of the Peanut

The peanut probably originated in Brazil or Peru, although no fossil records exist to prove this. But for as long as people have been making pottery in South America (3,500 years or so) they have been making jars shaped like peanuts and decorated with peanuts. Graves of ancient Inca Indians found along the dry western coast of South America often contain jars filled with peanuts and left with the dead to provide food in the afterlife.

Peanuts were grown as far north as Mexico by the time the Spanish began their exploration of the New World. The explorers took peanuts to Africa and Asia. In Africa the plant became common in the western tropical region. The peanut was regarded by many Africans as one of several plants possessing a soul.

Africans were the first people to introduce peanuts to North America. Eventually they were planted throughout the southern United States. The word "goober" comes from the Congo name for peanuts, "nguba." In the 1700's peanuts, then called groundnuts or ground peas, were studied by botanists and regarded as an excellent food for pigs. Records show that peanuts were grown commercially in South Carolina around 1800 and used for oil, food and as a substitute for cocoa. However, until 1900 peanuts were not extensively grown because they were regarded as food for the poor and because growing and harvesting were slow and difficult until labor-saving equipment was invented around the turn of the century.

Peanuts Sweep the Country

The first notable increase in U.S. peanut consumption came in 1860 with the outbreak of the Civil War. Troops of the Southern Confederacy were often without food and the easily-grown peanut became an important staple. Union soldiers came to appreciate peanuts, too, and carried home with them a taste for the Confederate's Goober Peas. At least one Civil War song, "Eatin' Goober Peas," was inspired by peanuts being roasted over the campfire.

Peanuts were introduced in the New York City area around 1870. They were sold roasted in the shell by street vendors. As the famous Barnum Circus made its way across the country, it was accompanied not only by its animal and highwire acts, but also by peanut vendors.

Baseball stadiums began to sell peanuts by the bagful in the late 1800's. Once, a baseball club owner threatened to bar peanuts from his park because it cost too much to sweep out the hulls. The fans protested so much that the owner not only reversed his decision, but gave peanuts away free at the opening game of the next season!

While peanut production rose during the last half of the century, peanuts were still harvested by hand which left stems and trash in the peanuts. Thus, poor quality and lack of uniformity kept the demand for peanuts down.

Around 1900, equipment was invented for planting, cultivating, harvesting and picking peanuts from the plants, and for shelling and cleaning the kernels. With these mechanical aids, peanuts rapidly came into demand for oil, roasted and salted nuts, peanut butter and candy.

Peanut production rose rapidly during and after World Wars I and II as a result of its popularity with Allied Forces and the post-war baby boom. By the mid-1990's, Americans were consuming about nine pounds of peanuts per person each year and peanuts contributed over $4 billion to the U.S. economy each year.

Dr. George Washington Carver Father of the Peanut Industry

Dr. George Washington Carver began his research into peanuts in 1903 at Tuskegee Institute in Alabama. The talented botanist recognized the value of the peanut as a cash crop. He proposed that peanuts be planted as a rotation crop in the southeastern cotton growing regions where the boll weevil insect threatened the agricultural base. Farmers listened and the face of southern farming was changed forever.

Dr. Carver's research led to improvements in horticulture and the development of more than 300 uses for peanuts (including shoe polish and shaving cream). For his work in promoting its cultivation and consumption, Carver is considered the father of the peanut industry.

Introduction of Peanut Butter

In 1890, it's believed that a St. Louis physician encouraged a food products company owner to package a ground peanut paste as a nutritious protein substitute for his patients with poor teeth who couldn't chew meat. In 1895, Dr. John Harvey Kellogg applied for the first patent for peanut butter. The world was first introduced to peanut butter at the Universal Exposition of 1904 in St. Louis, Missouri where the treat sold for about six cents per pound.

Types of Peanuts

Although peanuts come in many varieties, there are four basic market types: Virginia-type, Runner, Spanish-type and Valencia. Each of the peanut types is distinctive in size, flavor, and nutritional composition.

Runner peanuts are known for their consistent, medium kernel size. Half the runners grown are used to make peanut butter. The rest are used in candy and snacks. They are grown mainly in Alabama, Florida and Georgia and account for 75% of the total U.S. peanut production.

Virginia-type peanuts are known for their extra large kernel size. They account for most of the peanuts roasted and processed in-the-shell. When shelled, the larger kernels are sold as snack peanuts. Virginia-type peanuts are grown mainly in southeastern Virginia and North Carolina and account for 20% of the total U.S. peanut production.

Spanish-type peanuts are known for their smaller kernels and reddish-brown skins. They are used in peanut butter, snack peanuts and peanut candies. Spanish-type peanuts also have a high oil content which is good when crushing for oil. They are grown mainly in Oklahoma and Texas and account for 4% of the total U.S. peanut production.

Valencia peanuts are known for having three or more small kernels to a shell and for their bright red skins. They are very sweet and are usually roasted and sold in-the-shell. Valencias are also good boiled. They are grown mainly in New Mexico and account for 1% of the total U.S. peanut production.

How the Peanut Plant Grows

The peanut is unusual because it flowers above the ground, but fruits below the ground. Typical misconceptions of how peanuts grow place them on trees (like walnuts or pecans) or growing as a part of a root (like potatoes).

Peanut seeds (kernels) grow into a green oval-leafed plant about 18 inches tall which develops delicate yellow flowers around the lower portion of the plant. The flowers pollinate themselves and then lose their petals as the fertilized ovary begins to enlarge. The budding ovary or "peg" grows down away from the plant, forming a small stem which extends to the soil. The peanut embryo is in the tip of the peg, which penetrates two to three inches into the soil. The embryo turns horizontal to the soil surface and begins to mature, taking the form of the peanut.

Peanut farmers usually plant their crop after the last frost in April or May when the ground temperature is about 65 to 70 degrees Fahrenheit. They cultivate the crop one to three times a season to control the weeds and grasses. The peanut farmer needs to 120 to 160 frost-free days with adequate moisture for a good peanut crop. After peanuts mature and the soil conditions are neither too wet nor too dry, the peanuts are dug from the ground. They are left in the sun to dry for two or three days. Then a combine is used to separate the peanuts from the vines.

Where Peanuts Grow

Peanuts are grown in the warm climates of Asia, Africa, Australia, North America and South America. India and China together account for more than half of the world's peanut production. The United States has about 3% of the world acreage of peanuts, but grows nearly 10% of the world's crop because of higher yields per acre. Other major peanut growing countries include: Senegal, Sudan, Brazil, Argentina, South Africa, Malawi and Nigeria.

Nine states grow the U.S. peanut crop: Georgia (which grows about 45% of all U.S. peanuts), followed by Texas, Alabama, North Carolina, Oklahoma, Virginia, Florida, South Carolina and New Mexico. These states are grouped into three regions. The southeast region (Georgia, Florida, and Alabama) grows mostly Runner peanuts. The southwest (Texas and Oklahoma) grows Spanish-type and Runner peanuts. The Virginia/Carolina area grows mostly Virginia-type peanuts. About 62% of all U.S. peanuts are grown in the southeast, with Virginia/Carolina accounting for 18%, and the southwest accounting for 20%.

Nutrition in a Nutshell

Peanuts and peanut butter are protein powerhouses providing 12% of the Recommended Daily Allowance per serving. One ounce of peanuts or two tablespoons of peanut butter make up one serving. A peanut butter sandwich, a glass of milk and an orange make a balanced meal and provide 63% of an eight to ten year old's daily protein requirement. Rapidly growing children need a daily supply of protein to form bones and tissues. Adults need protein daily to replace worn-out body cells.

Peanuts and peanut butter do not contain any cholesterol. They are good sources of fiber. Fiber reduces the risk of some types of cancer, helps the digestive system, helps control blood sugar levels and may help reduce a person's blood level of cholesterol.

Peanuts contain 6 essential vitamins including folate, Vitamin E, niacin, thiamin, B6 and riboflavin. Peanuts also contain 7 essential minerals including copper, phosphorous, magnesium, iron, potassium, zinc and calcium.

Peanuts and peanut products are low in saturated fat, the type that health authorities recommend we cut down on. In fact, 80% of the fat in peanut butter is unsaturated, the "good fat." Peanuts and peanut products are rich in mono-unsaturated fatty acids, which have been shown to lower "bad" LDL-cholesterol levels. Peanuts actually have less saturated fat than most other nuts and peanut butter has about the same as many other lunch foods.

Resource List - Ideas for Teaching

Geography
• Have students use encyclopedias to find out the name of the capital of each of the peanut-producing states and name one interesting characteristic of each city.
• Have students print the nine major peanut-producing states in alphabetical order.
• Have students find each of the nine peanut-producing states on a map and color them according to a key.
• Have the students use a road atlas and estimate the distance from their hometown city to the capital city of each of the nine peanut-producing states.
• The 39th President of the United States was from one of the nine main peanut producing states. Have students research him and find out why peanuts were important to him. Then, have them locate his hometown on a road atlas.
• Display a map of the United States on the bulletin board. Have students put a pin on the states that grow peanuts.

Language
• Provide a list of famous nicknames for the peanut (African Nut, Goober, Jar Nut, Chinese Nut, Hawk Nut, Manila Nut, Monkey Nut, Grass Nut, Kipper Nut, Ground Nut, Guinea Seed, Pinda, and Pistache de Terre). Tell the story of how the peanut got the nickname "Goober" from the African word "gnuba." Have students write a creative story about how they think the peanut received one of its other nicknames.
• Have students write a short story or poem about peanuts, peanut butter or peanut farming.

Creative Dramatics
• Have students write and perform a short play about the path of the peanut through history, the life of a peanut farmer or the journey of a peanut from farm to peanut butter.

Science
• Have students break the kernels of the peanut in half and crush them between two pieces of paper to see the oil that comes out.
• Give students several roasted peanuts in the shell and several raw peanuts in the shell. Have them shell the peanuts and remove the skins. Note that it is difficult to remove skins from raw peanuts. Compare the taste and texture of raw and roasted peanuts.
• Have students research other members of the legume family.

Health/Nutrition
• Have students write down everything that they eat for one day. Put a picture of the Food Guide Pyramid with the correct number of servings each day on the bulletin board. Have students divide what they ate into the groups of the pyramid to see if they had a balanced diet that day.
• Classroom cooking is fun and may teach good snacking habits while incorporating nutrition, math, new words and teamwork. See pages 5-6 for recipes.
• Have students write a 30-second "commercial" on the importance of eating a healthy breakfast. Have them include peanut butter breakfast ideas and why peanut butter is a healthy start to the day.

Social Studies/History
• Tell the story of Dr. George Washington Carver and how he came to be known as the father of the peanut industry. Include the following vocabulary words in the story and allow students to share their interpretations and definitions of these words: botanist, century, boll weevil, crop rotation and cultivation.
• Use a peanut puppet (made from a paper bag or sock) named "Goober" to describe how peanuts came to be called "goobers." Teach students the Civil War song, "Eatin' Goober Peas." Provide materials for students to make their own peanut puppets.
• Have students divide into research groups in the library and investigate and then write a one page report on one of the following topics. Students should emphasize what importance peanuts has for each topic.

George Washington Carver
The Civil War
former President Jimmy Carter
Inca Indians

• On a world map have your students trace peanuts as they traveled from South America to Spain, Africa, Asia, and North America. Mark countries with flags or pushpins.
• Have students write a short story about a day in the life of a peanut farmer. Begin with getting up early to do chores around the farm. Have students draw pictures to accompany their story.

Bulletin Board and Classroom Displays
• Have students make a peanut plant out of construction paper by cutting out stems, leaves, pegs and peanuts or have students draw and color a picture of a peanut plant.
• Have students draw peanut characters doing various activities such as dancing, jumping, hopping, riding a bike or running to show that peanuts are good energy food.
• Display students' work, using the following titles or some of your own on the bulletin board:

Peanut Pride
Nuts About Peanuts
Peanut Productions
Look What We Shelled Out
Nutty News
Peanut Power
Crunching Numbers with Peanuts

Peanut Music

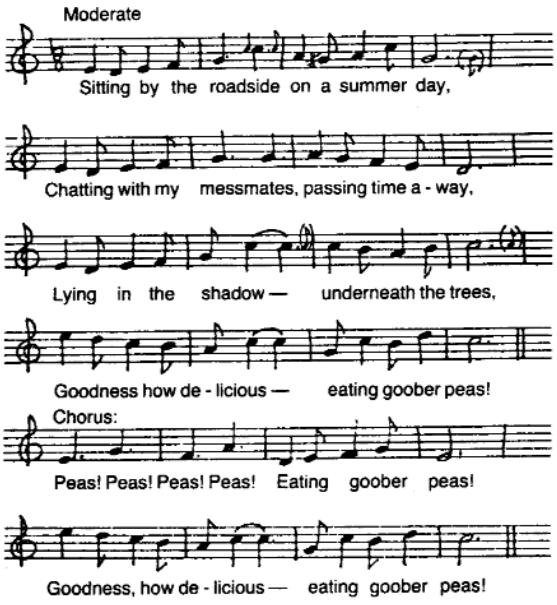
A Peanut Sat on a Railroad Track

(tune: Polly Wolly Doodle)

A peanut sat on a railroad track,
his heart was all a flutter
(pat chest rapidly)

'Round the bend came number ten.
TOOT! TOOT!
(pull imaginary cord)
Peanut Butter! Squish!
(palms together)

"EATING GOOBER PEAS"



From "Sound Off!" Soldier songs from the Revolution to World War II, by Edward Author Dolph; music arranged by Philip Egner. Copyright 1929, 1942, Farrar & Rinehart, Inc., N.Y. & Toronto; reprinted in B.A. Botkin, A TREASURY OF SOUTHERN FOLKLORE.

Peanut Recipes

Blender Peanut Butter

1 cup roasted peanuts
¼ teaspoon salt (optional)
1 teaspoon peanut oil
Place roasted peanuts, salt, and peanut oil in a blender. Blend briefly. Turn blender off and use a rubber spatula to push down whole peanuts which rise to the top. Blend 3 to 4 minutes more, scraping sides as necessary until desired consistency is reached. Store in a tightly closed container in the refrigerator. Stir before serving as oil may rise to the top when standing. Yields: ½ cup

Food Processor Peanut Butter

Use the same ingredients as above. Use metal blade in food processor. Place ingredients in container and close. Process for 3 to 5 minutes. The ground peanuts will form a ball which will slowly disappear. Stop machine. Scrape sides of container with rubber spatula. Start machine. Process until it looks like paste or is easy to spread. Store as above. Yields: ½ cup

Trail Mix

1 cup roasted peanuts
1 cup raisins
1 6-oz. package chocolate chips
1 cup dry fruit
Combine. Store in tightly closed container. Yields: 4 cups

Knots on a Log

peanut butter
1 cup shredded carrot
celery sticks cut in 3" pieces
raisins
Mix peanut butter and shredded carrot. Spread on celery sticks. Sprinkle with raisins.

GoGo Shake

1 small banana
¼ cup smooth peanut butter
¼ pint vanilla ice cream
1 cup milk
In a blender, blend banana until smooth. Blend in peanut butter and then ice cream. Add milk and blend until smooth.
Yields: two 1-cup servings

Peanutty Orange Faces

2 tablespoons peanut butter
¼ cup orange juice
2 oranges
4 lettuce leaves
raisins
Measure peanut butter and orange juice into bowl and use a spoon or fork to blend together. Peel oranges. Insert fork into side of orange and place on cutting board. Cut orange into ¼-inch slices. Spread orange slices with peanut butter mixture. Arrange on lettuce leaves. Place raisins on top of each slice to make a face. Serve immediately or chilled.
Yields: 4 salads

Honey Peanut Butter Balls

1 cup chopped roasted peanuts
½ cup creamy peanut butter
½ cup honey
1 cup dry milk
Pour peanuts into a plate or shallow bowl; set aside. In a medium-sized bowl combine peanut butter and honey. Stir in dry milk, mixing well. Form dough into quarter sized balls. Roll each in the peanuts until coated. Yields: 4 dozen

Peanut Butter Fruit Dip

1 cup peanut butter
1 cup honey
½ teaspoon ground cinnamon
Cream peanut butter, honey and cinnamon until smooth. Use as a dip for fresh fruit, dried fruit, fresh vegetables, or pretzels. Can also be used as a spread for toast, bread, or crackers. Yields: 2 cups

Apple Wedges

apple
peanut butter
raisins
Core apple and slice into eight wedges. Spread peanut butter on each wedge and top with raisins.

Peanut Gondolas

2 lettuce leaves
1 banana
mayonnaise
¼ cup chopped roasted peanuts
2 cherries
Place lettuce on salad plate. Peel banana and cut in half lengthwise. Place banana halves on lettuce leaves. Spread banana halves with mayonnaise, sprinkle chopped peanuts over mayonnaise and top with cherries. Yields: 2 servings

Peanut Butter Pudding

2 cups cold milk
1 package instant pudding (any flavor)
½ cup crunchy peanut butter
Pour milk into mixing bowl. Add peanut butter and pudding mix. Beat slowly until well mixed, about 1 minute. Pour into serving dishes. Let stand to set, about 5 minutes. Yields: 6 servings

Mexican Peanut Log

2½ cups shredded cheddar cheese, at room temperature
¼ cup creamy peanut butter
2 tablespoons taco sauce
snipped parsley
snack crackers
Combine cheese, peanut butter and taco sauce in small bowl. Beat until smooth with an electric mixer. Shape into a log 1½ inches in diameter. Wrap in waxed paper and chill. To serve, roll log in snipped parsley to coat. Serve with crackers. Yields: 1 log

Apple-Orange Salad

⅓ cup mayonnaise
¼ cup crunchy peanut butter
½ cup frozen whipped dessert topping (thawed)
1 medium orange
4 apples, sliced
In a small bowl, gradually blend mayonnaise into peanut butter. Fold in thawed whipped topping. Section orange, reserving 1 tablespoon juice. In another bowl, sprinkle apples with orange juice; stir to coat. Mix in orange sections. Top with peanut butter mixture. Serve at once. Yields: 6 servings

Peanut Butter Swirl

2 squares graham crackers
2 tablespoons peanut butter
1 tablespoon vanilla or fruit yogurt
nutmeg
Spread crackers with peanut butter. Top with a swirl of yogurt. Sprinkle with nutmeg. Yields: 2 servings

Easiest Yet Peanut Butter Fudge

1 bag (12-oz.) milk chocolate morsels
1 jar (12-oz.) crunchy peanut butter
1 can (14-oz.)sweetened condensed milk (not evaporated milk)
Melt chocolate and peanut butter in top of double boiler. Remove from heat and stir in milk. Pour in an 8 x 8 inch pan lined with waxed paper. Refrigerate to chill. Cut into 1-inch pieces. Yields: 1½ pounds

Soft Peanut Butter Cookies

1 cup granulated sugar
1 cup peanut butter, creamy
1 egg, slightly beaten
1 teaspoon vanilla extract
Mix all ingredients thoroughly. Drop by teaspoonful onto baking sheet and press with fork. Bake in a 325 degree oven for approximately 10 minutes. Cool before removing from baking sheet.
Yields: 3 dozen cookies

Peanut Butter S'mores

graham cracker
peanut butter
large marshmallow
Spread cracker with peanut butter. Top with marshmallow. Place under broiler until marshmallow starts to brown. Yields: 1 serving

Crispy Peanut Butter Treats

3 tablespoons butter or margarine
½ cup peanut butter
5 cups miniature marshmallows
5 cups crispy rice cereal

Melt butter, peanut butter, and marshmallows over low heat. Stir in rice cereal. Mix until cereal is coated. Press out onto waxed paper or into buttered 9-inch square pan. Cool. Cut into squares.
Yields 18 squares.

Peanut Butter Haystacks

1 package (6-oz.) butterscotch morsels
1/3 cup creamy peanut butter
1 cup roasted peanuts
1 can (3-oz.) chow mein noodles
Melt butterscotch morsels and peanut butter in top of double boiler over hot (not boiling) water. Stir to blend. (Or microwave butterscotch morsels in a 2 quart microwave safe container for 1 minute on HIGH; stir. Microwave on HIGH 1 minute longer. Stir until smooth. Add in peanut butter; stir to blend.) Add peanuts and noodles, stir until well covered. Form little clusters on waxed paper. Let harden. Yields 36 haystacks.

Microwave Peanut Brittle

1½ cups raw shelled peanuts, skins on
1 cup granulated sugar
½ cup light corn syrup
⅛ teaspoon salt (optional)
1 teaspoon butter
1 teaspoon vanilla extract
1 teaspoon baking soda
Stir together peanuts, sugar, syrup and salt in a 1½ quart microwave safe container. Microwave 4 minutes on HIGH; stir. Microwave 4 minutes longer. Stir in butter and vanilla. Microwave 2 minutes longer on HIGH. Add baking soda and quickly stir until light and foamy. Immediately pour onto lightly greased baking sheet and spread to ¼-inch thickness. When cool, break into pieces. Store in airtight container. Yields 1 pound.

Allergy

It is estimated that food allergy affects between one and two percent of adults and approximately six to eight percent of children. The most common food allergies among children are milk and egg. A smaller proportion of children suffer from peanut or nut allergies, which can cause very serious reactions.

The only certain way to prevent a reaction is avoidance—there is no treatment to prevent peanut allergy. The U.S. peanut industry is funding research to develop peanut allergy vaccines and drugs to mitigate allergy reactions, however it will be a number of years before these are available to peanut allergic individuals. In the meantime, with proper management, awareness, and education, most reactions to food allergens can be avoided. Individuals with a food allergy should diligently read all food labels and ask questions about foods prepared away from the home (such as in school or a restaurant). In the day care or school setting, parents of a child with food allergy should educate teachers and school staff to be prepared to recognize and treat severe allergic reactions immediately and seek first aid.

Allergic individuals should contact the Food Allergy and Anaphylaxis Network (FAAN) for more information about managing their specific allergy. Established in 1991, FAAN's mission is to raise public awareness, to provide advocacy and education, and to advance research on behalf of all those affected by food allergies and anaphylaxis.

The peanut industry through the American Peanut Council supports the work of FAAN, and works in collaboration with the group on a number of issues and projects including the "Be a A PAL: Protect a Life" program for school children. PAL is an awareness program designed to educate the friends of those with food allergies so they can help avoid risks, and so that they will know what to do if a reaction occurs. More information about the PAL program and other ideas for managing allergies in schools can be found at: http://www.foodallergy.org/school.html or by calling FAAN at 800-929-4040.