

# **Peanuts! Peanuts! Get Your Peanuts-- Connecting With Dr. George Washington Carver: The Peanut Wizard and Father of the Peanut Industry**

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To educate students to become citizens who think for themselves, interdisciplinary curriculum, an alternative to the traditional passive method of teaching, is prescribed as a social studies reform measure: Social studies teaching and learning are powerful when they are integrative (National Council for the Social Studies, 1994, pp. 164-166). In addition standards for English, science, and math have indicated a shift from subject-centered teaching to interdisciplinary curriculum (Myers, 1994).

Interdisciplinary curriculum is based in the theories of Dewey and Piaget that emphasize experiences. It is a child-centered approach to learning that emphasizes creativity, activities, "naturalistic" learning, and, above all, experiences (Ellis and Fouts 1993).

The unit described in this paper demonstrates interdisciplinary curriculum consistent with the idea that in the primary grades, children often learn social studies through opportunities that are highly integrated across several disciplines and often take the forms of units constructed around themes (National Council for the Social Studies, 1994). The unit is about George Washington Carver, a hero who made a difference in our lives.

George Washington Carver was born in the United States of America. His parents were slaves. Dr. Carver gained international recognition for his scientific discoveries, especially with peanuts. In America, George Washington Day is January 5. This paper contains information, lesson plans, and hands-on activities appropriate for elementary students that should "set the tone and lay the foundation for the social studies education that follows" (National Council for the Social Studies, 1989, p. 7).

## **Social Studies Standards:**

### **Time, Continuity, & Change**

- Demonstrate an ability to use correctly vocabulary associated with time such as past, present, future, and long ago; read and construct simple time lines; identify examples of change; and recognize examples of cause and effect relationships.

- Identify and use various sources for reconstructing the past, such as documents' letters, diaries, maps, textbooks, photos, and others.

### **People, Places, & Environments**

- Construct and use mental maps of locales, regions, and the world that demonstrate understanding of relative location, direction, size, and shape.

- Interpret, use and distinguish various representations of the earth, such as maps, globes, and photographs.

- Use appropriate resources, data sources, and geographic tools such as atlases, data bases, grid systems, charts, graphs, and maps to generate, manipulate, and interpret information.

### **Individual Development & Identity**

- Work independently and cooperatively to accomplish goals.

### **Individuals, Groups, & Institutions**

- Give examples of and explain group and institutional influences such as religious

beliefs, laws, and peer pressure, on people, events, and elements of culture.  
-Identify and describe examples of tension between an individual's beliefs and government policies and laws.  
-Show how groups and institutions work to meet individual needs and promote the common good, and identify examples of where they fail to do so.

#### Power, Authority, & Governance

-Recognize and give examples of the tensions between the wants and needs of individuals and groups, and concepts such as fairness, equity, and justice.

#### Science, Technology, & Society

-Identify and describe examples in which science and technology have changed the lives of people, such as in homemaking, child care, work, transportation and communication.

**Goal:** -To use interdisciplinary curriculum to teach about a hero who enriched our society. -To understand and appreciate the contributions of George Washington Carver: scientist, researcher, and educator.

**Objectives:** Implement the preceding Social Studies Strands.

Become acquainted with George Washington Carver's life and contributions as a scientist, researcher, and educator.

Develop process skills of sequencing, categorizing, observation, estimation, measurement, and spatial relations.

Develop language arts skills of reading, writing, speaking, listening, drama.

Develop math skills of word problems, two-digit addition without regrouping, graphing, and calendar.

Develop art skills.

Develop social skills--working and getting along with others.

**Materials:** Maps - large and desk                      Art materials/paper/pencils  
Variety of peanuts                                      Dried peas, cherry tomatoes

Trade Book: Make Me a Peanut Butter Sandwich (This book is about production of peanut butter, bread, and milk)

Materials for categorizing (included with instructions for this activity)

The following information/materials are included in this paper: Summary of George Washington Carver's life Time Line

Story of George Washington Carver's life

History of the Peanut

History of Peanut Butter

Say "Peanut"

Where In the World Are Peanuts Grown?

Going Nutty Observation Sheet

George Washington Carver's recipes

**Activities:** Students write/discuss what they know about George Washington Carver.

Tell or read the summary about George Washington Carver's life. Discuss.

Locate on maps where George Washington Carver lived.

Read a time line of George Washington Carver's life/accomplishments.

Read the story of George Washington Carver's life.

Make scenery and act out the story of George Washington Carver's life.

Discuss vocabulary related to George Washington Carver's work.

Categorize some of George Washington Carver's contributions.

Discuss the history of the peanut. Using maps, trace the route of the peanut.

Say "peanut" in various languages.

Locate on a map places where peanuts are grown. Discuss.

Estimate the number of peanuts in a jar. Discuss.

Complete "Going Nutty"--Using a peanut to conduct science process skills.

Discuss.

Sample and graph favorite kinds of peanuts. Discuss.

Discuss the history of peanut butter.

Read Make Me a Peanut Butter Sandwich. Sequence production of peanut butter. Illustrate. Share.

Write and illustrate a math word problem about peanuts. Share.  
Write/illustrate/share a cinquain about George Washington Carver or peanuts.  
Make/eat food prepared by a recipe created by George Washington Carver.  
Write what you know about George Washington Carver. Share/discuss.

**Procedures:** Ask students to write what they know about George Washington Carver. Discuss.  
Teacher - Refer to George Washington Carver (Background Information attached);  
tell the students about George Washington Carver's life. Select concepts that are  
appropriate for your students to discuss such as: Fairness/justice of...Slaves - owing  
people

Conflict of the U.S. Civil War  
Segregated schools/schools today  
How George Washington Carver may have  
felt about being owned, sold, not allowed into  
schools...how would you feel?

Locate on a large map and desk map the continent (North America), country (United  
States of America), region (Southeast), and states (Missouri, Kansas, Iowa, and  
Alabama) where George Washington Carver lived. Ask volunteers to locate these  
places on a large map. If students do not know the location of these places, ask them  
to use atlases. Ask all students to locate these places on their desk maps.

Teacher - Refer to Time Line of George Washington's Life (Background Information attached);  
select highlights of his life that are appropriate for your students to discuss. Make a  
time line of these highlights. Read and discuss a time line of George Washington  
Carver's life and accomplishments.

Teacher - Refer to The Story of George Washington Carver (Activities attached). Read or ask  
the students to read this story. Discuss this story with a focus on: characters,  
lifestyle, his struggle for an education, how he helped others, and how we continue  
to benefit from his contributions. (If possible, display sweet potatoes, peanuts,  
vegetables, colorful printed cloth that simulates flour sacks, and dull red clay that  
simulates Alabama red clay).

Make scenery and act out the story about George Washington Carver's life.

Teacher - Refer to Categorizing (Activities attached). Select vocabulary and items to be  
categorized that are appropriate for your students. Categorize some of George  
Washington Carver's contributions.

Teacher - Refer to History of the Peanut (Background Information attached). Sequence the  
history of the peanut in a way that is appropriate for your students. Using the  
sequence that you have prepared, discuss the history of the peanut with your  
students. As you discuss, use maps to trace the route of the peanut: Ask for  
volunteers to locate countries/continents on a large map. If the students do not know  
the location of the countries/continents, ask them to use atlases. Ask all students to  
locate these places on desk maps.

Say "peanut." Nutty names: goober, groundnut, monkey nut, earthnut, and ground pea. Spain -  
Mani (my-knee); Greece - Fystiki (fee-stee-kee); France - Cacahuete (ka-ka-wet);  
Germany - Erdnuss (aird-noose); and Russia - Zemlyanoy Grek (zem-ya-noy-arek).  
(National Peanut Council, USA).

Locate on a map places where peanuts are grown. Discuss. Ask volunteers to locate these  
countries/continents on a large map. If students do not know the locations of these  
countries/continents, ask them to use atlases. Ask all students to locate the  
countries/continents on their desk maps.

Countries/Continents: England/Europe; Canada/North America; Netherlands/Europe;  
France/Europe; Norway/Europe; Japan/Asia; Spain/Europe; Germany/Europe;  
Switzerland/Europe; Italy/Europe. Compare where peanuts are grown today with  
the "route of the peanut" activity that was done previously.

Estimate the number of peanuts in a jar. Put peanuts (in the shell) in a jar. Give each student a  
chance to estimate the number. Determine which guess was closest...ask students

how they estimated the number of peanuts in the jar. Put other items (dried peas, cherry tomatoes...) in a jar that is the same size as the jar filled with peanuts. Ask the students: "How can we estimate each of these?" Is one harder to estimate than the others?"

Teacher - Refer to Going Nutty (Activities attached). Using a peanut, conduct science process skills. Discuss with a focus on physical characteristics and physical and chemical changes.

Sample and graph favorite kinds of peanuts. Give each child a variety of peanuts raw, roasted, honey roasted Ask children to sample the peanuts.

Give each child a turn to tell his/her favorite kind of peanut. Tally the results.

Graph the results as a whole class:

Ask children questions about graphing until the graph is completed.

Examples: What is a good name for the graph?  
How do we make lines for the graph?  
What goes on the side (of the vertical line)?  
What goes on the bottom (of the horizontal line)?  
What numbers should we use for the number of children 1, 2, 5?

Teacher - Refer to the History of Peanut Butter (Background Information attached). Prepare a history of peanut butter that is appropriate for your students to discuss. Focus on: Based on information that we have, South American Inca Indians were the first to grind peanuts to make peanut butter; Dr. Kellogg invented a version of peanut butter for his patients who could not chew meat; and the contributions that George Washington Carver made that resulted in peanut production used to make peanut butter.

Read Make Me a Peanut Butter Sandwich. Teacher - If this book is not available, select a book that includes production of peanut butter, or make a poster that illustrates the production of peanut butter. Ask children to sequence the production of peanut butter. Illustrate. Share work.

Write and illustrate a math word problem about peanuts.

Write a word problem for the whole class to solve. An example is:

One peanut stalk had 40 peanuts. Another peanut stalk had 50 peanuts. How many peanuts did the two stalks have?

Have the class read the problem together. Ask students to raise their hand when they have their answer. Ask a volunteer to give the answer.

Ask the volunteer to tell how the answer was determined. Ask the class if they all agree. If they do not agree, ask students to discuss why the answer is not correct. If everyone agrees, ask if others determined the answer in a different way than that described by the volunteer.

Ask students to write and illustrate a similar story (about peanuts with addition). Ask students to volunteer to share their math stories. After each math story is read, the reader asks for a volunteer to give the answer to the math story (problem).

Write/illustrate/share a cinquain about George Washington Carver or peanuts.

Write a cinquain as a whole class. Ask children to contribute.

Example: (Name) George Washington Carver  
(Two describing words that do not end with ing) Scientist, educator  
(Two describing words that end with ing) Experimenting, teaching  
(A phrase) Invented more than 300 items from peanuts  
(Name) George Washington Carver

Ask students to write/illustrate/share a cinquain.

Teacher - Refer to Recipes by George Washington Carver (Activities attached). Make/eat food prepared by a recipe created by George Washington Carver. As you prepare the food, discuss measurement of ingredients, and cooking time.

Review information about George Washington Carver. Include: (a) events in George Washington Carver's life, (b) discoveries that made our lives better (The Peanut Wizard), and (c) his promotion of peanut production and consumption (Father of the Peanut Industry).

Ask students to write what they know about George Washington Carver. Share/discuss.

**Evaluation:** Participation. Completed activities. Written information about George Washington Carver.

### Background Information

#### **George Washington Carver (Summary)**

George Washington Carver, born in the United States of America, was not sure of his birth date but thought it to be 1864. He was born into slavery and won international fame for his agricultural research. He was especially noted for his work with peanuts and made more than 300 products from peanuts, including a milk substitute, face powder, printer's ink, and soap. He also worked to promote the welfare of black people and to improve relations between blacks and whites.

George was born to the parents of slaves who belonged to Moses Carver of Diamond Grove, Missouri. Shortly after George's birth, his father was killed while hauling wood to town on an ox wagon. George, his mother, and sister were kidnapped by night raiders and sold in Arkansas. Mr. Carver sent a man for them, but only the sick George was returned. George and his brother, Jim, were raised by the Carvers, Moses and Susan.

As a child, George showed interest in plants and a desire to learn. The Carvers taught him to read and write, and when he was approximately eleven years old, he moved to Neosho, Missouri, where he attended a school for black children. For the next twenty years, George worked at various jobs to support himself and pay for his education. He was admitted to Simpson College in Indianola, Iowa, from which he transferred in 1891 to Iowa State Agricultural College (now Iowa State University) in Ames. He received a bachelor's degree in agriculture in 1894 and a master's degree in 1896.

In 1896, George moved to Alabama to join the faculty at Tuskegee Institute, an industrial and agricultural school for blacks, where he became head of the agricultural department and director of a state agricultural station. He researched fungi, soil conservation, and other ways to improve crop production. He wrote pamphlets and bulletins about applied agriculture and distributed these publications to farmers in Alabama and other states all the while teaching more productive agricultural practices to Southern farmers, particularly black farmers, through conferences, travelling, exhibits, demonstrations, and public lectures.

George Washington Carver never married, and in 1940, he gave his life savings to the Tuskegee Institute to establish the George Washington Carver Foundation for Agricultural Research. He died January 5, 1943. He spent his life helping others, especially those in need.

Because of his discoveries and promotion of peanut cultivation and consumption, Dr. Carver is known as The Peanut Wizard and Father of the Peanut Industry. In the United States of America, January 5 is celebrated as Dr. George Washington Carver Day.

\*Refer to Time line information for a list of accomplishments, awards, and honors.

#### **Time Line of George Washington Carver's Life**

Materials: Chart paper/marker  
Glue  
Yarn  
Drawings of significant events

Directions: On the chart paper, randomly place illustrations of significant events.  
On the bottom of the chart paper? write decades from 1860 - 1970.  
Above the decades, write significant events.  
Attach yarn to illustrations.

Discuss decades/events. As each event is discussed, ask a child to use the yarn to match the event with the year of the event.

Choose events for the time line from the following information:

- 1864 Born, Diamond Grove, Missouri
- 1890 Enrolled at Simpson College to study piano and art
- 1891 transferred to State Agricultural College at Ames, Iowa
- 1894 Bachelor of Agriculture Degree, State Agricultural College
- 1894 Appointed member of faculty, Iowa State College
- 1896 Master of Agriculture Degree, Iowa State College
- 1896 Tuskegee Institute as Director of Agriculture at the invitation of Booker T. Washington
- 1916 Elected Fellow of the Royal Society for the Encouragement of Arts, London, England
- 1921 Lectures to Congress of the many uses of the peanut
- 1938 Feature Film, "Life of George Washington Carver," made in Hollywood by the Pete Smith Speciality Company
- 1939 Theodore Roosevelt Medal for contributions to science
- 1939 Honorary Membership, American Inventors Society
- 1941 The George Washington Carver Museum, Tuskegee Institute
- 1941 Honorary Degree, University of Rochester
- 1941 Recipient, Award of Merit by Variety Clubs of America
- 1942 Honorary Degree, Doctor of Science, Selma University, Alabama
- 1942 Erection of George Washington Carver Cabin, Dearborn, Michigan, by Henry Ford to honor Dr. Carver's achievements and contributions to American life
- 1943 Died, Tuskegee Institute, Alabama
- 1943 George Washington Carver National Monument, Diamond Grove, Missouri
- 1946 Congress/President Truman designates January 5 as George Washington Carver Day
- 1947 Picture on postage stamp.
- 1952 Selected by Popular Mechanics Magazine as one of 50 outstanding Americans and listed in their 50th Anniversary Hall of Fame
- 1956 Simpson College dedicated Science Building in memory of George Washington Carver
- 1968 Iowa State College dedicated Science Building in memory of George Washington Carver
- 1969 Agricultural Hall of Fame, Kansas City, Kansas
- 1973 Elected - Hall of Fame for Great Americans
- 1977 Enshrined - Hall of Fame for Great Americans

### **History of the Peanut**

The peanut plant probably originated in Brazil or Peru, although no fossil records exist to prove this. Peanuts were grown as far north as Mexico by the time the Spanish began their exploration of the New World (North American continent). The explorers took peanuts back to Spain, where they are still grown today. From Spain, traders and explorers took peanuts to Africa and Asia. Africans were the first people to introduce peanuts to North America.

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. George Washington Carver began his research into peanuts in 1903 at Tuskegee Institute, Alabama, USA. He discovered improvements in horticulture and developed more than 300 uses for peanuts. For his work in promoting cultivation and consumption of peanuts, Dr. Carver is known as Father of the Peanut Industry. (National Peanut Council, USA).

### **History of Peanut Butter**

There is evidence that ancient South American Inca Indians were the first to grind peanuts to make peanut butter and that Dr. John Harvey Kellogg (of USA cereal fame) invented a version of peanut butter as a protein substitute for his older patients who had poor teeth and could not chew meat. Peanut butter was first introduced at the Universal Exposition (World's Fair of 1904) in St.

Louis, Missouri, USA. In 1903, Dr. George Washington Carver began research with the peanut at Tuskegee Institute in Alabama, USA. Dr. Carver recognized the value of peanuts as a cash crop and proposed that peanuts be planted as a rotation crop in farmers' fields. This procedure was especially valuable in Southeastern United States. As farmers began to listen to this great scientist, crops began to flourish. Today, approximately half of peanuts grown in the United States are used to make peanut butter. (National Peanut Council, USA).

## Activities

### **The Story of George Washington Carver**

Summarized from The Story of George Washington Carver, Moore, E.

George Washington Carver, Epstein, S. & Epstein, B.

A Pocketful of Goobers A Story About George Washington Carver, Mitchel,

B.

Directions: Make scenery and present a play.

Narrator reads the following summary of George Washington Carver's life while characters pantomime.

Characters:	Mr. and Mrs. Carver	Mary, George, Jim
	Slave Robbers	Booker T. Washington
	Alabama Farmers	Farmers' wives

It was a cold night in the early days of the American Civil War. A band of slave robbers was riding toward the little town of Diamond Grove, Missouri. These robbers captured the sickly baby, George, and his mother, Mary. Mr. Moses Carver was good to Mary and her children, George and Jim. He gave his horse in exchange for Mary and George; however, only the sick baby was returned.

George was sick for a long time. Mrs. Susan Carver took care of him, but he was never as strong as his brother, Jim, who worked in the fields. Mrs. Carver taught George to do housework and cooking. He learned to crochet and knit by watching Mrs. Carver. He also learned how to care for plants and gardens. When George left home to attend school in another town, he used the name, George Washington Carver. He worked at various jobs while he attended grade school as well as college.

He received two degrees in agriculture from Iowa State Agricultural College, a bachelor's degree in 1884 and a master's degree in 1886. Upon completing his education at Iowa State Agricultural College, he received a letter from Booker T. Washington, President of Tuskegee Institute in Alabama. George Washington Carver joined the faculty at Tuskegee Institute so that he could teach blacks how to grow better crops thus having better food and better lives.

George Washington Carver taught how to plant crops such as legumes that would enrich the soil. Legumes could also be eaten. He taught farmers how to plant sweet potatoes, peanuts, and vegetables. He showed the farmers' wives how to make their yards and houses prettier--by making curtains out of flour sacks and paint out of the colored clays of the Alabama soil.

George Washington Carver and the Alabama farmers produced an abundance of peanuts--nobody knew what to do with them. George Washington Carver shut himself up in his laboratory and invented products from peanuts--eventually, he made more than three hundred peanut products. In time, new factories were built to make many of these things; these factories used all the peanuts that Southern farmers could grow. Dr. Carver became known as The Peanut Wizard and Father of the Peanut Industry. Before Dr. Carver died January 5, 1943, he was a world famous scientist. In America, January 5, is celebrated as Dr. George Washington Carver Day because Dr. Carver enriched lives of our world's citizens.

## Categorizing

Materials: Cards on which these words are written--Scientist, Inventor, Horticulturist Items to be categorized--some are suggested below.

**Procedures:**

- Introduce students to the vocabulary: scientist, inventor, horticulturist, artist, curing, canning, drying, and legume.
- Ask for volunteers to discuss what these words mean. If some of the words are unknown by all of the students, tell the students that they will know the meanings after the activity is completed. Vocabulary:
  - Scientist - A person who knows a lot about science or is engaged in scientific work.
  - Inventor - A person who makes something that nobody else has ever made.
  - Horticulturist - A scientist who works with fruits and vegetables.
  - Artist - A person who draws, paints, or sculptures.
  - Canning - To preserve by putting in air tight jars or cans.
  - Curing - To process for storage or use.
  - Drying - To make free of water.
  - Legume - Plants with fruits that are pods (peas, beans, peanuts).
- Have the items to be categorized in a container so that they are not seen by the students.
- Have one student hold the card "Scientist" and stand behind other students who hold the "Inventor," Horticulturist," and "Artist" cards.
- Pull items from the container and ask the students to determine the category for each item. Place each item in the proper category.

**Suggested Items to be Categorized**

**Artist:**

- ceramics
- curtains from colorful print cloth to simulate a flour sack
- wall hangings - crocheted or knitted
- prints of paintings by Dr. Carver (obtained from Tuskegee Institute, Alabama, USA)
- crocheted/knitted items

**Horticulturist:**

- sweet potato - curing
- tomato, pickles, peaches - canning
- legumes, dried apples - drying

**Inventor:**

things Dr. Carver made from peanuts that include the following:

- vinegar            shaving cream
- cream             coffee
- powder            ink
- peanut oil        shoe polish
- shampoo         soap

\*Remind students that peanut butter was invented prior to Dr. Carver--but Dr. Carver's contribution to peanut cultivation aided production of peanut butter.

- Review and discuss vocabulary.

**Going Nutty**

1. Trace your peanut here:
2. Measure the length of your peanut. \_\_\_\_\_ inches \_\_\_\_\_ centimeters
3. Estimate how many nuts are inside the shell. \_\_\_\_\_
4. List three words that describe the texture of the shell (how the shell feels).  
\_\_\_\_\_
5. What does it smell like'?
6. Do you think the entire peanut will float? Yes \_\_\_\_\_ No \_\_\_\_\_
7. Break open the shell. How many nuts do you count? \_\_\_\_\_

- Was your estimate in question 3 correct? Yes \_\_\_\_\_ No \_\_\_\_\_
8. Do you think a nut will float? Yes \_\_\_\_\_ No \_\_\_\_\_ Try it.  
Did it float? Yes \_\_\_\_\_ No \_\_\_\_\_
9. Peel the "skin" off the nut that is not wet. Do you think the skin float?  
Yes \_\_\_\_\_ No \_\_\_\_\_ Try it.  
Did it float? Yes \_\_\_\_\_ No \_\_\_\_\_
10. Compare your answers with others.  
Do all answers agree? Yes \_\_\_\_\_ No \_\_\_\_\_
11. If you would like to, perform a chemical change on your peanut. How? Eat it!

\*An adaptation of Going Nutty; used with permission of the Discovery Place, Birmingham, Alabama, USA.

### **Recipes Created by George Washington Carver**

#### Macaroni and Tomatoes, No. 1

Cook the required amount of macaroni in plain water to which a little salt has been added; cook till soft; cut a small piece of salt pork into little pieces; one small onion slices; put into a frying pan and brown. Drain the water off the macaroni; pour into the frying pan; add enough tomato paste to season well; add pepper and a bit of cheese if desired.

Carver, G. W. (1918, April). How to grow the tomato and 115 ways to prepare it for the table. Tuskegee: Tuskegee Normal and Industrial Institute.

No. 18, Peanut Cookies Number Two	
4 teaspoons butter	2 teaspoons baking powder
1 cut sugar	2 cups flour
2 eggs, well beaten	1 cut ground peanuts

Sweet milk to make a stiff batter. Drop on well greased tins and bake quickly.

Carver, G. W. (1925, June). How to grow the peanut and 105 ways of preparing it for human consumption. Tuskegee: Tuskegee Normal and Industrial Institute.

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Teaching Materials may be obtained from:

Teresa Smallwood, Information Specialist Alabama Peanut Growers  
Association  
P.O. Box 1282  
Dothan, Alabama, USA 36302

Telephone 334-792-6482

Fax 334-792-5876

George Washington Carver materials may be obtained from:

National Park Service  
Tuskegee Institute National Historic Site  
P.O. Drawer #10  
Tuskegee Institute, AL, USA 36087-0010

Telephone 334-727-3200

Fax 334-727-3201