

TEACHER MATERIALS - George Washington Carver

CONCEPT:

Math, Science, and Technology

-Standard 1.2- Scientific Inquiry

ELA

-Standard 1.1- Listening and Reading

-Standard 1.2- Speaking and Writing

Career Development

-Standard 3a.1- Basic Skills

-Standard 3a. 2- Thinking Skills

Social Studies

-Standard 1.1

-Standard 1.2

-Standard 1.3



OBJECTIVES: The students will:

1. listen to the story of George Washington Carver
2. find a few of the 300 uses G.W. Carver invented from peanuts
3. use the scientific method (in conjunction with this and other lessons).

BACKGROUND: George Washington Carver was a phenomenal individual. Not only did he succeed in spite of great odds, but single-handedly revolutionized the peanut

industry in the South. The information section details his life and accomplishments.

- ACTIVITIES:**
- 1a. Have the students read the "Peanut Wizard" story translating the symbols.*
 - b. Ask the students to answer these questions:
 - Who was Dr. George Washington Carver?
 - Why did the farmers come to see him?
 - What did Dr. Carver do to find out more about peanuts?
 - How many things did he make out of peanuts?
 - Name some of the things he made.
 - c. Have students cut picture examples of products made from peanuts from magazines and paste them on a piece of paper. Display these on a bulletin board.
 - d. Have the students draw pictures of Dr. Carver at work and write a story to go along with the picture.
 - e. Use Dr. George Washington Carver as the focus of a bulletin board display on the many different uses of the peanut.
2. Have the students complete the word find "George Washington Carver and Peanuts."
 3. Have the students complete the lesson on "The Scientific Method" and complete the peanut experiment. (The lesson gives a simplified version

that not all research is performed in this 5-step manner:

- I. State the problem clearly.
- II. Gather information about the problem.
- III. Form a hypothesis or probable explanation.
- IV. Test to see if the hypothesis is correct.
- V. Draw conclusions.

In reality scientists are flexible in how they approach problems. This rigid 5-step method has been criticized for just this reason. While it is valid, not every research project is undertaken in this fashion.

4. Utilize the information on George Washington Carver as you see fit. Some of the text may be offensive - it is to the author as well. Rather than 'whitewash' the truth, we included the information as researched. The life of George Washington Carver was, indeed, very difficult. It was the period of reconstruction after the Civil War, the former slaves were trying to eke out a living, many lived in abject poverty unable to rise out of it. The amazing fact of the life of George Washington Carver is that he did rise above the poverty and subjugation. His life is an inspiration to all, that each of us can be more. If we believe in ourselves, get a good education and work hard, we can determine our life's path.

* Adapted with permission from the National Peanut Council

Information: George Washington Carver

An orphaned child of a slave, sickly, near death's door, George Washington Carver was taken in by a farmer and his wife. He accepted their last name as his own. Their influence forged George Washington Carver's interest in nature and living things. It was on their farm that he started to care for sick plants and experiment with them. After he left his foster family (at the age of ten) until many years later, his difficult life had one goal--education. He moved from town to town subsisting on manual labor and the good will of strangers. From Missouri to Kansas, taking in laundry and saving money for college, he set forth for Highland College.

There, the president sent him away with, "We don't take niggers here!"

Crushed, he headed back to Kansas to homestead. In 1888, he fled to Iowa and worked as a chef in a hotel. There he was grudgingly accepted by Methodist Simpson College at Indianola. Still poor, he survived on corn meal and bits of suet, but he was studying art in college! He befriended an instructor whose father was a professor of Horticulture at Iowa State University in Ames, Iowa. She saw to it that he made his way to Iowa State University.

Because there was no room for a "negro" in the dormitories, a professor (James Wilson, later U.S. Secretary of Agriculture) offered him his office as sleeping quarters. Carver accepted. He graduated in 1894 a great success. As he continued his education for a Master's Degree, he had nightmares of people living in abject poverty in the South.

In 1896, Booker T. Washington, who developed Tuskegee Institute in Alabama, asked Carver to come to Tuskegee at a \$1,500 salary. Mindful of his past nightmares, George accepted. As his dreams of art faded, his

destiny was forming. Housed at an old 2,000 acre, run down plantation, Tuskegee Institute's work was cut out.

The idealist, Carver, found Tuskegee a disappointment. Mice overran his quarters, and chewed his books. Lizards lived in his shoes. Bugs tormented his sleep. He had no bookshelves or lab facilities. Nevertheless, he set out to test the soil to prepare for its improvement, took over the farm, and improved both.

Over the years, he endured and the program grew. He researched. His first successes were with the sweet potato. He improved the crop to the point where he increased yield eight times over. But, sweet potatoes didn't keep long--they spoiled. So, he set out to discover ways to use the sweet potato. Before long, he had invented 118 products from this sweet root. On the list were laundry starch, tapioca, ginger candy, flour, and laundry bluing.

Next, came cowpeas and then soybeans, but peanuts became his trademark. Peanuts, or goobers, were grown and eaten primarily in the South. Elsewhere, they were virtually unknown or just consumed at circuses. Professor Carver saw at once that not only were they a good crop which would help rebuild the overworked soil but also excellent as a food source. To convince the farmers to grow and eat it, he had to prove its worthiness, nutritional content, and marketability. After the devastation of the Civil War and the boll weevil, the South needed this light at the end of the tunnel.

His research produced 300 uses for the peanut:

peanut flour	drinks	metal polish	cereals
sauces	bleach	washing powder	salves
paper	ink	oil	axle grease
shaving cream	face creams	linoleum	peanut milk



soap	rubber	peanut cream	wallboard
30 dyes	instant coffee	butter	
foods of all types		blue pigment for paint	

Before his death in 1943, George Washington Carver saw the South blossom with a 250 million dollar per year peanut industry (in 1943 dollars). The South held "peanut weeks," peanut festivals, floats, bands, peanut queens. Peanuts finally rivaled the old King--cotton.

George Washington Carver was hero, botanical genius, miracle worker, and benefactor to all races. He was a man who's life meant more to millions than can ever be measured.

The Peanut Wizard


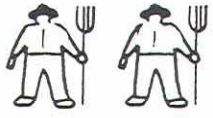
George Washington Carver is sometimes called the "Peanut Wizard."
Here is a fun story to read.

Once there were some  in Alabama. Their 

would not grow. The  went to see Dr. Carver. He

was a  at a college. "Your  is tired of

growing . You must grow something new," he said.

"Grow ." The  did not know what to do

with  so  worked in his . He

crushed the . He  them and froze them.

He made over 300 things with .  came

from all over to learn about his peanut , ,

, and many other things he made from .

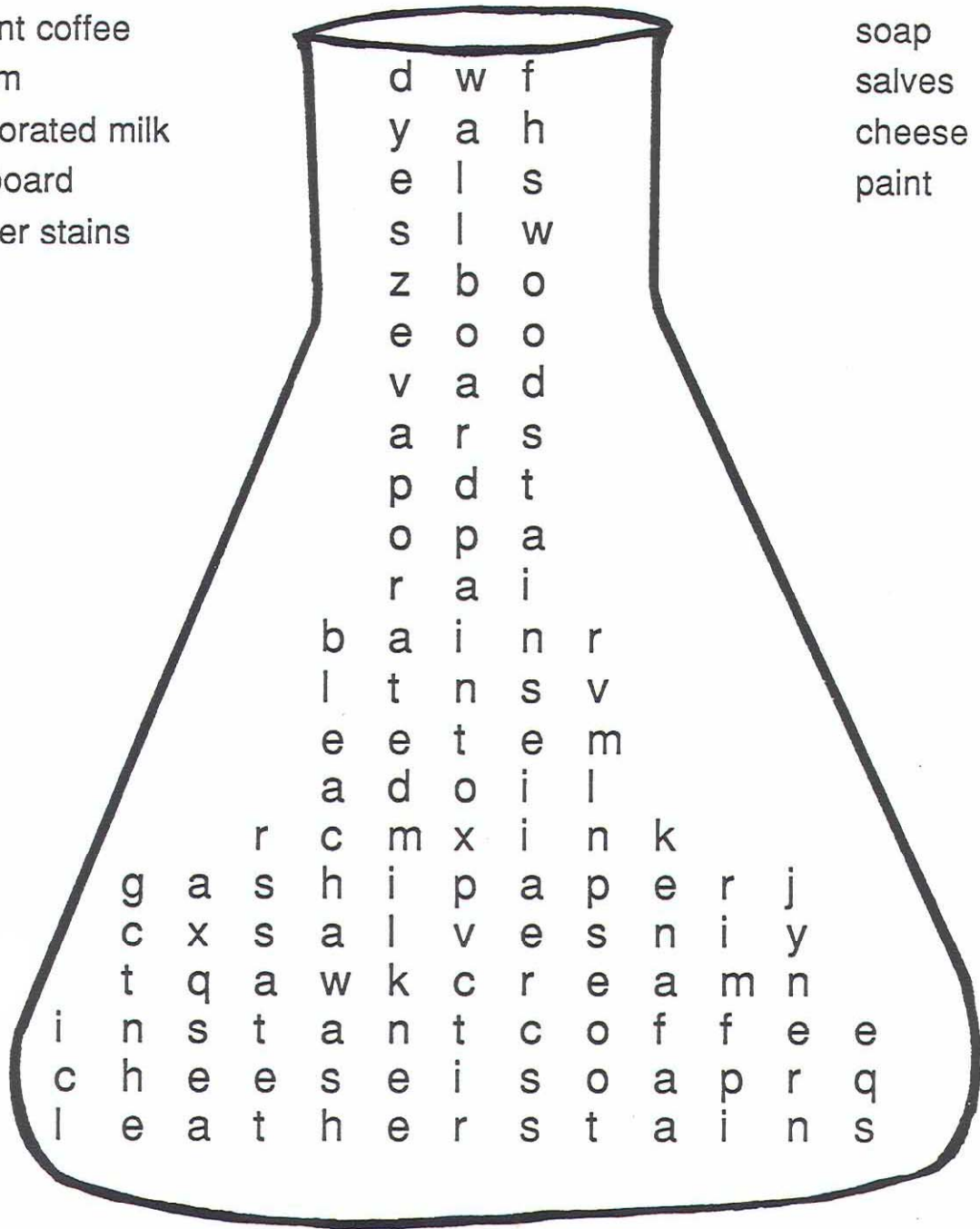
Name _____

George Washington Carver and Peanuts

George Washington Carver invented over 300 uses for peanuts. Can you find some of these in the puzzle?

- dyes
- wood stains
- ink
- instant coffee
- cream
- evaporated milk
- wallboard
- leather stains

- bleach
- paper
- oil
- soap
- salves
- cheese
- paint

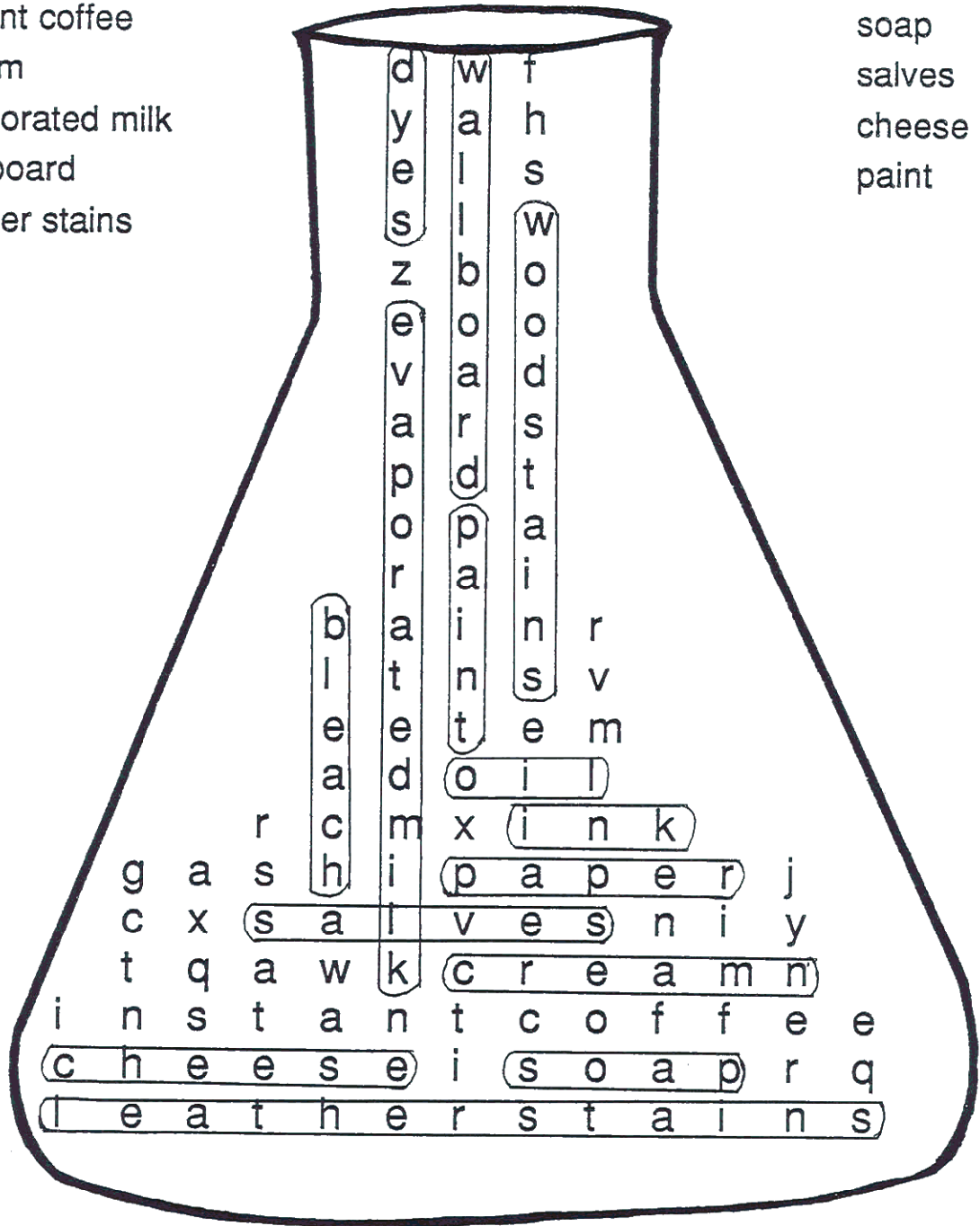


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Information: The Scientific Method

When George Washington Carver tried to convince farmers to grow peanuts instead of cotton, they said, "What will we do with them?" At the time peanuts were food for poor people or animal feed. So Dr. Carver decided he would research and find out what peanuts were made of and what to do with them. He used the scientific method:

1. What is the question?
or
What is the problem?
2. What can you learn about it?
Does anyone else in class have ideas?
3. Think of an answer.
4. Test the answer
5. Watch and see what happens.
6. Write down what you see.
7. Have you found the right answer?

ACTIVITY:

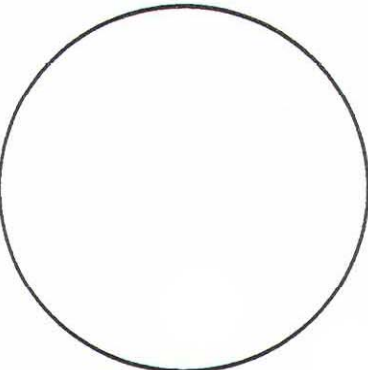
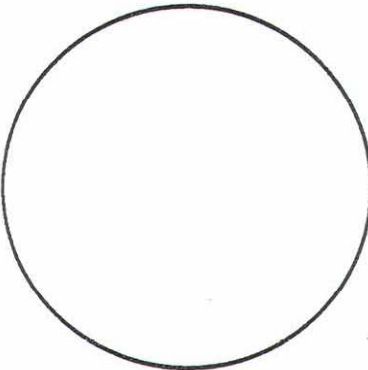
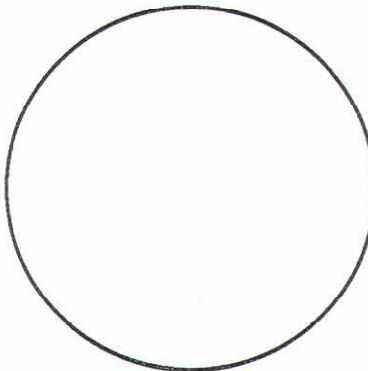
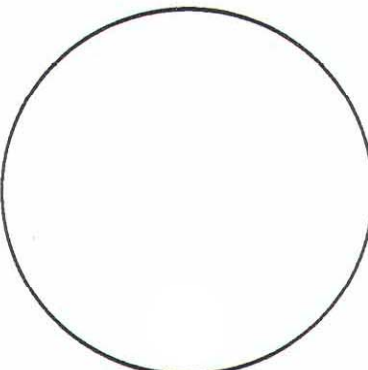
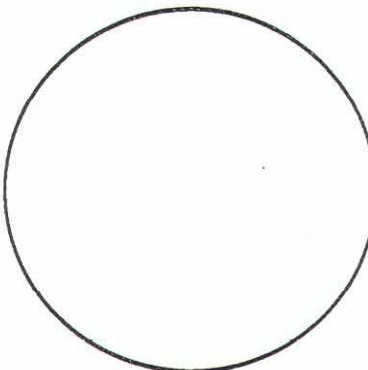
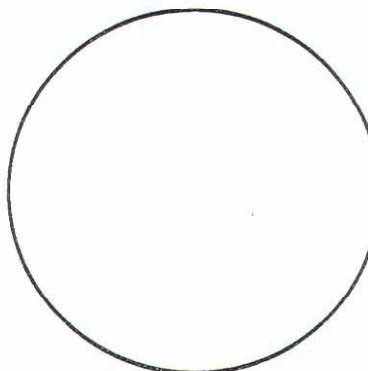
Use the scientific method to have the students answer this question, "What are peanuts made of?"

1. Brainstorm with the students to determine what they think peanuts are made of.
2. Have the students research in the library (encyclopedia) or even a dictionary to see if the students can learn the peanut composition.

(protein, carbohydrates [starch, sugar], fats, vitamins [E, K, niacin], minerals [phosphorous, magnesium]).

3. Have the students experiment to see what peanuts are made of.
 - a. Make copies of the experiment sheet.
 - b. Have the students rub a drop of water onto the water circle, oil onto the oil circle, etc. with salt, chalk, and sugar using the circles on the experiment sheet for comparison.
 - c. Have the students crush a shelled peanut onto the peanut circle and let it sit for a moment.
 - d. Observe what each appears like and record observations.
 - e. Compare the peanut to each other circle. Which one does the peanut look most like?
 - f. Come to a conclusion which ingredient of those listed does the peanut contain.

Name _____

 water	 chalk	 peanut
 oil	 sugar	 salt