Element 5: Standardize It

The Plant that Carries its Home on its Back

History, Cultural Awareness, Agriculture, Plant Biology	**The Plant that Carries Its Home on Its Back**
Age Level: 7-17 **(**based on which activities are developed) **Time:** 2 hr. 30 min. **Reading -** 30 minutes **Invention:** 45 **Video** 15 minutes **Cooking:** Up to 1 hour **Resources:** Reading Material Video Recipe Ingredients Varying invention materials made from available household objects **Objectives** Learners will: • Examine the groundnut/peanut as a sample of nature's resources that grow in the ground and contrast it with tree nuts • Study inventions inspired by humanitarian intentions • Expand math efficiency and cultural awareness by sharing recipes and cooking responsibilities with family members	**Teachers, Caregivers or Self-Learners will** 1. Study and discuss the differences in nuts that grow in different regions 2. Explore the ways nuts contribute to diets and cultures of the world 3. Learn about the role of nuts in the life of George Washington Carver 4. Create a prototype for an invention and share it with someone who may someday need it. 5. Watch a video to take a field trip to a nut farm. 6. Together with family, shop for ingredients and cook nut butter-based recipes from distant regions.

• Compare and contrast agricultural growing methods based on regional needs	

The Nature of Nuts

Outer casings protect plants, just as the turtle's shell protects its body. Go outside and look around. Do you see any plants with outer casings? Name each one.

Why does a nut have a shell? Does it protect the nutmeat inside as a nut grows? Does it absorb nutrients for the nut? Which nuts have you observed growing on trees?

Walnuts grow in a green husk. Eventually, the husk ripens, becomes loose and falls away.

Inside, another outer shell appears. After drying, the shell can be cracked open with a nutcracker or hammer, to reveal the nut meat inside.

Hazelnuts ripen slowly before they fall. Unlike walnuts, they have smooth, shiny shells, much harder to crack.

Pine nuts grow inside pinecones for about a year and a half. They are difficult to pull off the cone and must be picked ten days before the cone opens.

Almonds, cashews, Brazil nuts and peanuts grow in warmer climates, though most nuts tend to like a lot of rain.

A peanut is a legume – more like a bean than a nut. It offers protein and nutrition for people around the world. The Inca people of Brazil first made it popular. Africans called it a groundnut because it does not grow on a tree. A peanut plant may grow up to 40 peanut pods in its lifetime. The nuts can be shared and planted elsewhere.

Travelers, over time, planted the nuts everywhere and shared variations of recipes now popular around the world.

The groundnut or peanut has delicate yellow flowers that bloom above ground, while the nuts stay below ground.

The stalks point their buds downward, where pegs grow beneath the soil.

The water and minerals in the earth nourish the pegs until they emerge as wrinkly shells. Each shell houses two to four peanuts.

Around the World, People Cook with Peanuts

- People from Colombia, Peru, Brazil, Venezuela and Ecuador have grown peanuts for centuries. The Incas, Mayas and Aztecs may have been the first to make a paste from it.
- People in the Caribbean also discovered this nut long ago. Haitians eat peanut butter as a staple food.
- In West Africa, farmers found they could grow groundnuts (peanuts) in warm weather and grind them to make savory sauces and stews year-round, adding hot peppers and seasonings before adding vegetables and meat.
- In Southeast Asia, a different combination of chilis gives peanut sauce a regional flavor. The sauce can be eaten over rice or used as a dipping sauce for skewered meat.
- Americans stir peanut butter into cookies and spread it on sandwiches. Mr. Kellogg first tried adding it to the breakfast table. Some people are allergic to peanuts and can substitute cashews or almonds instead, but many people still rely on the nut that grows underground.

A Professor of Peanuts

If you could invent anything in the world, what would you make? Would you invent something to help people live better lives? What would it look like? What would it smell like?

How many things could you invent from a peanut?

There was a time when peanuts saved the livelihoods —and maybe the lives — of many people. The story began with a young boy very determined to go to school.

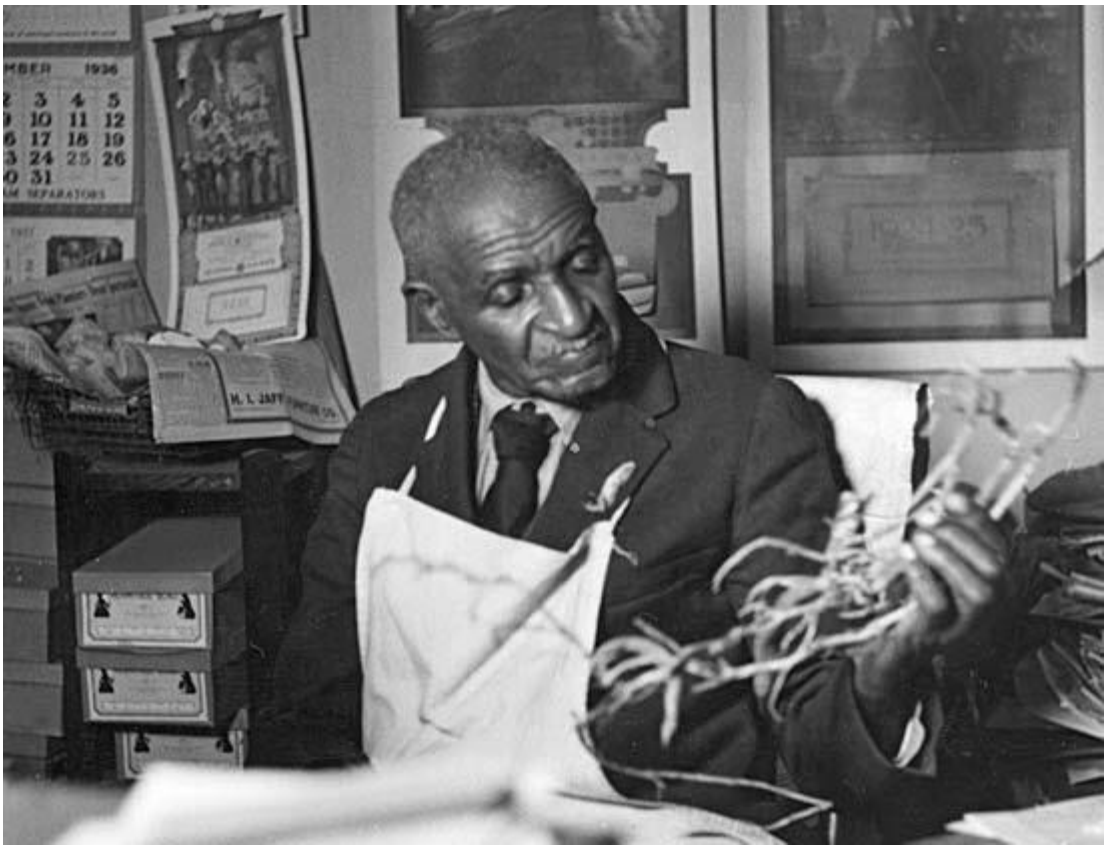
In the American South, Dr. George Washington Carver was born three years before the Emancipation Proclamation, a law that freed the slaves living in the Southern United States of America. He loved his people, yes, but he loved *all* people—young, old, weak, strong, rich, and poor, so he wanted to learn how to help them.

George set out for school in a town eight miles from where he lived. He walked all the way there on the first day. By the time he reached the school, night fell, and he found the building closed. He slept in a nearby barn until the next day.

George rented a room from the owner of the barn, who gave him the name George Carver. The town later became violent. The eager young student had to keep moving to find a safe place for

freed slaves to learn, so he could earn a high school diploma. He went on to become a scientist and inventor.

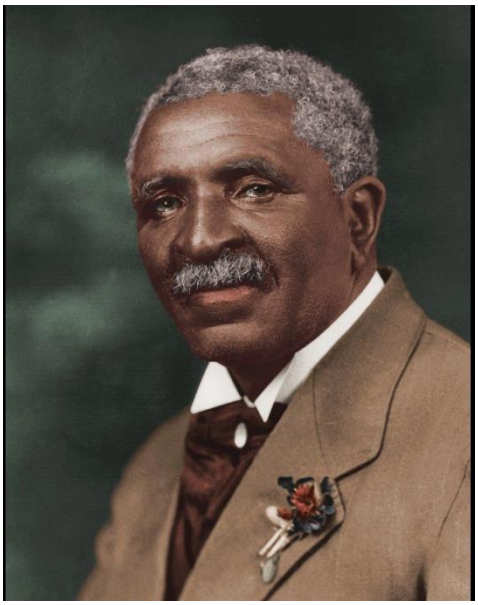
Dr. Carver invented many uses for peanuts. The nearby farmland had been depleted by cotton, so he wanted the farmers to grow peanuts and sweet potatoes instead of cotton, so they could make a living. His peanut-based inventions included paint, plastic and much more. In fact, he found 300 different uses for peanuts. He also made 118 products from potatoes. He even made wall material from cotton stalks. As a professor at Tuskegee Institute, he also studied diseases.



Dr. Carver believed that if we listen to our intuition, we will know the purpose for which we were given a good mind. We can develop our ideas through education and do great service for others, but we must also learn to love.

He wrote:

> How far you go in life depends upon your being tender with the young, compassionate with the aged, sympathetic with the striving, and tolerant of the weak and strong. Because some day in your life, you will have been all of these.*



By the time he died in 1943, George Washington Carver had lived a long and loving life.

Project 1: Invent Something Useful

George Washington Carver found uses for things around him. When he saw a need, he invented something to meet that need. Take up the challenge where he left off. Think about these questions:

1. What need do I see among the people I love?
2. What materials do I see around me?
3. What can I invent with those materials to meet that need?

Go outside to see what you find. You could turn recycled trash into something new. You may find eggshells or food peelings or cans or plastic jugs. How could they serve the need?

Make a prototype. Plan to present your invention to those who will benefit.

Try to invent something based on love for others, in the spirit of George Washington Carver.

Published in a 1982 newspaper in Bloomington Illinois, in an ad welcoming the Urban League, paid for by Norton Simon, Inc.

Project 2: Virtual Field Trip

Grow Your Own Plant

No-till farmers – and indigenous people who protected the land – try not to use machines to break the earth's skin. This leaves carbon in the ground and reduces climate change impact.

In this video, a farmer shows how he grew his first peanut plant in a pot and transplanted it. Watch the video and learn how to grow a groundnut or peanut, using an existing nut as your seed.

https://www.youtube.com/watch?v=sEfil-ZeX8A