

Lesson 1 - Student Worksheet Key

George Washington Carver: The Man, The Scientist, The Artist

George Washington Carver was an agricultural scientist in the early 1900s. He was an African American scientist born into slavery, in southwest Missouri, near the end of the Civil War. After the loss of his mother Carver was raised by Moses and Susan Carver. While not fully accepted in his lifetime, many of Carver's ideas formed the foundation for conservation efforts that have developed in the past 100 years.

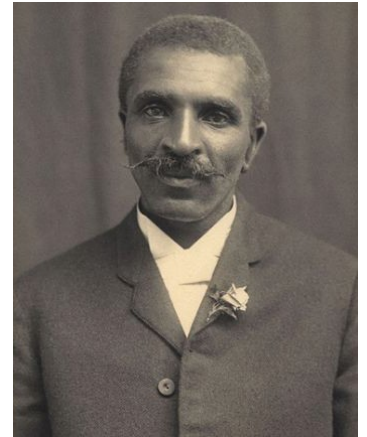


Photo courtesy of Tuskegee Institute

The focus of today's activity is to learn some basic history of Carver and the development of his role in science and his artistic works.

... education is the key to unlock the golden door of freedom ...
George Washington Carver

Option 1:

With your partner(s) work through the assignment below answering the questions in complete sentences. Answer the questions on a separate sheet of paper (you do not need to rewrite the question). If completing as a group have each person do their part on a different piece of paper then staple all sheets together in the correct order. (Pictures are not required for this option).

Option 2:

Take a posterboard or large piece of construction paper and divide it into four sections. Label the sections as follows as shown. Assign group members different sections. You should answer each of the questions on your paper and then work together to put everything on your poster. Remember to use neat handwriting on the poster.

Picture	History
Science	Art

History

1. Where was George Washington Carver (GWC) born?

Diamond Grove, Missouri

2. When was GWC born?

circa 1864 (no date confirmed)

3. What happened to GWC as an infant that resulted in the loss of his mother, and him being raised by her owners?

The Moses Carver farm is where George's mother was enslaved and where she and George were kidnapped. Moses was able to track them down and bring George back but was unable to find his mother Mary.

- 4. GWC suffered from several medical conditions as a child. How did these conditions affect the development of his interests and abilities as a child?**
Due to his illness, George learned the less physically demanding chores such as cooking, laundry, mending, and gardening. This left him more time to explore the natural environment, developing his curiosity.
- 5. At what age did GWC leave the Moses Carver farm? Why did he leave?**
George left the farm at between age 10-12, with the goal of earning an education. The local, rural school was segregated and only for white students.
- 6. Carver traveled to different schools throughout the Midwest gathering different amounts of education until he finally ended up at what is now Iowa State University to earn his college degrees. Pick one of these locations and give a brief description of Carver's life there.**
There will be a variety of answers to this question.
- 7. Carver is most well-known for his work at Tuskegee Institute. What brought him to Tuskegee?**
Booker T. Washington, the founder of Tuskegee Institute, heard about George's success in agriculture while at Iowa State, and invited him to move to Tuskegee and develop the agricultural program there. Washington's goal was to use Carver to help improve the livelihood of poor, African American farmers.
- 8. What roles did Carver have at Tuskegee?**
Director of Agriculture, teacher, researcher
- 9. Carver was not considered a leader in the Civil Right Movement because he rarely commented on civil rights issues. Explain George Washington Carver's reasoning for staying out of the Civil Rights debate.**
Carver was not interested in using his public image to influence racial politics but rather desired to serve humanity, with a focus on impoverished, African American sharecropping families.
- 10. Include a picture.**

Science

- 11. Carver developed an interest in plants early in life. Describe how he became known as the "plant doctor" while growing up on the Carver farm.**
Due to his childhood illnesses GWC helped his caretaker, Susan Carver, in the garden and may have learned about herbal medicines. This increased his interest in plants and may have influenced his later work with natural pesticides, fungicides, and soil conditioners. This expanding knowledge allowed young George the chance to help neighbors when they struggled with unhealthy plants.

12. What was the driving force behind Carver's desire to learn about plants?

Carver's primary drive was simply a desire to understand how plants worked. He also spent time figuring out problems that may arise with plants and how to address them. This understanding gained Carver notoriety in his neighborhood as being able to address issues people had in their gardens.

13. Carver focused his scientific work on agriculture, to benefit those in poverty, especially the African American community. Why did he choose this focus?

Carver believed that his talent in agriculture was a God-given ability and that it was his mission to use his abilities to support poor farmers in the South, both black and white.

14. Carver is known as the "peanut man" but in reality, he focused on several plants. What other plants did Carver focus on?

Sweet potatoes, soybeans, cowpeas, cotton and other useful crops

15. What was Carver's goal in providing agricultural knowledge to the poor? What did he hope his methods would accomplish for impoverished farmers in the South?

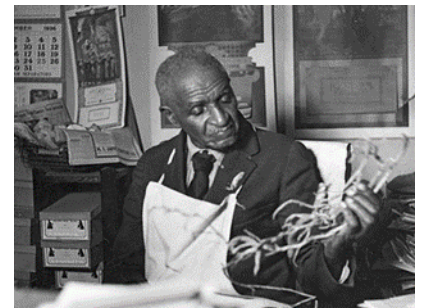
Due to racist policies, African American farmers were unable to acquire good farmland. They were trying to farm on exhausted soil, the result of the single crop cultivation for decades (primarily cotton). Carver's desire was to help this community recover by giving them alternative farming methods that would improve the quality of the land and thereby improve the quality of life for the community.

16. Explain why Carver struggled to be successful with other academics and scientists?

In the scientific community Carver was not known to follow the most stringent of scientific methods and often struggled with documentation of his experiments. So, while he developed many products few of the were widely accepted in the scientific or general community.

17. Carver spent time finding alternative ways to work the land to increase productivity. Pick one of his methods and describe how it worked and what problem it solved.

Crop rotation, new crops that allow for nitrogen replenishment of the soil (mainly soybeans and peanuts), natural fertilizers



18. Carver also wanted to find alternative ways to use plant products (ex. peanut milk, soy products to create plastic, etc.). Pick one of these products and describe the product and why it would be more environmentally friendly than what was currently in use at the time.

After switching from cotton to peanuts and soybeans Southern farmers had difficulty finding a market for their products. Carver then worked to develop alternative uses for the crops, including flour, paste, insulation, paper, plastics, rubber, soap, dyes, shaving cream, lotion and a variety of medications and antiseptics.

19. Include a picture.

Art and Religion

20. Carver developed his love of artwork as a child. Explain how he developed his talent.

Young Carver tended a secret garden of flowers. He saw beauty in nature. After viewing a formal painting at a neighbor's house, Carver created his own paints and developed his artistic ability.

21. Carver initially wanted to study art in college. What college did he wish to go to and why did he change his focus?

Carver originally studied art at Simpson College but one of his teachers encouraged him to change his focus to botany and agriculture. She identified his scientific abilities through and felt he could use his artistic skills to support scientific work.

22. What was the focus of Carver's artistic work?

Botanical drawings, still life, and landscapes

23. What role did art play in Carver's life as he worked at Tuskegee?

Carver used his artistic skills to capture a plant's physiology. Before the age of photography detailed drawings were necessary for scientists to identify and analyze botany. Carver's ability to accurately draw his specimens increased his effectiveness as a teacher.

24. What religion was Carver?

Carver had a deep faith in God, regularly read the Bible, and professed to be a Christian.

25. What role did his faith in God play in his work (both science and art)?

Carver often attributed his understanding of nature and plants to God and used his studies of science and nature to convince him of the presence and benevolence of God.

26. What was Carver's overarching life philosophy with regard to faith and science?

Carver believed that God spoke to people through nature and science. He took daily morning walks in nature near Tuskegee Institute, and communed with God.

27. How did his focus on religion impact his acceptance in the scientific community?

Many in the media and scientific community struggled to accept Carver because of his faith as many did not think that faith and God should mix with nature and science.

28. Include a picture

Resources

[George Washington Carver National Monument \(U.S. National Park Service\) \(nps.gov\)](https://www.nps.gov/georgewashingtoncarver/)

[Tuskegee Institute National Historic Site \(U.S. National Park Service\) \(nps.gov\)](https://www.nps.gov/tuskegeeinstitute/)

<https://www.britannica.com/biography/George-Washington-Carver>

<https://historicmissourians.shsmo.org/historicmissourians/name/c/carver/>

<https://www.livescience.com/41780-george-washington-carver.html>

https://www.cslewisinstitute.org/George_Washington_Carver_FullArticle

[George Washington Carver - Visionaries on Innovation - The Henry Ford](https://www.visionariesoninnovation.com/the-henry-ford-george-washington-carver/)

<https://www.acs.org/content/acs/en/education/whatischemistry/landmarks/carver.html#chemistry-agriculture-chemistry>

<https://www.icr.org/article/science-man-god-george-washington-carver>