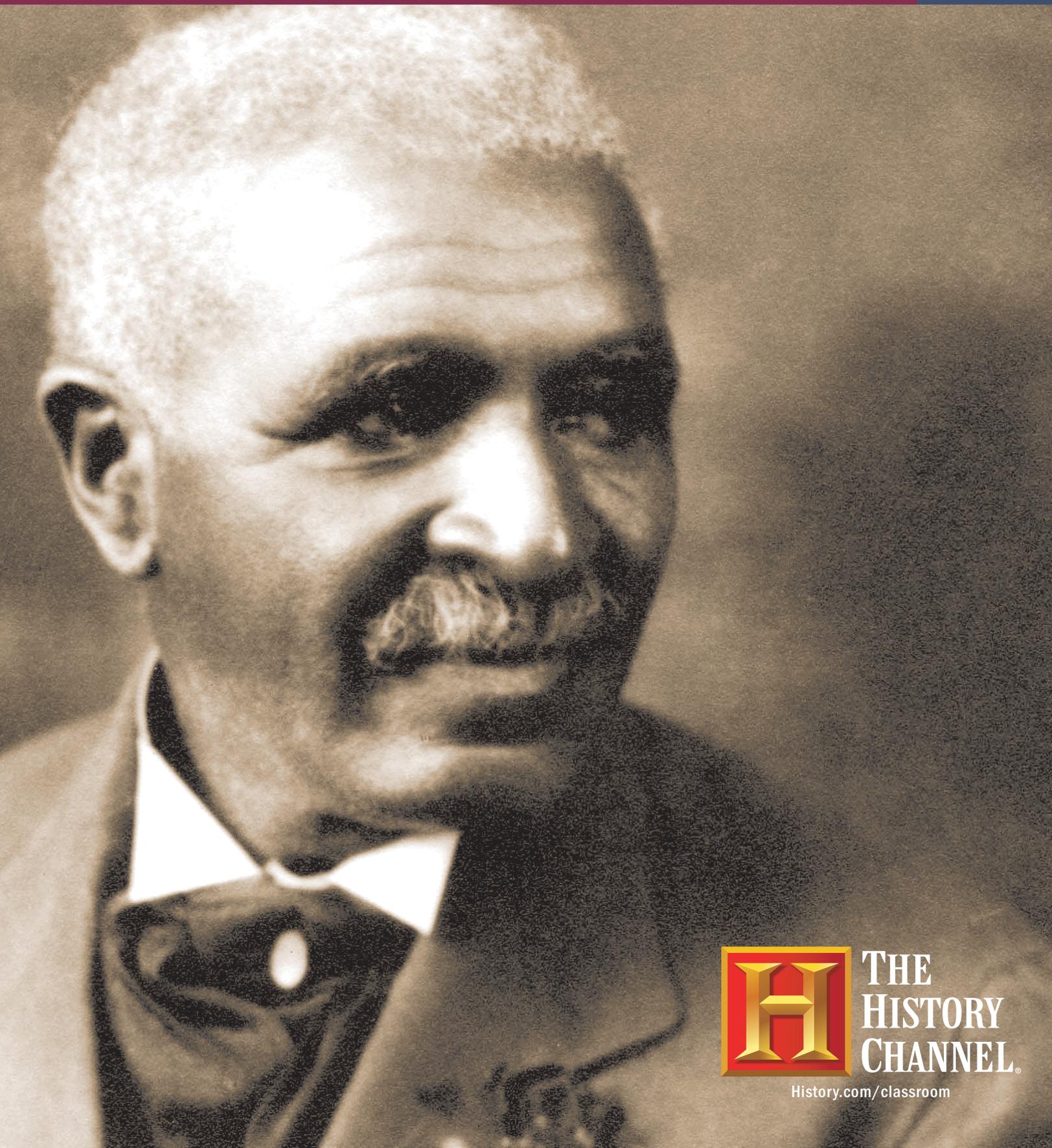


Modern Marvels: George Washington Carver Tech

STUDY GUIDE

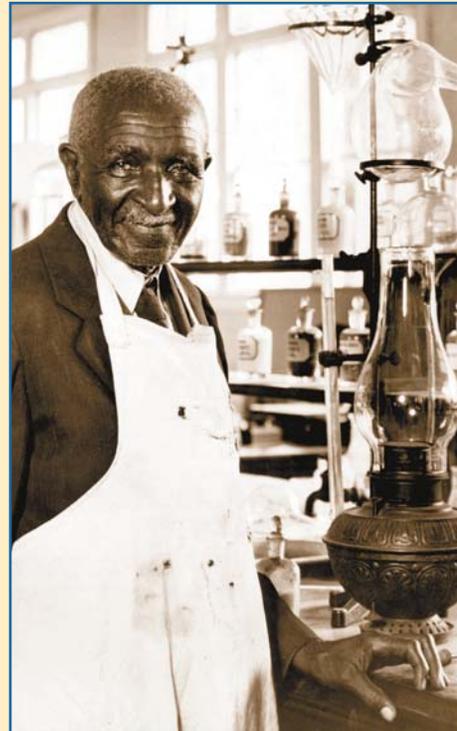


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MODERN MARVELS®:

George Washington Carver Tech

Named after the nation's first president, one of the most important inventors of the 20th century was born into slavery. George Washington Carver was born in rural Missouri in 1864 and despite the challenges of slavery, poverty, and becoming an orphan, he dedicated his life to using science and technology to advance the lives of everyday people. Carver's research and innovations influenced and shaped a wide range of national industries, ranging from agriculture to automotive to aerospace. This inspiring episode in the **Modern Marvels** series traces Carver's life through his many experiments, inventions and novel ideas to reveal how this humble and quiet man became a primary contributor to the technological and economic life of the nation. An hour-long program, this episode traces Carver's inventions and their common uses in our society today. Perhaps best known for his work with the peanut, Carver amazingly found over 300 uses for this crop. Driven by a desire to lift his fellow African Americans out of poverty, Carver used his research skills to encourage the development of new crops in the South as the unstable cotton market put many black Southerners in economic peril. Through his work as a teacher at Iowa State University and Tuskegee University, Carver found that peanuts and soybeans had medicinal value, could be used as an alternative energy source, and that their oils could be used as a base for automobile parts and other valuable materials. *George Washington Carver Tech* highlights the longevity of these findings as Carver's inventions continue to have countless contemporary applications in a wide variety of industries. This engaging exploration of Carver's life and work will introduce students to an amazing man whose simple and unassuming nature belied the enormity of his influence. With insights provided by former NBA star David Robinson and others, this program will motivate students to learn more about Carver and other influential African Americans during Black History Month and throughout the year.



CURRICULUM LINKS:

Modern Marvels: *George Washington Carver Tech* would be useful for History, Social Studies, American Culture, and Science and Technology Courses. It fulfills the following guidelines outlined by the National Center for History Education: Cultural Innovation and Diffusion and Human Interaction with the Environment. It is an excellent resource for courses, events, and programs related to Black History Month. It is appropriate for middle school and high school.

VOCABULARY:

agronomist
access
dubious

conspicuous
advocacy
extraction

distillation
dilemma
cash crop

DISCUSSION QUESTIONS:

1. How did George Washington Carver manage to become so well-educated despite being born into poverty and slavery?
2. How do you think Carver's early curiosity about art and nature shaped his focus on agriculture later in life?
3. Why did Carver originally start to experiment with soybeans and soybean oil? What uses for soybeans did he discover through his research?
4. Which of Carver's inventions do you think was most influential?
5. What were some of the uses of peanut oil? Why do you think Carver was so determined to find new uses for peanut oil and other experimental products?
6. Carver was always concerned that his inventions had a practical application. How does this differ from methods other scientists might use? Why do you think Carver emphasized usefulness?
7. Why do you think Carver turned down the opportunity to make more money and achieve more fame based on his inventions?
8. What do you think were George Washington Carver's top three priorities?
9. Who are some other inventors you admire other than Carver? What qualities do you think most inventors have in common?
10. What do you think is the most lasting legacy of Carver's life?

EXTENDED ACTIVITIES:

1. The National Park Service created a monument and park dedicated to honoring George Washington Carver in 1943. In addition to a statue of Carver, there are nature trails and special activities connected to Carver's interests and innovations. Imagine that you have been asked to design a monument to Carver. Think about how you would represent him and use your creativity to construct a monument that captures Carver's life, work and contributions. Write an essay describing your monument, or make a visual representation of the monument by creating a drawing, painting, or making a 3-D clay model. Share your design with your class or group.
2. Among the many ways George Washington Carver aimed to assist poor Southern farmers was by traveling through the Southern states with his "movable school." With the "movable school," Carver assembled tools, displays, and a traveling group of experts who would teach new techniques to African-American farmers and provide them with the services they needed to thrive amidst great poverty. Imagine that you are able to build your own "movable school." What issue or area would your school be related to and what would you include in it? On a piece of construction paper or posterboard, illustrate your fictional "movable school" and include images or lists of the items, experts, and ideas crucial to your school. Share your ideas with your larger class or group.

3. As this program describes, one of the incredible things about George Washington Carver's life is the wide variety of contributions he made to so many different industries. Carver's inventions reshaped the agriculture and automotive industries, among many others. Choose one of Carver's inventions discussed in the program or one that you discover on your own. At the library or using the Internet, do some additional research into this invention. Write a short essay of 2 to 3 pages describing this invention including the research Carver conducted and the reason he felt this innovation was important, and what he saw as the larger purpose it would serve. You can also include the modern-day uses of your chosen invention.
4. George Washington Carver lived an incredible life full of inventions, educational achievements, and contributions to the African-American community. Pretend that you are a newspaper reporter who has been assigned the task of writing Carver's obituary after he has died. In a short obituary of 500 words or less, write about the life of Carver. You can supplement your knowledge of his life by exploring additional biographies of him at the library or using the Internet. One of the challenges of this task is to capture such a compelling and full life using few words!

ADDITIONAL RESOURCES

Books:

- Carver, George Washington and Gary Kremer. *George Washington Carver: In His Own Words* (University of Missouri Press, 1991).
- Driscoll, Laura. *George Washington Carver: The Peanut Wizard* (Penguin Young Readers, 2003).
- McMurray, Linda. *George Washington Carver: Scientist and Symbol* (Oxford University Press, 1982).
- Moore, Eva and Alexander Anderson (Illustrator). *The Story of George Washington Carver*. (Scholastic, 1985).

Websites:

- A helpful site from the National Park Service, with a brief autobiography written by Carver:
http://www.nps.gov/gwca/expanded/auto_bio.htm
- The Iowa State University special website on George Washington Carver: <http://www.lib.iastate.edu/spcl/gwc/home.html>
- The United States Department of Agriculture page on Carver, with activities for younger students:
<http://www.usda.gov/oo/colorbook.htm>
- A helpful general website: <http://www.georgewashingtoncarver.com/>

 **Did you know?** Other than peanuts, Carver also developed recipes for mayonnaise, instant coffee, and shaving cream, among many other items.

 **Did you know?** The U.S. Navy has a ship in Carver's name to honor his contribution. The motto of the USS *George Washington Carver* SSBN-656 is "Strength Through Knowledge."