

Hidden Figures: The True Story of Four Black Women and the Space Race

Introduction: During the time of Jim Crow laws, Dorothy Vaughan, Katherine Johnson, Mary Jackson, and Christine Darden were able to use their talents to advance science and secure America’s legacy in the space race.

Time Required: 20-25 minutes.

Materials:

- A copy of *Hidden Figures: The True Story of Four Black Women and the Space Race* by Margot Lee Shetterly
- Characteristic Cards – (Best printed on cardstock)

Objectives:

- The student will be introduced to the characteristics of the four women featured in *Hidden Figures: The True Story of Four Black Women and the Space Race*
- The student will participate in a teacher directed activity ranking the characteristics of these successful as applied to specific scenarios.

Virginia Standards of Learning – History & Social Sciences

1.8	The student will explain that people make choices because they cannot have everything they want.
USII.9c)	The student will apply social science skills to understand the key domestic and international issues during the second half of the twentieth and early twenty-first centuries by c) analyzing how representative citizens have influenced America scientifically, culturally, academically, and economically;
CE.14	The student will apply social science skills to understand personal finance and career opportunities by a) identifying talents, interests, and aspirations that influence career choice; b) identifying human capital such as attitudes and behaviors that strengthen the individual work ethic and promote career success; c) identifying human capital such as abilities, skills, and education and the changing supply of and demand for them in the economy;

Procedure:

1. Collect and prepare materials prior to class.
2. Introduce the lesson by asking the students if they know what a “computer” is. Explain that today computers are considered machines, however in the 1940’s computers were people whose job it was to do math.

Reading Makes Cents 2018-2019

Hidden Figures: The True Story of Four Black Women and the Space Race

3. Show the students the cover of the book *Hidden Figures: The True Story of Four Black Women and the Space Race*. Tell the students that the four women depicted were “computers” for NASA and helped make the space program a success.
4. Ask the students if they can see any visual hints by the illustrator that would indicate that these women were good at math and worked in America’s space program. [There are math equations on their clothing and their earrings are planets and stars. The moon is in the background and a rocket is approaching it.]
5. Read the book to the students if time allows. This takes between seven and eight minutes. A YouTube reading can be located here:
<https://www.youtube.com/watch?v=dKFiSCQK5uY>
6. Tell the students that Dorothy Vaughan, Katherine Johnson, Mary Jackson, and Christine Darden were very smart women who managed to be successful in the fields of math, science, and technology: jobs that were mostly held by men during this time. Ask the students if they can name some qualities or characteristics that these women had that enabled them to be successful. [Students will often mention that they were very smart.]
7. Explain to the students that they are going to participating in an activity that has no right or wrong answers.
8. Show the students the characteristic cards and read the descriptive word on each card, defining them if necessary.
9. Distribute the cards to eight students. Ask them to come up to the front of the classroom. Tell the students that you will be reading a scenario to them describing a situation that one or more of the women in the book may have faced. The students are to arrange the characteristic cards, from left to right, from the characteristics that would be the most helpful to the least helpful in that situation.
10. Solicit comments and suggestions from other members of the class. Ask the students to explain their ranking.
11. Continue with some of the other scenarios as time allows.
12. Conclude the activity by reinforcing that a person’s success often depends on how they use the talents they have in the time period in which they live.

Extension Activities:

- Challenge students to write interesting scenarios based on the content of the text. Encourage them to share these with the class.
- Instruct the students to visit the biography section of the school’s library to discover other books about scientists, African Americans, and women trailblazers.

Successful “Computer” Characteristic Cards

African American
Competitive
Curious
Determined
Energetic
Female
Helpful
Mathematical
Smart

Scenario Cards

Mary Jackson wanted to help other women and minorities. Late in her career she took a position in NASA's Equal Opportunity Office. What personal characteristics would be the most helpful to her in this job?

Dorothy Vaughn was curious when new machine computers were brought in to Langley to help with the space program. She wanted to learn how to program these computers and then teach others how to also. What personal characteristics do you think would be most helpful to accomplish this goal?

Before he would go into and orbit the Earth, Astronaut John Glenn wanted Katherine Johnson to double-check the calculations made by the new computer machine. What characteristics of Katherine do you think John Glen recognized as being important to his safety and the success of the mission?

Dorothy Vaughan, Katherine Johnson, Mary Jackson, and Christine Darden all were high school math teachers at some point in their careers. What characteristics do you think are important to be a good math teacher?