

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

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Ages: 4-8/ Grades PreK-3

Themes: Women's History, Math, Science

SUMMARY

From the author of the bestselling book, *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race*, comes an equally riveting account, especially for a younger audience. Shetterly masterfully brings young viewers back to a time when the U.S. space program was on the brink of space exploration, when computers were actual humans who performed complicated computations, and when Blacks were segregated and denied their civil rights. Students are introduced to four young women who were really good at math. So good, in fact, that they were hired to work for NASA in pursuit of their quest to send people into space. Katherine, Dorothy, Mary, and Christine's stories bucked the social conventions of the time and paved the way for other Black women scientists and mathematicians who came behind them.

OBJECTIVES

- Students will compare and contrast life in the 1950s with life today.
- Students will define and discuss persistence.
- Students will define, identify, and deconstruct stereotypes.
- Students will discuss the meaning of the title, *Hidden Figures*.

BEFORE VIEWING ACTIVITIES

Define and discuss persistence with students. Use the following method to introduce and reinforce the word:

- Step 1: Write and say the word. Have students repeat orally.
- Step 2: Tell a short story or give a brief description of the meaning of the word.
- Step 3: Give students the opportunity to talk to each other to explain the meaning in their own words.
- Step 4: Model drawing a picture that shows the meaning of the word.
- Step 5: Have students write the word and draw their own picture that helps them remember the meaning of the word. Students who are proficient writers can also write a definition in their own words. Encourage students to watch and listen for ways the characters showed persistence in the movie.

Discuss stereotypes. Make a list of things that students think are "boy things" and things that students think are "girl things." Ask students to explain why they have these views. Ask students if boys can ever do any of the "girl things" or vice versa. Explain that stereotypes are ideas about groups of people that are based on one characteristic of some of those people, but that do not accurately reflect all of the characteristics

of those people. Give students examples, such as: Native Americans are sometimes stereotyped as always wearing feather headdresses, when in fact only some tribes of Native Americans wear feather headdresses; or, pitbull dogs are stereotyped as being mean, but not all pitbulls are mean. Help students understand why stereotypes may make people feel bad and create false impressions. Generate a list of stereotypes that students have heard or experienced. Work with students to give examples of how the stereotypes are untrue. Lead into the video by saying: "We will watch a video about four Black women who showed persistence to prove stereotypes wrong. Watch and listen to learn about how they went against the stereotypes of their times."

Use a KWL chart to elicit background knowledge (a three-columned chart: What I Know, What I Want to Know, What I Learned). Students will brainstorm what they know about life in the 1950s and 1960s, specifically regarding technology and Civil Rights. Record all of this information in the What I Know column of the KWL chart. Next, have students generate a list of questions of what they want to know. Record these ideas in the next column. Tell them that they are about to watch a movie about four Black women who persisted past what people told them was impossible to be instrumental figures in advancing Americans into space. Encourage students to watch and listen for ways that life in the 1950s and 1960s was different from life today. Revisit the KWL chart after viewing the movie to fill in the What I Learned column.

AFTER VIEWING ACTIVITIES

Revisit the KWL chart. Students should independently make a list of what they learned from the movie. Then, have students share what they learned and record it on the KWL chart. Then lead students in a discussion in which they compare and contrast life in the 1950s with life today. Guiding questions:

- How were African Americans treated in the 1950s and 1960s?
- What were some differences in the ways that women were thought of and treated in the 1950s and 1960s?
- How was technology different in the 1950s and 1960s?
- What were some similarities between the 1950s-60s and today?

Consider having students use a graphic organizer such as a Venn diagram or a table to record their ideas. Conclude the discussion with having students write 1-5 sentences comparing the 1950s and 1960s with today, including an illustration of each time period.

Follow up on the discussion of stereotypes. Guiding questions:

- What were some stereotypes that you heard in the movie?
- How did the different women in the book help to disprove those stereotypes?
- How have people's ideas about women changed? How has treatment of African Americans changed?
- What stereotypes about girls and women exist today? What about stereotypes about boys and men? What actions can you take to dispel those stereotypes?

Guide a discussion about persistence. Help students draw inferences about what qualities or character traits the women in the movie showed.

Guiding questions:

- In what ways did Katherine, Dorothy, Mary, and Christine lead others?
- What words can you use to describe them?
- What obstacles did the women have to overcome?
- How did Katherine, Dorothy, Mary, and Christine show persistence?

Follow up on the discussion by having students each choose one of the women to research further. Independently, or with a group, students can explore nonfiction texts and the internet to learn more about the life of each woman. Culminate the research with one of the following project suggestions:

- Annotated and illustrated biographical timeline
- PowerPoint presentation
- Dramatic reenactment of an important turning-point or event in the person's life with commentary on the impact of the event
- Informational essay
- Fictional interview with the person

Lead a discussion about the title of the movie, *Hidden Figures*. Possible discussion questions:

- The word figures has multiple meanings. What are they and how does each meaning contribute to the larger meaning of the story?
- How did Katherine, Dorothy, Mary, and Christine reveal hidden mathematical solutions?
- How were Katherine, Dorothy, Mary, and Christine themselves hidden?

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