

Katherine Johnson

Math Hero

Katherine Johnson once said, "In math, you're either right or you're wrong." Johnson was a talented mathematician. A mathematician is someone who solves math problems. Her math helped make space flight possible. She wasn't famous for a long time. But now people are learning about her. A movie came out about her in 2017.

Johnson was born on August 26, 1918. She grew up in West Virginia. She loved math. And she was really good at it! Her teachers saw her talent. She started high school at age 10. And she went to college at age 14. She was very smart. At this time, Black people and White people were not allowed to go to the same schools. Johnson was one of the first Black students to go to a White school.

Johnson started working at NASA in 1953. NASA is the group that sends American astronauts into space. Johnson worked as a "human computer." What does that mean? Computers weren't used a lot in the 1950s. People wrote numbers down to solve big math problems. Johnson was very good at solving big math problems. Johnson worked with other Black women to solve math problems. Those math problems helped plan space missions. It was very important work.

But Johnson was not treated fairly at work. Why? People treated her differently because of her skin color. She was not allowed to sit with White workers. She couldn't use the same bathroom as White people.



Katherine Johnson is shown here at her desk at NASA.

She was also left out of meetings. It was not fair. Still, Johnson said, "I loved going to work every day." She loved working with math and solving problems.

Johnson kept working hard. She solved math problems for many big missions. She helped Alan Shepard become the first American to go to space. She helped John Glenn become the first man to fly around Earth. NASA used a new computer to plan his flight. But he didn't trust the computer. He asked Johnson to check the math before his flight.

Johnson also helped the U.S. win the space race! The U.S. wanted to be the first country to land people on the moon in the 1960s. Johnson helped the U.S. win. The first man walked on the moon in 1969.

Johnson worked on space missions for more than 30 years. President Obama gave her an award for all of her work in 2015. She was 97 years old.

Johnson died at the age of 101. NASA official James Bridenstine said, "She was an American hero."

Name: _____

Directions: Read the biography “Katherine Johnson: Math Hero.” Then answer the questions below.

1. What is the main idea of the article?

- Ⓐ Black women were not treated fairly at work.
- Ⓑ Johnson loved math.
- Ⓒ Johnson’s work made many space missions possible.

2. What was Johnson’s job?

- Ⓐ She was an astronaut.
- Ⓑ She built computers.
- Ⓒ She solved big math problems for space missions.

3. Which statement about Johnson is true?

- Ⓐ Her dad was an astronaut.
- Ⓑ She started college at age 14.
- Ⓒ She didn’t like math.

4. The article says Johnson was an American hero. Do you agree? Use details from the article to support your response.

Teaching With “Katherine Johnson: Math Hero”

Whether you’re using this biography in a content-area lesson, reading block, research tool, independent practice, or some other way, supporting your students is key to their success.

Before Reading

Introduce the genre: Remind students that a biography is someone’s life story as written by someone else. Reading biographies helps us understand other people and cultures, learn about historical facts and notable accomplishments, and gain appreciation for how other people have overcome challenges and solved problems.

Introduce this biography: Ask students what they might already know or think about the subject of this biography. Have them jot down a few thoughts or predictions about the person and what they expect the biography to focus on.

During Reading

Encourage students to stop and think as they read. Have them underline key facts and interesting details and/or jot questions in the margin.

Students should make a list of any unfamiliar words and see whether context clues can help them define the words’ meanings.

After Reading

Use the companion text-specific questions to assess students’ comprehension and build key reading skills. Once students have completed the questions, invite them to share answers to open-ended questions with partners or in whole-class discussion.

Ask students to revisit the pre-reading notes that they jotted down to see what new facts and insights they gained from the article. Were their predictions correct?

Discuss the challenges that the biographical subject faced, including any societal obstacles, such as racism, sexism, poverty, or other sources of prejudice. What can we learn from this person’s successes and failures?

Extend learning with a research project. You might choose to divide the class into groups and have each focus on a different topic such as: the figure’s early life; their challenges, failures, and successes; their industry; how their life was impacted by other events in society at that time; or people who were inspired by or directly impacted by the biographical figure. Students can write reports and/or present their findings to the class.

Answers:

1. C; 2. C; 3. B; 4. *Sample answer:* I think Johnson was an American hero. She worked hard to help the country. Her hard work helped Alan Shepard and John Glenn achieve their missions. She also helped the U.S. win the space race.