

Katherine Johnson - NASA Mathematician and programmer, subject of the film *Hidden Figures*. (USA)

Katherine was born in West Virginia (in the United States) in 1918. When Katherine was young, she loved counting and numbers. She was so naturally clever and such a good student that she skipped ahead seven years and graduated ahead of her older siblings!

She eventually became a maths teacher, but she was encouraged by one of her mentors at University to become a research mathematician - trying to find new mathematics and ways of solving problems. In 1953, Katherine was given her shot.

NASA (the National Aeronautics and Space Administration) had recently opened a lab in Virginia that was hiring african-american mathematicians. In the time before there were electronic calculators or mobile phones, the women and men who performed complicated mathematical calculations were called 'computers' - Katherine was hired to be a computer by the flight research division.

At this time, the United States was in a 'Space Race' with Russia - both countries were fighting to be the most technologically advanced nation in the realm of spaceflight. Both countries were racing to see who could be the first to put someone on the surface of the moon! Katherine was one of the people who helped get the UNited States there first.

Her job was to calculate the flight path the spacecraft needed to take in order to arrive safely on the moon. Think about how tricky that is: The earth is rotating, the moon is revolving around it - and the rocket has to take off and follow the perfect path to hit it's target as it comes past. Yikes!

Even after NASA began to use mechanical computers, Katherine was still very important to their work. She continued working for NASA until 1986 and her work was vital to every major space program during that time. During the *Friendship 7* mission in 1962 - John Glenn, the first american to orbit the earth, refused to launch without a verification that Katherine herself had double-checked the maths.

In 2015 when awarding her the Presidential Medal of Freedom, President Barack Obama said of her; "Katherine G. Johnson refused to be limited by society's expectations of her gender and race while expanding the boundaries of humanity's reach."

Katherine died in 2020, but left behind an amazing legacy, including:

- She was named West Virginia State College Outstanding Alumnus of the Year in 1999.

- President Barack Obama presented her with the Presidential Medal of Freedom, one of 17 Americans so honored on November 24, 2015. She was cited as a 'pioneering example of African-American women in STEM.'
- Two NASA facilities have been named in her honor:
 - On May 5, 2016, a new building was named the *Katherine G. Johnson Computational Research Facility* and formally dedicated at NASA's Langley Research Center in Hampton, Virginia.
 - NASA renamed the Independent Verification and Validation Facility, in Fairmont, West Virginia, to the Katherine Johnson Independent Verification and Validation Facility on February 22, 2019.
- Johnson was included on the BBC's list of 100 Women of influence worldwide in 2016.
- The highly acclaimed film *Hidden Figures*, released in December 2016, was based on the non-fiction book of the same title. It follows Johnson and other female African-American mathematicians (Mary Jackson and Dorothy Vaughan) who worked at NASA.
- Johnson co-authored 26 scientific papers during her career, all of which share important discoveries in the field of aeronautics, mathematics and physics.