Name:

Date:

Katherine Johnson: Work at NASA

Part 1

Teacher Reads Following her teaching career, Katherine Johnson was hired to work at NACA (National Advisory Committee for Aeronautics), which later became NASA. During Johnson's career at NASA, she used math every day.

In 1953, Katherine Johnson was hired as a mathematician for NACA, an agency in Virginia that worked on problems related to building and flying airplanes. She was on a team of women mathematicians who did complex math calculations used by engineers to find ways to make flying safer. The women mathematicians were called human "computers" because they did their calculations by hand, with paper and pencil. At that time, computers had not yet been invented.

Later, NACA became a part of NASA, which dealt with exploring outer space. Johnson joined a team that solved difficult spaceflight math problems. When a flight trajectory (a flight path) was needed, engineers would ask Johnson to work out all the calculations. Later, when NASA started using electronic computers, Johnson often double-checked the calculations by hand.

Part 2

Teacher Reads Many people at NASA depended on Johnson's accurate calculations. For example, in 1961 she analyzed the trajectory, or path, for Alan Shepard's flight into space, America's first spaceflight carrying a human. Keep reading to find out how Johnson supported John Glenn, the first American to orbit Earth.

In 1962, NASA prepared to launch a spaceship that would travel three times around the Earth, carrying astronaut John Glenn. Computers were programmed with the math to guide the spacecraft from liftoff to splashdown. However, John Glenn didn't want to rely only on electronic computers. Before his flight, he asked Johnson to check the computer math by hand to see if it was correct. The math was correct, and the historic flight went forth.

Name:

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Part 2 continued

206 Johnson's calculations also proved critical to the
213 success of *Apollo 11* landing men on the moon and
223 the start of the Space Shuttle Program. After 33 years
233 working at NASA, Johnson retired.

Part 3

Teacher Reads Johnson's successful career motivated her to pass on her love of math to others. She encouraged students to pursue STEM careers—careers in Science, Technology, Engineering, and Math.

238 After Johnson stopped working at NASA, she
245 kept working with mathematics. She helped children
252 explore STEM topics.
255 In 2015, President Obama honored Johnson by
262 awarding her the Medal of Freedom. When she was
271 99 years old, NASA honored Johnson by naming a
280 building for her: the **Katherine G. Johnson**
287 **Computational Research Facility**.
290 You can read more about Johnson's life or see a
300 movie about her and the team at NASA. Thanks in
310 part to Johnson's work, NASA is set to explore Mars
320 and more.
322