[Episode 13 - Katherine Johnson Transcript]

Hello, my name is Jasmine. I am a biology major and math minor. I decided to write my biography on Katherine Johnson. Katherine Johnson was interesting to write about because there are video interviews available of her, and it gives more insight into her personality than I think a lot of female mathematicians get because most of them are deceased. And it allowed me to draw a connection to her, as well as notice a similarity between how people view women in science now versus how she's always thought about women in science. And that was really interesting. Katherine Johnson took the lead for women in mathematics, not only by playing a key role in the success of NASA's space exploration program, but by co-authoring the first textbook in space, writing dozens of scientific papers, and even helping with the integration of computers into NASA's flight research division. Women were given the right to vote exactly two years after Katherine's birth on August 26th, 1918. This ties her birthday to Women's Equality Day, a coincidence that strongly ties her impact in the STEM field, particularly in mathematics. She also never did anything because she was a woman and she wanted to break barriers. She did things because that was just what she wanted to do. And she decided that it didn't really matter that she was a woman or not. If that was what she wanted, that was what she was going to go for. And that was really cool for the time period that she was in. And she always says in her interviews that she was lucky or she was in the right place at the right time. And that might be true, but there's definitely a lot to say about still deciding to go for what you want to even if the odds are against you, especially she was not only a woman in math, but she was African American as well. That must have been really difficult. For example, to reach the heights she did, her family had to move 120 miles for her to have access to a high school that would accept African Americans. She also had to head the desegregation of West Virginia University, and she had to push for recognition by her male co-workers at NASA constantly. She grew up with a love of math which stemmed from her father's encouragement. Her father was a farmer who emphasized the importance of schooling and helped instill the idea of equality in his children, stating "You are as good as anybody in this town, but you're no better." This statement very clearly defines Katherine's attitudes toward her success, specifically where she gets her humble nature. She excelled in school growing up, skipping grades and graduating high school at the age of 14 and college at 18, with degrees in both French and mathematics. She fell in love with not only math, but English and French. The only subject she disliked was history because you just had to remember it and there was no end and no determinant answer. At first her intention was to become a teacher because other jobs available to math majors would not hire women. With the encouragement of her teachers, she went for her dream of becoming a

research mathematician. She attended math courses added and designed specifically for her, in particular the analytical geometry course set up for her, which would later be of paramount importance to her career at NASA, had her as the only student. The Great Depression caused Katherine to go immediately into teaching after completing college, to ensure her family could survive. After teaching both elementary school and high school for years and raising her children, the Space Research Center, which would eventually become NASA, opened positions for "human computers" to African American women. The reason NASA decided to hire specifically women for that position was because they believed women would have a greater attention to detail and more patience than a man ever could. Within just one week of working the position, she was recognized for her talent and joined the ranks of the engineers, attending meetings and briefings no woman had attended before. Katherine Johnson was part of the team which was responsible for the success of the United States space program. She personally calculated the paths and trajectories of the space shuttles responsible for getting Alan Shepherd into space. When electronic computers were introduced and used to calculate flight paths in place of the human computers, Katherine Johnson replicated these calculations to ensure their accuracy at the insistence of John Glenn, the first American to orbit the Earth. Katherine's calculations were also vital to future space exploration missions, most particularly in the Apollo moon program, which made Neil Armstrong the first person to walk on the moon. Over her years working at NASA, Katherine helped with the publication of the first textbook on space, along with the publication of 26 scientific papers. The first one included equations for determining where space shuttle debris would land with respect to the shuttle's initial launch angle. The first paper was also the first instance in which NASA allowed a woman to put her name on a scientific paper. Last year Katherine received the Presidential Medal of Freedom, the highest honor a civilian can receive, from President Obama for being "a pioneer who broke the barriers of race and gender." Katherine Johnson is currently 98 years old and she continues to be a source of encouragement, especially for women and minorities, to pursue jobs in the STEM field. From writing about her, I learned about the difference between letting your ambitions lead you versus letting your love for something lead you to your ambition. There's a huge difference in that and a huge difference in how you're perceived by people and how you understand other people. That perspective is important to me. While I started on my current path with a love for biology and the sciences, ambition has made me a little bit blind. It was good to get back to the reason that I decided to do this in the first place. Thanks for sticking around to listen to Katherine Johnson's biography. I highly recommend going online and finding interviews with her. She's a very interesting person to listen to and she has so much personality. It's

definitely a breath of fresh air. Thanks for listening and have a good day.
Ta da!