

**Sixth Grade Session 3**

**Integration of Knowledge and Ideas**

* I can analyze and evaluate information in multiple media.
* I can trace and evaluate arguments.
* I can compare and contrast information presented in different sources.

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**Text 2**

Lyrics

 **The Real Story Behind the Movie *Hidden Figures***

Q&A

**What are some of Katherine Johnson's accomplishments at NASA?**

Over the course of her three decades at NASA, Katherine Johnson's biography includes an impressive list of accomplishments. She calculated trajectories for Alan Shepard's groundbreaking 1961 spaceflight (America's first human in space), she verified the calculations for John Glenn's first American orbit of Earth, she computed the trajectory of Apollo 11's flight to the moon, and she worked on the plan that saved Apollo 13's crew and brought them safely back to Earth. For her accomplishments, President Barack Obama awarded her the Presidential Medal of Freedom on November 24, 2015.

**Did black women have to abide by segregation laws when they first started working at Langley in the 1940s?**

Yes. "At the time the black women came to work at Langley [in 1943], this was a time of segregation," says *Hidden Figures* author Margot Lee Shetterly. "Even though they were just starting these brand new, very interesting jobs as professional mathematicians, they nonetheless had to abide by the state law, which was that there were segregated work rooms for them, there were segregated bathrooms, and there were segregated cafeterias. On their table in the cafeteria was a sign that said 'colored computers,' which sort of sounds like an iMac or something, right, today? But this referred to the black women who were doing this mathematical work." They were essentially human computers. *-Al Jazeera*

**Did Katherine Johnson feel the segregation of the outside world while working at NASA?**

No. "I didn't feel the segregation at NASA, because everybody there was doing research," says the real Katherine G. Johnson. "You had a mission and you worked on it, and it was important to you to do your job...and play bridge at lunch. I didn't feel any segregation. I knew it was there, but I didn't feel it." Even though much of the racism coming from Katherine's coworkers in the movie seems to be largely made up (in real life she claimed to be treated as a peer), the movie's depiction of state laws regarding the use of separate bathrooms, buses, etc. was very real. African-American computers had also been put in the segregated west section of the Langley campus and were dubbed the "West Computers." *-*

**Were the women really known as "computers"?**

Yes. Before the days of electronic computers that we're familiar with today, the women hired at NASA to calculate trajectories, the results of wind tunnel tests, etc. had the job title of "computer." In simple terms, these were mathematicians who performed computations. Even when electronic computers were first used at NASA, human computers like Katherine Johnson still often performed the calculations by hand to verify the results of their electronic counterparts. *-NASA*

**Was Katherine really told that women aren't usually included in the space program briefings?**

Yes. "I asked permission to go," says Katherine, "and they said, 'Well, the girls don't usually go,' and I said, 'Well, is there a law?' They said, 'No.' Then my boss said, 'Let her go.' And I began attending the briefings." In the [*Hidden Figures* movie](http://www.historyvshollywood.com/video/hidden-figures-trailer/), Jim Parsons' character, Paul Stafford, tells Katherine (Taraji P. Henson) that women don't go to the briefings. "There's no protocol for women attending," Stafford states. After she continues to question this unspoken rule, their boss, Al Harrison (Kevin Costner), decides to let her attend the briefing.

**Did Katherine Johnson really compute John Glenn's trajectory?**

Yes. "When John Glenn was to be the first astronaut to go up into the atmosphere and come back, and they wanted him to come back in a special place, and that was what I did, I computed his trajectory," says Katherine Johnson. "From then on, any time they were going to compute trajectories, they were given mostly, all of them to my branch, and I did most of the work on those by hand."

**Did John Glenn really ask that Katherine double-check the electronic computer's calculations for his first Earth orbit?**

Yes. Fact-checking the *Hidden Figures* movie confirmed that John Glenn personally requested that Katherine recheck the electronic computer's calculations for his February 1962 flight aboard the Mercury-Atlas 6 capsule Friendship 7—the NASA mission that concluded with him becoming the first American to orbit the Earth. The scene in the movie unfolded in almost exactly the same way it does in real life, with Glenn's request for Katherine taken nearly verbatim from the transcripts. He even refers to her as "the girl." "Get the girl to check the numbers... If she says the numbers are good... I'm ready to go." *-NASA*

**What is probably the biggest difference between the *Hidden Figures* movie and the true story?**

"You might get the indication in the movie that these were the only people doing those jobs, when in reality we know they worked in teams, and those teams had other teams," author Margot Shetterly explained. "There were sections, branches, divisions, and they all went up to a director. There were so many people required to make this happen. ... But I understand you can't make a movie with 300 characters. It is simply not possible." *-Space.com*

**What did the real Katherine Johnson think of the movie?**

"Katherine Johnson saw the movie and she really liked it," said author Margot Shetterly (*Space.com*). Katherine told the Daily Press, "It sounded good...It sounded very, very accurate."

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**Text 3**

**May 25, 1961: JFK's Moon Shot Speech to Congress**

**Speech**

On May 25, 1961, President John F. Kennedy announced his goal of putting a man on the moon by the end of the decade.

In his speech, Kennedy called for an ambitious space exploration program that included not just missions to put astronauts on the moon, but also a Rover nuclear rocket, weather satellites and other space projects.

This NASA-provided transcript shows the text of Kennedy's speech and what it called for, in 1961, to put Americans in space and on the moon before the decade ended. About 2 1/2 years after giving the speech, later, Kennedy was assassinated in Dallas on Nov. 22, 1963. Just over eight years after the speech, on July 20, 1969, NASA's Apollo 11 mission would land the first humans on the moon.

Here's a look at an excerpt from Kennedy's speech to Congress:

**Section IX: Space:**

Finally, if we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere, who are attempting to make a determination of which road they should take. Since early in my term, our efforts in space have been under review. With the advice of the Vice President, who is Chairman of the National Space Council, we have examined where we are strong and where we are not, where we may succeed and where we may not. Now it is time to take longer strides--time for a great new American enterprise--time for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on earth.

I believe we possess all the resources and talents necessary. But the facts of the matter are that we have never made the national decisions or marshaled the national resources required for such leadership. We have never specified long-range goals on an urgent time schedule, or managed our resources and our time so as to insure their fulfillment.

Recognizing the head start obtained by the Soviets with their large rocket engines, which gives them many months of lead-time, and recognizing the likelihood that they will exploit this lead for some time to come in still more impressive successes, we nevertheless are required to make new efforts on our own. For while we cannot guarantee that we shall one day be first, we can guarantee that any failure to make this effort will make us last. We take an additional risk by making it in full view of the world, but as shown by the feat of astronaut Shepard, this very risk enhances our stature when we are successful. But this is not merely a race. Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share.

I therefore ask the Congress, above and beyond the increases I have earlier requested for space activities, to provide the funds which are needed to meet the following national goals:

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the Earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. We propose to accelerate the development of the appropriate lunar space craft. We propose to develop alternate liquid and solid fuel boosters, much larger than any now being developed, until certain which is superior. We propose additional funds for other engine development and for unmanned explorations--explorations which are particularly important for one purpose which this nation will never overlook: the survival of the man who first makes this daring flight. But in a very real sense, it will not be one man going to the moon--if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there.

Secondly, an additional 23 million dollars, together with 7 million dollars already available, will accelerate development of the Rover nuclear rocket. This gives promise of some day providing a means for even more exciting and ambitious exploration of space, perhaps beyond the moon, perhaps to the very end of the solar system itself.

Third, an additional 50 million dollars will make the most of our present leadership, by accelerating the use of space satellites for world-wide communications.

Fourth, an additional 75 million dollars--of which 53 million dollars is for the Weather Bureau--will help give us at the earliest possible time a satellite system for world-wide weather observation.

Let it be clear--and this is a judgment which the Members of the Congress must finally make--let it be clear that I am asking the Congress and the country to accept a firm commitment to a new course of action, a course which will last for many years and carry very heavy costs: 531 million dollars in fiscal '62--an estimated 7 to 9 billion dollars additional over the next five years. If we are to go only half way, or reduce our sights in the face of difficulty, in my judgment it would be better not to go at all.

Now this is a choice which this country must make, and I am confident that under the leadership of the Space Committees of the Congress, and the Appropriating Committees, that you will consider the matter carefully.

It is a most important decision that we make as a nation. But all of you have lived through the last four years and have seen the significance of space and the adventures in space, and no one can predict with certainty what the ultimate meaning will be of mastery of space.

I believe we should go to the moon. But I think every citizen of this country as well as the Members of the Congress should consider the matter carefully in making their judgment, to which we have given attention over many weeks and months, because it is a heavy burden, and there is no sense in agreeing or desiring that the United States take an affirmative position in outer space, unless we are prepared to do the work and bear the burdens to make it successful. If we are not, we should decide today and this year.

This decision demands a major national commitment of scientific and technical manpower, materiel and facilities, and the possibility of their diversion from other important activities where they are already thinly spread. It means a degree of dedication, organization and discipline which have not always characterized our research and development efforts. It means we cannot afford undue work stoppages, inflated costs of material or talent, wasteful interagency rivalries, or a high turnover of key personnel.

New objectives and new money cannot solve these problems. They could in fact, aggravate them further--unless every scientist, every engineer, every serviceman, every technician, contractor, and civil servant gives his personal pledge that this nation will move forward, with the full speed of freedom, in the exciting adventure of space.

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[**The Space Race**](http://www.history.com/topics/space-race/videos/the-space-race)

**Article and Timeline**

**Text 4**

**The U.S. competition with the U.S.S.R. for technological dominance spurred the U.S. on to the first-ever landing on the moon.**

After World War II drew to a close in the mid-20th century, a new conflict began. Known as the Cold War, this battle pitted the world’s two great powers–the democratic, capitalist United States and the communist Soviet Union–against each other. Beginning in the late 1950s, space would become another dramatic arena for this competition, as each side sought to prove the superiority of its technology, its military firepower and–by extension–its political-economic system.

Space exploration served as another dramatic arena for Cold War competition. On October 4, 1957, a Soviet R-7 intercontinental ballistic missile launched Sputnik (Russian for “traveler”), the world’s first artificial satellite and the first man-made object to be placed into the Earth’s orbit. Sputnik’s launch came as a surprise, and not a pleasant one, to most Americans. In the United States, space was seen as the next frontier, a logical extension of the grand American tradition of exploration, and it was crucial not to lose too much ground to the Soviets. In addition, this demonstration of the overwhelming power of the R-7 missile–seemingly capable of delivering a nuclear warhead into U.S. air space–made gathering intelligence about Soviet military activities particularly urgent.

**A New Urgency**

In 1958, the U.S. launched its own satellite, Explorer I, designed by the U.S. Army under the direction of rocket scientist Wernher von Braun. That same year, President Dwight Eisenhower signed a public order creating the National Aeronautics and Space Administration (NASA), a federal agency dedicated to space exploration.

Eisenhower also created two national security-oriented space programs that would operate simultaneously with NASA’s program. The first, spearheaded by the U.S. Air Force, dedicated itself to exploiting the military potential of space. The second, led by the Central Intelligence Agency (CIA), the Air Force and a new organization called the National Reconnaissance Office (the existence of which was kept classified until the early 1990s) was code-named Corona; it would use orbiting satellites to gather intelligence on the Soviet Union and its allies.

**Space Race Heats Up**

In 1959, the Soviet space program took another step forward with the launch of Luna 2, the first space probe to hit the moon. In April 1961, the Soviet cosmonaut Yuri Gagarin became the first person to orbit Earth, traveling in the capsule-like spacecraft Vostok 1. For the U.S. effort to send a man into space, dubbed Project Mercury, NASA engineers designed a smaller, cone-shaped capsule far lighter than Vostok; they tested the craft with chimpanzees, and held a final test flight in March 1961 before the Soviets were able to pull ahead with Gagarin’s launch. On May 5, astronaut Alan Shepard became the first American in space (though not in orbit).

Later that May, President [John F. Kennedy](http://www.history.com/topics/us-presidents/john-f-kennedy) made the bold, public claim that the U.S. would land a man on the moon before the end of the decade. In February 1962, John Glenn became the first American to orbit Earth, and by the end of that year, the foundations of NASA’s lunar landing program–dubbed Project Apollo–were in place.

**Achievements of Apollo**

From 1961 to 1964, NASA’s budget was increased almost 500 percent, and the lunar landing program eventually involved some 34,000 NASA employees and 375,000 employees of industrial and university contractors. Apollo suffered a setback in January 1967, when three astronauts were killed after their spacecraft caught fire during a launch simulation. Meanwhile, the Soviet Union’s lunar landing program proceeded tentatively, partly due to internal debate over its necessity and to the untimely death (in January 1966) of Sergey Korolyov, chief engineer of the Soviet space program.

December 1968 saw the launch of Apollo 8, the first manned space mission to orbit the moon, from NASA’s massive launch facility on Merritt Island, near Cape Canaveral, [Florida](http://www.history.com/topics/us-states/florida). On July 16, 1969, U.S. astronauts [Neil Armstrong](http://www.history.com/topics/neil-armstrong), Edwin “Buzz” Aldrin and [Michael Collins](http://www.history.com/topics/astronaut-michael-collins) set off on the [Apollo 11](http://www.history.com/topics/apollo-11) space mission, the first lunar landing attempt. After landing successfully on July 20, Armstrong became the first man to walk on the moon’s surface; he famously called the moment “one small step for man, one giant leap for mankind.”

**Conclusion of the Space Race**

By landing on the moon, the United States effectively “won” the space race that had begun with Sputnik’s launch in 1957. For their part, the Soviets made four failed attempts to launch a lunar landing craft between 1969 and 1972, including a spectacular launch-pad explosion in July 1969. From beginning to end, the American public’s attention was captivated by the space race, and the various developments by the Soviet and U.S. space programs were heavily covered in the national media. This frenzy of interest was further encouraged by the new medium of television. Astronauts came to be seen as the ultimate American heroes, and earth-bound men and women seemed to enjoy living vicariously through them. Soviets, in turn, were pictured as the ultimate villains, with their massive, relentless efforts to surpass America and prove the power of the communist system.

With the conclusion of the space race, U.S. government interest in lunar missions waned after the early 1970s. In 1975, the joint Apollo-Soyuz mission sent three U.S. astronauts into space aboard an Apollo spacecraft that docked in orbit with a Soviet-made Soyuz vehicle. When the commanders of the two crafts officially greeted each other, their “handshake in space” served to symbolize the gradual improvement of U.S.-Soviet relations in the late Cold War-era.

**Timeline: The Space Race**

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| **1958** | Project Mercury, initiated in 1958 and completed in 1963, is the United States' first human-in-space program. It is designed to further knowledge about humanity's capabilities in space. |
| **1959** | **April**Seven military-jet test pilots are introduced to the public as America's first astronauts. They are: Lt. M. Scott Carpenter, USN; Capt. L. Gordon Cooper, Jr., USAF; Lt. Col. John H. Glenn, Jr., USMC; Cap. Virgil I. Grissom, USAF; Lt. Cdr. Walter M. Schirra, Jr., USN; Lt. Cdr. Alan B. Shepard, Jr., USN; and Capt. Donald K. Slayton, USAF. |
| **1961** | **April 12**Yuri Gagarin of the USSR becomes the first person in space.**May 5**Alan Shepard makes a suborbital flight in Freedom 7, becoming the first American in space. Time: 15 minutes, 22 seconds.**Aug. 6–7**The USSR's Gherman Titov becomes the first man to take a long-duration flight in space. His flight time is 25 hours and 18 minutes. |
| **1962** | **Feb. 20**[John Glenn](http://www.factmonster.com/spot/glenn1.html) makes a three-orbit flight in Friendship 7 and becomes the first American in orbit. Time: 4 hours, 55 minutes. |
| **1963** | **June 16**[Valentina Tereshkova](http://www.factmonster.com/encyclopedia/people/tereshkova-valentina-vladimirovna.html) of the USSR becomes the first woman in space. |
| **1964** | **Oct. 12**The USSR's Vladimir Komarov, Konstantin P. Feoktistov, and Boris G. Yegorov take part in the first 3-person orbital flight and the first flight without space suits on the *Voskhod 1*. |
| **1965** | **March 18**Alexei A. Leonov of the USSR takes the first space walk, which lasts ten minutes.**March 23**Virgil Grissom and John Young are the first American 2-person crew on the *GT III*.**June 3-7**While on the *GT IV*, the first American space walk is made by Edward White, II. It lasts slightly over 20 minutes. |
| **1966** | **March 16–17**The first docking happens between a staffed spaceraft, *GT VIII*, and an unstaffed space vehicle, an orbiting *Agena* rocket. Neil Armstrong and David Scott are on board the *GT VIII*. |
| **1968** | **Dec. 21–27***Apollo 8* becomes the first spacecraft in circumlunar orbit and sends TV transmissions from this orbit. Frank Borman, James A. Lovell, Jr., and William A. Anders are the first astronauts to view the whole Earth. |
| **1969** | **Mar. 3–13**James A. McDivitt, David R. Scott, and Russell L. Schweikart participate in the first staffed flight of Lunar Module on *Apollo 9*.**May 18–26***Apollo 10* becomes the first staffed flight to descend within nine miles of the Moon's surface. Thomas P. Stafford, Eugene A. Cernan, and John W. Young are on the flight.**July 16–24**[Apollo 11](http://www.factmonster.com/spot/moonwalk1.html) takes off on the first manned flight to the moon with Neil A. Armstrong, Edwin E. Aldrin, Jr., and Michael Collins.**July 20**[Neil Armstrong](http://www.factmonster.com/biography/var/neilarmstrong.html) becomes the first man to walk on the Moon. |

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**Katherine G. Johnson Biography Mathematician (1918–)**

**Text 5**

**Biography**

**Early Years and Education**

Katherine G. Johnson was born Katherine Coleman on August 26, 1918, in White Sulphur Springs, West Virginia. A bright child with a gift for numbers, she breezed through her classes and completed the eighth grade by age 10. Although her town didn’t offer classes for African Americans after that point, her father, Joshua, drove the family 120 miles to Institute, West Virginia, where they lived while she attended high school.

Johnson enrolled at West Virginia State College (now West Virginia State University) in Institute, West Virginia, where she encountered a hands-on faculty. One particularly engaged professor was Dr. William W. Schieffelin Claytor, the third African American to earn a Ph.D. in mathematics, who was determined to prepare Johnson to become a research mathematician. At age 18, she graduated summa cum laude with degrees in mathematics and French.

The following year, Johnson became one of three students to desegregate West Virginia University's graduate school in Morgantown. However, she found the environment less welcoming than it had been in Institute, and never completed her program there.

**The 'Computer'**

Beginning in the late 1930s, Johnson taught math and French at schools in Virginia and West Virginia. In 1939, she married James Francis Goble, with whom she had three daughters: Joylette, Katherine and Constance.

In 1952, Johnson learned that the National Advisory Committee for Aeronautics (NACA) was hiring African-American women to serve as "computers"; namely, people who performed and checked calculations for technological developments. Johnson applied, and the following year she was accepted for a position at Langley Research Center in Hampton, Virginia.

Johnson not only proved adept at her calculations, she displayed a curiosity and assertiveness that caught her superiors by surprise. "The women did what they were told to do,” she recalled. “They didn’t ask questions or take the task any further. I asked questions; I wanted to know why."

After only two weeks, Johnson was transferred from the African-American computing pool to Langley's flight research division, where she talked her way into meetings and earned additional responsibilities. She achieved success despite difficulties at home: In 1956, her husband died of a brain tumor.

**NASA Pioneer**

In 1958, after NACA was reformulated into the National Aeronautics and Space Administration (NASA), Johnson was among the people charged with determining how to get a human into space and back. The following year she remarried, to decorated Navy and Army officer James A. Johnson.

For Johnson, calculating space flight came down to the basics of geometry: "The early trajectory was a parabola, and it was easy to predict where it would be at any point," she said. "Early on, when they said they wanted the capsule to come down at a certain place, they were trying to compute when it should start. I said, 'Let me do it. You tell me when you want it and where you want it to land, and I'll do it backwards and tell you when to take off .' " As a result, the task of plotting the path for Alan Shepard's 1961 journey to space, the first in American history, fell on her shoulders.

The next challenge was to send a man in orbit around Earth. This involved far more difficult calculations, to account for the gravitational pulls of celestial bodies, and by then NASA had begun using electronic computers. Yet, the job wasn't considered complete until Johnson was summoned to check the work of the machines, providing the go-ahead to propel John Glenn into successful orbit in 1962.

While the work of electronic computers took on increased importance at NASA, Johnson remained highly valuable for her unwavering accuracy. She performed calculations for the historic 1969 Apollo 11 trip to the moon, and the following year, when Apollo 13 experienced a malfunction in space, her contributions to contingency procedures helped ensure its safe return.

Johnson continued to serve as a key asset for NASA, helping to develop its Space Shuttle program and Earth Resources Satellite, until her retirement in 1986.

**Awards and Legacy**

Johnson has been honored with an array of awards for her groundbreaking work. Among them are the 1967 NASA Lunar Orbiter Spacecraft and Operations team award, and the National Technical Association’s designation as its 1997 Mathematician of the Year. Additionally, she has earned honorary degrees from SUNY Farmingdale, Maryland's Capitol College, Virginia's Old Dominion University and West Virginia University.

In November 2015, Johnson was presented with the Presidential Medal of Freedom by Barack Obama. The following May, NASA opened the new $30 million, 40,000-square-foot Katherine G. Johnson Computational Research Facility at Langley.

In September 2016, the little-known story of Johnson and her fellow African-American computers was published in Margot Lee Shetterly's Hidden Figures. It was also turned into a feature film, slated for a late 2016 release, with acclaimed actress Taraji P. Henson starring as Johnson.

**An Interview with Katherine Johnson**

**Text 6**

 **'If You Like What You're Doing, You Will Do Well'**

**Interview**

**Viewing Guide Directions:** Make notes in the space below. You will be able to use your notes to answer the questions that follow.

6th Grade Session 3: Integration of Knowledge and Ideas

Answer the questions below based on the Biography of Katherine Johnson and the Interview with Katherine Johnson.

1. How does the interview of Katherine Johnson help develop the ideas in the biography?

A. The interview gives the viewers an understanding of Johnson’s love of math and feeling of pride about her work.

B. The interview explains the influence of racism and segregation on Johnson’s career and opportunities.

C. The interview helps viewers understand the mathematics behind each of the complicated calculations of the missions.

D. The interview shows viewers how Johnson is fondly remembered by those she worked with at Langley.

1. This question has two parts. First, answer Part A. Then, answer Part B.

 **Part A:** Which statement below is supported by BOTH the biography and the interview?

A. Johnson has always loved mathematics and takes great pride in her work.

B. Johnson had no problem asserting herself in a white male-dominated field.

C. Johnson has been recognized with many honors for her achievements in math.

D. Johnson dealt with the tragic death of her first husband while taking on a new role.

**Part B:** Select TWO statements below that support the answer to Part A.

A. In September 2016, the little-known story of Johnson and her fellow African-American computers was published in Margot Lee Shetterly's Hidden Figures.

B. I said, 'Let me do it. You tell me when you want it and where you want it to land, and I'll do it backwards and tell you when to take off.

C. The following year she remarried, to decorated Navy and Army officer James A. Johnson.

D. This involved far more difficult calculations, to account for the gravitational pulls of celestial bodies, and by then NASA had begun using electronic computers.

E. "The women did what they were told to do,” she recalled. “They didn’t ask questions or take the task any further. I asked questions; I wanted to know why."

3. Which of the following was NOT included in the biography?

A. A description of the calculations for space flight

B. A brief summary of Johnson’s early education.

C. A listing of all of the missions Johnson worked on.

D. An example of how others trusted Johnson’s accuracy.

1. Drag and drop the statements below into the appropriate places in the graphic organizer to how the claim was developed in the biography.

**Claim:** Katherine Johnson was an important member of the NASA team.

**Support**

**Support**

**She was one of three students to desegregate West Virginia University.**

**She checked the calculations of the electronic computers.**

**She plotted the path of Shepard’s journey to space.**

**Johnson thought of the calculations as basic geometry.**

1. Read this sentence from the article.
2. This question has two parts. First, answer Part A. Then, answer Part B.

**Part A:** Which of the following statements can be concluded after reading the biography and viewing the interview?

A. Katherine Johnson was the first black female computer in the history of NASA.

B. Katherine Johnson did not let obstacles prevent her from reaching her goals.

C. Katherine Johnson had to fight hard to be treated seriously as a mathematician.

D. Katherine Johnson had a difficult childhood that she overcame to become a success.

**Part B:** Support your answer to Part A in two to three sentences.

1. Use the graphic organizer below to compare and contrast the development of ideas presented in the biography and the interview.

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2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Both**

**Interview**

**Biography**

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| --- |
| 1. Katherine Johnson reveals her thoughts and feelings about her career.
 |
| 1. A description of some of the missions that Johnson calculated.
 |
| 1. A feeling of competitiveness when Russia put a man in space.
 |
| 1. A mention of Johnson’s marriages and children.
 |
| 1. A list of the awards and honors bestowed upon Johnson.
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