Discussion Question Answers
African American inventors in History

Part 1: African Americans Inventors in History

Granville T. Woods
1. Woods was born in Ohio in 1856.
2. Woods went to school until age 10, when he started working in a machine shop for railroad equipment.
3. Woods was born just prior to the Civil War, and lived through it and Reconstruction afterward. Even in free states, racial discrimination and segregation were prevalent, evidenced by Woods’ difficulties advancing as a train engineer because of his skin color.
4. Woods was born in Ohio and likely worked across most of the northern United States. He died in New York City.
5. Woods lived and worked during the Second Industrial Revolution, which was in many ways spearheaded by the rails he worked on and the telegraph.

Lewis Latimer
1. Latimer was born in 1848 in Chelsea, Massachusetts. His parents were runaway slaves who had escaped Virginia.
2. Lewis Latimer’s father was captured by his former owner, but was eventually purchased by abolitionists and freed. Lewis served in the Union Navy during the Civil War, and began working at a patent law firm afterward, where his sketching skills earned him a head draftsman position.
3. Latimer was born just prior to the Civil War, and lived through it and Reconstruction afterward. Even in free states, racial discrimination and segregation were prevalent. However, Latimer’s proficiency at sketching and innovation let him
4. Latimer lived and worked in Massachusetts and Connecticut. He never attended a formal university, but learned much about drafting and innovation at his job at the Crosby and Gould patent law firm.
5. Latimer lived and worked during the Second Industrial Revolution, which was in many ways spearheaded by the rails he worked on and the rise of electricity. He worked with Edison, who was a giant in this field, especially lighting and other electrical innovations.
6. Latimer specialized in electric lighting, but developed innovations in many areas of electricity, like air conditioning and elevators.

Garrett Morgan
1. Morgan was born in 1877 in Paris, Kentucky.
2. Morgan was one of 11 children. He moved to northern Ohio to become better educated, and worked as a handyman during this time.

3. Morgan was born and lived during Reconstruction and the Jim Crow South. He lived in Ohio, and while segregation and discrimination were better than in the South, he surely experienced both, like when fire and police departments cancelled the order of his masks upon realizing he was black.

4. Morgan lived and worked mainly in the Ohio region. He never received an official education.

5. Morgan lived and worked during the Second Industrial Revolution.

6. Morgan specialized in developing and innovating safety equipment, like his gas mask and traffic light.

Elijah McCoy
1. McCoy was born in 1844 in Ontario, Canada.

2. From a young age, McCoy showed mechanical interest and aptitude, and he often disassembled and reassembled mechanical items.

3. McCoy was born before the Civil War, and lived through it and Reconstruction afterward. African Americans had been emancipated in the South, but across the country they still faced prejudice, discrimination and segregation.

4. McCoy mostly lived and worked in Michigan for most of his life. He was educated in Edinburgh, Scotland, where he studied mechanical engineering at the behest of his parents.

5. Morgan lived and worked during the Second Industrial Revolution, of which the railroads and trains he worked on were a major component.

6. McCoy specialized in railroad car lubrication, specifically his famous “lubricating cup.”

George Washington Carver
1. Carver was born in 1860 in Missouri.

2. Carver was sickly as a kid. He was born a slave, and he and his mother were stolen and resold to his owner once. He was sent to Neosho, Missouri for early education, and had a strong early interest in plants.

3. Carver lived and worked during the Reconstruction era, and African Americans were subjected to racial discrimination and prejudice. This was evidenced by the Highland University president revoking a scholarship once he found out Carver was black.

4. Carver grew up in Missouri and Kansas, but as an adult mostly worked in Iowa at Iowa Agricultural College, and in Alabama at Booker T. Washington’s Tuskegee Institute.

5. Carver worked during the Second Industrial Revolution. His development of agricultural products from non-traditional crops was the result of increased agricultural awareness and technology that emerged during this time.

6. Carver specialized in agricultural innovation, like crop rotation and the development of products from plants that restored nitrogen to the soil.

Sarah Breedlove, AKA Madam C.J. Walker
Walker was born in 1867 in Louisiana.

2. Walker was born to a family of sharecroppers, who died when she was young. She moved around often, and married at age 14 and had children by 18.

3. Walker lived during the Reconstruction era and the time of the Jim Crow segregated South. African Americans were subjected to discrimination and segregation and many diminished rights.

4. Walker lived in Louisiana for years, then moved to Colorado by the time she began making and selling black hair products. She sold her products across the Americas, and eventually established a school in Pittsburgh.

5. Walker worked during the Second Industrial Revolution.

6. Walker specialized in hair and beauty products for black consumers.

**Patricia Era Bath**

1. Bath was born in Harlem in 1942.

2. Bath’s parents fostered her interest in culture and science. She edited her high school’s science paper. At age 16 she worked on an NSF project researching cancer, which she eventually earned a Merit Award for.

3. Bath lived through the end of legal segregation, but in the latter half of the 20th century African Americans often still did not receive the same opportunities as white Americans. She recognized this disparity when observing statistics on glaucoma in blacks and whites (blacks were 8 times more likely to go blind from the ailment).

4. Bath worked largely in the Harlem and New York area until 1974, when she permanently moved to UCLA in California. She received her bachelor’s degree from Hunter College in New York, and her medical doctoral degree from Howard University in 1968.

5. Bath worked during the Space Age and the era of Big Science.

6. Bath specialized in medical innovation, especially in opthamologicl technological developments.

**Mark E. Dean**

1. Dean was born in Jefferson City, Tennessee in 1957.

2. Dean was an extremely bright, successful youth. He was a straight “A” student and an athlete.

3. Dean grew up and worked in a time when many of the racial problems in America were starting to improve, but he still endured prejudice, as his school peers questioned if he was actually black since “Black people were not supposed to be that smart.”

4. Dean worked and lived in Austin, Texas; Yorktown Heights, New York; Tucson, Arizona; and San Jose, California. He received his B.S. from the University of Tennessee (top of his class), his Electrical Engineering Master’s from Florida Atlantic University, and his Ph.D from Stanford University.

5. Dean worked during the Space Age and the era of Big Science.

6. Dean specialized in innovations in electrical engineering.

**Charles Richard Drew**
1. Drew was born in 1904 in Washington, DC.
2. As a youth, Drew was an excellent swimmer, football, baseball, and basketball player, as well as a very bright student.
3. Drew lived during the era of Jim Crow segregation. In many regions, especially in the South, it was legal for blacks to be required to use separate public facilities. This ended several after Drew’s death, in 1954.
4. Drew worked in Montreal, New York at Columbia University, and later the DC area at Howard University. He attended Amherst College for his bachelor’s degree, and McGill University in Montreal for his medical doctorate.
5. Drew lived during the end of the Second Industrial Revolution and during the buildup to both World Wars.
6. Drew specialized in medical innovation, specifically in the preservation of donated and banked blood plasma.

Lonnie G. Johnson
1. Johnson was born in Mobile, Alabama in 1949.
2. Johnson’s father taught him to repair household items, and he and his brothers often made their own toys, like go karts. He even experimented with rocket fuel in his parents’ kitchen.
3. Johnson lived and worked during a time when some of the racial problems that plagued America were starting to improve, during the civil rights movement and into the late 20th century.
4. Johnson worked in South Carolina, Tennessee, California and New Mexico (often due to his military career as a rocket scientist). He received his bachelor’s of science from Tuskegee University as well as a Master’s from there as well in Nuclear Engineering.
5. Johnson lived during the Space Age (which he worked through directly at the Jet Propulsion Laboratory and several other test and development sites) and the era of Big Science.
6. Johnson specialized in nuclear physics and aircraft/propulsion development, where he developed many innovations, but he also developed and marketed the Super Soaker water gun for children.

Fred McKinley Jones
1. Jones was born in Covington, Kentucky in 1893.
2. Jones was born to a white father and black mother. He was raised by his father until he was 8 years old, when he was given to a Catholic church in Cincinnati to raise and get an education. He had a fascination with machines, and at 12 ran away and began working at a garage. He was soon foreman of the garage and learned almost everything about automobiles.
3. Jones lived during the Jim Crow era, when black Americans were discriminated against and segregated based on their skin color.
4. Jones lived and worked in the Midwest region until he enlisted in World War I, and afterward returned to Minnesota. He never received a formal education, but taught himself a treasure of knowledge about automobiles.
5. Jones lived and worked during the end of the Second Industrial Revolution and the buildup and aftermath of the World Wars.
6. Jones specialized in automobile innovations and repair, specifically he developed the Thermo King, to allow trucks to transport perishables over long distances.

Thomas L. Jennings
1. Jennings was born in 1791, likely in New York City.
2. Jennings took several jobs before eventually settling as a tailor in New York City.
3. Jennings lived and worked during a time when slavery was still legal in many parts of the United States. Since he was a free man, he could apply for a patent. But, since slaves were not citizens, it would have been extremely difficult for them to receive one, at least until the patent law were changed in 1958, bizarrely. Also, the Confederacy allowed slaves to legally hold patents.
4. Jennings lived and worked in New York City, and it is unknown if he received an education.
5. Jennings lived and worked during the Industrial Revolution.

George Edward Alcorn, Jr.
1. Alcorn was born in 1940 in Indianapolis, Indiana.
2. Alcorn’s parents promoted education in their household, and George was an excellent student. His father was a mechanic.
3. Alcorn lived and worked after segregation had been legally outlawed, by prejudice still pervaded many parts of the country. Luckily, Alcorn was never stymied by this.
4. Alcorn lived and worked in California, and Washington, DC. He received his bachelor’s degree from Occidental College in Los Angeles, and his master’s from Howard University in DC.
5. Howard worked during the era of Big Science and the Space Age, as he capitalized on this through his work at NASA and the large companies North American Rockwell and IBM.
6. Alcorn specializes in space science and technological developments.

Shelby J. Davidson
1. Davidson was born in Lexington, Kentucky in 1868.
2. Davidson was born just after Emancipation, and attended public schools in Lexington.
3. By Davidson’s time, the Civil War had just ended, and Reconstruction was beginning. Blacks were still faced with terrible discrimination and segregation.
4. Davidson worked in Washington, DC mainly, as he was employed by the Treasury department.
5. Davidson worked during the buildup to World War I.
6. Davidson was a lawyer by trade, but developed a mechanism to manage the roll of paper on an adding machine (a paper-rewind mechanism) after his time spent working for the Treasury Department and Post Office.

James Edward Maceo West
1. West was born in 1931 in Prince Edward County, Virginia.
2. West had a fascination with electronics from a young age and often dismantled and rebuilt them, once receiving a tremendous shock in the process.
3. West grew up during the Jim Crow era, but saw its demise. Nonetheless, blacks continued to face discrimination, highlighted by his father’s advice to pursue medicine since few blacks were ever hired for science positions.
4. West worked in New Jersey at Bell Laboratories, mostly.
5. West worked during the Space Age and the era of Big Science.
6. West specialized in acoustical instrument development, such as his electret microphone.

Norbert Rillieux
1. Rillieux was born in 1806 in New Orleans, Louisiana.
2. Rillieux’s mother was a slave, while his father was a wealthy white engineer. Norbert was born free. He received a Catholic education in New Orleans and was also sent to Paris for advanced tutelage.
3. Rillieux lived during slavery, the Civil War, and Reconstruction. The racism and discrimination that pervaded the South ultimately caused Rillieux to return to Paris before he died in 1894.
4. Rillieux worked in Paris in the 1830’s, before returning to New Orleans for much of his life.
5. Rillieux worked during the Industrial Period, and his mechanized methods of sugar refinement were evidence of the industrial, large scale ambitions of producers of the time.
6. Rillieux specialized in mechanical engineering, and developed improved sugar refining processes.

Sample answers to these Discussion Questions were all acquired from The Black Inventor Online Museum: http://blackinventor.com/
Part 2: Create Your Own Invention!

1. How did you think of your invention? Did you begin by thinking about your daily life or the people around you?
Students likely thought of an existing problem that they or someone they know deals with, and acknowledged that there was no extant solution.

2. What does the process of coming up with an invention teach you about how inventors come up with their innovations?
Students will likely knowledge the creativity required to come up with new inventions, as well as the multiple attempts at finding a solution before landing on a viable one. Students will likely discover it takes time and effort to invent or innovate a practical solution to a problem.