



African-American Scientists and Inventors

Goals of the Lesson Plan:

- Understand contributions of African-American scientists
- Identify one scientist and gather information about him or her using a variety of sources
- Creatively present your findings to the class

National Council for Social Studies Standards:

Standard 8

Major discoveries in science and technology, their social and economic effects, and the scientists and inventors responsible for them.

The student understands the development of technological innovations, the major scientists and inventors associated with them, and their social and economic effects.

The student understands changes in communication and their effects.

Standard 4

The student conducts historical research: formulates historical questions, obtains historical data, interrogates historical data, marshals needed information time and place.

Activity:

1. Class researches list of scientists provided by “African-American Scientists” handout.
2. Each student will choose one person from the list.
3. Students will use various print and online resources to learn more about that person’s life, inventions, and accomplishments.
4. Students will use the research log to record the information they find.
5. Students will use this information to create a poster board for their scientist as an inductee to the “African-American Scientist Hall of Fame.”
6. Students should pay particular attention to the following:
 - What did this person contribute to the world of science?
 - In what period of history did this person live? How did the time and place effect his or her accomplishments?
 - Did race or ethnicity play a role in his or her success or failure?
 - Use any quotes available to describe how the scientist might have felt and what he or she might have thought at the time of his or her discovery.

**Assessment:**

1. Students should turn in completed research handouts.
2. Teacher should evaluate each student's project based on an oral presentation of the poster board.
3. This activity may be set up to be visited by other classes or displayed in a hallway.

Assessment Information:

Suggestions for poster evaluation:

Ask students the following about their research:

Evaluation: Compare your scientist's discovery to an accomplishment of another scientist.

Synthesis: Imagine how your scientist felt the day he or she made his or her discovery.

Analysis: What is the reason you have not heard of this scientist before?

Comprehension: Summarize what you learned about the scientist.

Knowledge: When was your scientist born? What did he or she discover?

Final Evaluation:

Does the student present ample information about his or her scientist?

Is the information presented accurate?

Is the presentation of the poster creative?

Teacher Background:

Benjamin Banneker:

Invented the first striking clock to be made completely in the United States. He also studied astronomy and made the calculations to predict solar and lunar eclipses. He also assisted in the survey of what is now Washington, D.C.

Guion Bluford:

He retired as a colonel in the United States Air Force. He was the first African-American astronaut in space. He participated in four flights of the space shuttle between 1983-1992.

George Washington Carver:

He was an African-American botanist who developed three hundred uses for the peanut and one hundred eighteen uses for the sweet potato. He also taught former slaves about agriculture and how to grow crops in order to be self-sufficient.

Charles Richard Drew:

He was an African-American physician and medical researcher. He created the blood bank (a system to produce plasma separate from blood matter) and was the first African-American surgeon to serve as an examiner on the American Board of Surgery.

Elijah McCoy:

He invented an oiling device for industrial machinery. This originated the term "real McCoy" which means the "real thing." He also obtained patents for a folding ironing board and lawn sprinkler.



Ronald McNair:

He traveled to space as a mission specialist in 1984. He was a member of the *Challenger* crew whose spacecraft exploded in 1986.

Garrett Augustus Morgan:

He invented the gas mask and the electric traffic light.

Dr. Daniel Hale Williams:

He was a famous surgeon who performed the first successful open-heart surgery.

Dr. Mae C. Jemison:

She was the first female African American to become an astronaut and fly in space.

Madame C.J. Walker:

She was the first American woman to become a millionaire. Her invention of hair-care products made her a millionaire.

Annie Easley:

She developed computer programs that save valuable energy. She worked for the National Air and Space Administration (NASA) and developed computer codes for determining solar wind and energy.



African American Scientists

Choose one of the following to complete your web search.

Questions

1. I invented the gas mask and the electric traffic light.
2. I invented an oiling device for industrial machinery, which created the term the “real McCoy” which means the “real thing.”
3. I was the first female African American to become an astronaut and to fly in space.
4. I was a member of the *Challenger* crew that exploded in 1986.
5. I invented the first striking clock completely made in the United States.
6. I was a famous surgeon.
7. I worked for NASA and developed computer codes.
8. I served as an expert witness in the court battles over Edison’s patents.
9. I was the first African American in space.
10. I learned three hundred uses for the peanut.
11. I developed a system to produce plasma separate from the blood matter.
12. I was one of the first American women to become a millionaire due to my invention.

Answers

- A. Benjamin Banneker
- B. Guion Bluford
- C. George Washington Carver
- D. Charles Richard Drew
- E. Lewis H. Latimer
- F. Elijah McCoy
- G. Ronald McNair
- H. Garrett Augustus Morgan
- I. Dr. Daniel Hale Williams
- J. Mae C. Jemison
- K. Madame C.J. Walker
- L. Annie Easley



Research Log

African-American Scientists

I. Use the following web sites to help answer the questions on the worksheet.

Garrett Morgan

<http://www.kytales.com/Nmogn/nmog.htm>

Yahooligans

<http://www.yahooligans.com/>

The Faces of Science: African Americans in the Sciences

<http://www.lib.lsu.edu/lib/chem/>

Honoring African-American Astronauts

http://observe.ivv.nasa.gov/nasa/exhibits/afam_astro/afam_astro.html#MPA

II. Choose one scientist or inventor.

My Scientist: _____

Web sites relevant to my scientist:

http://

http://

III. Take notes on important facts and information as you do your research. Things to consider as you do your research:

1. Look for personal information appropriate to use in a creative journal entry. Keep in mind that, based on your research, you will be writing a journal entry from the scientist's point of view.
2. Look for historical information about the place and time this person lived and worked. Gather facts about the field of science where this person succeeded. Keep in mind you will be using this information to present your scientist to the class.