

**Panther**  
**African History and Science 4pm MWF**  
**Instructor Baba Brandon Scates**

**Overview:** Students will study eight pioneer scientists and inventors (Benjamin Banneker, Madame C. J. Walker, George Washington Carver, Sarah Boone, Granville T. Woods, Sara E. Goode, Garrett Morgan) and learn about their valuable contributions to society. They will discuss how the inventions have affected people’s lives in the United States and around the world.

**Goals:**

Students will be able to:

Identify notable inventors from various cultural backgrounds that have created inventions to improve individuals’ quality of life.

Recognize how technology has evolved, expanded, and improved over time

Compose biographies for distinguished individuals in history

**Objectives:**

Identify the various inventions made by each scientist and/or inventor

Research documents and artifacts to view detailed information about the inventions

Understand the process of obtaining an invention patent

Write a biography about a chosen scientist and/or inventor with implications on the inventions’ impact on technology and people’s daily lives

**Investigative Questions:**

How have the pioneers’ inventions paved the way for others to utilize their talents and create inventions of their own?

Why did the inventors have a difficult time getting patents and/or recognition for their inventions? How have their experiences impacted future inventors’ ability to receive patents and/or recognition?

*Resources: **Black Pioneers of Science and Invention** by Louis Haber*

<b><u>Week Number</u></b>	<b><u>Schedule</u></b>
<b>1</b> <i>Benjamin Banneker</i>	<b><u>Wednesday</u></b> Read 4 pages of Benjamin Banneker in class. Questions: Identify the scientific contributions of Benjamin Banneker. Photograph analysis and Timeline completion for Banneker. Print analysis for Benjamin Banneker. Compare different stories about a historical figure or event and analyze differences in the portrayals and perspectives they present. <b><u>Friday</u></b> Read 4 pages of Banneker with class.. Ask historical questions and seek out answers from historical sources (e.g., myths, biographies, stories, old photographs, artwork, other visual or electronic sources) Compare different stories about a historical figure or event and analyze differences in the portrayals and perspectives they present Understand the development of economic systems
<b>2</b> <i>Benjamin Banneker</i>	<b><u>Monday</u></b> Read 4 pages of Benjamin Banneker in class. Questions: Identify the scientific contributions of Benjamin Banneker. Photograph analysis and Timeline completion for Banneker. Print analysis for Benjamin Banneker. Compare different stories about a historical figure or event and analyze differences in the portrayals and perspectives they present. <b><u>Wednesday</u></b>

	<p>Read 4 pages of Banneker with class. Students will be given a print of Benjamin Banneker’s first almanac, and they are to answer the following questions: (1) What is your interpretation of the cover of the almanac? What is your understanding of the almanac’s contents? Students will record their answers on a reaction response paper.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p style="text-align: center;">Read 4 pages of Banneker with class. Explain how individuals including John Deere, Thomas Edison, Robert McCormack, George Washington Carver, and Henry Ford, contributed to economic change through ideas, inventions, and entrepreneurship.</p>
<p style="text-align: center;">3 George Washington Carver</p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of George Washington Carver in class. Questions: Describe the effects on society of scientific and technological innovations (e.g., antibiotics, steam engine, digital computer) 13.B.3b: Identify important contributions to science and technology that have been made by individual and groups from various cultures.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of George Washington Carver in class. Students will be given a photograph of George Washington Carver, and they will analyze the photograph using the photographic analysis worksheet. The teacher will model the process and guide students to complete this task.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of George Washington Carver with class. Students will be given a general time line of events in the life of George Washington Carver. They will read over the timeline and include five other significant events that occurred in Carver’s life.</p>
<p style="text-align: center;">4 George Washington Carver</p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of George Washington Carver in class. Students will complete timeline handout.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of George Washington Carver in class. Describe the effects on society of scientific and technological innovations (e.g., antibiotics, steam engine, digital computer) Identify important contributions to science and technology that have been made by individual and groups from various cultures</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of George Washington Carver with class. Explain how individuals including John Deere, Thomas Edison, Robert McCormack, George Washington Carver, and Henry Ford, contributed to economic change through ideas, inventions, and entrepreneurship.</p>
<p style="text-align: center;">5 Granville T. Woods</p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Granville T. Woods in class. Students will complete timeline handout.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Granville T. Woods in class. Describe the effects on society of scientific and technological innovations (e.g., antibiotics, steam engine, digital computer) 13.B.3b: Identify important contributions to science and technology that have been made by individual and groups from various cultures</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Granville T. Woods with class. Explain how individuals including John Deere, Thomas Edison, Robert McCormack, George Washington Carver, and Henry Ford, contributed to economic change through ideas, inventions, and entrepreneurship.</p>

<p>6 <i>Granville T. Woods</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Granville T. Woods in class. Students will complete Great Black Innovators Activity Sheet For Lesson 3 The Innovative Personality.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of George Washington Carver in class. Start Script and choose characters.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of George Washington Carver with class. Go over Script.</p>
<p>7 <i>Elijah Mccoy</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Elijah MCcoy in class. Ask questions: Where was the inventor from and what was their background? How does where they're from or their background affect their work as an inventor? What was the inventor doing when they were your age?</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Elijah MCcoy in class. Ask questions: What was life like for African Americans during the time the inventor was alive and inventing?</p> <p>Think about laws, social norms, economics, and other factors. For example, would the inventor be living in a segregated society or were African Americans allowed to apply for patents at the time? What region did the inventor live and work in? Where did they receive their education? Who were their contemporaries? What other scientists, inventors, or other notable people were living at the same time?</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Elijah MCcoy with class. Ask questions: What was going on technologically in the United States during this time? Example: the Industrial Revolution, the Space Age, etc. What field did the inventor specialize in?</p>
<p>8 <i>Elijah MCcoy</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Elijah MCcoy in class. Build Your Own Invention. Ask questions: How did you think of your invention? Did you begin by thinking about your daily life or the people around you? What does the process of coming up with an invention teach you about how inventors come up with their innovations? What is the difference between a patent, trademark, and copyright?</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Elijah MCcoy in class. Build Your Own Invention. Ask questions: Ask your students to list some of the machines they use everyday (e.g., computers, MP3 players, televisions), including objects in the classroom. Then, use Google Patents (<a href="http://www.google.com/patent">www.google.com/patent</a>) to locate the patent for this machine. Write down the patent number and discuss some of the processes by which such machines arrive in the user's hand-invention, patent, production, marketing, sale.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Elijah MCcoy with class. Ask questions: Then ask students to research and draw up an outline of the development of one machine. Have students consider the following: a. What does this machine do? b. What did the developers perceive as the need for this machine? c. How did they get started financially? d. Did somebody hire them to do it? e. Did their ideas build on earlier ideas? f. Who did the actual development of the machine? g. Who got credit for it? Who profited from it? h. What were the reasons for building it? i. Who uses it? Do students believe this machine is useful? How?</p>
<p>9 <i>Lewis Howard Latimer</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Lewis Latimer in class. Ask questions: Who was the greatest inventor of all time? Explain why this individual deserves this distinction.</p> <p>How have inventions changed the course of history? How do inventions and events influence each other? How has nature influenced the development of new inventions? Describe some inventions that were inspired by a natural object or event. What does the process of coming up with an invention teach you about how inventors come up with their innovations?</p>

	<p>What is the difference between a patent, trademark, and copyright?</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Lewis Latimer in class. What invention would you miss the most if it disappeared? How would the world be different if electricity was never invented? How have inventions such as the fax machine, modem, computer, laser printer, and scanner revolutionized the work place? Describe the advantages and disadvantages of each machine.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Lewis Latimer with class. Ask questions: If you could get rid of one invention, what would it be? Why would you eliminate this invention? If you could interview any inventor from the past or present, who would it be? Why? What questions would you ask him/her? What invention(s) would you like to discuss? How did the invention of the automobile change the economy, work force, family life, entertainment, and courtship practices? What invention annoys you the most? Why? Do others agree with this opinion? How would you change this invention to make it more acceptable?</p>
<p style="text-align: center;">10 <i>Lewis Latimer</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Lewis Latimer in class. Pass out Latimer worksheet and complete in class.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Lewis Latimer in class. Ask questions: What traits do most inventors have in common? What other professions share these traits? How have inventions such as the food processor, blender, and microwave transformed food preparation in the kitchen? Describe how inventions mirror the civilizations from which they were created.</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Lewis Latimer with class. Ask questions: What period in history has created the most inventions? Why? Who were the most creative/inventive people in the history of civilization? What countries have produced the most inventions? Are these countries still actively involved in the invention process? What countries continue to produce inventions at a staggering rate? What countries are at the leading edge of technology?</p>
<p style="text-align: center;">11 <i>Garrett A. Morgan</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Garrett A. Morgan in class. Ask questions: Describe the reasons why people invent. What inventions will become obsolete by the year 2050? Why? What is invention? What is discovery? Describe the differences between both terms and discuss how one affects the other.</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p> <p>Read 4 pages of Lewis Latimer in class. Ask questions: Do the times make the inventor or does the inventor make the times? How do the accomplishments of American inventors compare to their European counterparts? How does human technology affect the environment? How does this technology disturb the ecological balance of oceans, rain forests, and other natural habitats? How can humans protect these places?</p> <p style="text-align: center;"><b><u>Friday</u></b></p> <p>Read 4 pages of Lewis Latimer with class. Ask questions: How do people react to new inventions? Describe how people first reacted to electricity, automobiles, televisions, telephones, and other major inventions. If you were alive when these inventions were introduced to society, how would you have reacted to them? Why? What inventions caused the most commotion/excitement in the 1950's, 1960's, 1970's, 1980's, 1990's? Describe how these inventions are viewed today. Do they still cause excitement?</p>
<p style="text-align: center;">12 <i>Garrett A. Morgan</i></p>	<p style="text-align: center;"><b><u>Monday</u></b></p> <p>Read 4 pages of Garrett A. Morgan in class. Ask questions: What inventions are both harmful and helpful to humans? Describe the inventions that have been most detrimental and/or beneficial to human life. How do inventions affect our daily lives?</p> <p style="text-align: center;"><b><u>Wednesday</u></b></p>

	<p>Read 4 pages of Garrett A. Morgan, Ask questions: Ask questions: How have the following inventions changed in the past twenty years: television, airplane, watch, iron, radio, battery, and stove? How do you think these inventions will change in the future?  What are the advantages and disadvantages of working as an inventor for a large company? What forces drive invention? Discuss which forces have the most influence over the invention process.  <u><b>Friday</b></u>  Pass out Garrett A. Morgan book and read with class.</p>
<p>13  <i>Dr. Daniel Hale Williams</i></p>	<p><u><b>Monday</b></u>  Read 4 pages of Dr. Daniel Williams in class and pass out color sheet.  <u><b>Wednesday</b></u>  Read 4 pages of Dr. Daniel Williams and pass out “Doctor’s Notes”. Have students do Journal #1 for Homework.  <u><b>Friday</b></u>  Read 4 pages of Dr. Daniel Williams and complete Journal Day 2 in class.</p>
<p>14  <i>Dr. Daniel Hale Williams</i></p>	<p><u><b>Monday</b></u>  Read 4 pages of Dr. Daniel Williams in class and pass out Cardiovascular system worksheet.  <u><b>Wednesday</b></u>  Read 4 pages of Dr. Daniel Williams and pass out “Doctor’s Notes”. Have students do Journal #3 for Homework.  <u><b>Friday</b></u>  Read 4 pages of Dr. Daniel Williams and complete Station #5 in class.</p>
<p>15  <i>Charles Richard Drew</i></p>	<p><u><b>Monday</b></u>  Read 4 pages of Charles Drew in class, pass out An Excerpt from “Biographical Information” worksheet and complete in class.  <u><b>Wednesday</b></u>  Read 4 pages of Charles Drew, pass out Biographical Information: Brief Chronology and have students complete in class.  <u><b>Friday</b></u>  Read 4 pages of Charles Drew, pass out blank “Chronology and complete in class.</p>
<p>16  <i>Charles Richard Drew</i></p>	<p><u><b>Monday</b></u>  Read 4 pages of Charles Drew in class, pass out An Excerpt from “Dr. Charles Drew - Answer Grid ” worksheet and complete in class.  <u><b>Wednesday</b></u>  Read 4 pages of Charles Drew in class, pass out An Excerpt from “Dr. Charles Drew - Answer Grid  <u><b>Friday</b></u>  Read 4 pages of Charles Drew in class, pass out An Excerpt from “Dr. Charles Drew - Answer Grid</p>