

LESSON 5

Museum Connection: Labor and the Black Experience

Lesson Title: Benjamin Banneker: Trailblazer

Purpose: In this lesson students will examine the accomplishments of Benjamin Banneker and put them in perspective. They will become aware of how remarkable Banneker's accomplishments were for a free African American living during the colonial period. They will examine how Banneker was received during his lifetime, and they will connect the importance of his accomplishments with today's society. Students will reflect on what he accomplished despite adversity and consider how he can be a role model for people today.

Grade Level and Content Area: Elementary, Social Studies

Time Frame: 2 class periods

Correlation to Social Studies State Standards:

- USH 2.3.5.1 Analyze the social and religious composition of early settlers, their motives for migration, and the difficulties they encountered, with particular attention to the early settlements of Maryland.
- PNW 7.1.5.1 Describe and compare cultural characteristics of different groups of people.
- SSS 1.1.6.1 Construct various timelines of key events, people, and periods of the historic eras studied and explain how major events are related to each other.

Social Studies: Maryland College and Career Ready Standards

- 2.B.1.b (Grade 4) Describe the contribution of individuals and groups such as Francis Scott Key, Benjamin Banneker, Mary Pickersgill, Clara Barton and Freedman's Bureau.
- 5.B.2.c (Grade 5) Describe the different roles and viewpoints of individuals and groups, such as: women, men, free and enslaved Africans, and Native Americans during the Revolutionary period.

Reading and English Language Arts Maryland College and CareerReady Standards:

- 1.E.1.a (Grades 4 and 5) Listen to critically, read, and discuss texts representing diversity in content, culture, authorship, and perspective including areas such as race, gender, disability, religion, and socio-economic background.

1.E.3 (Grades 4 and 5) Use strategies to make meaning from text (during reading).

Writing VSC:

4.A.2.c (Grades 4 and 5) Compose to inform using relevant support and a variety of appropriate organizational structures and signal words within a paragraph.

4.A.7.b (Grades 4 and 5) Use various information retrieval sources (traditional and/or electronic) to obtain information on a self-selected and/or given topic.

Objective:

Students will describe the accomplishments and contributions of Benjamin Banneker.

Vocabulary and Concepts:

Almanac – An almanac is a calendar of days, weeks, and months with astronomical data, weather forecasts, etc., that is published every year.

Astronomy – Astronomy refers to the study of the composition, size, movement, and other characteristics of the planets, stars, and other objects in space.

Chronological order – To arrange things in chronological order means to arrange them in the order of occurrence.

Eclipse – When the moon comes between the sun and the earth and obscures the sun (either partially or totally), it is called an eclipse.

Ephemeris – An ephemeris is a table that gives the computed positions of a heavenly body for every day of a given period.

Surveyor – A surveyor collects data about a piece of a land in order to determine its location, forms, or boundaries.

Telescope – An optical instrument known as a telescope makes distant objects, such as the stars and planets, appear nearer and larger.

Timeline – A timeline arranges historical events in chronological order.

Materials

For the teacher:

Teacher Resource Sheet 1 – “Benjamin Banneker: Astronomer-City Planner”

For the student:

Student Resource Sheet 1a – Appraising Benjamin Banneker’s Accomplishment

Student Resource Sheet 1b – Benjamin Banneker

Resources

Books:

Bedini, Silvio A. *The Life of Benjamin Banneker: The First African-American Man of Science*. Baltimore: The Maryland Historical Society, 1999.

Chapelle, Suzanne E., and Glenn Phillips. *African American Leaders of Maryland. A Portrait Gallery*. Baltimore: Maryland Historical Society, 2004.

Christian, Charles M. *Black Saga: The African American Experience*. New York: Houghton Mifflin Company, 1995.

Ferris, Jeri. *What Are You Figuring Now?* Minneapolis: Carolrhoda Books, Inc., 1998.

Pinkney, Andrea D. *Dear Benjamin Banneker*. New York: Harcourt Brace & Company, 1994.

Web sites:

Benjamin Banneker: An Important Black American (could be used by students)
<http://www.socialstudiesforkids.com/articles/ushistory/benjaminbanneker1.htm>

Who Was Benjamin Banneker? (brief history)
<http://www.progress.org/banneker/bb.html>

Teacher Background:

Benjamin Banneker was born a freeman on November 9, 1731, to Mary and Robert Bannaky in an area of Baltimore County, Maryland, between Oella and Ellicott City. Banneker's white grandmother, Molly Walsh, had been sent to America from England as an indentured servant, and she had worked on a farm for seven years before she was given her freedom. Molly Walsh worked very hard and saved her money so that she could buy her own farm. She hired two black slaves to help her on the farm. Later, after she had set both men free, she married one of them, Bannaka, who later changed his name to Bannaky. Molly and Bannaky had three children, the oldest of whom was Mary. Mary married a free black man named Robert, who took Mary's last name of Bannaky. Mary and Robert had three daughters and a son named Benjamin.

Much of Benjamin's early life was greatly influenced by the strength and determination of his grandmother. Molly Walsh taught Benjamin how to read from the only book available, the Bible. When he became a proficient reader, Benjamin was sent to a Quaker school, where he was introduced to arithmetic and learned how to write. Reportedly it was his Quaker schoolmaster who changed Benjamin's last name from Bannaky to Banneker.

Benjamin Banneker enjoyed the outdoors. He also enjoyed playing the flute and violin when not working on his parents' farm. With his strong mathematical skills and interest in learning, Banneker grew up to be an excellent farmer. When he took his goods to sell at the local store, he also enjoyed meeting and speaking with travelers. One day at

the store, Banneker met a man who showed him a pocket watch. He was so consumed by the concept of time that he borrowed the watch, took it apart very carefully, and made notes as he studied each piece. Using a pocketknife, he carved each gear out of wood and put the wooden gears together, creating the first striking clock made completely out of wood. Banneker was only 22 years old at the time and was admired by many.

When Banneker was 28 years old his father died, which left him responsible for looking after the family farm, his mother, and his sisters until they married. Thirteen years later, a new family moved into the area adjoining his farm. The Ellicott family, originally from Bucks County, Pennsylvania, moved to the Patapsco River area in order to build a flour mill. George Ellicott soon became a major influence in Banneker's life and loaned Banneker the books and instruments he used to learn about astronomy.

One of George Ellicott's cousins, Andrew Ellicott, was commissioned as a surveyor to help construct the boundaries of what is now Washington, D.C. He was charged with the responsibility of hiring competent assistants. His cousin George was unavailable and suggested that he ask Benjamin Banneker to assist him. Banneker was 60 years old at the time, but he was excited by the opportunity and agreed to help. The winter of 1791 was cold and harsh, but Banneker worked into the early hours of the morning making all the necessary calculations. The task was finally completed in April, and Banneker returned to his farm, where he finished the astronomical predictions for his 1792 almanac.

During the colonial period, an almanac was very important, and most families owned one. It provided information about when the sun and moon would rise and set and also about the weather during different seasons. Banneker spent several months making the calculations for his first almanac. Using his keen mathematical sense, Banneker predicted eclipses and computed detailed information about the rising and setting of the sun. Yet he had difficulty getting his almanac published, so he wrote a letter to Thomas Jefferson, who was then the Secretary of State. Within ten days Jefferson had replied to Banneker and in his letter complimented Banneker on his work. Banneker's almanac, which would be the first of six, was printed soon after this recognition.

Benjamin Banneker died on his farm on October 9, 1806, and he was buried in the family burial plot two days later. Tragically Banneker's log house, along with all of his papers, books, notes, and wooden clock, burned to the ground during the funeral service.

Lesson Development:

1. **Motivation:** Ask students to recall a time when they were curious about something (how something works, what something is made of, etc.). Ask students to explain to what they do when they are curious about something.
2. Explain to the students that they will be learning about a free black man who proved to be exceptionally intelligent and inventive. Tell them that they will read about

Benjamin Banneker and identify how he demonstrated his natural curiosity and intelligence.

3. Distribute Student Resource Sheet 1a, Appraising Benjamin Banneker's Accomplishments, and Student Resource Sheet 1b, Benjamin Banneker. Model for the students how to read the selection, and complete one section of the graphic organizer with the class.
4. Students will read the next two sections with a partner and take notes on the graphic organizer. Check for accuracy.
5. Students will complete the reading and the rest of the graphic organizer on their own.
6. After all students have finished, have them meet with their partners again and discuss their findings.
7. Have students reflect on the benefit of Banneker's accomplishments to people living both during the colonial period and now. Ask: What can we learn from the life of Benjamin Banneker?
8. **Assessment:** Students should write a short report expressing how advanced Benjamin Banneker was, both scientifically and mathematically, for his time. This report will be read to the class. Students should be sure to:
 - describe some of Banneker's inventions or accomplishments (*wooden striking clock, astronomical observations, predictions for his almanac such as weather and tide tables, city planning for Washington, D.C., tobacco process, scholar, avid reader, etc.*)
 - identify someone living during the colonial period who would have benefited from these accomplishments (*farmers, sailors, people who worked in Washington, D.C., neighbors who asked for calculations and ideas, etc.*)
 - discuss the effects of Banneker's accomplishments on today's society.
9. **Closure:** Have a class discussion about how difficult Banneker's accomplishments must have been with the level of technology available during his time (*no electric light bulbs, telephones, calculators, computers, cameras, etc.*). Discuss the fact that other African Americans were enslaved and not allowed to learn to read and write during the colonial period.

Thoughtful Application:

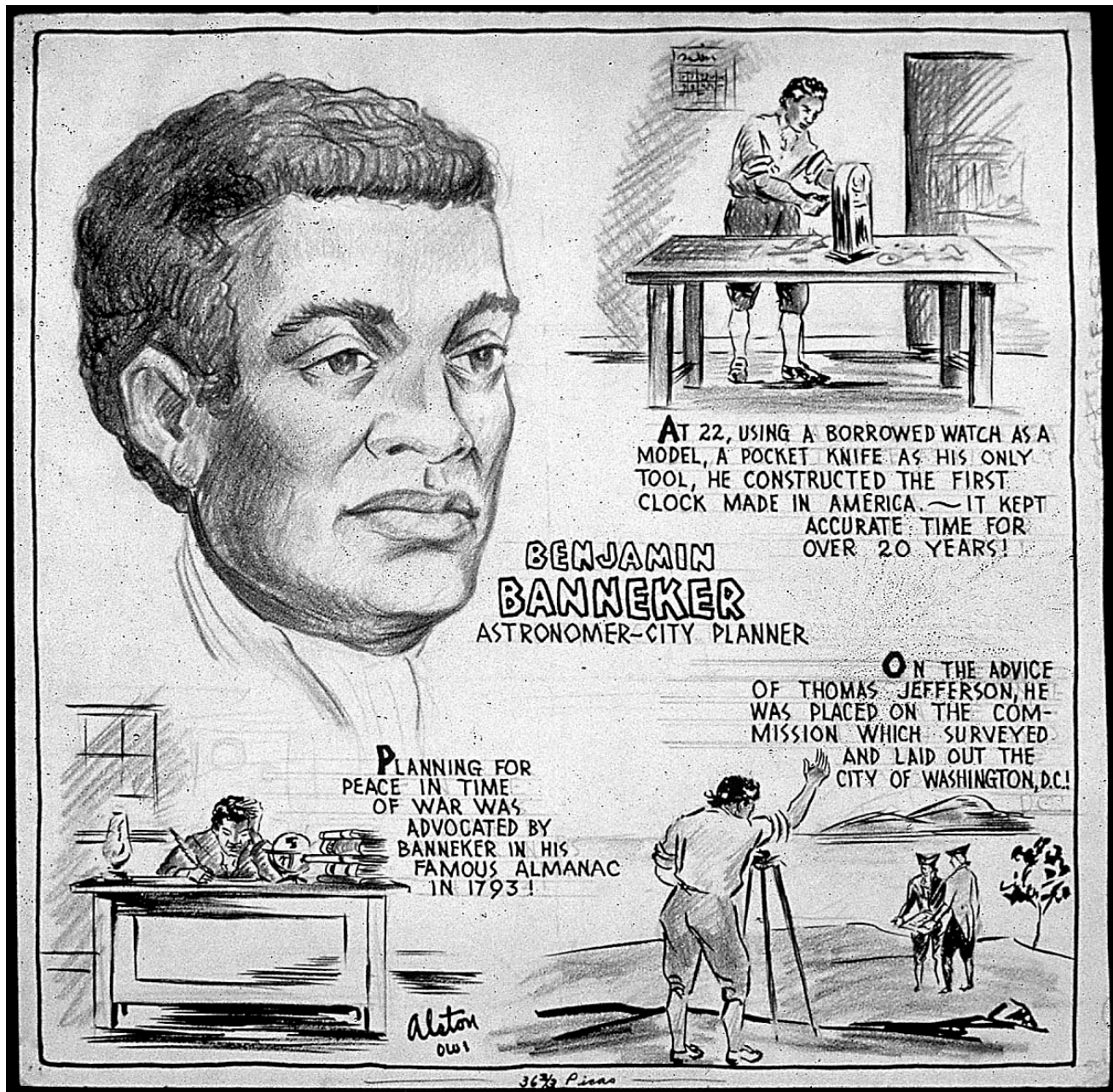
Benjamin Banneker published his first almanac in 1792, but he had some difficulty getting it published because of racial discrimination. Many historical figures are recognized today for their accomplishments in both science and math. Nevertheless, although Banneker's work demonstrates that he was brilliant, few Americans know about his life or his accomplishments. Why do you think this has happened? What could have been changed? What can you do to make people more aware of the

accomplishments of Benjamin Banneker? How can you find out more about African American scientists in today's world? What qualities did Benjamin Banneker possess that make him such a good role model (*brilliant, creative, curious, etc.*)? Who today has these same qualities? How could this person be a role model?

Lesson Extensions:

- Visit the Reginald F. Lewis Museum of Maryland African American History and Culture.
- Visit the Benjamin Banneker Historical Park & Museum in Catonsville, Maryland.
- Research the architectural plans of some cities. Ask an architect to visit your class and explain the complexity in creating a city such as Washington, D.C., and the skills that are necessary to do so. Inquire about the education and training needed to be a surveyor. (Keep in mind that Benjamin Banneker was self-taught.)
- Divide students into groups based on the topic headings found in almanacs. Ask them to work in groups in order to create articles that can be compiled into a classroom "farmer's" almanac. They should be encouraged to use accurate information and to use the Internet as well as print sources.
- Visit "The Story of Benjamin Banneker"
<http://www.biography.com/people/benjamin-banneker-9198038#early-years>
https://en.wikipedia.org/wiki/Mythology_and_legacy_of_Benjamin_Banneker
The site enables students to create a timeline of Banneker's life, review the topic of economic resources, and create their own almanac page.

Teacher Resource Sheet 1
Benjamin Banneker



“Benjamin Banneker: Astronomer-City Planner” by Charles Alston. From *Artworks and Mockups for Cartoons Promoting the War Effort and Original Sketches by Charles Alston, ca.1942-ca.1945*, a collection at The National Archives in College Park, Maryland.

Appraising Benjamin Banneker's Accomplishments

Accomplishment or Invention	Evaluate Contribution to Society

Benjamin Banneker

By the time Thomas Jefferson drafted the Declaration of Independence in 1776, Benjamin Banneker was 45 years old. Benjamin was born in 1731 to free black parents in Baltimore County, Maryland, but he lived during a time when the majority of Blacks in America were enslaved. Being free enabled him to obtain an education. His early education took place at home where his grandmother, a former indentured servant from England, taught him to read the Bible. Later Benjamin attended a private Quaker school for both Blacks and Whites. Most of his knowledge, however, came from independent reading and investigation.

Benjamin's greatest interests were science and math. When he was a young man, he became fascinated with a pocket watch that he had seen at the local store. One day he borrowed the watch, took it apart, and made careful notes on each and every piece. After carefully studying all the pieces, Benjamin carved each one of them from wood and then put them together. His clock became the first striking clock made completely from wood.

Benjamin spent most of his day cultivating tobacco on the farm that he had inherited from his father. While he was farming the land, he was able to observe the weather closely. The observations he made allowed him to predict the weather, and even solar eclipses, accurately. This success led him to create his first almanac in 1792.

Because he was a black man, Benjamin had a difficult time finding someone to print his almanac. Remembering that the Declaration of Independence stated that all men were created equal, he wrote a letter to Thomas Jefferson, who was the Secretary of State then, and asked him for help in getting his almanac published. Jefferson responded to the letter within ten days, and he told Benjamin that he had sent his almanac to the Secretary of the Academy of Sciences in Paris. Not long after receiving Jefferson's letter, Benjamin was able to find a publisher for his almanac. He published five more during his lifetime.

In addition to publishing six almanacs, Benjamin was appointed by President George Washington to serve on a three-man team that would survey the future District of Columbia. According to a newspaper article from March 1791, Benjamin was a man "whose abilities as surveyor and astronomer already prove that Mr. [Thomas] Jefferson's concluding that the race of men were void of mental endowment was without foundation."

Despite the fact that Benjamin Banneker did not live long enough to see the enslaved peoples of America freed, his almanacs, his work as a surveyor of the District of Columbia, and his correspondence with Thomas Jefferson all proved that black people were indeed created equal.