

Name: _____

Date: _____

15.1 Benjamin Banneker

Benjamin Banneker was a farmer, naturalist, civil rights advocate, self-taught mathematician, astronomer and surveyor who published his detailed astronomical calculations in popular almanacs. He was appointed by President George Washington as one of three surveyors of the territory that became Washington D.C.

Early times



Benjamin Banneker was born in rural Maryland in 1731. His family was part of a population of about two hundred free black men and women in Baltimore county. They owned a small farm where they grew tobacco and vegetables, earning a comfortable living.

A mathematician builds a clock

Benjamin's grandmother taught him to read, and he briefly attended a Quaker school near his home. Benjamin enjoyed school and was especially fond of solving mathematical riddles and puzzles. When he was 22, Benjamin borrowed a pocket watch, took it apart, and made detailed sketches of its inner workings. Then he carved a large-scale wooden model of each piece, fashioned a homemade spring, and built his own clock that kept accurate time for over 50 years.

A keen observer of the night sky

As a young adult, Benjamin designed an irrigation system that kept his family farm prosperous even in dry years. The Bannekers sold their produce at a nearby store owned by a Quaker family, the Ellicotts. There, Benjamin became friends with George Ellicott, who loaned him books about astronomy and mathematics.

Banneker was soon recording detailed observations of the night sky. He performed complicated calculations to predict the positions of planets and the timing of eclipses. From 1791 to 1797, Banneker published his astronomical calculations along with weather and tide predictions, literature, and commentaries in six almanacs. The almanacs were widely read in Maryland, Delaware, Pennsylvania, and Virginia, bringing Banneker a measure of fame.

A keen observer of nature

Banneker was also a keen observer of the natural world and is believed to be the first person to document the cycle of the 17-year cicada, an insect that exists in the larval stage underground for 17 years, and then emerges to live for just a few weeks as a loud buzzing adult.

Banneker writes Thomas Jefferson

Banneker sent a copy of his first almanac to then-Secretary of State Thomas Jefferson, along with a letter challenging Jefferson's ownership of slaves as inconsistent with his assertion in the Declaration of Independence that "all men are created equal." Jefferson sent a letter thanking Banneker for the almanac, saying that he sent it onto the Academy of Sciences of Paris as proof of the intellectual capabilities of Banneker's race. Although Jefferson's letter stated that he "ardently wishes to see a good system commenced for raising the condition both of [our black brethren's] body and mind," regrettably, he never freed his own slaves.

Designing Washington D.C.

In 1791, George Ellicott's cousin Andrew Ellicott asked him to serve as an astronomer in a large surveying project. George Ellicott suggested that he hire Benjamin Banneker instead. Banneker left his farm in the care of relatives and traveled to Washington, where he became one of three surveyors appointed by President George Washington to assist in the layout of the District of Columbia.

After his role in the project was complete, Banneker returned to his Maryland farm, where he died in 1806. Banneker Overlook Park, in Washington D.C., commemorates his role in the surveying project. In 1980, the U.S. Postal Service issued a stamp in Banneker's honor.

Reading Reflection

1. Benjamin Banneker built a working clock that lasted 50 years. Why would his understanding of mathematics have been helpful in building the clock?
2. Identify one of Banneker's personal strengths. Justify your answer with examples from the reading.
3. Benjamin Banneker lived from 1731 to 1806. During his lifetime, he advocated equal rights for all people. Find out the date for each of the following "equal rights" events: (a) the Emancipation Proclamation, (b) the end of the Civil War, (c) women gain the right to vote, and (d) the desegregation of public schools (due to the landmark Supreme Court case, Brown versus the Board of Education).
4. Name three of Benjamin Banneker's lifetime accomplishments.
5. What do you think motivated Banneker during his lifetime? What are some possible reasons that he was persistent in his scientific work?
6. **Research:** Find a mathematical puzzle written by Banneker. Try to solve it with your class.