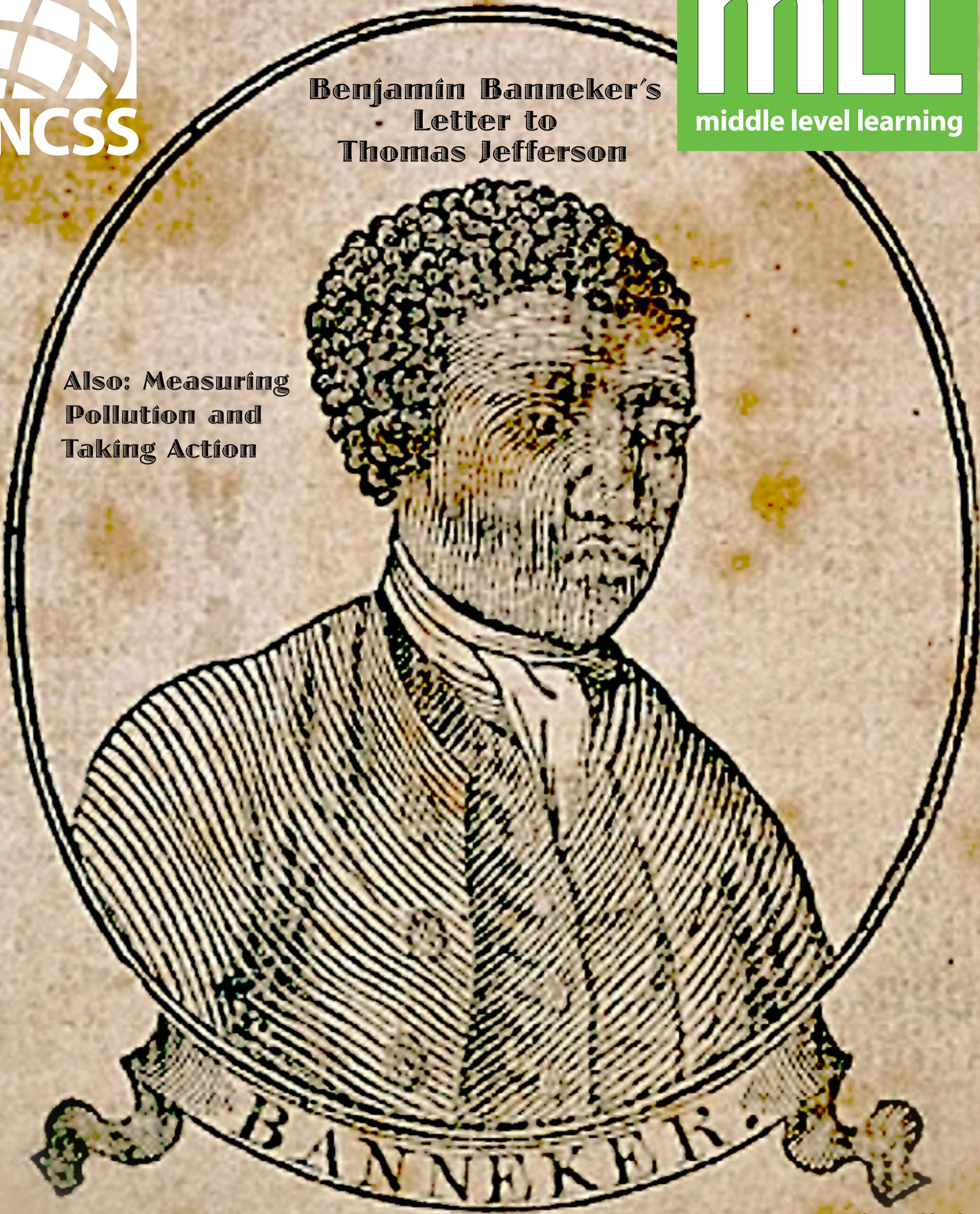




**Benjamin Banneker's
Letter to
Thomas Jefferson**

**Also: Measuring
Pollution and
Taking Action**



Benjamin Banneker's Letter to Thomas Jefferson: Using the C3 Framework Inquiry Literacies

John A. Moore

In 1791 Benjamin Banneker, a free black American mathematician, surveyor, farmer, and astronomer, sent a letter to then Secretary of State Thomas Jefferson.¹ Enclosed with the letter was Banneker's first almanac, containing his original astronomical calculations for that year.² His purpose for sending the letter was to challenge Jefferson's racial ideology and to ask for Jefferson's assistance in ending the "the unjustifiable cruelty and barbarism" that was the institution of slavery in America.

Details and Context

To understand the salience of Banneker's letter, students should consider to what he was responding and the context of the time. Seven years before Banneker sent his letter, Thomas Jefferson's book *Notes on the State of Virginia*, had been published in Paris, France. The book was a lengthy response to questions posed by a French diplomat about the United States. Jefferson used the occasion to expound on various issues concerning his home state and the United States generally, including geography, education, religion, economics, citizenship, government – and race. For example, he shared his "suspicion" that blacks were "inferior to whites in the endowments of both body and mind."³ (Sidebar, p. 3) In 1787, the book of 23 chapters was published in English, and it sold well in America.⁴ Banneker was probably an eager reader of the book. Jefferson was a famous man, and Banneker read widely.

Two Men, Builders of a New Nation

Banneker, when he sent his letter to Jefferson, was 60 years old, a retired Maryland farmer, and well known as a scientist in this country and abroad. Early in the year, he'd assisted the commission that surveyed the future capital of the nation. His major contribution was taking astronomical measurements each night during the cold months of February-April 1791, using the most precise instruments available in America at that time, including an astronomical clock. These data were crucial to establishing accurate longitude and latitude as surveyors mapped and marked out the 100 square miles of the "federal district." Banneker considered this work to be a great adventure.⁵

Jefferson, at the time of this correspondence, was 49 years old and serving as U.S. Secretary of State. He was the famous "author of the Declaration of Independence" who would, in

eight years, be president of the United States. Jefferson was aware of Banneker's scientific accomplishments. Indeed, he had not objected to Banneker's position as assistant to the survey commission, and according to one account, "Jefferson encouraged [chief surveyor Mayor Andrew] Ellicott to employ Banneker for the preliminary survey."⁶

President Washington was also very interested in the work of the survey team, and he often checked on their progress in person. "It is virtually certain that Washington and Banneker were in the same meetings on many occasions," according to biographer Charles Cerami.⁷

A "Political" Response

In a brief response to Banneker, Jefferson thanked him for the letter and almanac, admitted that the abilities of the different races was open to question ("such proofs as you exhibit" in the letter that "our black brethren talents equal ... that of the other colors of men"), and said that he (Jefferson) was forwarding the letter and almanac to the Academy of Sciences at Paris.⁸ It probably pleased Banneker to think that this prestigious group of scientists and scholars would be reading his letter and almanac. One biographer has written that Jefferson "was paying Banneker a great honor."⁹ However, in the opinion of more recent scholars, Jefferson's response was a political one.¹⁰ He avoided discussing in depth the notion that blacks and Native Americans might be equal to whites in their intellectual potential. He avoided sincerely evaluating the institution of slavery or encouraging further correspondence from Banneker.

ON THE COVER: Part of the cover of Benjamin Banneker's 1795 Almanac, which featured a woodcut portrait of the author at age 64. See also the caption on page 3.

That was not, however, the end of the story. The correspondence was soon published as a pamphlet in Philadelphia, and Banneker included the letter and response in his 1793 almanac, which pleased his abolitionist friends.¹¹ “Banneker’s almanacs were among the first to popularize the theme of antislavery and contributed substantially to the abolitionist cause. As the scientific effort of a free Negro, his almanacs provided tangible proof of the mental equality of the races”—a topic central to the antislavery movement.¹² Banneker’s medium was his message.

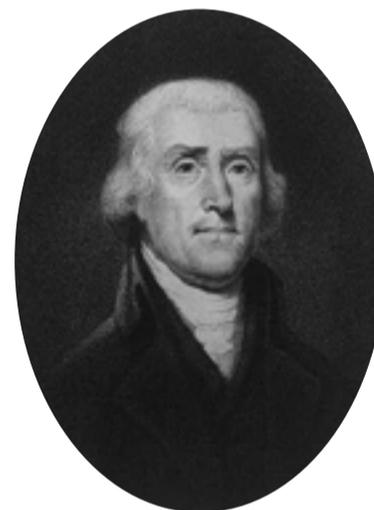
Broadening the Curriculum

When Black Americans during this era have been recognized in social studies curricula, they’ve traditionally been depicted as slaves with limited agency.¹³ Even in today’s curriculum, black American agency (their conscious efforts to fight against oppression) is often limited to stories of slave escapes and revolts.¹⁴ To be clear, resistance in the form of escapes and rebellions are historical events that help us understand black Americans’ desire for freedom and to counter the myth of the good master and the happy, docile slave. These particular narratives, however, do not communicate the totality of black Americans’ resistance to slavery: the intellectual, political, and social strategies—employed by free blacks like Banneker as well as the enslaved—that helped them garner freedom.¹⁵

Banneker’s letter is a primary source that can help social studies teachers bring some of the C3 Framework “inquiry literacies” into the traditional American history curriculum.¹⁶ (**Teaching with Banneker’s Letter**, pp. 6–7) It is a long letter, and the eloquent language would be difficult for middle school



This is said to be the only portrait of Benjamin Banneker made from life. His name was misspelled in the original woodcut. We corrected this error for the cover of *MLL*.



This etching, “Thomas Jefferson, Vice President of the U.S.,” may resemble Jefferson as he looked about a decade after he received Banneker’s letter in 1791.

(Maryland Historical Society/Cerami, p. 153)

(no date, Library of Congress, LC-USZ62-3795)

Jefferson’s “Suspicion” about “the Blacks” in 1787

In general, their existence appears to participate more of sensation than reflection. To this must be ascribed their disposition to sleep when abstracted from their diversions, and unemployed in labour. An animal whose body is at rest, and who does not reflect, must be disposed to sleep of course. Comparing them by their faculties of memory, reason, and imagination, it appears to me, that in memory they are equal to the whites;

in reason much inferior, as I think one could scarcely be found capable of tracing and comprehending the investigations of Euclid; and that in imagination they are dull, tasteless, and anomalous. ... I advance it therefore as a suspicion only, that the blacks ... are inferior to whites in the endowments both of body and mind.

—Thomas Jefferson, *Notes on the State of Virginia* (1787), in *Thomas Jefferson: Writings* (New York: The Library of America, 1984), Query XIV, pages 266 and 270; the text

is online at xroads.virginia.edu/~hyper/JEFFERSON/ch14.html.

.....
Commentary: In general, Thomas Jefferson, who was often mercurial in his thoughts about race ... had written publicly about blacks’ lack of intellectual ability. ... But typically, he also wrote opinions casting doubt on that.

—Charles A. Cerami, *Benjamin Banneker* (New York: John Wiley & Sons, 2002), p. 136.

students to read in full, so we have provided key excerpts for students. (**Handouts**, p. 8–11) The social studies teacher could possibly collaborate with a language arts teacher on having students analyze both Banneker’s and Jefferson’s letters as they relate to today’s proper spelling, grammar, and writing conventions. For example, Jefferson writes “no body” instead of “nobody” and closes his letter with “I am with great esteem, Sir, Your most obedient Humble Servant,” which did not mean he was offering to be Banneker’s servant.¹⁷ Students should certainly examine the full letter in senior high school, charting the general path of his arguments, and again in college, dissecting the rhetorical devices and logic of his argument, and comparing this letter with civil and human rights documents of any era.

Using Banneker’s letter in a middle or high school lesson is also an example of the process of democratic humanistic education.¹⁸ Today, we can hear in Benjamin Banneker’s letter a voice that was respectful and yet assertive. The letter was both a protest and a plea. Its rhetoric is both meticulously reasoned and impassioned. (**Sidebar**, below)

Banneker’s almanac was irrefutable evidence of the letter’s thesis: people of color could reason as well as anyone else. His letter to Jefferson is a clear example of black agency. Here are the words of a black man who was, like Jefferson, a scientist, writer, patriot, civil servant—and social critic. Let’s bring his prophetic American voice into the curriculum. 🌍

Notes

1. Charles A. Cerami, *Benjamin Banneker: Surveyor, Astronomer, Publisher, Patriot* (New York: John Wiley & Sons, 2002), 163-167; Angela G. Ray, “‘In My Own Handwriting’: Benjamin Banneker Addresses the Slaveholder of Monticello,” *Rhetoric & Public Affairs* 1, no. 3 (1998), 387-405; “Banneker’s Letter to Jefferson, August 19, 1791.” A full transcript of the letter is free online at the PBS series “Africans in America,” www.pbs.org/wgbh/aia/part2/2h71t.html.
2. Benjamin Banneker, *Pennsylvania, Delaware, Maryland and Virginia Almanack and Ephemeris, for the Year of Our Lord 1792* (Baltimore, MD: William Goddard and James Angell, 1791) in the Rare Book and Special Collections Division, Library of Congress (2-14), www.loc.gov/exhibits/african-american-odyssey/free-blacks-in-the-antebellum-period.html#obj4.
3. Thomas Jefferson, *Notes on the State of Virginia (1787)*, in *Thomas Jefferson: Writings* (New York: The Library of America, 1984), “Query XIV,” pp. 266 and 270; the text is free online at xroads.virginia.edu/~hyper/JEFFERSON/ch14.html.

Recent Opinions on Banneker’s Letter to Jefferson

[For his first six decades, Banneker] was outwardly little affected by the horrors his enslaved black brethren were experiencing. Then, when he had come to know Thomas Jefferson personally, Banneker struck. To the author of the Declaration of Independence, he wrote a blistering letter that can stand with it proudly in reasoning and style—similarly audacious, courageous, and potentially explosive. The mores of early American society were at least civil enough to make Secretary of State Jefferson refrain from punishing Banneker for the raging insult. He hushed it up instead. It was more than half a century before the great black leaders we have come to know as the pioneers of civil rights began to make themselves heard. But Banneker had taken the first risk—and the greatest, because he

could not know how Secretary Jefferson and the whole white world might react.

—Charles A. Cerami, *Benjamin Banneker* (New York: John Wiley & Sons, 2002), p. xi–xii.

[When reading Cerami’s biography of Banneker,] we understand how the pragmatic farmer who was imbued with Quaker ideology endured decades of ignominious racism with overt equanimity while haunted by incessant night terrors. We comprehend the heroism of the man whose very existence refuted Thomas Jefferson’s notorious public denial of black intellect in *Notes of Virginia* when, speaking truth to power, Banneker launched an anti-slavery epistle at the ambivalent and duplicitous Jefferson.

—Kweisi Mfume, former president and CEO, NAACP (from the book jacket, *Benjamin Banneker*, by Charles A. Cerami)

[Banneker’s] employment of available rhetorical strategies—from the emphasis on Christian precept and revolutionary principles to the descriptions of his own life and work—reflects his awareness of his own social and historical situation. ... Banneker sent Jefferson the work of his own hands, the production of his own mind, in his own handwriting, as a presentation of himself. Likewise, he speaks to us in his own voice, and his utterance still has the power to move, even after two hundred years.”

—Angela G. Ray, “‘In My Own Hand Writing’: Benjamin Banneker Addresses the Slaveholder of Monticello,” *Rhetoric and Public Affairs* 1, no. 3 (1998), 387–405.

4. See background at Monticello, www.monticello.org/site/research-and-collections/notes-state-virginia.
5. Silvio A. Bedini, *The Life of Benjamin Banneker* (New York: Charles Scribner's Sons, 1972), 103. See also 109-110, 115, 126-127; Cerami, 129-146.
6. Bedini, 103, 108; Cerami, 136.
7. Cerami, 135.
8. "Thomas Jefferson, Secretary of State, Replies to a Letter from Benjamin Banneker, August 30, 1791," www.pbs.org/wgbh/aia/part2/2h72t.html.
9. Bedini, 160-162. Banneker's letter and almanac were not presented at the Academy. The reasons are unclear, and were probably unrelated to any action by Jefferson. France was in turmoil.
10. Jean Yarbrough, "Race and the Moral Foundation of the American Republic: Another Look at the Declaration and the Notes on Virginia," *The Journal of Politics* 53, no. 1 (1991), 90-105; Henry Louis Gates, Jr., *Life Upon these Shores: Looking at African American History, 1513-2008* (New York: Alfred A. Knopf, 2011).
11. Bedini, 158; Cerami, 174.
12. Bedini, 200.
13. U. B. Phillips, *American Negro Slavery* (Baton Rouge, LA: Louisiana State University Press, 1918/1966); R. Elson, *Guardians of Tradition: American Schoolbooks of the Nineteenth Century* (Lincoln, NE: University of Nebraska Press, 1964).
14. Wayne Journell, "When Repression and Liberation are the Only Choices: The Representation of African-Americans within State Social Studies Standards," *Journal of Social Studies Research* 32, no. 1 (2008) 40-50; LaGarette J. King, "Learning Other People's History: Pre-service Teachers' Developing African American Historical Knowledge," *Teaching Education* (2014), DOI: 10.1080/10476210.2014.926881.
15. See, for example, the work of the black-led New York Vigilance Committee, as described by Eric Foner in *Gateway to Freedom: The Hidden History of the Underground Railroad* (New York: W.W. Norton, 2013).
16. NCSS, *Social Studies for the Next Generation; Purposes, Practices, and Implications of the College, Career, and Civic Life C3 Framework for Social Studies Standards*, Bulletin 113 (Silver Spring, MD: NCSS, 2013).
17. Association for Middle Level Education, *This We Believe: Keys to Educating Young Adolescents* (Westerville, OH: AMLE, 2010).
18. K. C. Barton and L. S. Levstik, *Teaching History for the Common Good* (Mahwah, NJ: Lawrence Erlbaum Associates, 2004).

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Recreation of the interior of Banneker's one-room cabin, Benjamin Banneker Historical Park and Museum.



Reproduction of Banneker's cabin, Benjamin Banneker Historical Park and Museum in Cantonsville, Maryland. (benjaminbanneker.wordpress.com)

Middle Level Learning

Steven S. Lapham, *MLL* Editor • Michael Simpson, Director of Publications • Rich Palmer, Art Director

Teaching with Banneker's Letter and C3 Framework Inquiry Literacies

John A. Moore

Key Resources

Banneker's 1791 Letter and Jefferson's response can be found at a webpage for the PBS series "Africans in America," www.pbs.org/wgbh/aia/part2/2h71t.html.

NCSS, *Social Studies for the Next Generation: Purposes, Practices, and Implications of the College, Career, and Civic Life (C3) Framework for Social Studies State Standards* (Bulletin 113, Silver Spring, MD: NCSS, 2013). A free PDF of the C3 Framework is at www.socialstudies.org/c3. Or buy the paperback book cited above (with explanatory essays) at www.socialstudies.org/store.

C3 Disciplinary Focus: History

Content Topic: U.S. History or Sociology

C3 Inquiry Literacies Focus: Gathering Information from Sources; Evaluating Sources; Critiquing Arguments and Explanations; Analyzing Social Problems

Dimensions of the C3 Framework's Inquiry Arc

1. *Developing Questions and Planning Inquiries*
2. *Applying Disciplinary Concepts and Tools*
3. *Evaluating Sources and Using Evidence*
4. *Communicating Conclusions and Taking Informed Action*

Dimension 1: Explain how a question represents key ideas in the field (D1.1.6-8, page 25) Have students to inquire "why did Benjamin Banneker write the letter to Thomas Jefferson?"

Dimension 1: Determine the kinds of sources that will be helpful in answering compelling and supporting questions, taking into consideration multiple points of views represented in the sources. (D1.5.6-8)

The teacher should help students realize that Benjamin Banneker's letter is a primary source that contains Banneker's point of view of the institution of slavery and challenges Jefferson's point of view of different races.

Dimension 2: Use questions generated about multiple historical sources to identify further areas of inquiry and additional

sources. (D2.His.12.6-8)

The teacher could help students inquire and make inferences about Jefferson's response to Banneker's letter.

Dimension 2: Evaluate the relevancy and utility of a historical source based on information such as maker, date, place of origin, intended audience, and purpose. (D2.His.13.6-8)

The teacher could ask students to evaluate the relevancy of Banneker's letter based on the following:

Creator of the letter: Benjamin Banneker

Date and Place of Origin: 1791, Baltimore County, Maryland

Intended audience: U.S. Secretary of State and writer of the Declaration of Independence Thomas Jefferson (and Banneker probably hoped to reprint the letter in his almanac)

Purpose: to challenge the institution of slavery and Jefferson's racial ideology

Dimension 2: Identify common patterns of social inequality (D2.Soc.15.9-12)

- * Throughout his letter, Banneker made several references to the morality of race and democracy. Benjamin Banneker questioned Jefferson and other founders' morality in terms of Christianity, the rights of human nature and the legal precedent they established or ignored throughout the country (Banneker, paragraph 4). He pointed out that Jefferson and other white founders did not live up to their moral ideals of life, liberty, and happiness. Throughout his letter, Banneker questioned Jefferson's virtue and sincerity in allowing injustices to happen to black Americans. (para 6). Then, he held Jefferson accountable because he understood that he noticed the terrors of slavery since he (Jefferson) was a slave owner himself (para 7).
- * One of Banneker's most profound strategies was his challenge to the persistent racial theories that black Americans were innately inferior: "We are a race of beings who have long been considered rather as brutish than human, and

scarcely capable of mental endowments" (para 2).

- * To move beyond the deficient racial theories of the time, Banneker appealed to both spirituality and to science: "one universal Father made us one flesh... afforded us all the same sensations and endowed us all with the same faculties...we are the same family" (para 3).

Dimension 2: Interpret the effects of inequality on groups and individuals (D2.Soc.16.9-12)

- * Banneker's almanac and his mathematical calculations were proof a black American could understand the ideals of democracy the founders (who were white men) presented, and intellectually challenge their subsequent personal behavior and public statements. He recommended Jefferson and others "Wean themselves from those narrow prejudices and put your soul in their souls' stead" (Banneker, 1791, para 8).
- * In the first sentence of Banneker's letter, he identifies himself as black American—of a certain complexion that differed from Jefferson. The world looked upon his brethren with an "eye of contempt" (para 2) and that the skin color was an ready marker for "prejudice and prepossession" (para 1). Banneker, however, does not retreat from his blackness, rather, he embraces it. "I freely and Cheerfully acknowledge, that I am of the African race, and in that color which is natural to them of the deepest dye" (para 5). In a footnote to the original letter (not included in the 1792 published version) Banneker refers to his ancestor: "My father was brought here a Slave from Africa" (as quoted in Ray, 1998, p.392, See note 1).

Dimension 2: Propose and evaluate alternative responses to inequality. (D2.Soc.18.9-12)

The teacher could help students analyze and evaluate Jefferson's response to Banneker's letter. Does Jefferson grapple with the difficult questions that Banneker asks? What might have been his motives for writing as he did?

Dimension 3: Gather relevant information from multiple sources while using the origin, authority, structure, context, and corroborative value of the sources to guide the selection. (D3.1.6-8)

The Teacher could use passages from Jefferson's *Notes on Virginia* (which is in most collections of Jefferson's writing), Banneker's letter to Jefferson, and Jefferson's response to help

students engage in historical and sociological inquiry activities.

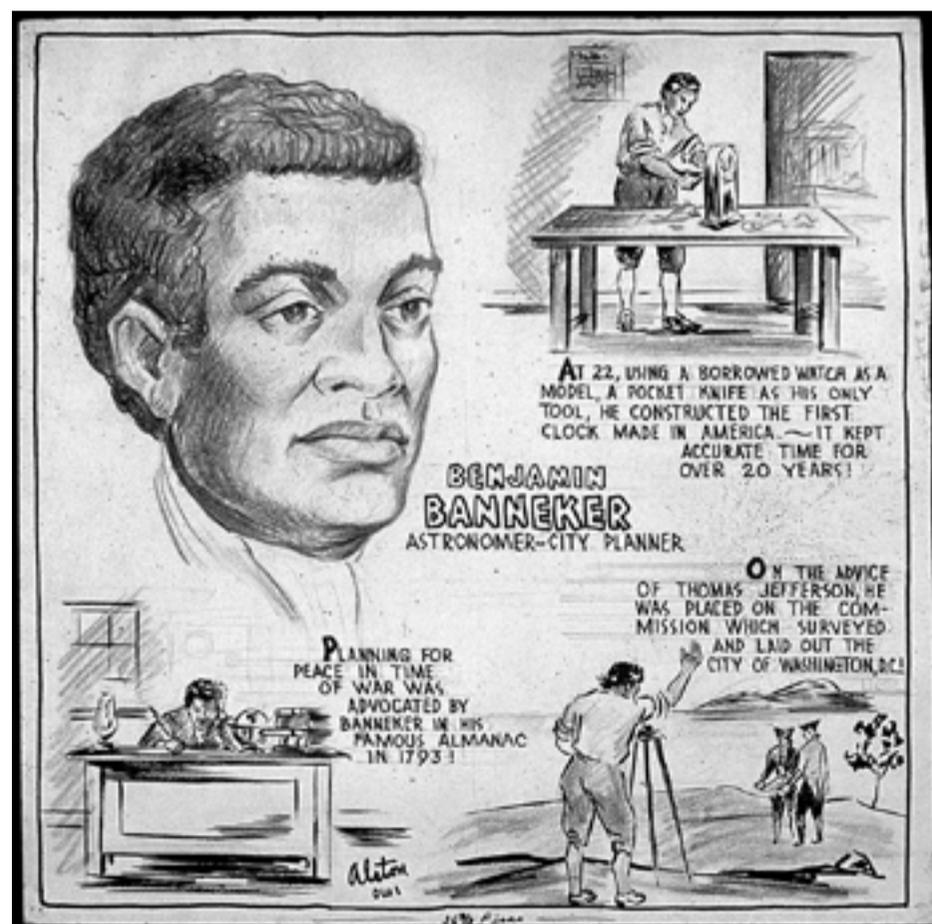
Dimension 4: Construct explanations using reasoning, correct sequence, examples, and details with relevant information and data, while acknowledging the strengths and weaknesses of the explanations. (D4.2.6-8)

Can students explain why readers found Banneker's letter to be powerful? Can they cite two lines (from the excerpts) that demonstrate its power?

Dimension 4: Critique arguments for credibility. (D4.4.6-8)

Ask students to list the concrete evidence that Banneker uses in his letter. (Be sure that Banneker's almanac, which he enclosed with the letter, gets mentioned during this discussion). Ask students to compose three questions they would like to ask Thomas Jefferson, after reading his brief reply.

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Students can enter "Benjamin Banneker" at the National Archives website ([research.archives.gov](https://www.research.archives.gov)) to see this poster. Banneker's role on the survey team was more complex than that shown in this drawing by Charles Alston, created for "promoting the war effort" ca. 1942.

Benjamin Banneker (1731–1806)

What do you see when you look at the stars? Benjamin Banneker saw patterns that he could show with math equations. He could project the future paths of the planets and the stars as they moved across the night sky. He reasoned that distant stars were suns, and that some suns had planets revolving around them. His biographer, Charles A. Cerami, discovered that Banneker published these ideas before any other scientist in America, and before telescopes had the power to confirm them.

A Self-Taught Astronomer and Surveyor

Born on November 9, 1731, Benjamin Banneker spent most of his life on his family's 100-acre farm near Baltimore, Maryland. He was born free and never enslaved. Ben and his four sisters helped with farm chores. Both parents encouraged reading and learning. Ben played fiddle and flute. He taught himself astronomy by watching the stars and by reading textbooks he had borrowed. He correctly calculated future eclipses of the sun and moon. He learned surveying and advanced mathematics from books. He was one of the first African Americans to be known as a scientist, and he was famous in his own time.

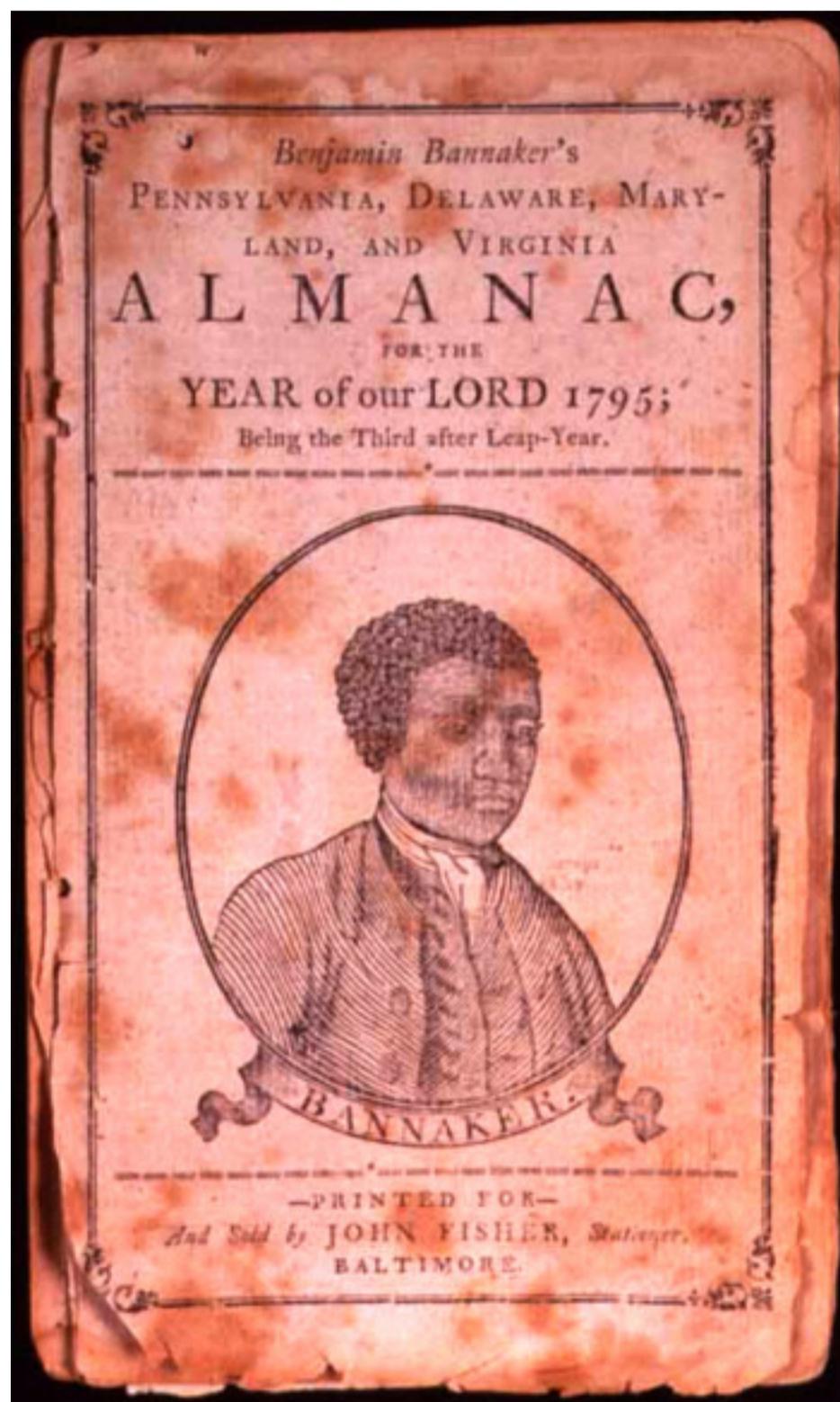
A Scientist, Patriot, and Author

At the age of 22, Banneker attracted local attention by building a clock entirely out of wood. He probably copied the mechanics, the gears and such, from a smaller metal timepiece. During the American Revolution, he switched from growing tobacco to wheat to help feed the Army.

Years later, Banneker gained wider attention when he successfully forecast a 1789 solar eclipse. His correct prediction contradicted those of better-known mathematicians and astronomers.

Banneker's abilities impressed many people, and he assisted the surveying team that laid out the capital of the new nation. He took astronomical measurements each night during the cold months of February, March, and April 1791, using the most precise instruments available in America at that time, including an astronomical clock.

Banneker's role on the survey team was similar to that of a ship's navigator. Our GPS devices



The cover of Benjamin Banneker's Almanac for 1795." Courtesy of the Maryland Historical Society, Baltimore. The printer misspelled Banneker's name twice on this cover!

today rely on signals from satellites. Mapmakers of Banneker's day determined the exact location of points on the ground by using the stars. Banneker's measurements were key as surveyors mapped and marked out 100 square miles of land. This rough terrain was the "federal district" that would become the city of Washington, D.C.

In his elder years, Banneker wrote almanacs that listed tides and charted the future positions in the sky of celestial objects (such as the sun, moon, planets, and stars) from different locations (Pennsylvania, Delaware, Maryland, and Virginia) for the upcoming year. He also shared jokes, interesting stories, philosophical essays, poetry, and his thoughts about issues of the day. He published this popular book annually from 1791 to 1802. Like Ben Franklin's famous *Poor Richard's Almanac*, Banneker's almanac was a best seller.

A Social Critic (The Letter to Jefferson)

On August 19, 1791, Banneker sent a letter and a hand-written copy of his first almanac to Thomas Jefferson, who was then U.S. secretary of state. In the letter, Banneker questioned Jefferson's sincerity as a "friend to liberty." Jefferson was

a slave owner. Banneker urged Jefferson to help get rid of "absurd and false ideas" that one race is superior to another. He asked for Jefferson's help in ending "the unjustifiable cruelty and barbarism" of slavery. The letter shows Banneker's great abilities to write clearly, logically, and convincingly.

Jefferson replied very briefly. He praised Banneker's accomplishments, but he avoided any deep discussion about race or slavery.

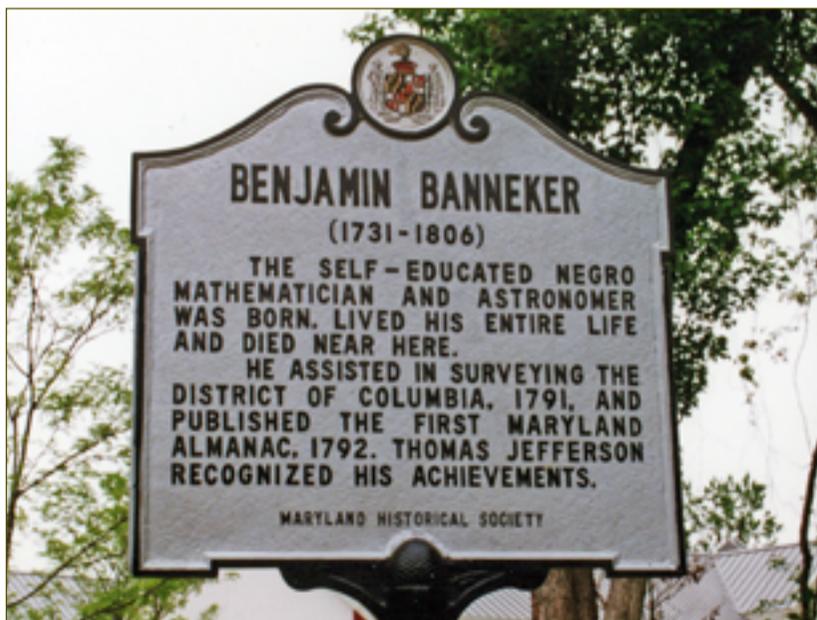
Banneker published his letter and Jefferson's reply in his 1793 almanac. His letter was used by abolitionists for the next 68 years as they argued and organized for the end of slavery in the United States.

Remembering Banneker



Banneker died in his log cabin on October 9, 1806, exactly one month before his 75th birthday. That year, he was eulogized before the French Academy of Science, which was a great honor. The U.S. Post Office honored Benjamin Banneker with a postage stamp in 1980. Many books for

youth, and several adult biographies, have been written about him. You can visit Benjamin Banneker Historical Park and Museum, a 142-acre site near Baltimore, Maryland, which is dedicated to telling the story of his life and times. 🌐



Historical marker in Maryland does not hint at Banneker's disagreement with Jefferson over slavery.

MAIN SOURCES FOR THIS BIOGRAPHY: Library of Congress/America's Story, "Benjamin Banneker," www.americaslibrary.gov; Africans in America, PBS, www.pbs.org/wgbh/aia/part2/2p84.html; Charles A. Cerami, *Benjamin Banneker* (New York: John Wiley & Sons, 2002); Silvio A. Bedini, "Early American Scientific Instruments and Their Makers," *U.S. National Museum Bulletin* 231 (1964), www.gutenberg.org/files/39141/39141-h/39141-h.htm [for "French Academy" statement]. Another short biography is at PBS Africans in America, www.pbs.org/wgbh/aia/part2/2p84.html.

Benjamin Banneker Writes to Thomas Jefferson about Race

The words in bold are from Banneker's letter. You can read the entire letter at www.pbs.org/wgbh/aia/part2/2h71t.html.

On August 19, 1791, Benjamin Banneker wrote a lengthy letter to Thomas Jefferson, then Secretary of State, in which he said **“having taken up my pen in order to direct to you as a present, a copy of an Almanack... I was unexpectedly and unavoidably led”** to write a letter about race and rights.

Banneker enclosed a copy of his first almanac, which was about to be published. It featured Banneker's own calculations about the positions of the stars over the coming year, and it would soon be a best seller.

In his letter, Banneker made it a point to **“freely and Cheerfully acknowledge, that I am of the African race.”** Though not himself a slave, Banneker encouraged Jefferson to accept “the indispensable duty of those who maintain for themselves the rights of human nature,” by ending the **“State of tyrannical thraldom, and inhuman captivity, to which too many of my brethren are doomed.”**

Appealing to Jefferson's **“measurably friendly and well-disposed”** attitude toward blacks, Banneker hoped that Jefferson would **“readily embrace every opportunity to eradicate that train of absurd and false ideas and opinions which so generally prevail with respect to us.”**

After humbly stating that, by writing to Jefferson, he was taking **“a liberty which Seemed to me scarcely allowable,”** considering **“the almost general prejudice and prepossession which is so prevalent in the world against those of my complexion,”** Banneker launched into a critical response to Jefferson's published ideas

about the inferiority of blacks.

He appealed to Jefferson's sense of spirituality, arguing that **“one Universal Father...afforded us all the same sensations and endowed us all with the same faculties.”**

With restrained passion, Banneker chided Jefferson and other framers of the Declaration of Independence for the hypocrisy **“in detaining by fraud and violence so numerous a part of my brethren under groaning captivity and cruel oppression, that you should at the Same time be found guilty of that most criminal act, which you professedly detested in others, with respect to yourselves.”**

Citing Jefferson's own words from the Declaration—the “Self-Evident” truth “that all men are created equal”—Banneker challenged Jefferson and his fellows **“to wean yourselves from those narrow prejudices which you have imbibed with respect to”** African Americans.🌍

SOURCE: “Africans in America,” PBS, www.pbs.org/wgbh/aia/part2/2h71t.html; Charles A. Cerami, *Benjamin Banneker: Surveyor, Astronomer, Publisher, Patriot* (New York: John Wiley & Sons, 2002), 163–167.



Jefferson Replies to Banneker

To Mr. BENJAMIN BANNEKER.
Philadelphia, August 30, 1791.

SIR,

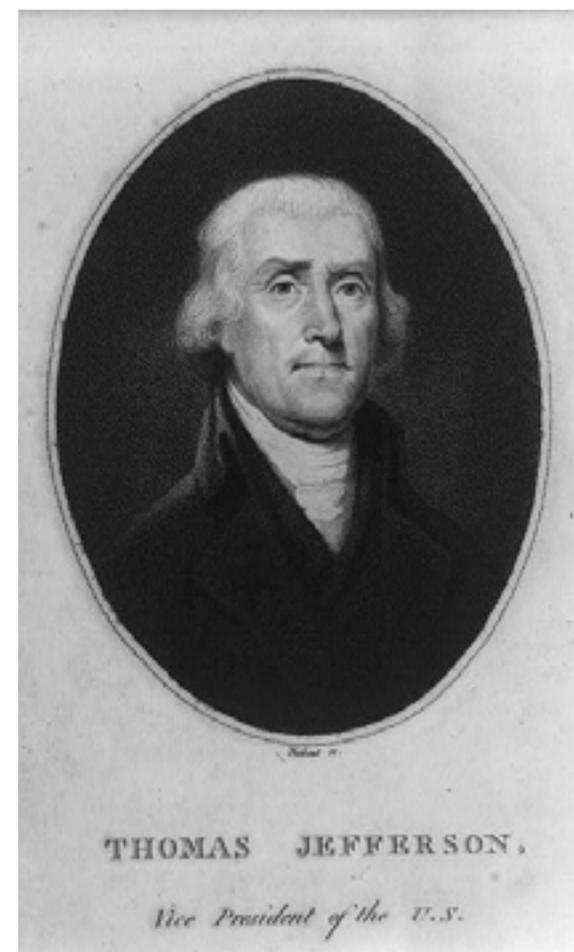
I THANK you, sincerely, for your letter of the 19th instant, and for the Almanac it contained. No body wishes more than I do, to see such proofs as you exhibit, that nature has given to our black brethren talents equal to those of the other colors of men; and that the appearance of the want of them, is owing merely to the degraded condition of their existence, both in Africa and America. I can add with truth, that no body wishes more ardently to see a good system commenced, for raising the condition, both of their body and mind, to what it ought to be, as far as the imbecility of their present existence, and other circumstances, which cannot be neglected, will admit.

I have taken the liberty of sending your Almanac to Monsieur de Condozett, Secretary of the Academy of Sciences at Paris, and Member of the Philanthropic Society, because I considered it as a document, to which your whole color had a right for their justification, against the doubts which have been entertained of them.

I am with great esteem, Sir, Your most obedient Humble Servant,

THOMAS JEFFERSON.

SOURCE: "Africans in America," PBS, www.pbs.org/wgbh/aia/part2/2h72t.html; University of Virginia; Charles A. Cerami, *Benjamin Banneker: Surveyor, Astronomer, Publisher, Patriot* (New York: John Wiley & Sons, 2002), 168–169.



Next Door to “Old Smokey”

Engaging in Scientific Measurement and Public Action

Bertha Vazquez, Hilary Landorf, and L. Bahia Simons-Lane

Students, teachers, and staff of George Washington Carver Middle School (Carver) in Miami, Florida, have studied, worked, and lived in the shadow of “Old Smokey,” a now defunct incinerator, for more than four decades. The low building (which still stands) and a 200-foot-tall brick chimney (demolished some years ago) were situated a mere 20 feet away from the school’s playing field. Many adults in the neighborhood spent their childhood playing in local parks that were formed on old quarry sites filled with tons of non-burnable ash from Old Smokey. The incinerator stopped operating in 1970, but it has cast “a shadow” into the present day.

In the spring 2013, University of Miami (UM) law student Zach Lipshultz was preparing a legal case for residents of West Coconut Grove.¹ He uncovered the fact that the city had found dangerous concentrations of toxic chemicals at the site of Old Smokey and other city-owned properties, but had not notified residents of this low-income urban community established in the 1880s by Bahamian immigrants.² Lipshultz, now a fellow of UM’s Environmental Justice Project, brought the information to the media, and thus to the public.³ Once the issue was out in the open, the city implemented broader testing of 112 parks;⁴ seven were then closed and fenced off.⁵ It was public awareness, followed by public pressure and attention from organizations such as the Environmental Justice Project, that brought this issue to light and resulted in community attention and government action.

Local News and Place-Based Learning

As these events unfolded in the wider community, Old Smokey’s dirty legacy became part of the daily conversations held by Carver students and their parents. When students returned to school in fall 2013, they wanted to learn all about how Old Smokey affected the parks where they frequently played. Parents called the school administration to voice concerns about the safety of their children, their school, and their community. In



Old Smokey as it appeared in 1989. (History Miami Archives and Research Center)

classes ranging from physical education to AP Spanish to social studies, students raised such concern that a teacher (co-author Vazquez) galvanized a group of students to learn more about what was happening in the parks. Eventually, we took scientific measurements of industrial contaminants in school soil samples, engaged students in democratic discussions, and helped bring about public action to address the public’s concerns.

What started as open discussions about the past, present, and possible future of a neighborhood turned into a year-long project in which the students experienced first-hand how scientific evidence can compel public action, and how their participation in the democratic process matters. Projects like this present an ideal opportunity for social studies and science teachers to help students apply content knowledge and engage in public action. The Old Smokey project became part of the activism happening in the wider community, ultimately reflecting questions, concerns, and new information back to the Coconut Grove community.

A Brief History of Old Smokey

Opened in 1925, Old Smokey was considered the “Cadillac of Garbage Incinerators” in an era when tall industrial chimneys were seen as symbols of economic progress.⁶ By the 1960s, however, perceptions were changing. The ash was often so thick that it forced airline pilots to change their routes into Miami International Airport and sent Coconut Grove residents running to take down the laundry hanging on their backyard lines.⁷ In 1970, Old Smokey was shut down after the nearby city of Coral Gables sued⁸ and a court order naming it a public nuisance ordered its closure.⁹ Today, the incinerator building is used as a training facility for the City of Miami Fire and Rescue Department.

In addition to the ash billowing into the air, Old Smokey produced tons of remnant ash that was piled in large mounds just outside the incinerator entrance. Most of this ash was hauled away and dumped in empty quarries that had provided the limestone for buildings of a growing Miami. These sites are near modest homes and mansions alike. Some of them became city parks.

A Science Project with Meaning

Questions about possible toxic materials in public parks were being asked in the news just as students were choosing a topic for their semester-long science project. Sophie asked if her project could involve testing the soil around the school, in the neighborhood, and at some of the nearby parks. When other students expressed interest in investigating Old Smokey’s legacy for their projects as well, we decided that collaborative research was in order. As it happened, an opportunity for the school to participate in the Samsung Solve For Tomorrow STEM Competition arose at the same time, so we decided to open

this research opportunity to all students at Carver. A team of about a dozen interested students and some of their parents began meeting regularly after school to discuss how to proceed.

Civic-mindedness is part of the culture at Carver, with many initiatives implemented over the past few years that included active student participation. For example, Carver is a leader in implementing energy-savings efforts in the Miami-Dade County public school district. Since 2008, the school facility has



Students read that seven public parks had been closed after tests revealed the presence of toxic chemicals.

steadily decreased its energy consumption with a total energy savings of over \$50,000. The school also has a long-standing recycling program and a campaign to landscape the campus with trees and other foliage.

Preliminary Background Research

The first step was to conduct research to gather and understand what was known about the issue. Students reviewed the news stories and discovered the official reports from the Miami-Dade Department of Environmental Resources Management (DERM). These reports listed which parks had been used as dumpsites. Students learned about the health risks posed by contaminated



Carver Middle School students receiving the Samsung Solve for Tomorrow award in Washington, DC, in May 2015. Bertha Vazquez is second from right.

ground and water around Old Smokey.

The students also found that in 2011, the soil at the site of Old Smokey had such high concentrations of arsenic and other heavy metals that county regulators ordered the city to investigate and address the problem. The investigation expanded to nearby parks, churches, private residences, and green spaces in the Coconut Grove and Coral Gables areas.¹⁰ Samples collected from the parks contained unsafe concentrations of lead, barium, arsenic, and other hazardous chemicals listed in the World Health Organization's "Ten Chemicals of Major Public Health Concern."¹¹ Other tests found high concentrations of benzo(a) pyrene (BaP) that were higher than the safe thresholds set for industrial areas.¹² The students read about BaP, and learned that it is highly carcinogenic.¹³ In addition, the parent of one student found a scientific journal article written in March of 2013 that identified West Coconut Grove as a pancreatic cancer cluster.¹⁴ The pancreatic cancer patients came from different economic classes, countries, and careers, but all lived within a mile of Old Smokey.

Testing Soil Samples

After this preliminary research, the second step was to learn how to test soil samples for the presence of some of these

chemicals. Sophie and her classmates interviewed DERM officials and the environmental engineer, Eduardo Smith, who performed the soil testing for the City of Miami. Mr. Smith spoke about what the city had learned thus far and the possible remediation strategies that could be implemented, such as covering the contaminated ground with a thick layer of soil. He also taught the students proper soil collecting techniques using a T-shaped instrument to drill into the soil to obtain samples from deeper levels. He also explained that students should take multiple samples from different locations within each property. Earlier studies had found that contamination was often clustered in one area.

The third step of the project was to take some soil samples and test them for lead. The students measured lead levels on the school grounds (using an off-the-shelf kit),¹⁵ in several local parks, as well as in the backyards and gardens of local residents. The results of these initial tests detected the presence of some lead. The students sent soil samples to an independent, private lab to replicate the measurements of lead, and also to measure amounts of arsenic and BaP in the soils (which our kits did not measure). The lab found that the amount of these chemicals was below dangerous levels.¹⁶ Based on the lab results, the students concluded that their school campus was safe.



The incinerator building is now used as a training facility for the City of Miami Fire and Rescue Department.

A Civics Project with Meaning

Once the students collected and analyzed all the data, they took their information public. With the help from Claire Novy, a computer specialist and the mother of one of our students, students created a website (carversamsung.weebly.com) that displayed the students' data as well as information about the health risks associated with the remnant ash. The students also held an evening event to present their work to the alumni of the former G.W. Carver High School, as well as to more than 600 parents of one of the local elementary schools. Reporters from several local newspapers and television stations interviewed students about their work.

The students' efforts were greatly rewarded when Carver won the popular vote for the 2014 Samsung Solve For Tomorrow STEM Competition. One of five national winners, our school received a grant to purchase \$150,000 in Samsung technology. This competition also created the opportunity for the students to present their work in front of a panel of judges at the South

by Southwest Conference in Austin, Texas, in March of 2014. In May of 2015, a contingent of ten students, Ms. Vazquez, and Principal Shelley Stroleny traveled to Washington, D.C. to receive the Samsung award. The students explained their project to U.S. senatorial staff, to U.S. Rep. Ileana Ros-Lehtinen, and to members of the President's Office of Science and Technology.

What the Students Learned

This project helped the students learn three important lessons. (a) By conducting their own background research, sampling, and measurement, students learned the value of the scientific method. Because the results of their work mattered to them on many levels, students understood the reasons for doing it carefully, of completing each step, and of repeating results to enhance validity. (b) They also learned that scientific knowledge is a vital part of public discourse. By the end of the school year, students had met with community members, and local, state, and national politicians, all who took their results

and concerns seriously. By the start of the following school year, they were overjoyed when they learned that the City of Miami had unveiled plans to cover the toxic soils in the seven contaminated parks and to reopen the green spaces once they were demonstrated to be safe. The cost of all remediation is estimated to be \$10 million.¹⁷

The students also learned (c) the importance and power of public action. The knowledge that the students gained from doing scientific measurement gave them entrée into the political process, and enabled them to play an active role in a community movement. Adults listened to them when they spoke at public hearings; people viewed their website; they won competitions for solving problems; and, most important, they were involved in affecting positive social change.

Why Make Public Action Part of a Project?

Nobel Prize winning economist Amartya Sen believes that people are agents whose values must be engaged in setting public objectives, and whose energies help propel these objectives into public action. “By public action we mean not merely the activities of the state, but also social actions taken by members of the public—both collaborative (through civil cooperation) and adversarial (through social criticism and political opposition).”¹⁸ The arena of public action extends well beyond participation in formal political settings like a city hall meeting. It includes participation in families, community groups, informal organizations, school clubs, and other forums.

The Old Smokey project is an example of students engaging in public action. Students successfully engaged in the scientific method, from questioning, to measurement, to reporting results. Students also embraced the democratic process, collaborating with other concerned citizens and gaining the ability to become confident participants in their community. As stated on the student’s website, the goal of their project was to help the public “relieve their immediate fears about Old Smokey and get informed.”¹⁹ They learned that they have the power to make a difference. 🌍

Notes

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8. Jenny Staletovich and Patricia Mazzei, “Miami’s Douglas Park Shut Down Indefinitely for Widespread Contamination,” *Miami Herald* (November 22, 2013), www.miamiherald.com.
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14. Wen Liu-Mares et al., “Pancreatic Cancer Clusters and Arsenic-Contaminated Drinking Water Wells in Florida,” *BMC Cancer* 13 (2013): 111–119.
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