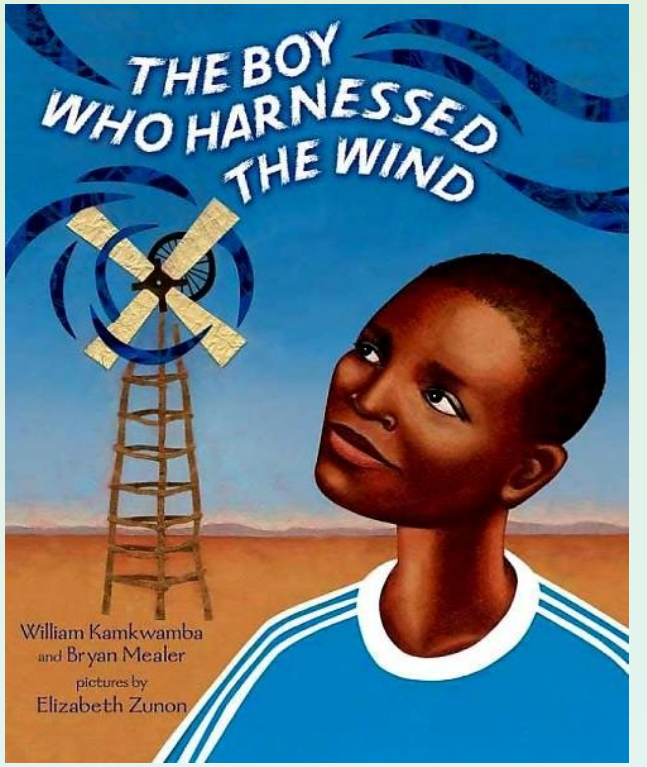
Careers in STEM

1. Question & Research Task

During the 1700s, Benjamin Banneker was an accomplished scientist who made an impact on both the local and global community. He is remembered for many of his contributions and accomplishments in science, technology, engineering, and math. His contributions continue to impact our society today.

More recently, in 2006, William Kamkwamba built a wind turbine out of scrap parts and brought electricity to his village in Malawa. Click on the image to read about William's project.

Benjamin Banneker and William Kamkwamba are excellent examples of how individuals can make an impact on the global community. Think about how these two individuals can be your inspiration to explore careers in the STEM community, which one day may have an impact on the world.



Click the image above to read the article "William Kamkwamba's Electric Wind."

Image Source: wikispaces.com

In this Slam Dunk, you will conduct brief, focused research to respond to the inquiry question:

How do the contributions of the STEM community impact the global community?

2. Information Sources

Choose several of the sources to complete the Student Activity on slide 3.

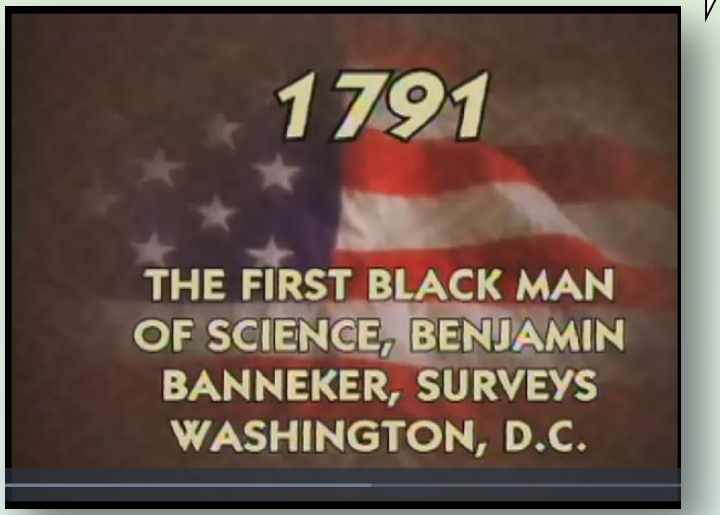
Benjamin Banneker Information

- Benjamin Banneker Historical Park and Information
- WorldBook Student: Benjamin Banneker
- GALE InContext Elementary: Benjamin Banneker
- Benjamin Banneker Museum: A Man of Many Firsts

STEM Information

- Discovery Education: Careers in Science
- Discovery Education: What is Engineering?

Agriculture	Math	Civil Engineering	Biology
• Agricultural & Biosystem Careers • Agriculture in the Classroom Career Seeker • Occupational Outlook Handbook: Farmers and Ranchers • USDA Living Science Careers	• ScholasticGo: Careers in Mathematics • We Use Math: Careers Using Math • Science Buddies: Careers in Math and Computer Science • Occupational Outlook Handbook: Math Occupations	• ScholasticGo: Careers in Civil Engineering • Science Buddies: Civil Engineers • Civil Engineering Careers • Occupational Outlook Handbook: Civil Engineers	• ScholasticGo: Careers in Biology • Science Buddies: Biologist • American Institute of Biological Sciences: Careers in the Biological Sciences • Occupational Outbook Handbook: Life, Physical & Social Occupations



Click the image above to view a video about Benjamin Banneker from Discovery Education.

Image Source: discoveryeducation.com

****If you are prompted to log in to access a database or digital content links, your teacher/librarian can provide login information.**

3. Student Activity

Think about:

- **What education do these careers require?**
- **How does this career impact others?**
- **How do these careers help us to find solutions to our local and global community?**
- **How will these careers be reflected in our daily lives?**

Activity 1: Working with a small group, explore the resources on Slide 2 in order to determine careers in which you may be interested. As you explore, you will filter out what information is most important using the "25 Things You Didn't Know" inquiry chart. You will share your charts with the class.

Activity 2: Think about the STEM career that you are most interested in. Use the graphic organizer to help you take notes research for a career in science and the impact on the global community. Stuck and can't decide? Check out this resource from the Bureau of Labor Statistics. (Remember to focus on careers in the Science Technology Engineering Math fields.)

Image Source: bls.gov

How do the contributions of the STEM community impact the global community?

4. Assessment Activity

How do the contributions of the STEM community impact the global community?

What impact will you have on the STEM community like Benjamin Banneker? Use the information from slide 2 and your organizer from slide 3 to promote a career in the STEM field.

In your presentation you will describe the STEM career you chose to research (education and job description) and share the how that scientific community has impacted the global community. Use the drafts and rubrics to help you plan your presentation.

- Promotional Video using device camera
- Podcast using Wixie or VoiceThread
- Help Wanted Poster using print or digital tools

Use the rubric to help guide you in creating your promotion.

Image Source: flickr.com

5. Enrichment Activities

Click on the image to view a video from NBC News about how drones or unmanned aircrafts are revolutionizing many STEM careers and changing the way we see our world.

Image Source: NBC News

Benjamin Banneker impacted our global community with his many contributions and accomplishments. Check out these games, activities, and websites to explore STEM connections even further:

PBS Kids: Activities and Videos

My American Farm

Almanac For Kids

Check out these additional websites and activities about the educational path to a career in STEM.

Careers in STEM

The Best Colleges for STEM Degrees

6. Teacher Resources

Learning Standards Alignment

Common Core State Standards for English Language Arts & Literacy

Reading: 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

Writing: 7. Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

AASL Standards Framework for Learners Inquire: Build new knowledge by inquiring, thinking critically, identifying problems, and developing strategies for solving problems.

Think: Learners display curiosity and initiative by:

I.A.2 Recalling prior and background knowledge as context for new meaning.

Create: Learners engage with new knowledge by following a process that includes:

I.B.1 Using evidence to investigate questions. I.B.3 Generating products that illustrate learning.

Share: Learners adapt, communicate, and exchange learning products with others in a cycle that includes:

I.C.1 Interacting with content presented by others.

Grow: Learners participate in an ongoing inquiry-based process by:

I.D.2 Engaging in sustained inquiry.

P21 Framework: 21st Century Student Outcomes

3. Information, Media & Technology Skills: Information Literacy: Access information efficiently and effectively; Use information accurately and creatively for the issue or problem at hand.

ICT Literacy: Use technology as a tool to research, organize, evaluate and communicate information.

Grade 5 Library Media

Objective: Students will conduct brief, focused research in order to analyze careers in STEM and explain how contributions of the STEM community impact the global community.

Time Frame: 4 class periods of 50-minutes each

Differentiation strategies for this lesson:

- Have students use learning supports provided in any BCPS Digital Content in the Apps Portal included in this lesson.
- Refer to Digital Content Snapshot/Support pages as needed.

Notes to the teacher:

- Access all digital content through the BCPS Digital Content in the Apps Portal .Both Wixie and VoiceThread are accessible through the BCPS Digital Content in the Apps Portal
- Collaborate with the fifth grade teacher about teaching the unit the same time as the Becoming Banneker (Grade 5) unit.
- On Slide 3, the "25 Things You Didn't Know" Strategy is reference. To find information on that strategy, check out Discovery Education Spotlight on Strategies.
- Consider using the Schoology Assignment Apps feature to assign Google documents and files for students to access, edit, and submit through Schoology.