

**Los Angeles Unified School District**  
**Division of Instruction**  
**Secondary Mathematics**

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## Lesson Plan

**Title:** African-American Mathematicians

**Overview/Annotation:** Many people are unaware of the very important contributions African-Americans have made to the field of mathematics. Benjamin Banneker was a multi-talented person who taught himself astronomy and mathematics. What other African-Americans made contributions to the field of mathematics? Students will research and investigate famous and not-so-famous African-American mathematicians. Also, they will plan and present a slideshow on three of the mathematicians and explain why each is significant.

**Learning Objective(s):** Students will demonstrate knowledge of different African-American mathematics by creating a representation of the process through any medium, such as poster, and PowerPoint. Students will utilize technology to conduct research and present their findings.

**Lesson Duration:** 150 Minutes

**Materials and Resources:** Each student must have a notebook or journal, blank storyboards, and handouts (see attached).

**Technology Resources Needed:** Classroom computer with Internet access, LCD projector or TV scan converter, computer lab, laptop carts, or one-to-one devices with internet access, word processing and/or desktop publishing software (optional), or presentation software.

**Background/Preparation:** Students should have a working knowledge of computers to include internet searches, slideshow presentations with transitions, and inserted picture/clip art.

### Procedures/Activities:

- 1.) Teacher will introduce the lesson by telling a brief story about little known African-American mathematicians, such as Dudley Weldon Woodard (1881-1965). The teacher may want to do a retelling or read it from a hard copy or a website using the computer projector. Time should be spent discussing the importance of mathematics in scientific discovery, everyday life, and society.
- 2.) After a class discussion about famous African-American mathematician, take the students to the computer lab or provide computer carts, or one-to-one devices to research one of interest. The teacher should provide an information sheet for each student to fill in the information they find (see attachment). This step should be done in 40 minutes or one class period.

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- 3.) Students share in small groups with a discussion protocol.
- 4.) Each student will compile a list of three African-American mathematicians about which to make a slide show scrapbook or poster for presentation to the class. The students must have access to library resources including biographies or other books and may research Internet websites. The teacher may allow library or computer lab time for this component, or provide a weekend and assign this portion as homework. Help should be made available before and/or after school. Preferably, students should not choose the same inventors or common ones such as Benjamin Banneker to present. (Class sizes and total number of students may require some duplicates.)
- 5.) After the teacher has approved each student's list, students are given a handout of the requirements for the assignment (see criteria attachment).
- 6.) Students will fill in the slideshow storyboard to determine how their presentation will look. By completing a storyboard, the teacher can make suggestions and answer questions prior to the student going to the computer lab, using laptop carts, or one-to-one devices. Allow students to share their storyboards with peers for feedback and constructive criticism (see attached storyboard).
- 7.) I would more strongly suggest that teacher takes the time to thoroughly review the parameters and the rubric for the presentation. The teacher should have the classroom ready for the presentations by having all equipment properly connected and tested prior to the students' arrival. By using a projection device, the class can see the slideshow as it appears on the computer screen (see attachment for sample slide show).
- 8.) The lesson culminates with the student presentations. Students are graded using the attached rubric. Allow peers to use rubrics to score student presentations.

**Attachments:**

Scrapbook Rubric.doc  
Criteria  
PowerPoint Storyboard 1.doc  
African-American mathematicians research form.doc

**Assessment**

**Assessment Strategies** The teacher will use rubrics (see attachment) to assess student knowledge. Students will engage in peer reviews to help each other edit and improve their work prior to teacher's final assessment.

**Acceleration:** Students who excel in the use of technology tools and resources may exceed project requirements or serve as peer helpers. Also, they may want to produce a

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broadcast, develop a trivia game using information learned, or any other related activity that would encourage others to explore scientists, inventors or inventions.

**Resources and References**

- Mathematicians of African Diaspora  
<http://www.math.buffalo.edu/mad/madgreatest.html>
- 10 Famous Black Mathematicians and Their Contributions  
<http://www.famous-mathematicians.com/10-famous-black-mathematicians-and-their-contributions/>
- African and African-American Contributions to Mathematics  
[http://www.3rdspacecc.org/uploads/1/8/3/0/18304817/aaa\\_contributions\\_to\\_math.pdf](http://www.3rdspacecc.org/uploads/1/8/3/0/18304817/aaa_contributions_to_math.pdf)
- Contributions of African Americans and Other Minority and Ethnic Groups to Mathematics and Science  
<http://www.ms.uky.edu/~lee/minority.html>
- 9 Great African Americans Mathematicians That Changed the World  
<http://www.dreambox.com/blog/in-honor-of-black-history-month-3-great-african-american-mathematicians>