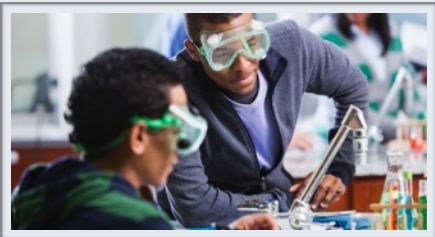


# White House Initiative on Educational Excellence for African Americans

## Fact Sheet: Supporting Science, Technology, Engineering and Mathematics (STEM) Success among African American Students



Improving science, technology, engineering, and mathematics (STEM) education is a priority, especially among African American students. Though America will need to add 1 million more STEM professionals to meet workforce needs by 2022, African American youth are the least likely racial group to enter technology fields (U.S. Department of Labor). In order to ensure our students achieve in STEM fields, we must support and encourage participation and success in STEM among students of all ages.

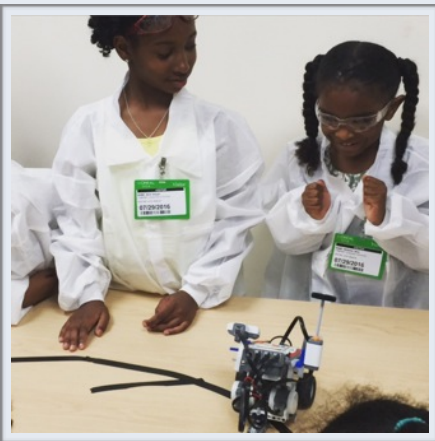


### STEM Success Begins at Home:

The National Assessment of Educational Progress (NAEP) administered the first-ever nationally representative assessment of technology and engineering literacy in 2014. Out of 21,000 eighth-grade students surveyed who took the test:

- Nearly two-thirds (63 percent) said that family members taught them about building things, fixing things, or understanding how they work.
- Only 13 percent said they were taught by their teachers.
- Almost one-fifth (19 percent) said they taught themselves.

This data suggests that parents and other family members have an important role in technology and engineering literacy. It is important for students to continue learning outside of the classroom.

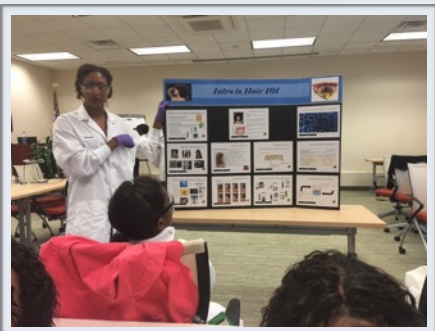


### Gaps in STEM Related Academic Performance Persist:

The 2014 NAEP technology and literacy assessment also found gaps among eighth-graders that spanned across race and class.

- Just 18 percent of black students scored at or above proficient, whereas 56 percent of white students fell into that category.
- Students who qualified for free or reduced-price lunch scored an average of 28 points lower than students from more affluent families.

African American students are more likely to struggle with environmental barriers that can reduce academic performance, and not see themselves as having a place in the STEM community. We can help by increasing the number of diverse mentors and learning opportunities in and outside of the classroom.



To learn more about the White House Initiative on Educational Excellence for African Americans visit [www.ed.gov/AfAmEducation](http://www.ed.gov/AfAmEducation). Follow us on Twitter @AfAmEducation. Like us on Facebook @OfficialAfAmEducation. Share a picture with us on Instagram @OfficialAfAmEd.

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## The Gender Gap in the Pursuit of STEM Careers

Closing gaps in STEM achievement should focus on encouraging STEM interest in all African American students. Girls and boys are equal in their ability to achieve in STEM careers. In fact, the 2014 NAEP assessment found that 45 percent of females met or exceeded the proficient level, compared with 42 percent of males.

At the undergraduate level, the rate of science and engineering courses taken by girls/women shifts and gender disparities begin to emerge, especially for minority women (National Science Board):

- In 2012, just 11.2% of bachelor's degrees in science and engineering, 8.2% of master's degrees in science and engineering, and 4.1% of doctorate degrees in science and engineering were awarded to minority women.
- While women receive over half of bachelor's degrees awarded in the biological sciences, they receive far fewer in the computer sciences (17.9%), engineering (19.3%), physical sciences (39%) and mathematics (43.1%).



## Ways to Support STEM Success Among African American Students

- 1. Provide additional support to students pursuing STEM degrees:** African American students are more likely than any other racial group to switch their majors from STEM to non-STEM programs. Upperclassmen mentorship, academic support services, and growth-mindset messaging can increase resilience.
- 2. Create and connect students to additional opportunities outside of the classroom to develop skills:** This can include after-school programs, museum visits, and conversations at home.
- 3. Expose students to African Americans who have succeeded in STEM careers:** African American students do not see themselves as having a place in STEM. Schools can do this by highlighting scientists of color in their curriculum. At home, having conversations about the history of African American excellence in STEM can also be a source of encouragement.

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