

AweSTEM! 2018
Theme: *Diversity in STEM*

MySTEM – Mentoring for Success in STEM

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How This Lesson/Activity Connects to *Diversity in STEM*

Big Brothers Big Sisters provides mentors to youth facing adversity. MySTEM is an enrichment program which provides STEM engagement opportunities for all mentors and mentees in BBBS of Central MA / Metrowest's service. The youth in our program are 54% female, 41% Hispanic, 15% African American, and 14% multi-race. Over half live in a single parent household, and 85% receive free or reduced lunch. All of these young people are at risk of falling out the STEM pipeline. The goals of MySTEM are to increase self-esteem, sense of belonging, and access to quality programming in STEM, to help tear down socio-emotional barriers to pursuing a STEM career. By breaking down these barriers we hope to open a pathway to STEM for our youth.

How Lesson/Activity Was Intentionally Designed to Impact an Element of *Diversity in STEM*

This mentoring program was designed to encourage the youth who are statistically marginalized to pursue STEM as an interest or career. We identified the barriers that BBBS is well-equipped to tackle as (as outlined by the USNews/Raytheon index and Change the Equation) to STEM success as 1) access to STEM role models, 2) a sense of belonging, 3) confidence, and 4) access to hands-on STEM activities.

Lesson Outcomes: How the Lesson/Activity Supported *Diversity in STEM*

We surveyed youth in our program who participated in MySTEM programming, and those that did not. 96% of youth who participated agreed with the statement "I feel more confident trying STEM activities when my Big is with me." Bigs also felt more confident about leading future STEM activities after participating in MySTEM, and were more likely to want to do more STEM with their Littles. We also saw a 14% increase in youth who identified as feeling "good at STEM," and an increase in Littles who felt they wanted to do more STEM activities. As our youth are mostly from marginalized communities, we hope that this programming will plant a seed to help encourage these youth to be more confident in STEM to pursue more STEM in their future.

Other Information Related to this Lesson/Activity and *Diversity in STEM*

Anyone who works with youth inside and outside of the classroom can help lift them over the barriers that block their pathway to STEM that are outside of just education. Some best practices include:

- 1) Find role models in STEM that look like that student. Present them with professionals from their neighborhood, their race, their gender identity, or other factors that might marginalize them in the community. In-person is great, but even just highlighting media representation can be powerful.

- 2) Break stereotypes and be careful about the language you use around your students. Constantly focusing on how hard you need to work to be a STEM professional or how much math skill you need to have can turn off students who believe the field is out of their reach.
- 3) Focus on the emotional blocks that can stand in the way. Know that some youth may immediately feel like they are not “supposed” to be good at this subject, and help gently coax them to feel confident rather than focusing on academic success.
- 4) Focus on how STEM professionals are helpers. Data show that youth of color and girls respond well to messaging about how science and engineering improves the lives of people in their community and around the world.
- 5) Open up your social capital to the young people in your life. Many of our Littles don’t think they know anyone who is a scientist or an engineer, and think they don’t think that they could meet one if they wanted. Help ensure that they have open lines of communication and the social skills to network with the people in your professional web.
- 6) Guide young people to mentors! Formal, dedicated mentoring through a referral to Big Brothers Big Sisters or other programs can be a life-changing intervention, but so can an informal mentor taking the quality time with a young person.