

BUILDING UNIQUE
INVENTIONS TO
LAUNCH DISCOVERIES,
ENGAGEMENT AND
REASONING IN STEM

TUSKEGEE BUILDERS ACADEMY

JUNE 22, 2018

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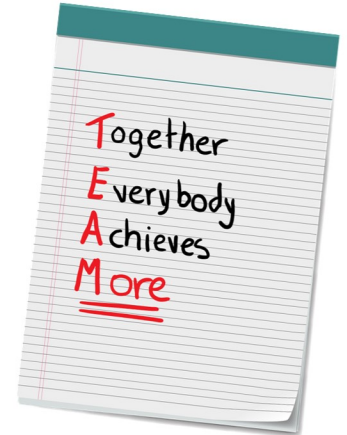
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CREATIVITY GALORE!

Our teams are working hard to develop the first version of their prototypes! They have selected materials, began building components of their final product, and have redesigned their prototypes many times. Through this process they have strengthened their

teams, learned many skills for the workplace, and cemented their passion for STEM. As the final week of the summer Academy approaches, they are also begin to plan how they will continue to work on their products through the upcoming academic year.



GET TO KNOW OUR SCHOOLS!

Notasulga High School is part of the Macon County school district, and it is located in the historic town of Notasulga Alabama. The town

is small, with a population of 954, and a single K-12 building serves over 300 students, playing a pivotal role in the life of the town. The name of Notasulga comes from the Muskegean word for "many teeth," a name that was probably given due to its proximity to a creek with that name. The athletic record is truly impressive for such a small school. The Blue Devils football, basketball, and track teams have been regional champions and fill their town with pride. Notasulga High has a strong commitment to STEM education, and are a

participating school in GEAR UP Alabama, a program that increases readiness for post-secondary education in the state of Alabama. This is the second year that Notasulga High participates in the BUILDERS Academy, with 1 teacher and 9 student participants.

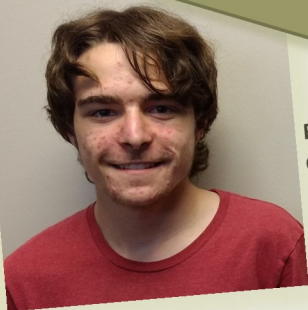


Lee High School is part of the Montgomery Public Schools. The city of Montgomery is home to over 200,000 people, and is an important part of the history of the United States: It was the first capital of the Confederate States of America, and a major site of events for the Civil Rights Movement. Lee High is located in the North side of the City of Montgomery, and serves over 1,500 students in the 9-12 grades. Lee High has a strong athletic program, and the Lee Captains have won many different state and national championships, and add to the liveliness of the school. As the home of 5 universities, education is an important part of the city, and Lee High is not an exception. This is the first year the school participates in the BUILDERS program, with 4 teacher and 32 student participants.

Meet our Peer Mentors

WHAT IS IT LIKE TO COME BACK AS A PEER MENTOR?

**LATHEN
OLIVER**



**Rising Senior,
Central High
School.** "My
experience at
the academy
has been

enlightening. It has opened my eyes to some of the struggles engineers go through on a daily basis, such as the struggle for materials and having to rethink ideas. This camp has also allowed me to see the more social aspect of engineering and how engineers have to rely on others for not only inspiration but also critiquing. This camp has been a extremely important experience for my future career goals in



In 2017, we had participating students from three high schools: Notasulga, Booker T. Washington (Tuskegee, AL), and Central (Phenix City, AL). Some of these participating students distinguished themselves in terms of motivation, dedication, and leadership, and were invited to participate in the 2018 Academy as **peer mentors**, students who serve as guides and provide assistance to this year's BUILDERS. Our peer mentors not only

assist with all aspects of research, design, and construction, but also provide support for group functioning, act as cheerleaders when ideas do not go well, and keep the upbeat nature of our camp going on a daily basis. We asked our incredible mentors to describe what they learned from participating in the Academy, as well as give us an insight on what it means to be a peer mentor. Here's what they had to say!

**TRAVERUS
THOMAS**



**Rising Junior,
Booker T.
Washington High
School.** "The
academy taught
me so much! Not

only did it allow me to show my intelligence, but it also trained me on how to be a better leader and critical thinker. I doubt I could have gained the skills I have today if it wasn't for the academy last year. Though the experience I received last year was phenomenal, it does not beat the dedication and ingenuity of this year's academy. The students here are moving at an extreme pace, learning and coming up with better ideas every day!"

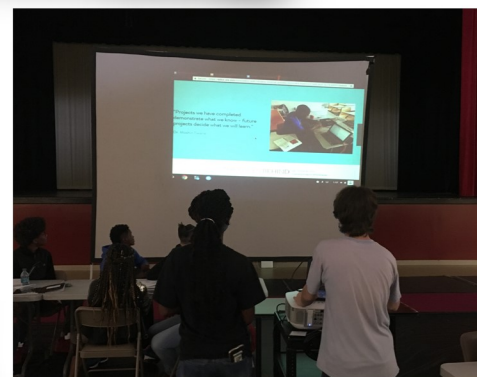


Traverus and Lathen have set up a "programming station" and are assisting this year's BUILDERS with development of code for their prototypes.

VERONICA SANDERS

Rising Senior, Central High School. "I plan to attend the University of Alabama in Birmingham next fall to pursue a degree in biology. While I attended the

BUILDERS Academy last year, my group created a portable water filtration system that could be utilized in rural areas. This was a once in a lifetime experience, that opened my eyes to third world problems within our own country. This year, as a mentor, I aim to help guide the 2018 BUILDERS Academy participants into the right direction and open their eyes to all the possibilities available in STEM."



Janica and Lathen explain how to create an e-portfolio to keep a record of the process of developing the BUILDER prototypes.

JANICA BROOKS

Rising Senior, Booker T. Washington High School. "At first I was skeptical about applying for the program because of my confidence. I was

afraid of being an outcast or not even being accepted in the academy. During the program, we were challenged socially and physically. I enjoyed the fact that we were in control of our entire project. We were able to determine our own deadlines, what materials we could use and how to collaborate with our teammates. The program overall was a definite success for me. Not only did I gain colleagues, my team and I also produce an effective prototype."



While technically not a BUILDER, **Delayna Harris** is participating in our BUILDERS Academy as a near-peer mentor. Delayna is a Biology and Chemistry student at Tuskegee University. She is a scholar in the MAKERS program, which provides college students with the opportunity to develop projects that use their STEM knowledge in practical ways that prepare them for the workforce of the 21st century.



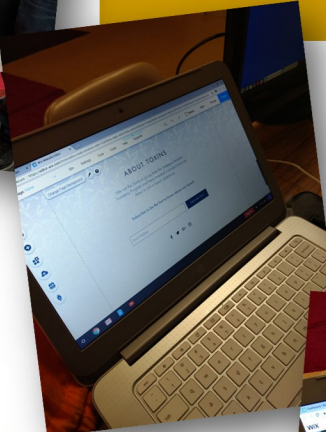
www.stem-makers.net

Selecting materials & documenting the process

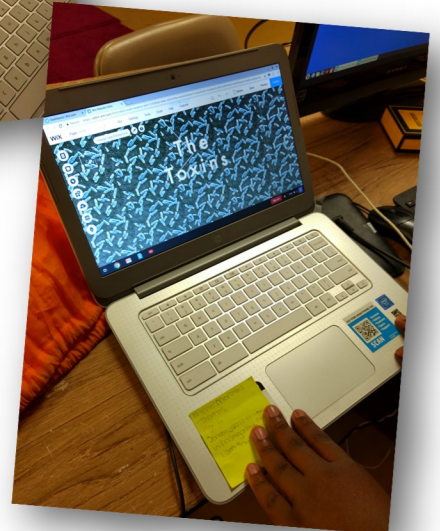
Summer Academy — Week 2



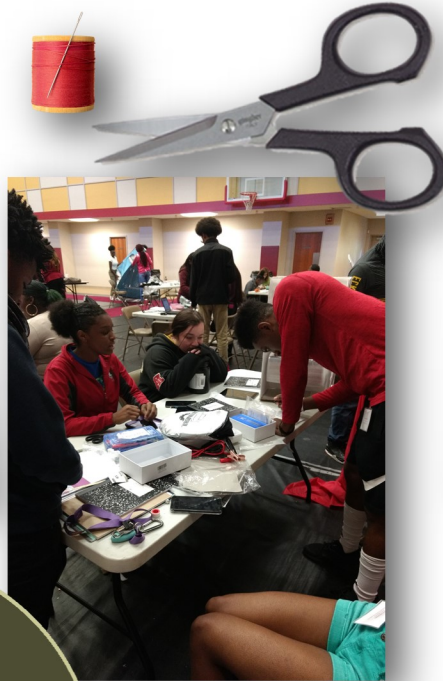
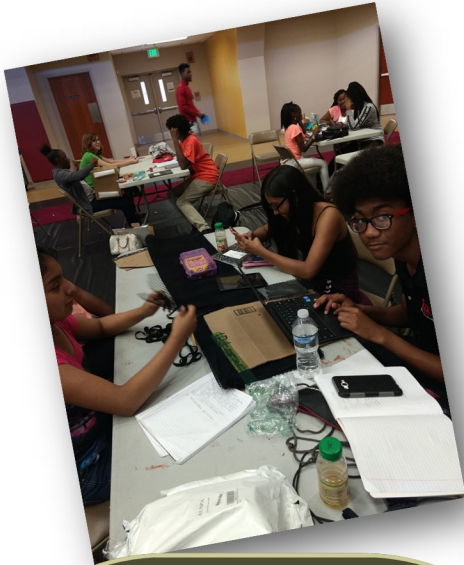
Things got serious this week! Teams have begun identifying the materials they will need to create their prototypes, and the materials have arrived. One of the biggest lessons of the Academy is to **work within a budget**. Students are quickly learning the value of modeling, designing, and prototyping before using their materials.



E-portfolios are electronic documents that showcase a process over time. Our students document their learning process (their research and thinking process to reach a solution to the problem they chose) as well as the process of design, development, and construction of their prototype. Students are encouraged to **record successes and failures**.



Teamwork and STEAM!



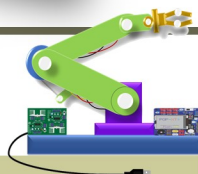
Designing a useful product requires understanding that this product must appeal to the user. Thus, our students' experience is a true STEAM experience in which science and design come together to complement each other.



Preliminary testing



The question we hear and ask most often is, "will it work?" The only way to know is by testing every step of the process, determining what works, and learning from successes and failures.



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TUSKEGEE BUILDERS ACADEMY



Building unique inventions to launch discoveries, engagement, and reasoning in STEM

How can I learn more about the BUILDERS program?



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www.TuskegeeBuildersAcademy.org



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