

2017 STEM DAY INFORMATION

Fulton Science Academy Private School created an all day, school-wide celebration of STEM on May, 5, 2017. The school was transformed into a Science, Technology, Engineering, and Math playground where students, educators, community members and parents came together to create an out of this world STEM experience. Students experienced STEM at a whole new level, one that left them eager to be the next inventor, leading scientist or technology superstar.

Students from pre-K through high school spent the day participating in unique STEM sessions that included collaborative engineering projects, getting hands on with new technology, and elaborate science demonstrations.

URL for STEM day video: <https://www.youtube.com/watch?v=AYyj1WqOLWU>

Newspapers article:

<https://www.northfulton.com/stories/fsa-students-celebrate-stem-day,105771?>

When were the plans initiated?

Plans for STEM day 2017 for Fulton Science Academy Private School began a full year in advance. As the lead STEM Day Coordinator, an FSA high school parent, Alison Gurevich, led the preparations which included: creating curriculum for 19 of the student sessions, booking vendors, coordinating the schedule for 28 groups of students to be simultaneously moving through up to 32 distinct STEM sessions for the entire school day, and arranging over 50 volunteers needed to make the day a success. Our STEM day is not just an assembly. It is a program that is unique to any other school. Our programs are largely created in house with curriculum written specifically for our students by volunteers and educators at Fulton Science Academy. Our students rotate through sessions all day while teachers, community members, and volunteers educate students collaboratively.

How many students participated?

The entire student body from grades Pre-K through High School, 460 students.

How does FSA advance STEM education among non-traditional student populations?

The focus for our STEM education is to always provide a rich learning environment where all students are challenged to their level of ability while being exposed to new ideas and concepts centered on the STEM initiatives. Our goal during STEM day and throughout the year is to make the learning so engaging that the students do not think of it as learning core STEM concepts, but simply as learning something they didn't know when they walked in the door.

In order to meet the needs of all students at Fulton Science Academy Private School, our STEM activities and curriculum are created specifically for four grade based 'tracks', but each session is able to be adjusted by the session leader for the grade level and more specifically to each student or student group as they participate. With both teachers, volunteers, and a range of STEM professionals on hand throughout the day, all students are able to fully participate and excel in every activity offered. We believe all students benefit from hands-on instruction and collaborating with peers and our STEM programs start with that in mind.

**List of competitions and programs students participated in.
What did the students do? Impact on classroom learning and results of their efforts?**

A total of 32 unique sessions were planned and implemented for our 2017 STEM day. 25 were created in house or created in collaboration with STEM professionals specifically for our STEM day and the remaining seven were professional STEM programs offered by vendors. As we have students in Pre-K through high school, we ran four distinct 'tracks' which each had a unique all day curriculum. Each student participated in eight to eleven different STEM sessions that were 25 to 50 minutes long. Each session was designed or selected to enhance standards instructed at FSA and include the newest and most up-to-date 21st century concepts.

Students were active participants throughout the day. The goal was to extend instruction outside of the classroom and build a toolbox of concepts that could be referred back to for years to come. Any teacher at any level can refer back to a STEM day activity and students at FSA can then connect the concepts taught in the more traditional classroom setting to a particular STEM day creation or activity.

An example of sessions include: Math and Music with Grammy Award nominated pianist John Burke, Collaborative Art and Engineering using 3Doodlers, Man Made Man Powered submarines, science demonstrations with the Georgia Tech Research Institute, the physics of juggling, collaborative engineering challenges in each track, as well as sessions centered on levitation, static electricity, aerodynamics, wind resistance, structural engineering and more.

Proudest achievement on STEM Day?

The greatest accomplishment was seeing how excited the students were at the end of the school day. The school was buzzing with stories, students comparing their results from the day's activities and students eagerly dreaming of STEM Day 2018. Not only were the students excited, the adults in the building were just as thrilled about the day. It was amazing to see how one day can come together and define what Fulton Science Academy is all about.

How were your STEM day efforts innovated?

We have several goals in organizing our STEM day to make it unique, innovative, and overall the best day possible for all of our students.

The first goal is to purchase and use new technology that then remains at FSA to be used for future projects. For this STEM day, our parent organization purchased 24 3Doodlers for students to work with in sessions that combined 3-D engineering with art.

A second goal is to build relationships and connections with outside business partners, organizations and educational leaders that are actively innovating in the real world. We reached out to a range of STEM professionals and Makers all around Georgia to work with us and our students. As we build relationships for future STEM related projects at FSA, many of these people volunteered their time to lead sessions and collaborate on the STEM day curriculum.

The third innovative goal for our STEM day was the implementation of collaborative structures that students would contribute to throughout the day. Rather than a certain activity to be “done” in a 25 minute time block we wanted students to be able to see something growing and changing throughout the day as different students had their time in those sessions.

The final goal was to be able to build a day that we hope will one day be planned and organized by our high school students, and run by them for our pre-K through eighth grade students. As our future leaders, we want to give them the leadership opportunities as well as encouraging sharing their own STEM innovation and knowledge. This year our high school students participated in sessions in the morning and co-led sessions in the afternoon.

How did STEM day inspire students to become interested and engaged in STEM careers?

Our day specifically brought in individuals that are currently working in the STEM fields. Our students had a unique opportunity to interact with these individuals as they become more aware of STEM related careers. Our presenters included inventors, scientists from the Georgia Tech Research Institute, musicians and others who brought their STEM passions to our students.