



BROWNCOATS

Team 7842 Engineering Notebook - *FIRST* Relic Recovery

Date	Start Time	End Time
September 9, 2017	9:00 am	4:00 pm
Location: Huntsville High School Freshman Academy		

Attendance:
<p>Team: Ian, Megan, Joseph, Patrick, Brooklynn, Andrew, Anthony</p> <p>Mentors: Mr. Stewart, Mr. Bateman, Mrs. Stewart, Mr. Holbrook, Mr. Cherry, Mrs. Bateman, Mrs. Thompson</p> <p>Student Mentors: Ryan, John, Tala</p>

OUTREACH: 2017 *FIRST* Tech Challenge Kickoff

The Browncoats co-hosted Alabama's *FIRST* Tech Challenge (FTC) kickoff with FTC Team 10165 Apex Predators. All Alabama and Tennessee teams were invited to attend, along with groups of people interested in starting their own FTC teams. Kickoff was larger this year, in part due to our efforts to grow FTC in Alabama, which is very encouraging for the future of the program in our state.

We were able to talk to other teams about how they were planning for their seasons and what goals they were hoping to accomplish. For the new teams, we had an engineering notebook station set up, so they could come by, check out our 2016-2017 notebook, and learn everything they could on how to keep one. Ian also had the Creo drawings set up to show them the advantages of working in CAD.

After the challenge was released, we immediately started brainstorming. Our initial thoughts and actions were to try and determine the value of each individual scoring method. Andrew and Joseph worked on a scoring chart. We spoke to members from other teams and were able to put together some of our ideas and thoughts. One of the teams we helped start was there, and we were able to give them a few tips towards building. *FIRST* in Alabama was kind enough to provide the Relic Recovery field, so we were able to study how the field elements work and the best way to go about collecting them. Because we had our prototype and testing robot with us, we were able to use it on the field to test the balance board.

It was a really great experience to meet with other teams and talk about different opinions and ideas. We can't wait to compete with them at the Alabama State Championship! We are extremely excited for the challenge this year. It's definitely completely different from Velocity Vortex, and we are curious to see the different designs that will come out of this challenge.



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Date	Start Time	End Time
September 13, 2017 - Ongoing		
Location: Athens Renaissance School		

Attendance:
Team: Rosie Mentors: Student Mentors:

OUTREACH: Athens Renaissance Robotics Club

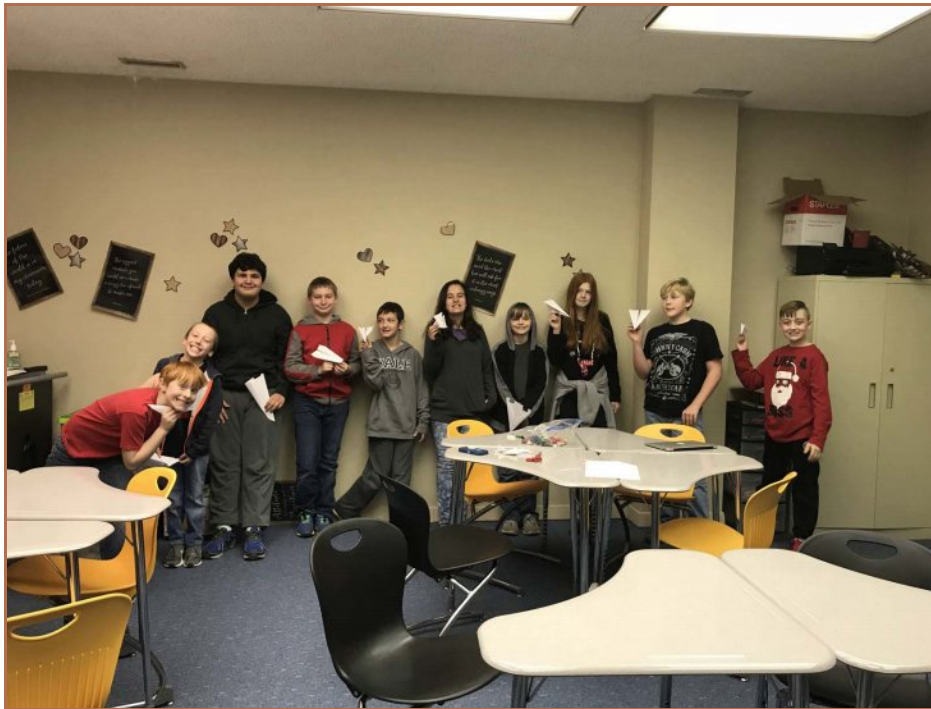
This school year I have helped to start and have been teaching a robotics and STEM club at my school for grades 4-8 with about 30 students. We do lots of projects and field trips to teach the kids about Robotics and STEM. Through the first semester we have done several interesting projects; the first was “robotic arms” made out of cardboard string and hot glue. I organized a field trip to the U.S Space and Rocket Center with a NASA engineer as our personal tour guide. And in the end of the first semester and going into the second semester, we are currently planning a science fair with the students working on anything from improvements on road safety to catapults and drones. The students are learning a lot of things beyond their normal class material and they’re having a lot of fun.





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Date	Start Time	End Time
September 25, 2017 - ongoing	4:00 pm	6:00 pm
Location: Endeavor Church		

Attendance:
Team: Megan Mentors: Student Mentors:

OUTREACH: Endeavor STEAM Machines Weekly Meeting

One of the teams we helped get started—12856, Endeavor STEAM Machines—asked some of us to come to their weekly meetings to help them out with building and programming. I started attending their meetings on September 25th, 2017 and I plan on attending most of their meetings from here on out. They meet for two-three hours every week on Monday evenings.

Because they're a new team, they won't always have the resources or knowledge to keep them going, and that's what I'm there for. I won't build anything for them, however, I will offer my opinions and guidance. The Browncoats donated a Matrix building kit to them so they could get a feel for the parts and work on those over the summer. They already have a running chassis and drive-train built and have already started prototyping lifts and claws for their glyph collection system. I can't wait to see how their final product of the robot turns out.





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Date	Start Time	End Time
October 7, 2017	7:00 am	5:00 pm
Location: Downtown Madison		

Attendance:
Team: Ian, Megan, Joseph, Patrick, Brooklynn, Rosie Mentors: Mr. Stewart, Mr. Cherry, Mrs. Bateman, Mrs. Stewart Student Mentors: Ryan

OUTREACH: Madison Street Festival

On October 7th, we attended the Madison Street Festival. We brought the Velocity Vortex field along with our 2016-2017 competition robot and our prototype and testing robot. We handed out 3D printed robots and robot whistles along with tons of flyers about *FIRST* and the Browncoats. We had many people interested in joining *FIRST* Tech Challenge and *FIRST* Lego League.

The kids loved learning how to drive our prototype and testing robot, Binky! Each kid who drove Binky earned a driver's license. There were many who wanted to learn everything they could about robotics. We explained the 2016-2017 game to them, along with the new 2017-2018 game. We showed off Velocity Vortex Vera one last time before we disassemble her at our next meeting. They loved watching Vera shoot the particles into the Vortex and were fascinated by how she lifted the cap ball. It was such a joy to see them so enthusiastic about STEM. One of our goals is to introduce young ones to STEM and this was the perfect way to do that!

A few mentors from other FTC teams came to our booth and asked us a few questions about how our robots worked and how we programmed them. We told them everything we knew, along with a few tips and tricks we'd learned from the past few years competing as a team.

Many of the parents were familiar with *FIRST* robotics, but hadn't heard of *FIRST* Tech Challenge. They were intrigued by the program and wanted to learn more about it. They were so impressed with everything we'd achieved and were fascinated by the robots we've built. A lot of people thought it was really cool how we use android phones to connect the robot to the controller.

Nearly 40,000 people came out to visit the Madison Street Festival. It was the perfect opportunity to spread awareness of *FIRST* and STEM!



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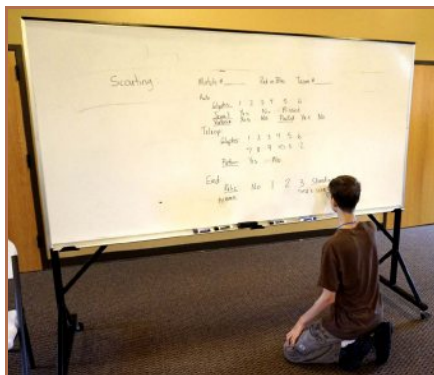
Team 7842 Engineering Notebook - *FIRST* Relic Recovery

Date	Start Time	End Time
October 14, 2017	10:00 am	3:00 pm
Location: Hobbs Street Church of Christ, Athens		

Attendance:
Team: Anthony, Ian, Megan, Rosie, Brooklynn, Patrick, Joseph Mentors: Mr. Stewart, Mr. Bateman, Mrs. Bateman, Mr. Cherry, Mrs. Thompson, Mrs. Stewart Student Mentors: John, Tala, Ryan

OUTREACH: Workshop/Build Day

The Browncoats hosted a build day for local FTC Teams, along with a few Tennessee teams. We started at 10:00 A.M. and finished at 3:00 P.M. We set up the field and brought all of our tools, our prototypes, and our past engineering notebooks. We wanted to help new teams get the hang of the engineering notebook, and for those without a field, we wanted to give them the opportunity to see it. We worked on programming and building, along with strategy. Megan and Anthony worked on the relic lift, Brooklynn worked on the jewel system, and Rosie and Megan worked on the chassis together. Our glyph collection system is almost complete for now, we're just waiting for a few more parts to come in the mail so we can finish it. We got a lot of prototyping accomplished. With those who attended, we showed them our engineering notebook and gave them some tips we'd learned over the past few years. It was a great opportunity to reach out to the other FTC teams in Alabama and help the new ones get on their feet.





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Date	Start Time	End Time
October 21, 2017	9:00 am	3:00 pm
Location: Bolton, Mississippi		

Attendance:
Team: Ian, Megan, Brooklynn, Rosie, Patrick Mentors: Mr. Holbrook, Mrs. Bateman

OUTREACH: Ready or Not Scrimmage

We were invited by FTC team 8651, Wait for It, to attend their Ready or Not scrimmage/build day. Two long car rides sandwiched a thoroughly exciting and motivating day! The scrimmage was held in a hangar used for small aircraft and in a building that helped train college students at Mississippi State in programming and building UAVs or drones. We brought our robot and our tools to work on the robot there. While there weren't any actual matches, it was a great opportunity to work on the robot and talk to a lot of other teams.

Leading up to the scrimmage, we worked all week to have a working prototype ready, however, by the time we got there, the elevator wasn't working to score glyphs yet. Throughout the day we continued building on it, and some of the other teams gave us a few tips on how we could fix the problems we were having. By the end of the day, we were able to score a full column of glyphs.

A lot of teams were using mecanum wheels for their drive train, and one of the teams was having a lot of trouble coding theirs. Since we used mecanum wheels last year, we happily sent them the code we used to help them get the hang of it.

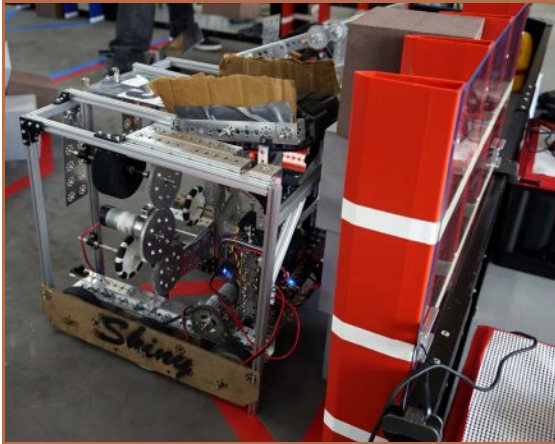
FIRST in Mississippi informed all of the teams about a few rule changes and demonstrated how the new autonomous to tele-op transition would work. We learned a lot of useful information about how the matches will work and how to prepare for them.

This was a great opportunity to connect with other *FTC* teams, discuss ideas, find solutions to our problems, and learn even more about the new season!



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Date	Start Time	End Time
November 5, 2017	11:00 am	1:00 pm
Location: Huntsville-Madison County Public Library		

Attendance:
Team: Megan, Ian, Brooklynn Mentors: Mr. Holbrook Student Mentors:

OUTREACH: Rocket City Nerdcon

The Browncoats attended the 2017 Rocket City Nerdcon at the Huntsville Library Main Branch. We brought our latest revision of our 2017-2018 robot, Vera Mark V. While we demonstrated what we had, we also discussed the Relic Recovery game, and how we plan to tackle all of the challenges.

We went into a lot of detail about the *FIRST* program, specifically how it works and how it can benefit you. Because there were people of all age ranges, we also discussed the different stages of *FIRST* and how they benefit all different kinds of age ranges. Everyone had lots of questions about how the competitions work.

A lot of people were interested in how to become involved with the program, or how to support our team. We handed out a bunch of flyers about *FIRST* and the Browncoats. It was a great way to spread *FIRST* and *FIRST* Tech challenge through the Alabama community.





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Date	Start Time	End Time
December 16, 2017	8:00 am	4:00 pm
Location: 6945 University Drive Suite F Huntsville, Alabama		

Attendance:
Team: Ian, Megan, Patrick, Joseph, Rosie, Brooklynn Mentors: Mr. Stewart, Mr. Bateman, Mr. Holbrook, Mr. Cherry, Mrs. Bateman, Mrs. Stewart Student Mentors: John, Ryan

OUTREACH: Scrimmage/Build Day

FTC 7842 Browncoats, 13808 Time Travelers, and 10165 Apex Predators co-hosted a scrimmage/build day for any FTC teams that were interested in attending. We had seven teams in attendance—including the three hosts. Throughout the day we held twelve matches for any of the teams to participate in to allow them to get a feel for an actual competition.

It was very interesting to see different robot designs. 6-wheel drive trains were the most prevalent, with a couple x-drives as well. Almost everyone was using a variation on the “gripper paired with a lift” design, and we are interested to see how these designs evolve between this scrimmage and State.

At the beginning of the day, all of the teams had a rocky start, though as the day progressed, some were close to filling their entire crypto box. Everyone made a lot of progress and it was a great opportunity for driving practice.

Everyone was helpful towards each other and gave useful tips when others were struggling with programming or building. Several of the rookie teams we helped start asked for a few tips, but all in all, they’ve made incredible progress and already have working robots.

The scrimmage/build day was a fantastic way for some of the local veteran and rookie teams to get together and practice competing.



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