THE NUTS AND BOLTS
TechHOUNDS Newsletter

FOREST DALE SCIENCE FAIR

On September 12, the TechHOUNDS traveled to Forest Dale Elementary School's science fair. The science fair took place after school, so the TechHOUNDS brought the 2016 robot Hammerhead to show off. The TechHOUNDS showed the students how to operate the robot's controls, after which the students were allowed to drive the robot themselves.

Public Relations lead Laura Dobie explains how the TechHOUNDS always find a fun way to portray the robots at demonstrations. "At the 1150 Coding Academy STEM Fair, another demonstration, we got the idea to put a cup with a phone inside on Sentinel, our 2015 robot. Then we called the phone and put it on speaker so when we drove it around to kids it made it seem like the robot was talking to them. We now do it at most of the demonstrations; kids get really excited when a robot tells them that STEM is cool, " Dobie said.

Outreach lead Linnea Schultz describes the event. "We brought Hammerhead to Forest Dale to show off at their science fair. It was super fun. The kids loved driving the robot around after we taught them all the controls. It's really important for kids to get involved with STEM at a young age because they might discover that they really enjoy it. They could be the first person to cure cancer or something like that. If they get started at a young age it will better prepare them for their future," Schultz said.

UPCOMING EVENTS

FEBRUARY 17:
STOP BUILD DAY

CONTENTS:

PHOTOS OF THE WEEK

FIRST 2017 STEAMWORKS

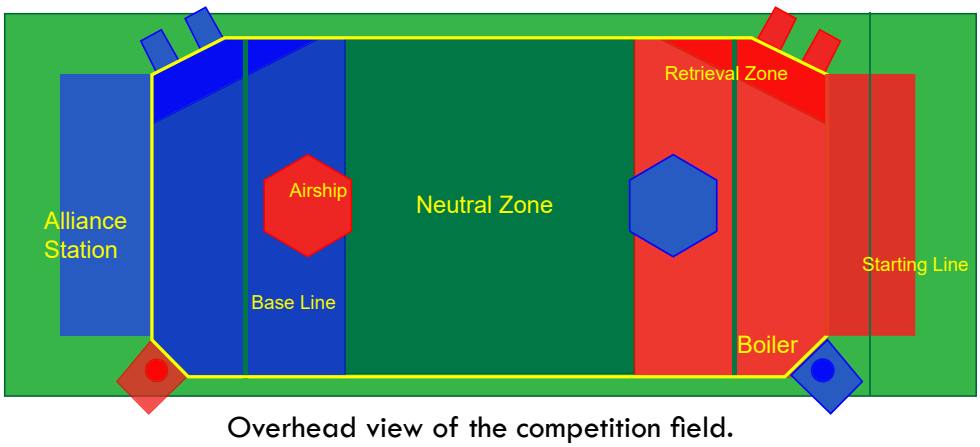
2016 FIRST Stronghold was a hard game to top, but things are looking great for the 2017 game, FIRST Steamworks. Steamworks is themed around the industrial revolution in the late 19th and early 20th centuries. Two alliances of three teams play against each other, both trying to score points and get a higher rank.

This year's game has many different challenges to complete in a two-minute match. One way to gain points is to shoot 'fuel' into the boiler to build up steam pressure. The boiler has two goals, one high (1 point per 3 balls), and one low (1 point per 9 balls). Another way to gain points is by delivering gears to the human pilots. Once the robot hangs the gear on a hook, the human pilot stationed on the airship lifts the gear up to their station to put the gear in place so that they can spin the rotors on their airship (40 points per rotor spinning). Another challenge the game presents is climbing. Similar to last year, at the end of the match teams have the opportunity to climb a rope to score final game changing points. The game challenges every team's technical and strategic abilities.

Each round teams are able to receive four ranking points: one for scoring 40 fuel points, one for getting all the rotors spinning, and two for winning (or 1 for a tie). At the end of qualifying matches the teams with the highest ranks get to choose what teams will be on their alliance for the elimination matches. After a lot of rumors about what FIRST's 2017 game would be, with speculations ranging from water robotics to drones, many are satisfied with the challenges this year.

Electrical lead Megan Singer was worried about the game rumors. "I like this year's game because it poses a great challenge due to the size constraints and what we have to do with the game pieces, but I really like that it wasn't a water game or flying game because we would have to change the entire control system," Singer said.

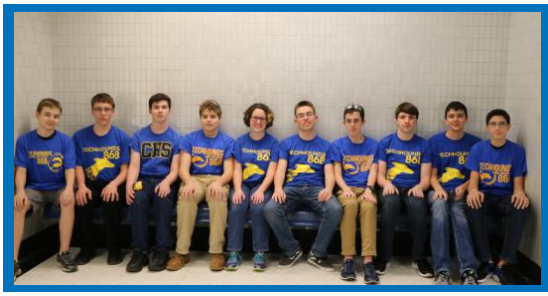
The game is set up to have multiple different ways to score points; this helps with movement and scoring around the field. IT lead Jack Engledow explains the importance of strategy for this year's game. "[The game] is hard because there are a lot of components you have to keep track of. There are the gears, the balls you have to pick up, and then there's also climbing. It's a lot of stuff to worry about because all of those can be game changers, especially with only two-minute matches," Engledow said.



Overhead view of the competition field.

DIVISION UPDATES

CONSTRUCTION – Since the start of the season we've been super productive building the field. The field was finished by the end of day two, the fastest we've ever done. We are going to be using the rest of the season to work on the pit and make the best pit we've ever had. It will last at least five years.



ELECTRICAL – This week we have worked on our batteries and we've reanimated Boomer (our 2013 robot) to work with prototyping. We have worked a little bit more with LEDs and continued to teach people.

ROBOT OPS – We're currently finishing up the wooden and metal drivetrain for the robot and the prototype. We have most of the shooter done, we hope to finish it and then get the collector and hopper systems done by the end of the week.

INFORMATION TECHNOLOGY – We have our scouting system started and it's looking pretty good so far. We fixed most of the stuff on the website. We are still getting sponsors updated but it's going well overall.

PUBLIC RELATIONS – This week has been surprisingly very calm and productive despite working on a bunch of different projects. We finished the nametags and we are working on our spirit wear designs, newsletters, weekly videos, taking photos, and other small projects.

PROGRAMMING – We have been working on using Boomer (our 2013 robot) as a prototype turret shooter, and also testing out vision tracking autonomous code. We've written code for motor testers and we've gotten the basic robot code completed.

GET TO KNOW OUR TEAM

ROOKIE CORNER

CAROLINE RAMSEY

Why did you join?

Well I was really interested in STEM and I just thought it was a really good tactile way to get involved.

What are your aspirations for the team?

I'm hoping to become more involved with construction, and more involved with other divisions.

What have you liked about the team so far?

I like how everybody is involved together and it's not just like each part working separately, everybody has to collaborate.

How did you hear about TechHOUNDS?

I heard about it through a couple of my friends, then saw the pictures and stuff.

MENTOR CORNER

MR. CUNNINGHAM

What do you do?

One of my main positions is mentoring the construction division, but I also help talk to new mentors and get them plugged into different areas.

Why did you become a mentor?

I started to mentor because of my son Ben. As a freshman he wanted me to come help out on the team and be part of it.

How long have you been a mentor?

This is my fifth year as a mentor.

What is your goal as a mentor?

Helping the kids, also mentoring and developing them into leaders. Even if they aren't a lead they can be a leader in their division. The kids are the ones who should be leading this team, they just need the adults and mentors to make sure they will be on the right track. Our lead mentor, Mr. Bonewit, can point the direction, and then we can continue to work as a team and grow not only as healthy divisions, but as a healthy team.

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