

LAKE SHORE FIRST ROBOTICS

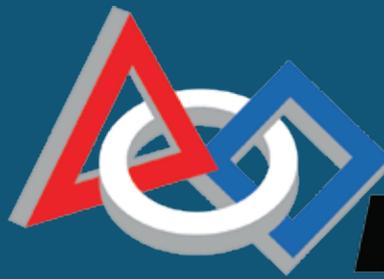
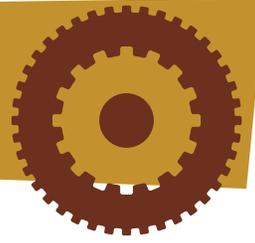


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STEMPUNK4531.ORG

ABOUT US



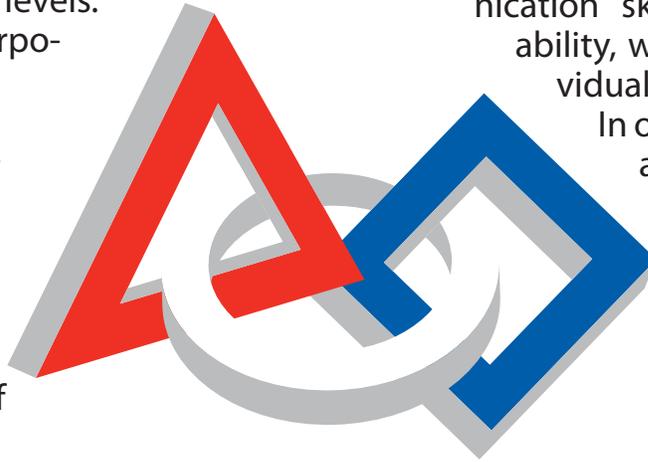
The Lakeshore F.I.R.S.T Robotics program funds, supports, and runs over 25 FIRST robotics teams at several grade levels. It is funded by local corporate sponsors.

The acronym F.I.R.S.T stands for, "For Inspiration and Recognition of Science and Technology." The program itself is a worldwide phenomenon, the brainchild of Dean Kamen. Kamen's dream is to realize the potential of high school students who are missing out on the careers offered in the STEM (science, technology, engineering, and mathematics) fields. Our program's motto, "We don't just build robots, we build people," reflects

how we change the lives of many elementary school, junior high, and high school students. Our students gain self-confidence, communication skills, strong decision making ability, which are valuable to any individual.

In our program, teams of students are driven to cooperate for success. If students don't cooperate and student leadership is lacking, a team cannot be successful at competition. In this way, with cooperation and leadership, STEmpunk, the high-school team out of Mishicot, WI, received the 2014 Northern Lights Engineering Inspiration award.

This award "Celebrates outstanding success in advancing respect and appreciation for engineering within a team's school and community."



FIRST®

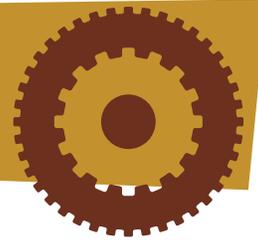
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BOND BRIGADE

FLL KICK-OFF

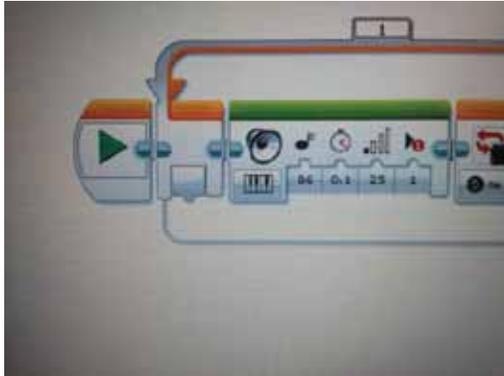
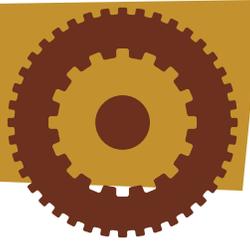


The FLL season is upon us! The kick-off for the event was at the Valders School Cafeteria on Saturday September 12th, and we were happy to see the gym filled with enthusiastic kids from all across Manitowoc County. By 11 o'clock, a total of 15 teams were sitting at their tables eagerly awaiting the challenge video.



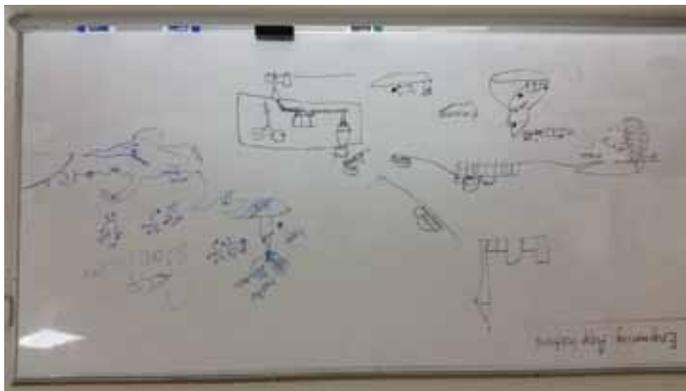
This year's challenge is called Trash Trek, a recycling themed competition that features some of the world's brightest young minds at work analyzing a real world problem we struggle with today. Teams of elementary school students across the world have set out to find a way to make less trash or improve the way people handle the trash we make. Each team will come up with a unique idea that could help our country, but most importantly, these kids are going to learn a lot while doing it. In addition to the research project, each team is designing, building, and testing a LEGO robot. This robot will be able to think for itself on the playing field, an 8'x4' interactive obstacle course. The students program the robot to assess its surroundings and make decisions based on its coded instructions. Using these instructions, the robot is able to navigate the course and pick up objects, deposit them in the correct location, flip levers to operate the models, and gain as many points as possible.





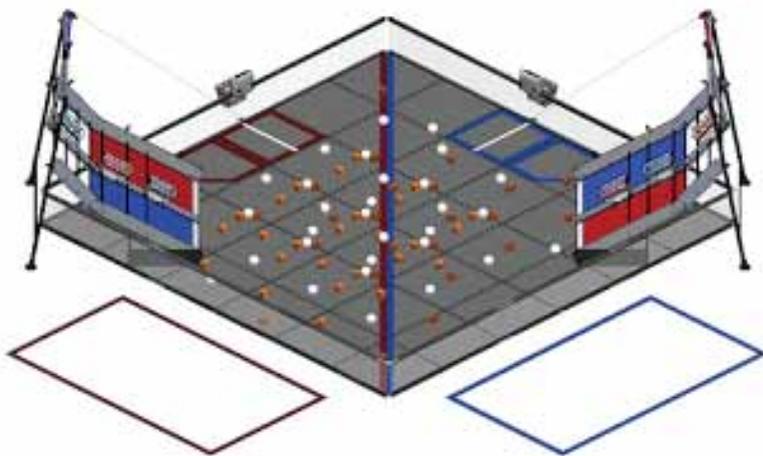
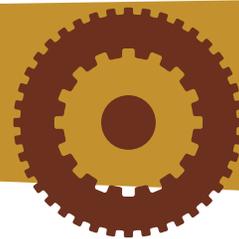
To the left is a clip of code, programmed and compiled by team member Pierson. The code uses a loop to repeat an action, in this case it makes a sound, until an ultrasonic sensor senses an object within 5 centimeters. Pierson and his other team members are working hard at accomplishing this year's game challenge, and are taking it one mission at a time.

On the right, Mentor Nick Ruzek helps his students understand the capabilities of the ultrasonic sensor. Here Pierson is making several readings of different objects, flat ones, round ones, and rough uneven ones. As he makes the readings, he realizes the sensor is most effective when reading a flat surface. This advanced testing will change their design plan and help the team use each available component to its full potential.



Team G.N.U.O.A (Gangster Ninja Unicorns of Awesomeness) is also working hard on a way to help conquer trash. The team has researched different ways that today's industries manage trash, and they learned about a trash managing strategy called plasma gasification. This method uses plasma to melt the trash down to consumable gases and also metal slag, which can then be recovered. Currently the team is researching ways to raise awareness about this concept and help spread its use around the world.

FTC KICKOFF



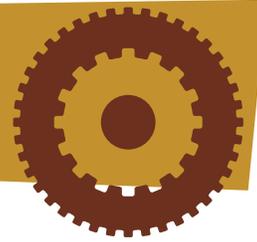
FTC playing field, the structures on either side are the mountains.

While the FLL kickoff was in full swing, we also opened up our FTC season in the same way. We're proud to say our FTC program has achieved a 100% increase from last year. We grew from having one team each in Valders and Mishicot, to two in Valders and one in Mishicot and Kiel. This year's challenge, Res-Q, will truly be a challenge for these teams to accomplish. We displayed the game animation (check it out on the US FIRST website, under FTC), which is a quick overview of the different ways to score in the game. Teams will be

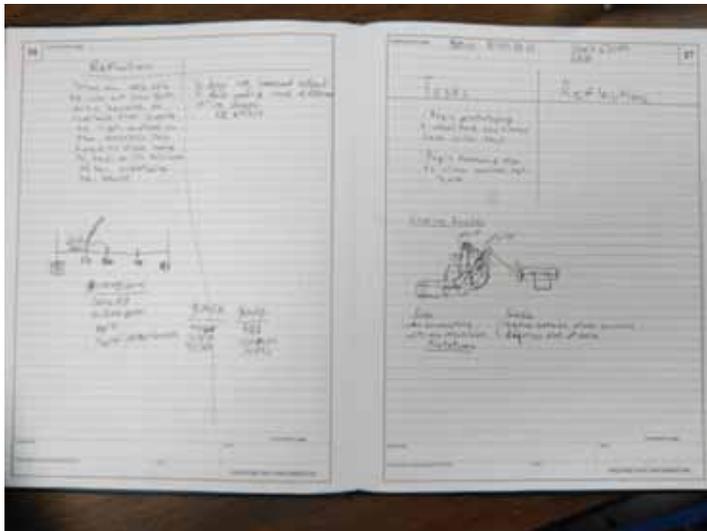
tasked with navigating over debris, depositing "game pieces" into a box, cleaning up debris, climbing a mountain, releasing zip lines, and completing a pull-up at the top of the mountain.

After that general overview, we had each team split up and crunch through the rulebook. Teams split the 30-page rulebook into equal parts, handing one part to each team member. During the first hour, team members efficiently pulled out the information they found important to the game and wrote it up on a whiteboard. Once a sufficient amount of information had been pulled from the rulebook, the teams began assembling a game strategy. This does not mean they jumped in and started tossing out ideas of how the robot will work, but rather that they discussed what the robot needs to do in order to be competitive. Over the rest of the day, the students carried out a very constructive discussion in which they broke down the point values and general appeal of each task.



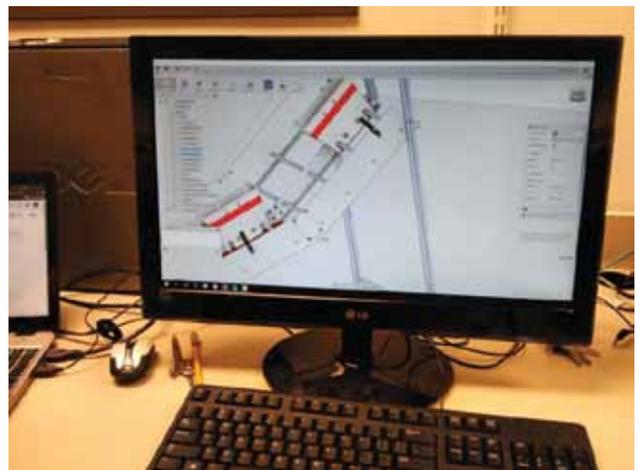


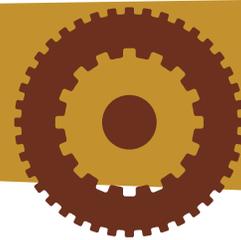
Through the first several weeks of the season, we have been discussing and prototyping different mechanisms and drive trains. Our first week was spent on pure discussion. Veteran members stepped up and led the discussion. We analyzed and broke down different design ideas. At the end of our meetings, we documented the important decisions in our engineering notebook.



After having completed shop training, we are now able to make cheap practical representations of our ideas. We've been building several prototypes and will soon be proving the concepts behind them. Currently the team plans to climb the mountain, and they have been designing mechanisms and drive trains to effectively accomplish the task.

We used our online resources and information to build some practical models of our game field. Within a few weeks, we will get a chance to test our robot on a playing field and compete against a few other teams in a practice regional at Lakeshore Technical College in Cleveland.





Mishicot FIRST robotics team STEMpunk visited Milwaukee on September 26. What for? Why to help raise STEM awareness, of course! We teamed up with Team #1675, "The Ultimate Protection Squad," and thirteen other teams to show the Milwaukee Maker community all about FIRST robotics, the "Varsity Sport for the Mind."

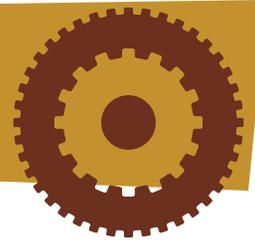
Robofest is an offseason event that aligns with the Milwaukee Maker Faire. This year, it consisted of fifteen teams competing against each other to claim the Robofest trophy.

Our team traveled down to the event to give our incoming students a taste of what the team is like, and also to see the many exhibits at the Maker Faire. Throughout the day, we got Doc Ock out on the playing field and saw a strong team performance. We competed in eight qualification matches and formed an alliance with Wave Robotics, Fondy Fire, and Cougar Bots to compete in the tournament. Our robot complemented those of our alliance partners in a fingernail-biting series of three final matches, from which we emerged victorious, 2-1. Doc Ock got to make some new friends and took some selfies with them.

But Robofest isn't just a chance to have the robots compete on the field. It's also a chance to see some of the fantastic projects that the Milwaukee Maker Community has designed. Students were able to interact with cutting edge innovative projects, as well as watch a demonstration that featured a magnificent Tesla coil. We had a lot of fun down in Milwaukee, and we hope we did a good job spreading the word about STEM and FIRST robotics!



ANNOUNCEMENTS



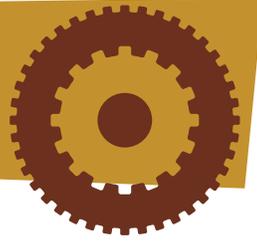
FLL regional at Lakeshore Technical College

Our two-day FLL regional not only hosts over 60 teams from across the state, but also exhibits the jr. high and high school robots in mock competition. The entire event is entirely open to the public, and we encourage you to come check it out. The event is on the 14th and the 15th of November in the Lakeshore building of the Lakeshore Technical College in Cleveland WI. The event runs from around 9 A.M. to 6 P.M. each day.

For more information, please contact Ambrose at ambrosew@stempunk4531.org



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