

STAR Program

star·pro·gram

/stăr 'prō̄ gram/

noun

1. The STAR Program - Starting Technology Appreciation Right - is an outreach program designed for high school students to teach to others to get them involved in technology.
2. The STAR Program spreads awareness of technology, allows kids to have fun, and teaches new ideas that the kids may never have been exposed to before
3. The STAR Program also works to promote FIRST within the community: at schools, community centers, and more.

history - The STAR Program was invented in 2015 by highschool students part of the Red Shift Robotics program in Seattle Washington. They started this program to raise awareness about robotics and technology at schools.

July 20, 2015 - July 24, 2015 - Middle School Sci-Fi Summer Camp

Every year, Red Shift runs a middle school summer camp for robotics. This year's theme was sci-fi! Everyone participated in different ways. There were four activities that the kids could choose, each in two day periods. They would switch groups after the first two days. Matt and AJ wanted to run an activity focused on programming, rather than building. They used Node.js with a board called Tessel. Tessel made it easy for AJ and Matt to control a robot using Node code. In order to teach them basic programming concepts, they programmed a choose your own adventure game. After, the kids controlled an R2D2 robot that Matt and AJ built for them to use. In the first session, they also tried to have the students sign up for GitHub and put their code there, but it didn't work as well as they expected. The students had a really good time. They especially liked the choose your own adventure game. There were also a couple other stations, where they could 3D print, play games, and tour the new STEM building at Seattle Academy. Overall, the students had a great time, learned a lot, and we look forward to running this camp again next year!

August 22, 2015 - Museum of Flight Space Elevator

Red Shift Robotics was invited to Museum of Flight for their annual Space Elevator Contest. We were one of two First teams invited for outreach. We brought two old robots with us and talked with people of all ages about what First Tech Challenge is and what we do. We let children who have never seen a robot before drive out old robots and score blocks and balls. It was a very rewarding experience. This was a chance to reach out to visitors of the Museum of Flight and robot enthusiasts. We got to talk about FIRST and see excited kids driving our robots. While we were there, we also watched the Space Elevator Contest and watched middle and high school teams work to drive their robots up pieces of caution tape.

While we were driving our robot around, we even taped a phone to it and facetedmed the robot! We were able to drive it far away and talk to people through it. We also walked around and

learned about different science concepts too. We learned about actual Space Elevators built by carbon nanotubes. We talked to people interested in Rubik's cubes and FLL teams. It was really fun!



Kickoff 9/12/15:

This year we went to the annual kickoff at the main Bellevue Microsoft Campus. All three of our teams were able to come to the kickoff event where we learned the new challenge for our 2015-2016 year. We watched the FIRST Res-Q game, and were able to ask questions about the new game. We looked at the fields they had set up there at the kickoff and did some brief strategizing.



After the game video release, we went to a few symposiums. Arielle and Robert went to the Engineering Notebook presentation which discussed what the judges look for in a notebook and how to best format the notebook.



STREAM Building Opening 9/20/15:

This year, Seattle Academy opened a new building called the STREAM Building. STREAM stands for Science Technology Robotics Engineering Art and Math. Our new STREAM Building features a whole new robotics lab! We are so excited to have a new lab for all of our supplies and a space for our field set up!



Many of the members of our team volunteered their time to help show off our new space to donors and parents who visited the school Sunday. Some of us were down in our robotics studio showing off our new space and demonstrating a few robot prototypes we had made. We also were showing parents and visitors the field. We talked to a lot of parents about FIRST robotics and the FTC challenge we compete in every year. Many people were interested at the opening to hear about our competitions and our FTC robotics program.

FTC Workshop - 9/27/15

On Sunday the 27th, we hosted our annual FTC Workshop. We had 16 teams from around the Seattle area come to our workshops and presentations. Over 100 students and their mentors listened to presentations on using the new android system, robust design, GitHub, game strategy, and how to make an engineering notebook.



These workshops were given by a few mentors and coaches around the area. Our team also did a presentation on the setup of Android studios. We presented for about 45 minutes, helping teams set up their android kit. AJ also gave a presentation about Git and GitHub and how to use them.



This workshop is a great information session, but it is important for our teams fundraising. We sold pizza and soda for lunch. We were able to raise money for our team's season! We raised \$210 dollars!

In the afternoon, we ran a chassis building session. Our team helped guide rookie teams who are unfamiliar with FTC building. Teams brought their tetrax parts, and we helped them build chassis as well as brainstorm game strategy. The presentations and workshop went all day, and everyone seemed to have a blast!



At the workshop, AJ presented his own workshop called "Git Your FTC On!". The presentation appeared to me to be a real success, especially since there were a lot of people in attendance. He ended up forgetting to do some setup for the live demos, but overall, those still went pretty well, too.

The presentation covered why Git is useful, initializing a Git repository, commits (and the staging area), and branching. Once we had got a base level of knowledge about local Git repositories, we moved on to using Git with other people, and performing operations such as pushing, pulling, and - most importantly - merging. We finished up with a couple of useful Git tools and an explanation of some GitHub concepts like forking and Pull Requests, and how these are different from just generic Git. The presentation was especially fun to give because he got to put into practice ideas that he had picked up from attending a "how to teach Git" presentation at a conference over the summer.

Probably one of the coolest parts of giving "Git Your FTC On!", though, was talking with one of the SWERVE mentors afterwards. He had some suggestions for the future based on how he teaches Git to his team - in particular, he suggested using SourceTree, a GUI interface to Git, instead of teaching the commandline tools. This suggestion was based on his observation that most of the kids he worked with weren't strong typists, and so couldn't understand why they should use a CLI interface which required lots of typing when there was a nice GUI available. This is really useful information that he'll be able to use if he ever teaches Git again.

"Git Your FTC On!" is available at
<http://saasrobotics.com/presentation-git-your-ftc-on.>

Club Fair - 9/28/15

Red Shift Robotics presented at Seattle Academy's club fair. 500 high school students from our school visited the club fair and learned about the opportunities Seattle Academy has. For our booth, we brought a robot and drove it around. We drove it through the gym and allowed people to interact with it. In addition, we spoke with interested participants about what robotics does. This opportunity helped the sustainability of our team through recruitment and awareness of what we do.



Robothon FTC Outreach - 10/10/15





The SAAS Robotics team attended Robothon at Seattle Center to spread the word of FTC. A wide range of people came by to check out what we had to say and the other attractions there were also taking place there. We took a couple of our old robots and drove them around to show what we had accomplished in past seasons. We answered a lot of questions about what we do, who we are, and what challenges we have to

overcome during this season. We had some FTC flyers that we gave out to everyone interested in knowing more about FTC. We overall had a fun time spending our day spreading the word of FTC to a bunch of people.

Boys and Girls Club Visit and Presentation - 10/15/15

A few of our team members went to the Rotary Boys and Girls club in Seattle Washington. We had an enormous amount of fun teaching Elementary students in grades 3-5. Jasmine, who volunteers often at the Rotary club, organized this outreach. This fit very well in our team's outreach audience goal of upper elementary schoolers to middle schoolers.

This outreach was very meaningful because it was very interesting, inspiring, and sad to see students who are so interested in robotics yet do not have a robotics or any technological team or program at their school or Boys and girls club.

We demonstrated our robot from last year, and showed them how it scored. We demonstrated the lift mechanism and explained the game. They were very interested in the robot and what we do as a club in FTC. We taught them about building the robots and our design process, and many of them were familiar with lego building and seemed exciting.



At the Boys and Girls Club we also taught them about the 2014-2015 Cascade Effect came. They had so many questions about the game and how our robots score, move, and play.

Most excitingly, after we left, we were notified by the counselors that some of the students were interested in being part of an EV3 program! We were so excited that our outreach was meaningful and we were able to get students excited about robots and building!

Seattle Academy Open House #1 - 10/15/15

The first Seattle Academy Open House was a major success, attracting elementary and middle school families from around Seattle. There were about 1,000 people that came to our open house, and almost all families went through our new robotics studio! We had a few working robotics on the field that visitors could demo, and we also had old robots set up on tables. A few of the tables also showed off our prototypes. During this open house, we were able to talk to hundreds of families about FIRST and FTC. We also talked about our outreach STAR program and what we do as a club to help the community. The open house helps both our school and our club get more students as well as get our club more members who are interested in robotics to come to SAAS.



Spruce Street Visit - 10/27/15

Robert and Arielle, accompanied by mentor Willy, went to Spruce Street School in Seattle, Washington. We spent a couple days previous preparing for it. We flashed 5 NXTs with the right program, made sure the robot was up and running, and figured out what we wanted to talk about.

One of our activities our team did was a name game! The kids were able to choose transformer names and we started to call them these names during the activities. The kids had so much fun choosing their names and it turned out to be a blast!

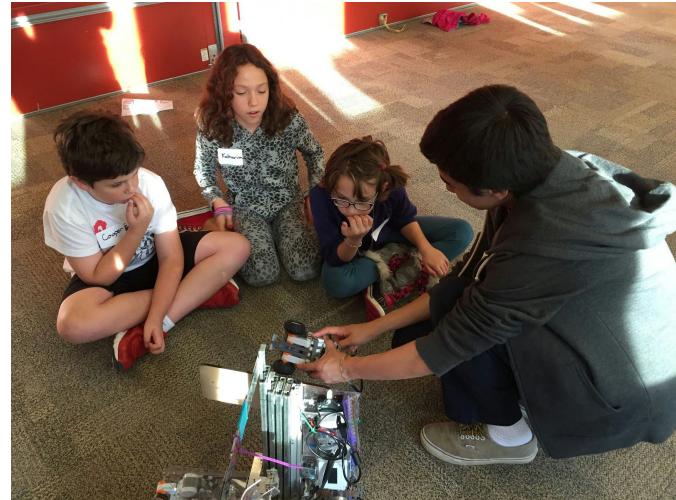
We were there for an hour and a half. The first 45 minutes we spent with their after school kindergartners. The kids were great! Each kid picked a transformer name to start with while we set up the robot. They all wanted to be the same one, even though



Willy had found pages upon pages of names.

After, we pulled out the Mindstorms and taught the kids how to program the robots on the NXTs. They caught on really fast and had a great time! Some of the kids would just yell at the robot to turn, and because they programmed it to turn, it 'listened'. They had such a great time. The students also built some towers and knocked them over.

These block towers that the students built were targets for their robot to hit. They would try to program the NXT's to run into the towers and knock them over. This turned out to be very fun, and some of the students got quite good at programming the robot to hit the towers!



Finally, we showed off the old robot. One side of it wasn't working, but we took that opportunity to teach them about troubleshooting in technology. They found the drawer slide arm on it to be really cool.

After the kindergartners left, fourth and fifth graders joined us. We started by speaking with them about their previous robotics experience and told them about FLL, a FIRST program they could potentially join.

We did the same thing with the older kids that we did with the kindergartners. However, we explained more in depth about what our robot does and how it works. They were fascinated by the pulley system and the gearing for the wheels.

Overall, everyone had a great time and we look forward to doing more outreach with schools!

Open Window School - 10/30/15

Seattle Academy had off of school so Arielle coordinated a visit to her middle school, Open Window School. She brought three alumni with her: Aidan (2856), Turner (6157), and Corey (6157).

They arrived that morning and set up in the middle school tech lab. The kindergartners came in after their Halloween Assembly in their costumes prepared to play with robots. For the first 45 minutes, the three of them taught how to program the mindstorms. Arielle brought

jenga blocks and they would build towers to knock down. Unfortunately, last year's robot would not connect to the computer to run it, so Aidan spent the first class troubleshooting it and trying to get it working.

The kids loved the robots. They were all running around making them move and getting excited when they were able to knock down the towers! Because they were all in their halloween costumes, the girls kept getting the wheels stuck in their dresses because they would drive the robot straight towards them. That was an easy fix though and they continued to play!

The next group came in after and they had a blast too! We had the robot working for them, so they got to learn about how it works for the last 10 minutes.

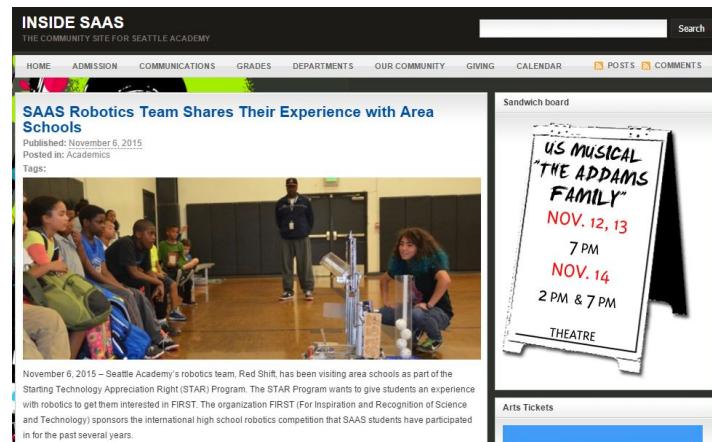
After, Arielle gave a presentation to the seventh grade about FTC. Open Window is thinking of starting an FTC team for them next year and instead of just showing them photos online, they had her present about it. She showed off how the robot worked, talked about the outreach and engineering notebook aspects, and explained how the game works. When she finished, the kids were really excited and all went to sign that they were interested for next year!

We should be heading back to Open Window sometime this year for their Girls in Technology club and to help their FLL team.

Robotics on the school site:

Arielle wrote an article about the past outreach events we have participated in for the school news site:

"Seattle Academy's robotics team, Red Shift, has been visiting area schools as part of the Starting Technology Appreciation Right (STAR) Program. The STAR Program wants to give students an experience with robotics to get them interested in FIRST. The organization FIRST (For Inspiration and Recognition of Science and Technology) sponsors the international high school robotics competition that SAAS students have participated in for the past several years.



Red Shift members Robert Winton '17 and Arielle Isaacs '17, accompanied by club mentor Willy Felton, recently went to Spruce Street School and taught kindergartners, fourth, and fifth graders about robotics. They brought Mindstorms and taught the kids basic programming. In addition, they showed off a previous year's robot and talked about what it took to be on a robotics team. Later that week, Arielle, Turner Riley '18, and Corey '19 and Aidan Wood '16

went to Open Window School and ran the program with the kindergartners there. These four students are all Open Window alumni and wanted to show students what they could look forward to doing in high school. Arielle also spoke to the seventh grade students about starting a First Tech Challenge team at Open Window.

Rebecca Wilbur '18 has been going to Lake Washington Girls School, assisting their robotics team with game strategy and arm building. Robert and Jasmine Alvarado-Salinas '18 visited Rotary Boys and Girls Club to demonstrate last year's robot and teach them about the design process. They spoke about the game and what the SAAS team does. They wanted to give students an opportunity to learn about something they may not have a lot of experience with in school.

These experiences are not only giving the participants valuable technology skills but are also motivating Seattle Academy robotics participants to share what they love with others! Everyone has a great time, and the robotics team is hoping to continue outreach with the community.

Keep up with Red Shift Robotics progress by following our Twitter (@SAASRobotics) and our Facebook (SAAS Robotics Club)."

Seattle Academy Scrimmage - 11/7/15

Our team hosted a scrimmage 2 weeks before our first competition in order to see how well our robot could compete. We wanted to see how well our team robot could in the two minute driver control period. We invited other teams from our league, and 6 robots were able to compete. Our team had some problems functioning and it was a great experience for us. During the first match, our robot's Tetrix treads fell off the robot. This frustrated our team, because we now needed more sturdy tank treads. We also got some good feedback watching our robot on the field with debris. We saw that our robot had some trouble moving across some of the balls and blocks.

After doing a few competitions, we worked on our robot and made it more robust. We talked about ways our team could fix our robot so that in real competitions our treads did not break. We came up with a solution to put bolt through the plastic tread connectors. This would allow us to have a more robust design and hopefully have a better competing robot.

Seattle Academy Open House #2 - 11/10/15

On Tuesday November 10th, our school had its second open house. These open houses are a great opportunity for our team to outreach to hundreds of families and thousands of visitors! Every tour comes through our new robotics studio, and so we have a great opportunity to outreach to each family about what we do in robotics, how people can get involved, and the FIRST Res-Q challenge we compete in. We had so much fun discussing our season and our

past experiences in robotics. These open houses are a very meaningful event for our team! We enjoy sharing how lucky we feel to be part of such a great club and organization. During these events, we also are able to enjoy how much fun we have as a club. These events allow us to really reflect on our experiences and work on the Red Shift Robotics team.



Rotary Club Outreach 12/2/15

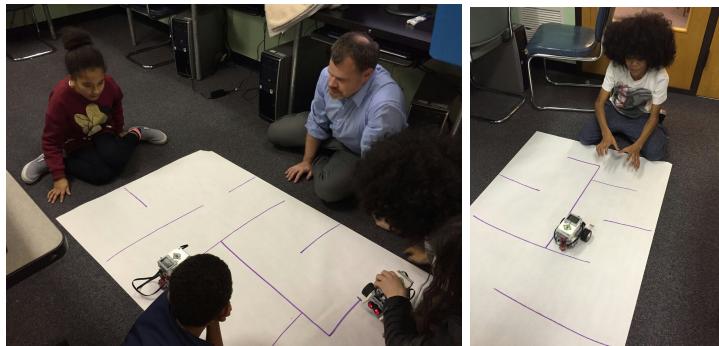
Robert and Jasmine went to Rotary Club a while ago to present about FTC. They were so interested in the program that they started an FLL team. We heard they were starting the team because we had visited, so we decided we wanted to support them. At the first league competition, we set up a concessions stand to raise money for them. Robert, Arielle, and Gabe returned to follow up and help their club. They helped them program their EV3 robots. We set up a maze, and programmed the robots to go through the maze.



Unfortunately, there were quite a few challenges that we ran into while helping the students. Some of the laptops we were using decided to update, and they also had trouble supporting the EV3 programming coding program. We weren't completely familiar with the EV3 set up, so it took a few tries to figure out the coding system. Luckily it was very similar to the NXT program!

Robert and Arielle had some trouble too. Neither of them had worked with EV3s. One of the two groups couldn't use their computer because it was updating. Using trial and error, Arielle had to figure out how to program the Mindstorm on the EV3 so the boys could move through the maze.

They had it working well enough that they could make it move by themselves!



GitHub Outreach By AJ 12/5/15

The Bush School Extended Day Outreach Visit 12/8/15

Robert, Arielle, and Willy went to the Bush School extended day program. Robert went to Bush for elementary school, so he was able to set up a visit. They brought the soccer robot built for outreach and seven NXTs to teach about robotics. They taught two classes: one to 2nd-5th grade students and one to K-1 students.

The kids had a great time! They lined up to see how many people's legs they could get the robot to drive through. Gabe had the robots set up for sixth grade visit days, so they had touch sensors on them. We got to teach the kids what the sensors did!

One of the kids was scared of technology, but she learned that robots can't do anything we don't tell them to do. She ended up having a great time. The kids would line up to drive the soccer robot, even though one of the wheels wasn't working because it was on carpet. That was okay and they still had fun! And our favorite quote? From a first grader, "I learned how to code today"



Redshift Robotics @SAASRobotics · 20h

Quote of the day: From a 1st grader @TheBushSchool when asked what she learned during our visit. "I learned how to code today"

#LoveOutreach



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Redshift Robotics @SAASRobotics · 20h

Thanks @TheBushSchool Extended Day for such a fun afternoon! We loved showing you some robots!
@SeattleAcademy



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Giddens School Extended Day Program: 12/15/15

Arielle, Robert, and Willy visited the Giddens School to teach robotics! We brought in the mindstorms and taught the kids how to use them. They had done hour of code or had toured with SAAS, so some of them were familiar with the system. Unfortunately, the outreach soccer robot wasn't working. However, it was okay because the kids found ways to entertain themselves! This class was the first time we saw Battlebots: Mindstorms edition. They all programmed their robots then sat in a circle of five and ran them at each other.

While they were doing that, some of the others were learning why the robot was not connecting to the computer. They learned about the connections and how they don't always work right. After this talk, one girl said, "I want these for Christmas!"

We started the day with 10 students and 2 teachers. By the end, we had more teachers, parents, and siblings, all interested in what we were doing!

It was a productive and great class. A good way to end the 2015 STAR program. Onto next year!



Here is a tweet from our team's twitter: @SAASRobotics



Redshift Robotics @SAASRobotics · now
@GiddensSchool Thanks for letting @SeattleAcademy robotics visit you!
Highlight of the day: Battlebots with NXTs.



T-Shirt Cannon: 12/18/15

On the last day of school before the winter break, it is a tradition at SAAS for the basketball teams to all play at our home gym. A ton of students, faculty, parents, and alumni come to these games! Our team brought out our T-Shirt cannon and launched SAAS T-Shirts into the crowd. Our T-shirt cannon was a huge hit, and a ton of fans were excited when it came out between quarters.

These games were also huge draws for alumni and some robotics students who graduated were able to see our robot and say hi to our team!

Our T-shirt cannon was built around 4 years ago, and we bring it out at sporting events. It is a drivable robot, with its own remote control and drive system. We recently put lights on it, which change colors depending on if it is waiting, raising, or firing.

SAAS Middle School FLL Team: 1/5/16

Seattle Academy's FLL Middle School team had over 40 students this year with four teams! We have helped them with a few of their practices and provided guidance to them. The FLL teams competed on December 12, which was the same day as our competition. Unfortunately because they were the same days, we couldn't see each other's competitions. We hope to help SAAS's FLL teams more in the future. Even though they are after their season, they are still going to fun building activities and have practices.

Our FLL team's are mentored by Lewis Travis and Chelsea Wilcox. Chelsea was the math teacher for quite a few of our teammates so it is fun to still see her and work with her. The FLL middle school program is a great feeder for our FTC team. We have students who have participated in the SAAS FLL team. The middle schoolers can get great experience and are well prepared for our team!

Visiting Our Sponsor PacFab: 1/12/16

Our team visited our sponsor PacFab to see what they do. We saw them CADing things in their machine shop. They had milling machines as well as lathes that we got to see them using. Our team also got to watch them weld many fisheries parts. We were very interested to see what PacFab does and what they produce. It was inspiring to see what parts they make, and they gave us inspiration for some of our ideas. For example, we saw them printing some pizza tables for a company, and we got the idea to make round key chains to hand out at Super Regionals! We really liked to see what our sponsor builds and where our chassis was built!

Running FIRST to Change the World: 1/30/16

At our Washington State competition, our team was asked by the head of Washington FIRST, Adrienne Rime, to help run FIRST to Change the World. This event benefits underprivileged students get involved in FIRST robotics. It helps to sponsor teams and not make many teams to worry about their funding. During the opening ceremonies, we had a Minute of Change, where our team ran up and down the aisles of the arena and collected money in tin cans. Many people were able to help contribute to the fund raising, including a few members of our team! During the Minute of Change, we collected about \$1000, all benefiting FIRST team! We were so happy to help volunteer our time to help FIRST teams with funding. To learn more about FIRST to Chagne the World: <https://www.firstwa.org/changetheworld>



Zambia Meeting and getting Ready for our Outreach in Zambia: 2/10/16

After practice, Robert, Peter, and our mentor Gabe went to a meeting to prepare for the 2016 trip to Zambia! Robert went on the trip last year and helped teach Zambian students about HTML, Java, and CSS. At this meeting, he was able to share his experiences with students (lie Peter) going on the trip this summer. Gabe, our mentor, is also going to be leading the trip to Zambia. Gabe and Peter are going to work on continuing what Robert worked on, as well as teaching Zambian students about using NXTs. There will be 9 other students on the trip, and so Peter and Gabe will help to teach them how to effectively work with the students.

When Robert went on the trip in the summer of 2015, he taught students at Munali High School how to type and design a website with HTML, Java, and CSS. In Zambia, knowing how to type is a *very* valuable skill. Knowing how to type can get you a job. Robert and his fellow group members were able encourage the students as they learned how to type without looking. Some students had done peck typing, but Robert and his group made sure they learned how to touch type because it can be much faster. After typing lessons, the group spent a day on each of the three methods for building a website. Students from Seattle Academy were able to teach

Munali students how to do some of the most basic coding such as changing the color, font size, website background color, and adding images. The Zambian students seemed to have a very fun time with learning to code because it was challenging and something they hadn't done before.

When Peter and Gabe go on the trip this summer, they hope to teach students at Munali High School about using NXTs and more advanced coding. They will make sure to teach all the Seattle Academy students before they leave for Zambia. This will allow all of the students to help teach the Munali students about what we do in robotics. We will be spreading the message of FIRST to students in Zambia and teach high schoolers why robotics is valuable to us. We hope to continue this connection with Munali High School as our mentor Gabe continues to help lead the trip.

Working at the Seattle Academy New Families Visit: 2/23/16

Each year, Seattle Academy holds an event to welcome students that have been accepted to the school but haven't decided if they want to attend. The main goal of this event is to persuade students to attend our school Seattle Academy. Therefore, we want to show off the best parts of our school to give students a sense of whether they could see themselves attending Seattle Academy. Robert toured families and showed them around our school and brought them down to the robotics studio where we had many teams practicing and showing off robots! When in the robotics studio, future families got to see our robots driving up the ramp, discussing strategy as a team, and having fun! Many future students enjoyed watching us practice, and they were very convinced to come to our school!

During the event, our team reached out to many students and asked about their robotics experiences at their middle schools. We discussed how we had gotten involved in FIRST robotics, what it had taught us, and many details about our team. We told them about our roles on the team and about how the three teams practice at different times. At the event, we promoted our school, team, and FTC robotics.



Visiting Our Sponsor Pacific Hardware Supply Company: 3/16/16

Our team visited our sponsor Pacific Hardware Supply Company to thank them for their continued support. The Pacific Hardware Supply Company is the closest hardware store to our school, and so we visit them very often. Two years ago, we came to Pacific Hardware Supply Company and asked for their sponsorship because we went to them so often. They were very welcoming and generous and continue to give us gift cards and store credit to help us out. Our visit went very well, and we enjoyed talking to the manager and sharing our robotics story. We told him about this year's competition and how well we had done in state. He was very impressed with how well we did in state and the complexity of our robot.