

Cranbrook Robotics

Summer Camp Newsletter

Week Three 7/5 to 7/9

Dear Parents,

It is hard to believe that we finished our third week of robotics camp! We are halfway through the six weeks of camp we offer this summer. It was great to see new and old faces this week. We are sad to say goodbye to campers who spent the first three weeks of camp with us, but happy to share our love of robotics over multiple weeks. New and returning campers wowed us with their attention to detail, creativity and insight. Campers followed detailed instructions to build a robot to specific specifications, then had an opportunity to put their imagination to work making a robot of their own design. The 4th to 7th grade Vex IQ robotic students had a chance to visit the natatorium for a much-needed swim on Tuesday, followed by the 1st grade Lego WeDo and 2nd to 3rd-grade Boost groups on Wednesday. When weather permitted, campers had an opportunity to hike a small part of our beautiful campus. While we are unfortunately not able to invite parents into our buildings this summer for our traditional Show and Tell on Friday afternoons, we have included various pictures and stories about our exciting week in this newsletter.

Gratefully,
The Robotics Summer Camp Team

Want to Purchase the Kits We Use?

Lego WeDo 2.0

<https://education.lego.com/en-us/products/lego-education-wedo-2-0-core-set/45300>

Lego Boost Creative Toolbox

<https://shop.lego.com/en-US/product/BOOST-Creative-Toolbox-17101>

Vex IQ Super Kit

<https://www.vexrobotics.com/228-2500.html>

4th to 7th Grade Vex IQ

Summary

Our Vex IQ instructors, Mr. Elmer, Mr. Daniel and Ms. Aishwarya have been looking forward to a great week of camp! All campers made this week exceptional, as everyone learned how to construct and program their robots for the Vex IQ competition. While a few students came in with prior knowledge of Vex IQ robots, each individual rapidly grew in their understanding.

This season's competition is called "Pitching In." The object of the game is to attain the highest score by scoring Balls in Goals, clearing Starting Corrals and by Hanging at the end of the match. Campers could build a robot from instructions, called "Fling," a new design called "Campbot," or create their own design. Robots were programmed using a graphic software called Robot Mesh Studio.

Vex IQ Reflections

Lily built a “Fling” robot and got the catapult working after some adjusting. It was the first robot that could score in the high goal in both driver and autonomous modes. She spent a lot of time working on her autonomous program to make it successful.

Seif worked on several modifications to his robot from the previous week. He evaluated using an intake to improve ball handling, but decided to stick with a stationary scoop. He found a way to reinforce the scoop forks in the process.

Jacob built a robot with a linear lift that used rack gears. He then added a pivot arm to the lift, which enabled it to do a high hang. In a time crunch, Jacob’s robot can also do a low hang.

Ishan worked with different arm configurations before settling on a double-jointed arm. He was able to create an autonomous program to complete the task of high hanging.

Will carried over his robot from the previous week and worked more on his autonomous program.

Michael modified his robot from the previous week to be lighter and better balanced and now called Juggernaut III.

Nyla carried over her robot from the previous week, including the dual-motor arm for reliable hanging.

Alex built a robot with four motor drives and added a wheel for sideways motion.

Alice built a version of Campbot, then tried different arm configurations until she found one she liked. She also was one of the first to do autonomous coding.

Jude built a robot with two arm joints, which enabled it to reach the high hang bar and do a high hang by folding back up.

Simon added an arm for hanging to his “anti-virus” robot and used it to demonstrate to the other campers.

Eric worked on a V-Rex robot, a robot that uses legs instead of wheels. He will have the only dino-robot competing in the tournament.

Ella built a Campbot robot, then modified the arm to have two joints, which enabled it to do a high hang and get under the bar. It took some practice and timing, but she was able to make the high hang successful.

Eli built a robot base, then tried to add a catapult. After a few iterations, the robot could fling balls into the high goal.

Victor started with a robot with four motor drives and a two-motor arm, but changed to a two-motor drive and a one motor arm that used a 1:15 gear ratio.

Max Nakamura built a version of Fling, adding a second motor and a faster gear ratio to the arm. He spent a lot of time practicing his driving skills.

Esme built a robot that could shovel balls into the low goal and do a low hang. She then added a pair of LED lights and programmed them to turn on and off at the touch of a button.

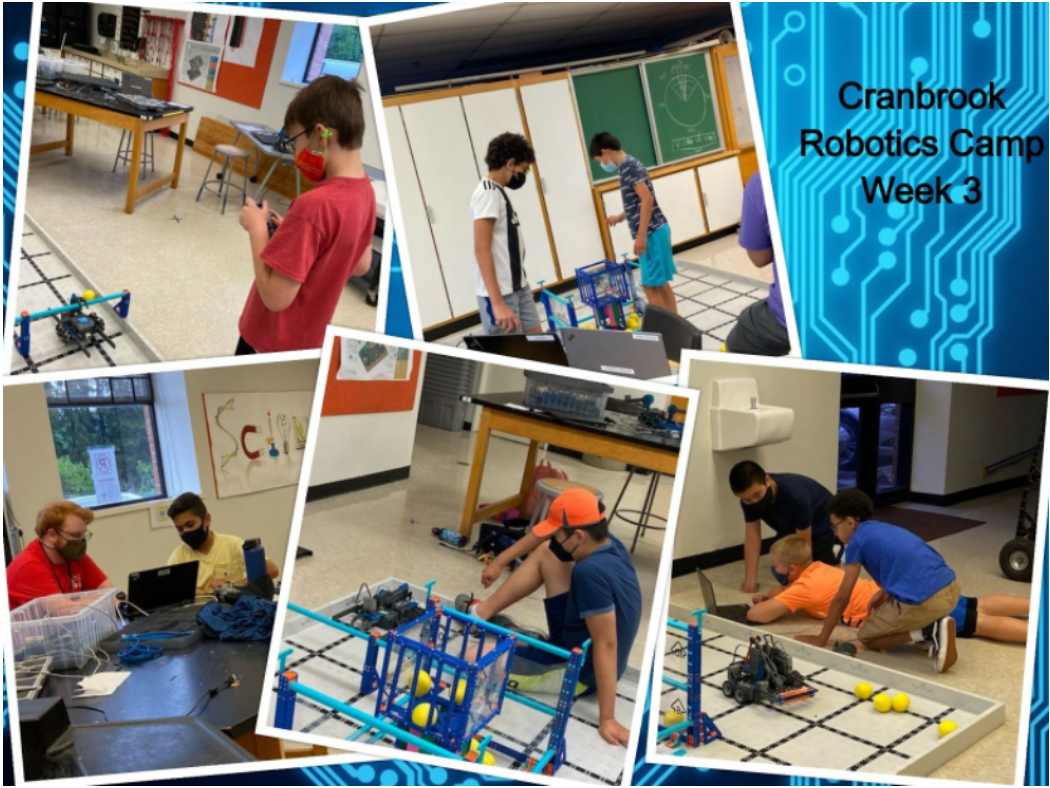
Griffin helped another camper with his code for his autonomous skills. He and Seif worked to perfect the autonomous code to maximize the points scored.

Vex IQ Photos





Cranbrook
Robotics Camp
Week 3



2nd to 3rd Grade Lego Boost

Summary

Lego Boost Creative Toolbox guides campers through the building and coding of fun, interactive robotics. This week's campers were particularly creative with some project ideas. They were also energetic and excited whenever we went outside for a snack, to play ball, or on a hike around campus. We also finished off the week with an optional battlebot tournament that combined the kids' love for competition with their natural talent at robotics. This week's instructors were Mr. Ben and Mr. Avaneesh.

Lego Boost Reflections

Alex built a bulldozer bot during camp this week. He was very thoughtful and had a great work-ethic, which definitely helped him finish his robot. He also already had some experience with our lego boost kits and used it to his advantage, as he was able to find pieces and build variations of the main design with ease.

Although this was **Kevin's** last week at camp, it might have been the one he most enjoyed. Kevin has always enjoyed robotics, and due to the weather, we had to stay inside longer than we intended, allowing for him to spend more time on his robot. All in all, he was a great camper to have for the 2 weeks he attended.

Henry decided to build a bulldozer bot during camp this week. Although he missed the first day, he quickly caught up to the rest of the pack, showing his prowess at building. Henry is always a joy to have and we are excited to have him back next week.

Jack continued to be a great camper this week. Although he missed the first day, he bounced back and got straight to building multiple robots. Having tested out each design for the battlebot competition at the end of the week, he chose his best robot, which employed high-level mechanics, something that is great to see.

Hadi explored the creative aspect of robotics this week, as he wanted to get ready for the battlebots competition right from the start. After testing out a couple of innovative designs, he settled on one robot that combined the good qualities of multiple of his designs. He had a great week this week and we are excited to see him return next week.

This week was about perseverance for **Luka**, as his robot unfortunately fell off the table during the beginning of this week. However, he bounced back, making his own spin-off of the bulldozer robot for the battlebot competition on Friday. All the counselors really enjoyed having him these past 3 weeks and we are sad to see him go.

Noa was a great camper to have this week. She built the lego boost robot, and finished it in a timely fashion. She also had a lot of fun with the various activities we had outside of robotics, like making paper airplanes. We are excited to see her return next week.

Zach was one of the most passionate and excited campers this week. He showed great excitement when building his lego boost robot, and overall we have rarely seen anyone that exemplifies his joy for robotics. He was a joy to have this week and we hope he continues doing robotics in the future.

Jayden was another returner who continued his hot streak as one of the best roboticists in the camp. He continued making several changes to his robot, and perfected it for the battlebot competition on Friday. Even if he does not win the competition, he still has one of the best robots in the camp in terms of complexity.

This week, **Aaryan** built the bulldozer in preparation to compete in the battlebots tournament this Friday. Although he sometimes needed to be guided back to work, he was very invested in accomplishing whatever task I set in front of him.

This week, **Shay** used both Spike and Vex IQ to help him become more familiar with programming. Although he tended to stay away from building, he was able to jump right into higher level programming like Python and find success.

For his last week, **Haruto** chose to build both the guitar and the bulldozer. He demonstrated what he learned in the past 2 weeks by completing the guitar on the second day. Haruto then moved onto the bulldozer with an eye on competing in the battlebots tournament today. He was a pleasure to have for the past 3 weeks and will be missed.

This week, **Bram** used Spike to create an impressive windmill. Using a combination of gear ratios and a lever to control speed, Bram was able to create the most complex and well designed project I have seen at camp so far (all without instructions). Bram is a hard worker, and I look forward to having him again next week.

This week, **Jonas** built the robot using Boost as his project. He is a quiet, hardworking student and was able to complete it in a few days with ease. He is easygoing, and tends to get along well with all the other campers. I look forward to having him again next week.

Mila spent this week building and programming a guitar as her project. Although she needed help at times, she was able to get the hang of it pretty quickly and it turned out exceptional. Mila was energetic whenever we went outside for snack or recess, but always calmed down when it was time to get back to work.

Lego Boost Photos



1st Grade Lego WeDo

Summary & Reflection

Robotics camp is half over with the completion of week three. Although we had a small group this week, we were still mighty and excited to do robotics. George and Bianca completed their final week with a bang, designing and building cool new projects without directions. Additionally, we had two new campers, Addison and Charlie, who started the week building milo rovers to get them used to WeDo. After that, Addison decided to build a racecar that she then modified to “battle” with the boost kids. Meanwhile, Charlie used as many brains and motors as possible to make a multitool robot with drills and fans that he even put wheels on eventually. These creative designs allowed them to join Boost in competing in “battlebots.” Also, this week we branched out into arts and crafts by building paper airplanes. Along with the Boost group, George also designed many new Pokemon cards.