

Cranbrook Robotics Day Camp Newsletter
6/21/2019



Dear Parents,

This week at robotics camp your campers had a blast learning about robotics! The rain didn't deter them, as all campers were enthusiastic and productive all week!. We look forward to telling you about all of the fun your camper had this week at our show and tell on Friday afternoon.

*The **Vex IQ** group's tournament on Friday afternoons will take place in the [Performing Arts Center](#) (PAC). If attending, park in the parking lot at [550 Lone Pine Rd](#). Camp staff will be in the parking lot directing parents into the building. Finals are scheduled to begin at 2:30 pm.*

***Lego WeDo** and **Lego Boost** have Show & Tell on Fridays in their classrooms located in the Robotics Labs in [Hoey Hall](#). If attending, park in the parking lot at [550 Lone Pine Rd](#). Signs will be posted on campus to highlight the path to the parking lot as well as our classrooms. Camp staff will be in the parking lot directing parents to the building. Show & Tell will begin at 2:30 pm.*

For those parents not attending the Show and Tell, please follow normal pick-up procedures.

Vex IQ Page 2-4
Lego Boost Page 5-8
Lego WeDo Page 9-11

Links to purchase Kits: Page 12

VEX IQ



In Vex IQ this week, instructors Mr. Elmer, Ms. Emma, Mr. Emerson, and Ms. Ilina all looked forward to starting a great week of camp. All of the campers made this week exceptional, as everyone learned how to construct and program their robots for the Vex IQ competition. The Vex IQ competition that we are doing this summer is called “Squared Away”. The goal is to put balls in some large cubes and bring cubes to the scoring zones. While a few students came in with prior knowledge of Vex IQ robots, most were newly introduced and each individual grew their understanding substantially during the week.

Jonah was the first to try making an elevator lift, which uses linear slide to move straight up and down. The idea quickly gained popularity with other teams.

Nikhil is a veteran of the robotics camps but is new to Vex IQ this summer. He built a base using 36 tooth gears and traction tires, then joined forces with Jonah.

Jack and Zach teamed up and also went with an elevator lift and had fun getting it to work.

Ian and Theo had a slow start, but after a brief interlude into battle bots, they found their footing and built a four bar to focus on cubes.

Bru and Taiga worked quickly on their robot. They decided to add an H-drive for sideways motion and programmed it as well.

Anniston had a very productive week. She started with an intake robot to pick up balls, then added a hook on the back to pick up a cube. She then replace the hooks with a rack and pinion device which would raise the cubes higher. It was could not reach the highest platform on the field, however, so it was back to the drawing board. Anniston then worked on a parallel lift device that was able to reach the high platform. Mission accomplished!

Laila, who is new to robotics was able to learn quickly and built a robot that could pick up balls and cubes while programming a rainbow led. On our trip to the Cranbrook Science Institute, she figured out that it takes approximately 1100 steps to get there from Hoey Hall. Who needs a Fitbit?

Christophe, Anthony, and Trevor persevered after setbacks and reliability issues to create a stable working robot.

Kaiden and William decided quickly that they wanted to focus on the cubes. They built a robot with a lift that could lift cubes and debugged it. They then decided they wanted a faster robot and worked on a faster drive ratio.

Ethan also decided to work on robot for cubes. He added a manipulator to it that hooked on the near edge of the cube which allows a quicker release. He then turned his base into a “H” drive, which adds a sideways motion.

Marcus showed off his experience with Vex IQ by using a variety of parts. He tried a tank drive with tread then quickly switched to omni wheels. The treads didn't go to waste, however, because he used them on a double tread intake for the balls. He also added a bumper to the lift that senses if the lift has touched to ground and keeps the arm from going too far.

Sophie, Samantha, Heer decided to work together and were thoughtful and deliberate in their actions. They decided that scoring a robot with a 4 bar lift was the best way to do it and constantly strived to be better by rebuilding several times.

At the Natatorium and Cranbrook Institute of Science, the campers exhibited enthusiasm, and were interested in all the museum has to offer. As week one of camp comes to an end, it was a very enjoyable and successful time to explore both engineering and robotics, while most importantly being able to make new friends and fun memories.

Lego Boost



Lego Boost Creative Toolbox allows our campers to build and code fun, interactive robots. This week's campers had a great time and made some amazing projects with the help of their instructors Mr. Daniel, Ms. Suba, and Mr. Jason!

Ethan: When we took a trip to the CIS, Ethan was really interested in the Physics exhibit and expressed his knowledge in different types of rocks in the mineral exhibit. From the very first day Ethan has worked very efficiently

Esme: Esme really enjoyed working with the interactive activities at the Physics exhibit at the Institute of Science. She quickly made friends at camp and is a focused builder; she is one of the few people attempting the cat project, and is possibly the only one to have succeeded. She likes to design characters and program on ScratchJr.

Oliver: Oliver seems to really enjoy robotics camp. Though it's been a little challenging for him to work on his robot he works methodically and is making slow yet steady progress. He also always keeps a positive attitude and engages in our various activities. He gets along well with his peers and is such a pleasure to have.

Simon: Simon was a model camper this week. He was kind to his fellow campers and was happy to participate in our various activities. Whatever the plan was he took it in stride and it came across that he was doing his best.

Elizabeth: Elizabeth seemed a little quiet at first about camp with everything being very new to her. However, she seems like she tries very hard to engage regardless and ended up having a great time as a result. She was such a delight this week and we were all super happy to have her.

Lauren: Lauren enjoyed creating multiple interesting projects in ScratchJr. She also has really engaged with camp and listens well to instruction. She has been a good friend to Elizabeth and gets along with her fellow campers great as well.

Asher: Asher has been very enthusiastic about robotics. He worked diligently on his robot and took special interest in coding on Hour of Code. When we visited the Science Institute Asher spent a lot of time at the Physics exhibit in the interactive

activities. He also volunteered to give Vera a Boost piece when she didn't have all the parts to make one herself.

Ava: Ava is really into her building this week. She made the Guitar, which is one of the more difficult projects, and did it in near record time. She has a great attitude and participates in whatever activity we're doing with enthusiasm.

Max: Max was enthusiastic about camp and clearly loves being here. He doesn't always know the boundaries but it's clear he wants to be the best camper he can be and we're glad to have him. He especially liked playing outside and running on the field.

Aden: Aden had a great week. He is always positive and engages in the various activities we do over the week. He is polite and listens very well. He worked hard to finish his robot and was very excited to show it to his brother when it was complete.

Gerald: Gerald had a great attitude during the camp. He interacts well with the other campers and is very positive. I especially appreciated how even though the Boost builds were a struggle for him he still wanted to experiment and make it a little different if he thought it'd look cooler that way. He also loved going to the pool. There were many giggles as he splashed and was splashed.

Nathaniel: Nathaniel really engaged with the light coding aspect of camp this week. He loved ScratchJr so much that we set him up on the full version of Scratch and let him explore it by himself. He even got a certificate for completing Hour of Code Minecraft.

Caleb: Caleb has a great attitude and was a lot of fun to have this week. He takes his time with his activities but he's diligent and patient. I love his persistence and think that some of the other campers could learn from that example.

David: David is a great camper. He might not have the fastest build speed, but this is due to his more methodical pace. He is otherwise very lively and always fun to have at camp. David has a lot of personality and he adds so much life to the group. He is very focused on doing his best work at all times and his diligence is impressive.

Ishan: Ishan has done really well this week. He seems to be having a great time with his tablemates, but always listens to instructors when it's time to transition activities. Once he finally clicked on the guitar project, he truly began to shine.

Will: Will was very quiet at the beginning of the week but he quickly opened up and became a very positive addition to camp. He wasn't the biggest fan of Boost but he was always happy to join in the many other activities at camp over the week.

Vera: From day one Vera was immediately super into building with Lego Boost. She had some of the most progress on her Lego robot on day one, and had a super positive attitude. At the Science Institute Vera loved to see the Doom of the Dinosaurs exhibit where she saw her favorite huge dinosaurs.

Lego WeDo



We have had such an exciting opening week of Robotics Camp! We started off the camp with a project called “Milo” that teaches the kids how to build and program.

Many kids used Milo as a base to make their own special model, such as with Freddy who added a sensor to his and learned how to program it all on his own.

After lunch, we spent part of the afternoon outside, where Margaret W. did an excellent job teaching the rest of the class how to play a game called poison dart frog.

All the kids started a new project on Tuesday that had giant Legos that rotated to move the robot. Noah R. noticed that the robot didn't move very fast like that, and decided to add wheels to make it move faster (and it worked!). After all the kids saw Noah's new discovery, they were inspired to add wheels and many more gadgets like chains and extra blocks for design. Like real engineers, each of the kids took a design that already existed to add and create one that was unique and better than the first! We also made a journey to the science institute where we travelled back in time to the dinosaur age. There, the kids were able to interact with the new dinosaur exhibit. We also saw fluorescent gems, mastodons, and planets out of this world! This experience was extra special because of the kids' contagious leadership. Every one of the campers used their inside voices, waited for their turns at each attraction, and were very respectful to each of the exhibits. On our way back, Noah N was an excellent line leader, and did not want to stop to take a break because he was so eager to go back and resume building his awesome pull machine! When we got back from the museum, we got right back to building.

We've noticed an exceptional ability in this group of campers to share and be responsible. When fellow campers needed parts, Margaret Wong helped them find the parts and even shared some off hers. At recess Ethan and Shia showed great leadership by picking up trash even when it wasn't theirs in order to leave the earth a more beautiful place. This inspired everyone in the class to want to clean up as well. Though many campers wanted to give up on the challenging project of the PullBot, everyone decided to persevere and make the bot. In fact, one of the campers, Miles, showed exceptional determination when he struggled with some of the more difficult steps, but kept working and managed to successfully complete the project!

Wednesday brought another fun packed 6 hours! We started off the morning by building a search and rescue helicopter. At lunch, we were stunned by Graham's

natural curiosity, asking questions about how pools worked in anticipation for the swimming time later that day, as well as using context clues to deduce the sources of the noises around us, even when said sources were out of sight. The time spent at the pool was a great time for overcoming hesitations. Beckett wasn't sure he wanted to swim, but put on his swimming suit anyway and had a great time splashing around!

Innovation came alive on Thursday. Hannah diverged from the instructions to work on a creation completely her own, using building techniques developed from earlier projects, while Ethan, Freddie, and Shia engaged in cooperative competition with their race cars to figure out how to make their creations faster and stronger, pushing each other to keep improving. Maggie combined art and science, adding to her functioning car to make it look cooler, understanding the importance of aesthetics.

**For Parents interested in Purchasing Kits used in Robotics
Camps this Week:**

Lego Education 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>