

# Cranbrook Robotics Day Camp Newsletter

7/12/2019



Dear Parents,

The campers had a very productive week at robotics camp! The instructors were amazed at the innovative designs and creative ideas that these children came up with! Some campers focused much of their time and attention on the mechanics of building while others seem fascinated with learning about coding and CAD. We all had fun learning about dinosaurs at the Science Institute on Tuesday and swimming at the Natatorium on Wednesday. The campers are looking forward to sharing all their cool projects with you at the Show & Tell this afternoon!

Please note that there are four different robotics groups this week. The different groups all have different Show and Tell programs planned in different locations.

We are asking ALL parents who are able to attend the Show & Tell this afternoon to please park in the [550 Lone Pine Road](#) parking lot. Signs will be posted on campus and on Lone Pine Road to highlight the route. Camp staff will direct you to the proper location of your specific child's robotics group once you park in the lot.

*Parents with children in the Vex IQ (4th-7th grade) group will be directed to the [Performing Arts Center](#) (PAC). Please plan to arrive at 2:30 when the exciting finals are scheduled to begin. Winner award certificates will be presented at the conclusion of the tournament!*

*Parents with children in the Lego WeDo (1st grade) and Lego Boost (2nd and 3rd grade) groups will be directed to the appropriate classrooms located in the Robotics Lab in [Hoey Hall](#). Please plan to arrive at about 2:45 to meet your child's instructors, see your child's camp room, and to hear about your child's awesome robotics projects!*

*Parents with children in the Lego EV3 (1st-7th grade) group will be directed to in the [Gordon Science Building](#). Please plan to arrive around 2:45 to meet your child's instructors, see your child's camp room, and hear about your child's progress as they prepare for the WRO competition on July 20<sup>th</sup>!*

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

**Next Week's campers:** For returning campers, please wear your camp t-shirts on Tuesday for the group picture and bring your swim suits and wristbands (if your child has one for passing the swim test) on Wednesday. We are excited to meet all our new campers in Vex IQ, Lego Boost, Lego WeDo and Lego EV3 and are looking forward to another great week!

**Thank you to all our Week 4 campers for sharing your summer with us at the Cranbrook Robotics Day Camp! Below is a summary of the four robotics classes we had at camp this week:**

# VEX IQ



In Vex IQ this week, campers were instructed to create their very own robots geared towards the VEX IQ competition, a game involving placing cubes in scoring zones on the field and putting balls in or on top of those cubes to score points. The instructors (Mr. Jason, Mr. Nikhil, and Ms. Emma) helped students implement their ideas regarding building and programming, and aided campers in constructing the best robots that they could create. Returning campers picked up where they left off, and new campers began their robots from scratch.

Eli and Devon brought the fun spirits of team food (now named team chick) and team woof dog back with new and improved designs to their robots. Eli fortified his new double sided tread bot making it capable of carrying 2 cubes with ease, and Devon built a four bar robot with an elevator on the back as another way to carry two cubes at once.

Nikhil, with the help of Heer, switched from his custom designed elevator lift to a four bar robot. Once again Nikhil, was willing to start from scratch in order to build the best robot he could.

Madison worked independently this week to create her version of this week's "meta" bot. Even though her tread lift bot with an elevator on the back didn't always work perfectly, she persevered and was able to fix it (and make it better overall) every time something went wrong.

Anthony modified his robot from last week by adding a 5th omni wheel, making it a H-drive, and worked on his code completely independently.

Hangyul and Kevin worked hard all week to create a robot equal to any other, sporting both a frontal 4-bar and a rear-mounted elevator lift capable of scoring in any zone. An impressive showing for two first-time campers.

Jackson and Yoseph built a double tread bot at the beginning of the week but then decided they wanted to do something different and built a whole new bot. This new and improved version features a four bar with a small elevator on the back. Their willingness to switch up designs so quickly shows that they both really understand how Vex IQ works.

Veteran camper Anniston took new campers Anika and Louisa under her wing this week. They practiced driving on Anniston's bot then worked together to build one of their own. Overall, they worked really well together and were able to learn a lot from each other.

Heer spent this week helping less experienced campers and practicing to become a true powerhouse of a driver. She can now score 60 points easily alone and combined with pretty much any team can expect to get around 80. Good job!

Jacob and Jonathan built a four bar initially but wanted to expand the amount of points they could score, so they added a tread lift to the back.

Andrew and Bade started out by building two separate robots but then brought their skills together for the final competition. Andrew jumped onto this week's "meta" by building a double



tread lift bot and Bade built one of the almost humanoid bots featured in the Vex IQ challenge video. The whole class had fun watching this bot actually manage to score points.

Namish and Jacob exhibited good problem solving skills this week. Whenever their robot broke they found a way to fix it and were always looking to add new scoring mechanisms to get just a few more points.

Siddharth put in consistent effort all week to finish his robot, despite being new to VEXIQ at the beginning of the week. Through his hard work, he built a tread robot for scoring cubes.

## 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, and Ms. Suba!

### **Here are some of the week's highlights from our awesome campers:**

Andrew: Andrew found the programming in Boost very interesting, he built a car out of Legos and spent a lot of time programming using loops. He has a lot of energy and has a large suite of unique creations at camp. He is very enthusiastic, he listens when he needs to, and never has been a problem to have in class. We were definitely glad to have him this week.

Matthew: Matthew has worked hard on his legos over the week. He was able to make a very unique custom guitar by Wednesday. Also, when he was done, he was happy to jump right into other builds and make more stuff. He has a great attitude and isn't afraid to speak up when someone is doing something that isn't camp appropriate.

Jayson: Jayson has a great attitude. He works hard on his build and clearly loves working with his Legos. He also is polite and kind. He asks nicely for help, and never is rude to his fellow campers. Jayson is a model camper that is an absolute pleasure to have at camp this week.

Harrison: Harrison is a great new face to have this week. He is willing to go the extra mile to be helpful at camp and always has a wonderful attitude. He also works hard on his robot cat, which is one of the most complex builds in Boost.

Tommy: Tommy has so much energy at camp. He is always working on some new ideas or running around with his peers during break time. He really likes the coding based games on the tablets, and never shies away from getting the help he needs.

James: James is such a treasure at camp. Even when he isn't feeling well James does his absolute best to be an exceptional camper. He is always polite and doing his best to follow the expectations of Cranbrook. Though his progress is slow, he remains steady and focused on working on his build. Every camper could learn something from for James' behavior and attitude.

Stone: Stone has a good attitude and creative mind. He loves to run around and be wild, but he's always willing to listen when it's something important. He also was doing a custom robot fight club with some of the other campers. His design was really unique and clearly had a lot of effort put into it, even if he destroyed it.

Vera: Vera is such a sweetheart. She has such a kindness about her that is so wonderful to see at camp. She works on her robot at a modest pace, but is always doing her best. She is polite when she needs something and tries to help the instructors when they need an extra pair of hands. We're very glad to have her back at camp.

Caleb: Caleb enjoyed programming his robot this week. He programmed his truck to do a variety of different things and even discovered how to use the number randomizer in his program.

Cameron: Cameron has a very unique presence at camp. He works hard on his build and is happy to make more. But, he also loves to be involved in the physical activities and leads a lot of the team games. He has such a go-getting attitude, even when he's being a little off-task. Cameron is a wonderful addition to the camp atmosphere this week and he shows the kind of traits that all campers should have.

Lukas: Lukas had engaged a lot with coding and soccer this week. Since he was not as interested in building, we gave him other options that he has done really well with. He has tried hard to make progress in a fairly challenging coding based game, and during outdoor time, he was one of the leaders making groups and rules. Lukas has been a great addition to camp.

Dylan: Dylan is a great new camper this week. He has a great time working on his Lego build and also does well during our other activities. He listens well and is a good example for the other campers. He does well with transitioning between activities and is an absolute pleasure to have at camp.

JJ: JJ is a great camper to have. He has a bright, positive attitude no matter the circumstances. He loves to mess around with his Lego car and he engages well socially during our outdoor activities. He listens well to directions and enjoys interacting with the other campers. We were happy to have JJ at our camp this week.



# Lego WeDo



Week 4 of camp has been going super swell! We had a bunch of new campers this week and they all started with Milo. Alex finished his quickly and was able to spend most of the day programming and adding on to his project. Jaiden and Devin spent the day working together on a hand that can actually grab things.

On Tuesday, the new campers built the pulling bot and the returners got to choose something new. Jack had his birthday today and all the campers sang happy birthday to him! Noah built a car with a motion sensor and dedicated the morning to learning and understanding how a motion sensor is programmed and how it works. Next, we went to the science museum where we visited the dinosaur and physics exhibits, as well as the gem collection and all the campers had a blast. When we got back, Shannon started a really cool frog. e

The kids had been really looking forward to Wednesday because it was really hot outside and we were going to spend some time at the pool. Charlotte used that time to splash around,



meeting campers from other classes. Later that day, Geoffrey built a car that he created a crazy-complicated code for while Ethan flew through projects with his speedy building.

On Thursday, the campers worked on a new project, making a bee that stopped at a flower to pollinate it. They used vision sensors to detect when the bee was at the flower. Those who had already completed the flower started working on a cool new project of their choice! Beckett chose to make a stop light and Charlie, after finishing the flower, used the LEGOs to explore architecture through free build. Kahlil built an awesome frog and coded it, learning more complex coding blocks such as loops and Easton used this time to build an amazing helicopter that he was very proud of.

## Lego EV3



This was the second week the Lego Mindstorms EV3 Summer Camp. All the campers had gotten a good start on the challenges last week and had another productive week of building and coding.

Enzo and Calvin continued coding their robot and finished coding for all the different cases. They started working on methods to assemble their robot from individual parts, which is what happens at an actual WRO competition

Joshua made good progress on his robot. He achieved a perfect score in the WRO game. He should definitely consider going to the competition next Saturday. It would be a valuable experience to hone his critical thinking skills and he would have a great chance to win.

Zev and Shriram continued to work on their robot, which has to find and deliver light bulbs. They refined their code that identifies the color of the light bulbs and added code to deliver more. Shriram found time to create his own robot, actually more of a robot sculpture, which resembles a transformer robot, complete with an energy source and launchers. Some of the other campers joined and made their own creations.

The WeDo campers worked on ways to more precisely control their robot. MJ made great progress to design a plow that could effectively manipulate the game field pieces and Valentina reprogrammed the bot in Scratch, while Sebastian used this design to gain a perfect score! Luke and Vivian worked hard, cooperating to figure out the most efficient path to scoring all while innovating to make a better robot design, experimenting by changing features, such as exchanging for larger tires. Oliver is well on his way to catching up, enthusiastically jumping back into the world of robots after missing some camp, and working hard to understand the program and learn the game.

The campers spent another session at the Cranbrook Institute of Science and the Natatorium. At CIS, they learned more about mastodons and dinosaurs. They also spent time at the "Motion Gallery" where the Kinetic Machine is always a crowd pleaser. As the week comes to an end, the campers can feel proud of their progress. Next week will focus on making their robots more consistent and reliable.

**For Any Parents interested in Purchasing Kits used in Robotics Camps this Week, Here are the Links:**

## **Lego Education WeDo 2.0**

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

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## **Lego Boost Creative Toolbox**

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

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## **Vex IQ Super Kit**

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

## **Lego EV3**

**<https://www.lego.com/en-us/mindstorms/about-ev3>**

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