

Cranbrook Robotics Day Camp Newsletter

7/05/2019



Dear Parents,

The robotics campers had a great time building and coding their robots this week! We also had a fun time learning about dinosaurs at the Science Institute, swimming at the Natatorium on Wednesday and eating, jumping, and playing at the awesome 4th of July Carnival on Thursday! 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 on Friday 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 between 2:30 and 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 between 2:30 and 2:45 to meet your child's instructors, see your child's camp room, and hear about your child's amazing progress as they prepare for the WRO competition on July 20th!

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 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, and Lego WeDo and Lego EV3 and are looking forward to another great week!

Thank you to all our Week 3 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, instructors Mr. Jason, Ms. Emma, and Mr. Nikhil all looked forward to a great week of camp. All of the campers learned how to construct and program their robots for the Vex IQ competition “Squared Away”. The goal is to score the most points by putting plastic balls in some large cubes and bringing the cubes to the scoring zones. Some students came in with prior knowledge of Vex IQ robots, some had worked on robots the previous week and some were new to Vex IQ. All were able to build functional robots and increase their understanding. The week started by sharing some lessons learned from the previous week.

Zoe joined Samantha and Sophie to build a four bar robot to pick up cubes effectively, demonstrating a consistently impressive work ethic.

Alex and Heer, along with Kaden and Daniel won the camp tournament last week and worked this week to improve their robots. Their efforts to stay ahead of the competition this week is notable.

Eli built a robot capable of scoring 2 cubes at once, with a tread lift on one side and an elevator on the other side. His dedication to being independent rather than follow the prebuilt designs came through clearly.

Reid and Theo teamed up to create a two bar robot capable of scoring two cubes. However, they disassembled that two bar when it proved unreliable; their willingness to start over in the face of failure is remarkable.

Anniston and Nikhil both started fresh, building two new robots completely by themselves. Their work ethic and willingness to start fresh is commendable.

Patrick and Anthony started the week out skeptical that they could finish a whole robot in time, but were soon proved wrong. They made a four bar robot with the towers foreword which made it slightly unstable. In order to counteract the weight difference they decided to weigh the robot down with extra wheels in the back. Patrick then joined Daniel to make a reinforced bot for the "battle bot" scene.

Marcus used his impressively comprehensive knowledge of different lifts to build a whole new robot with a 6 bar.

Issac showed lots of creativity by building quite a few robots including a "kiwi" drive and an armbot.

Antonella, Isabella, and Haviana all worked together on 2 robots, then split ways with Antonella and Isabella starting an autonomous skills program and Haviana joining Marcus to make a "lizard mobile." Antonella and Isabella consistently demonstrated a strong willingness to improve their driving and programming, where Haviana felt free to pursue building her own robot to accomplish her goals.

The campers made a big splash at the Natatorium and they checked out the new exhibit "Doom of the Dinosaurs" at the Cranbrook Institute of Science. We also had a great time at the Fourth of July carnival. As the week 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, and Ms. Suba!

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

Nevreah: Nevreah has been such a positive addition to camp this week. She is kind, helpful, and considerate of others. She gets along well on her tablemates, Ava and Asher, and works hard on her robot kitty. She is always doing the most during clean up time and is very conscientious of the rules does he utmost to follow them.

Jayden: Jayden has such unrivaled enthusiasm for Boost that it's a little infectious. He loves working on his robot next to Luke. He's making steady progress on his robot and engages with every activity with gusto. Even if he had Luke get a little distracted being next to each other, they are a wonderful duo to have at camp together.

Mason: Mason has been a great addition to camp this week. He is enthusiastic and energetic. He and Charlotte are especially close, working hard on their robots and making sure they're always at the same step. He does his best to be helpful, and loves to get the door for the class. He's a real help during the day.

Elizabeth: Elizabeth is still so much fun to have on week 3. She is having a great time interacting with her peers, and learning all sorts of new things during our various activities. She was disheartened to have to disassemble her cat to make something new, but she tried and did her best.

Christian: Christian has an enormous enthusiasm for everything he's doing. Wherever the class goes he's got something planned and loves to get laughter and smiles. He still does what is expected of him, usually, and built his guitar with impressive speed. He's a really unique presence at camp and it won't be quite as much fun when he's gone.

Asher: Asher has been a great role model this week. We've been trying to be more strict about rule following. Asher has taken this seriously and has been a big help in reminding his peers about the rules and following them himself. Of course, he is still engaged and working hard on his robot when it's time to do that.

Ava: Ava continues to be a superstar at camp. She is polite and hardworking. Her ability to follow directions and listen to her instructors earns her frequent specific praise. We love having Ava at camp and watching her build the cat this week was a lot of fun to see. Ava puts in the extra effort during clean up to make sure that the whole floor is free of Legos.

Charlotte: Charlotte is a very sweet camper. She is very polite and kind. She and Mason are working together on their robots and always try to be on the same step. She is making steady progress towards her goals on her robot.

Luke: Luke is picking up where he left off last week with his robot build. He's continuing to make steady progress on his robot and is very excited every day to get another step along. He and Jayden are having a great time together and are very endearing to watch.

Gerald: Gerald completed his truck this week. It was a big milestone for him and he was very happy about it. But he still wanted to make other things, so he got Caleb's help and he made a windmill. Gerald loves going to the pool, and is always a big splash.

Giorgio: It's super fun to have Giorgio back this week after having had him last year. He is working well with his Lego Simple Machines kit. He is passionate about making the fastest car again, which is just as endearing as always. He went through several iterations and improvements to get his working final product. He seems to be very social and overall is a joy to have at camp.

Caleb: Caleb, having finished his robot, tackled some new projects this week. However, he didn't just want to follow the instructions any more. He made a windmill, and a modified version of the guitar that is something akin to a cannon, we think. Whatever the case, Caleb is so much fun to have at camp and seems to grow more social and comfortable each week. He participates well in activities and gets along great with others. It was a pleasure to have him.

Faith: Faith is a wonderful new addition to camp this week. She is polite and hardworking. She is making the cat and has made excellent progress over the week. She consistently goes the extra mile to help her fellow campers and fix problems as they arise.

Nathaniel: Nathaniel had a great week this week. He was more social with his neighbor, Giorgio. He also worked a little more with Lego this week. We were sad that he decided to not swim this week, but otherwise he was happy to participate in all the cool activities we offered this week. He shared a little Russian culture with the class and had us play some folk music on the speakers, which was a fun change of pace.

Lego WeDo



This has been such a fantastic week! We started off Week 3 by having the new campers build Milo and the returners choose from making a dinosaur and a gorilla. The latter projects had both instructions and a creative element, where the campers had 3 pictures of the finished project to base theirs off of, and Margaret W. was able to make hers look exactly like them!

On Tuesday, the kids went to the science museum where Beckett was especially interested with the physics exhibit. Afterwards, the kids had the ability to build a robot without any instructions, and Noah R. built a really cool crane that could spin!

Wednesday was another great day for Robotics Camp! In the morning, Noah N. began working on a hand that could grab things, Maggie F. built a mantis that moves forwards and backwards and Ray made a car that could turn. After lunch we went swimming and everyone had a blast, especially Mila who was able to go underwater without holding her nose!!

Thursday was, of course, Fourth of July (we hope you and your families all had a great holiday!!!) and we had a special carnival to celebrate. Before the carnival, the kids started a new project and Seth chose to make a space rover with few instructions. Andrew was really excited to go to the carnival because he was able to see his sister, and spent most of his time there playing with her inside a giant inflatable ball!

Overall, this has been such a great week and we are so impressed with how respectful, responsible and hardworking all of our campers have been!! Thank you for letting them spend the week with us!

Lego EV3



This week the Lego Mindstorms EV3 Summer Camp started with eleven enthusiastic campers. The camp is structured around the World Robot Olympiad (WRO) challenge, a global robotics challenge that uses the Lego Mindstorms WeDo and EV3 platforms. Instructors Elmer, Paige, Emerson and Nikhil were excited to see how the campers approached the challenge presented this year.

This year's WRO challenges are themed around "Smart Sustainability". Enzo and Calvin built a robot for the "Elementary" division (Ages 8-12). The object of the game is to autonomously transport "adult" and "children" to various locations on the playing field. They spent a lot of time learning different coding methods for following lines. They also made a lot of mechanical changes to help the robot navigate around the field and manipulate objects. They even made some code to get the robot back to base autonomously between runs.

Joshua also built a robot for the Elementary division. His robot featured larger wheels for more speed. Joshua showed off some artistic talent reconfiguring some of the field pieces into contemporary art.

Zev and Sriram started work on a “Junior High” division (Ages 13-15). The Junior High challenge is to bring “light bulbs” (built from Lego pieces) to different locations, identify bad light bulbs, and take them to the trash area. They built a robot with a grab and lift mechanism, then started coding. Their first iteration wasn’t able to reach far enough but they solved it with a quick redesign.

The WeDo challenge this year is “Smart Transportation”. Students have to build and program a “driverless school bus” and transport children to school from different locations on the field. The main goal this week was to formulate teams and discover how to build a sturdy drive train that was capable of turning. MJ, Sebastian, and Valentina, and Vivienne, Luke, and Oliver worked in two teams of three, testing their robots against each other to explore how different build techniques affect speed and functionality.

In addition to robotics, the campers enjoyed a visit to the Cranbrook Institute of Science and visits to the Natatorium where they showed off their swimming skills. This was the first week of a three week camp. Students that are interested may participate in the Michigan WRO Championship that is being hosted by Cranbrook on July 20. Great progress was made this week, and there is still plenty to learn in the upcoming weeks.

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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