

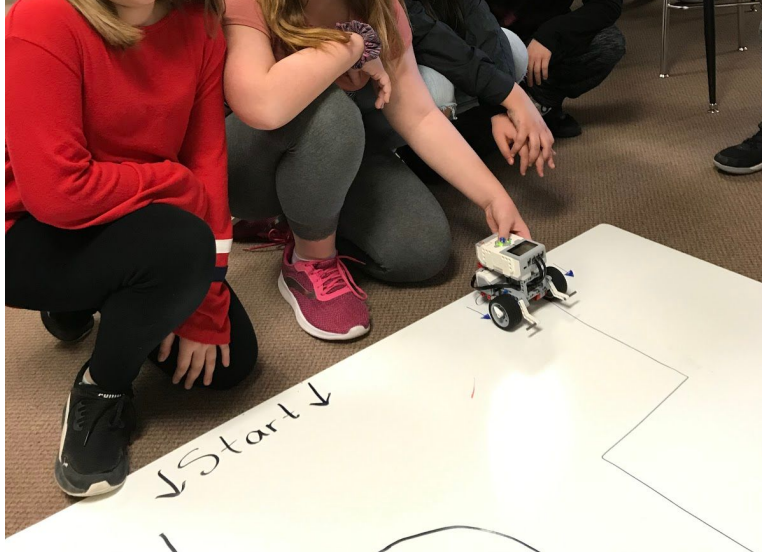
Hello! Here is a little bit about the EV3 robotics kits and what we were able to do with your generous help last year. They are a robotics kit- but are really very versatile. In the past I have had students build everything from a basic robot to a guitar. They include a number of sensors that are great starter sensors for learners such as a touch sensor and a color sensor. With our students I had them start by following lego's instructions to build a basic robot and get it driving forward then turning. I was able to take some pictures of our students that I can share with you. I had to crop out their smiles for their privacy, unfortunately. This is so engaging for kids to do- they all have big grins or thinking faces as they work! I have 2-4 kids work together in a group. They also really improve their teamwork skills while doing this!



After their robot is built- they take it to the computer and use programming software that is free from Lego to program their robot to drive. This is a great way to get started coding and allows for them to immediately see their robot run their program. Students really come face to face with the difference between what they think the robot should do and what their program says to do. They also use math skills such as measurement and degrees to help determine the radius of turns and distance the robot drives.



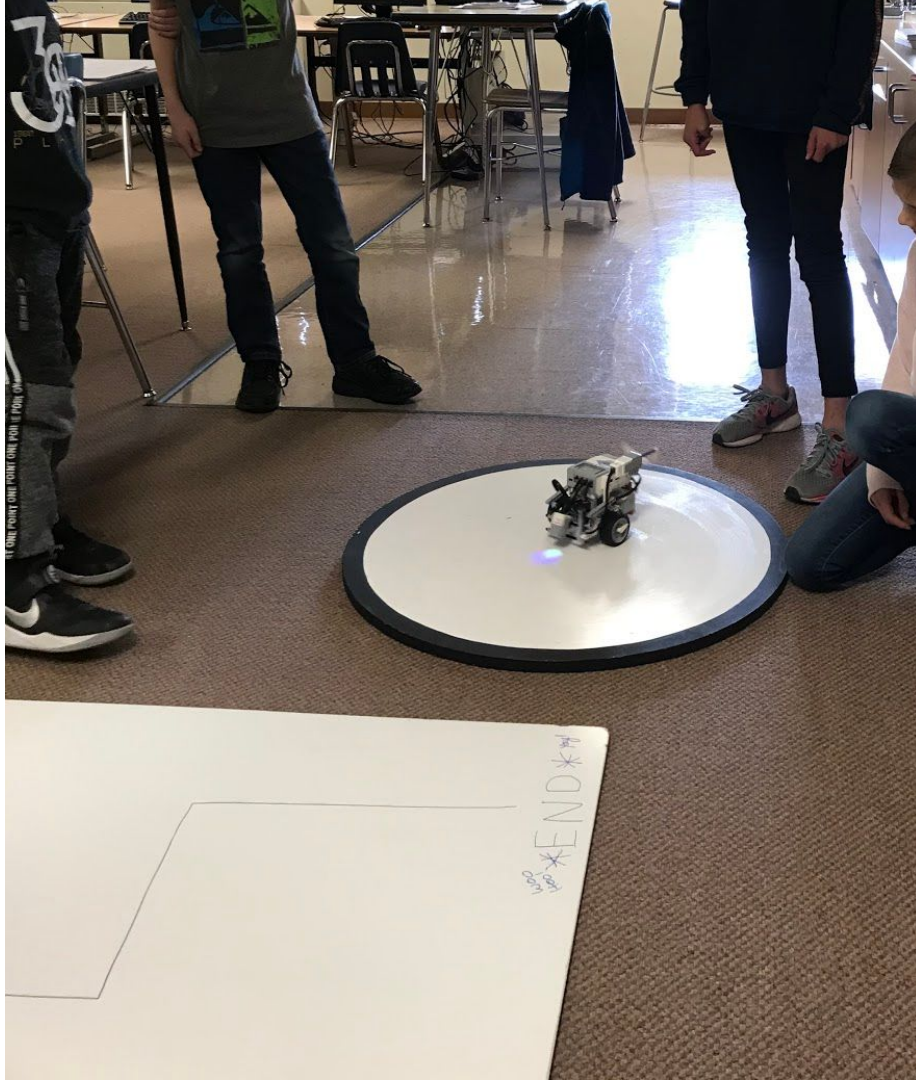
After students get their robot moving forward, turning and they have a little control over how far their robot drives, I have them start trying to program their robot to follow a “maze.” You can also create a robot that will follow a black line with these kits and I sometimes do this as well, but for kids just starting out getting them working with the basic coding blocks more has been a better starting point in my experience. I usually have a few of these, with some simpler to start with and more challenging ones to try that have curves to challenge them to think of new ways to use the coding blocks and look at all the specifications available in the coding program.



When I used to coach robotics team- I made “sumo” robot mats. I often pull these out after the mazes and ask students to put together a program that requires a sensor. This allows them to start to see how sensors are used and, mechanically, consider how best to add the sensor. Sometimes they start by putting it in a place that doesn’t work well and then see the problems and adjust the placement of the sensor. I generally have kids figure this out instead of following directions to improve their critical thinking and get them engineering a bit. The goal is to get your robot to stay on the mat using the color sensor to see the line on the edge and react appropriately.







After a couple of groups get their bots going on the mat, they can start adding an attachment to create “battle bots” that try to push each other off the mat. This adds a whole new element to the program, since it’s a new program block and is often the first program that requires a second or third line of code running simultaneously. These matches can get very lively and kids get pretty creative with their building ideas!

There are many other things to do with these robots beyond this that I am hoping we will explore in years to come as our robotics program gets up and running and I have students that have gotten to work with the robots in my technology classes for several years running so they are able to dive more deeply into the challenges. Since I use these during technology time, several classes are able to access them throughout a school year on a rotating basis.

Thanks so much for supporting our students!

