

# Introduction to Robotics at foundry10

June 22, 2016

Over the past year, foundry10 has run programs at elementary, middle, and high schools in the Greater Seattle Area and we have begun finding interesting things about robotics and learning. How does robotics at foundry10 differ from standard programs? What does robotics mean to different students and teachers? What does it look like to create a self-sufficient and sustainable robotics program? What more can we do to prime students for what is available in the field and help them find their desired path? These are all questions we asked, and we have begun to figure out the answers to how students interact with the broad field of robotics.


Throughout the year, we have offered a program titled “Introduction to Robotics” to a Seattle Girls School. This drew in students with varying levels of experience and created a dynamic environment in which students can both learn and teach.

## The programs, students, and work

In the Fall of the 2015, Seattle Girls' School (SGS) offered foundry10 the opportunity to run our Intro to Robotics program as part of their [Wednesday Workshops](#). It's a wonderful opportunity where community members and organizations can come in and teach SGS students for 2 hours. In our program, we allowed students to choose their own projects (subject to approval) and/or learn the basics through basic kits. Although this program is taught as an introduction, we always get students with diverse, varied skillsets and levels of experience.



We were frequently surprised by the level of innovation the students showed, even at young ages. For example, while most SGS students chose off-the-shelf kits to work with, Zoe, founder of the SGS Coding Club, ended up creating her own robot from a few loose components and some spare parts that she had from previous projects. Specifically, she used stepper motors, an Arduino



## A spectrum of skills in a broad field

As an introductory course, we were not just focusing on coding, mechanical, or electrical skills. Instead, we were attempting to convey the subtle nuances of what it means to be a roboticist at the most basic level.

This is a broad field of study that is constantly growing and branching. By not explicitly telling students what to do, instead having discussions about potential opportunities, we found students accessing the opportunity to think for themselves and choose their own projects. This self-guided exploration of a field is key in many different facets of our work, and it was exciting to see young students embracing it in a highly technical field.

In the future, we hope to further explore how people select certain branches of robotics and engineering. Our hypothesis is that by allowing them to explore their own creativity, they will know which branch of robotics they would like to pursue later in life, if at all.

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Although, through our work, we have created a host of new questions in addition to shedding some light on the logistical challenges of robotics, we have also been able to refocus our goal for

the program and are looking forward to refining existing programs and potentially supporting new ones in the area.