READY FOR A CAREER AS AN ENVIRONMENTAL ENGINEER

Aquabots
1845-A

My name is Madelyn Courtney and I will be an environmental engineer in May 2031. That is when I will graduate college. My best friends and I are on the AquaBots 1845A VEX IQ robotics team. I have been on the team for 5 years. Our STEM experiences in VEX IQ robotics have allowed us to have the knowledge of different careers in the STEM field. For example, through the STEM Research Project Presentation, we have researched the environmental engineer career by interviewing marine biologists at a marine life research center and the inventor of the FarmBot, Rory Aronson.

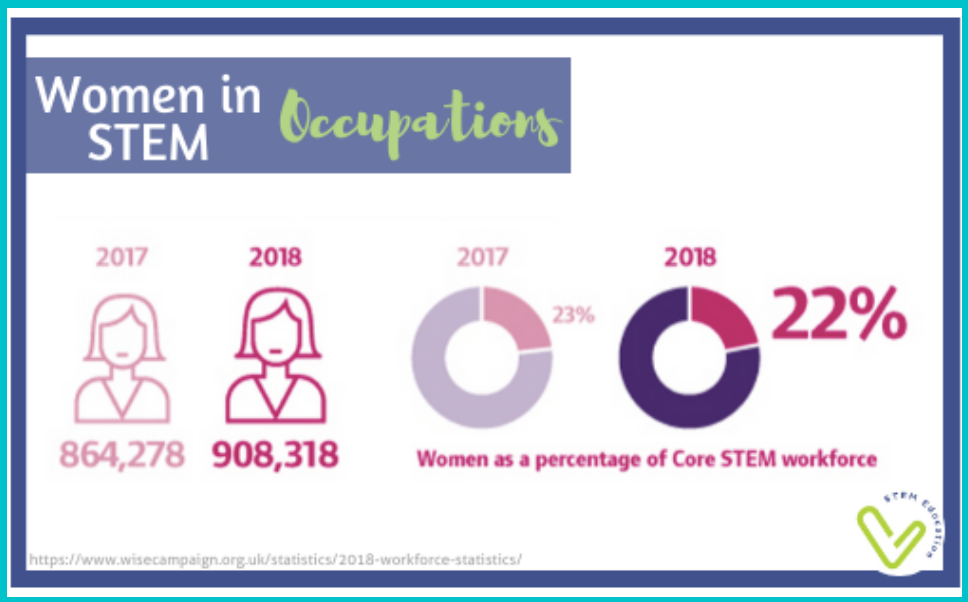
STEM is a very diverse career option. Although there are many branches of engineering, I would like to become an environmental engineer. This STEM field appeals to me the most because my dad is an agricultural teacher and I have always been fascinated by the environment, since I live in a rural area. While conducting research for one of our VEX STEM Research projects on dolphins a couple of years ago, I learned that an oil spill occurred in local gulf waters. This caused many aquatic wildlife to die. I read a thesis on the effects of the oil spill on dolphins. I got to see some of the dolphins that were saved from the oil spill and conduct my own scientific investigations on their quality of life, by creating a dolphin playground out of recycled VEX robotics parts. Even though this dolphin playground that my team and I created was such a small gesture, it made me think of what I could do as a future environmental engineer to make a bigger difference in the environment.

"You can do anything you want, but you have to work for it."
-Annie Easley

Environmental engineers can be very helpful to the environment. According to careerexplorer.com, "An environmental engineer is someone who uses the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems." Competing in VEX robotics has prepared me for this job because I have learned how to research and solve problems in my community. I have also collaborated with the inventor of the FarmBot through the STEM project in VEX Robotics. The FarmBot is an open source precision agriculture CNC farming project consisting of a coordinate farming system.

According to Rory Aronson, engineer and inventor of the FarmBot, one of the skills you need to be an environmental engineer is proficient math skills. This skill comes from learning and creating programs. I use coding skills to program my robot. Creative thinking skills and good writing skills are both skills that we all learned from writing into our engineering notebook and doing online challenges. Brilliant analytical and problem solving skills, are skills that come in handy when our robot is not working the way we want it to. Good communication and people skills are skills we learned by doing judges' interviews and explaining our engineering notebook. One year at Worlds we won the STEM Research Project Award for our division. Having the ability to speak to adults and to get them to listen and be interested in our presentation really gave me the motivation to speak up as a girl pursuing a career in a STEM field. Strong project management skills are what we learned and used when we hosted a tournament with our brother team. Another skill that we learned while participating in VEX robotics is how to use power tools and machines. We have learned how to use welding machines, by conducting STEM research at a local ship-building yard.

We also conducted research about the environmental engineer career by attending a youth workshop hosted by the Society of Women Engineers. The women engineers at the shipyard explained their roles and careers. They also set up some STEM experiments that we tried out on our own! We also used the website https://www.careergirls.org/role-model/environmental-engineer/ to research women environmental engineers. This website showed several women and what it is like to be an engineer. It also has resources for girls who want to become engineers. According to the Society of Women Engineers website, only 13% of engineers are women. Over 33% of environmental engineers are women. Through researching, I found it interesting that environmental engineers are not that common of an engineering degree choice for women. It was voted number 9 out of 10 of engineering majors. I do not mind going outside and getting my hands dirty. I love the outdoors and farming and that is why I think being an environmental engineer would be a good career choice for me. I am also good at taking machines apart and putting them back together. This is why I am the head builder of our team.



INFOGRAPHIC SOURCE

HTTP://WWW.WISECAMPAIGN.COM.ORG/UK/STATISTICS.2018-WORKPLACE-STATISTICS

Environmental engineering will change over the next ten years as more problems come up in the world. The world's population is expected to continually increase. Our natural resources will be used at an increasingly continuous rate. We will need more engineers to protect our environment and ensure that resources are protected and used wisely. Without environmental engineers, who knows where we will be in the future? The person that inspired me to become an environmental engineer was Rory Aronson. He is an environmental engineer that invented the FarmBot. Rory has inspired me to learn more about the career because he invented a robot that can help many people learn more about agriculture by planting and maintaining their own gardens and farms at home on a smaller non-commercial scale. FarmBot has also allowed regular homeowners to manage their own crops in a more environmentally friendly way. If I could be anything like Rory Aronson, I would probably be so proud of myself. He started his small business on his own. Even though he lives across the country from me, he took the time out of his busy schedule to talk to little girls and explain his business strategies and about his prototypes. I want to go to college and become an environmental engineer, so I think what I'm doing right now by competing in VEX robotics is already making an impact for my future. When we participate in robotics, it reminds me what I want to do in the future. STEM is something that you can do on any path and use in future careers. I am in 7th grade and I am already on my path of becoming an environmental engineer.

I am a girl.
I am a welder.
I am a roboticist.
I am an environmentalist.
I am an AquaBot
And because of that, I will be an environmental engineer.
I will change the world.

CITATIONS/ RESOURCES

Aquabots 1845-A

We are the wave of the future!

Title: Ready for a Career as an Environmental Engineer
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Resources/Bibliography:
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