

Career Readiness

One career strongly relating to STEM, especially technology and engineering, is a rocket designer at NASA. The engineering design process is essential to outer space travel. Rocket science is a vast and complicated branch of science, and ordered processes are necessary to success.

To acquire my information on this subject, I used NASA's official website as well as a reliable article on the engineering design process.

The first step in the process is to identify the need and constraints. When working with NASA, the general need is always the same: discover more about the universe, and push the bounds of space travel even further. 50 years ago, this meant sending a man to the moon. Now, maybe it means putting a man on Mars. 50 years in the future, this could mean colonizing another planet.

The second step of the engineering design process is to research the problem. In a space exploration program full of experts, this is perhaps the easiest step of the process. Depending on what they are trying to accomplish, NASA scientists must figure out their current limitations and then find ways to push them further.

The third step of this process is to imagine and develop possible solutions. NASA rocket scientists apply this by showing immense creativity to brainstorm potential ways of defying the current bounds of physics and accomplishing their goal.

The next step is to plan and select a promising solution. Having come up with several creative possible solutions, NASA scientists now need to select what seems to be the most efficient way to solve the problem. This step may need to be repeated again and again until a suitable solution is found.

After this step comes finally building: create a prototype. This fifth step is fairly straightforward. All you have to do is act on your selected solution and bring it into existence based on pre-created ideas or blueprints.

The difficult sixth step of the engineering design process arrives next: test and evaluate the prototype. For NASA, this would usually mean launching a manned or unmanned craft into space. If, as is unlikely on the first attempt, it perfectly achieves the desired goal, nothing else is needed. However, as is likely, if this is not the case, a seventh step will be necessary.

This seventh step is to improve and redesign as needed. In order to do this, NASA must repeat the process over again either with an entirely different idea or with a more specific improvement on the previous design.

This series of steps, called the engineering design process, is similar in many ways to how my team operates with vex robotics. Like space travel, the possibilities for improvement are nearly endless, and there is always more to do. My team and I are constantly finding ways to improve our robot. We research, brainstorm, and create prototypes for ways to do this just like NASA.

Similarities in vex robotics to many engineering careers in the real world have taught me valuable life skills regarding technology and engineering. Creativity and perseverance are necessary anywhere I go in life, even if my career lies outside the realm of STEM.

Works Cited

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