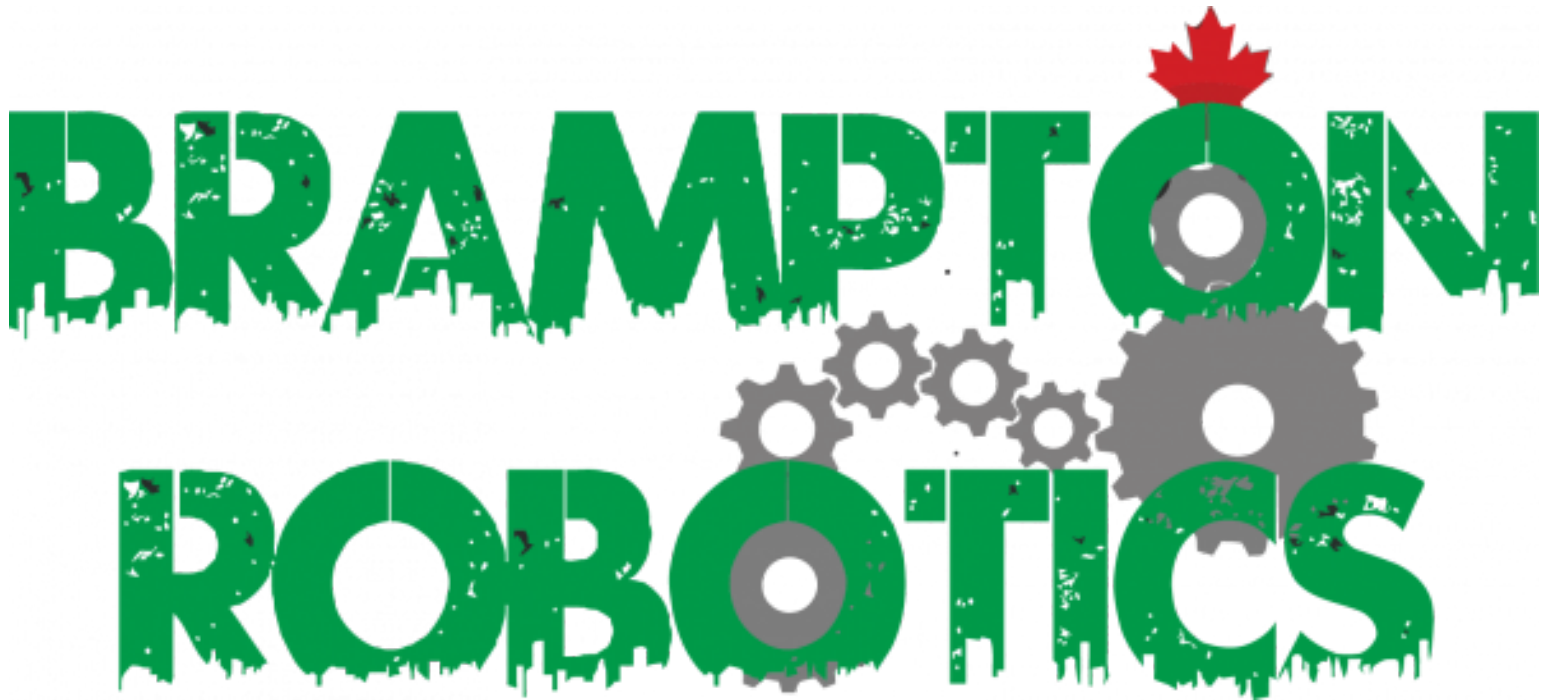


Jaybir, Arnav, and Srinidhi

# Career Readiness

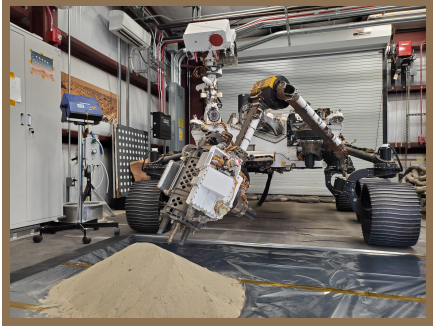
1140D - Brampton, ON

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NASA has attracted the attention of many interested in pursuing engineering careers, including students in VEX Robotics, due to curiosity, the engineering design process, and the training provided by VEX Robotics to prepare people for this opportunity. First and foremost, our interest for NASA has significantly increased as we continue to wonder about the hidden gems scattered across galaxies. As stated on the NASA website,



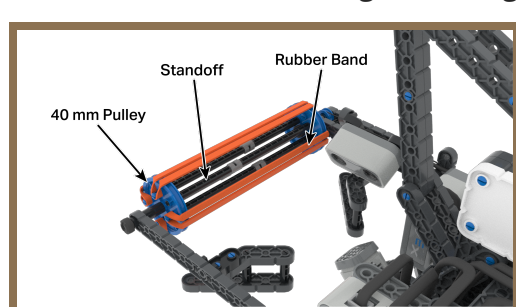
"Humans are driven to explore the unknown, discover new worlds, push the boundaries of our scientific and technical limits, and then push further." As individuals interested in the undiscovered worlds scattered distantly throughout the galaxy, we chose to pursue this fascinating career. Our curiosity in NASA is also heightened by the possibility of contributing to discoveries that can influence the course of human history. Moving on, in relation to VEX Robotics, NASA personnel must constantly test their robots to

ensure they do not malfunction after being launched into Earth's orbit, the moon's orbit, the orbits of other planets, or even the surface of celestial bodies. If a problem emerges, the implications might be severe, with deaths, financial setbacks, and psychological setbacks all not being far-fetched. For illustration, NASA's Perseverance rover underwent rigorous testing in a Mars-like environment to validate its functionality. Engineers must go through a procedure known as the engineering design

process to accomplish this. Engineers engage in the process as follows, according to NASA: "NASA Engineers ask questions, imagine solutions, plan designs, create and test models, and then make improvements." NASA uses this method to ensure that the technology they develop is as energy efficient, compact, and superior to other current market technologies. For contrast, NASA's website describes the Hubble Space Telescope in the format of an engineering notebook, describing particular components in depth, mentioning complications, and providing a summary of how the telescope operates. This article gives an outline of the thought process and criteria considered by these engineers. Our team 1140D Brampton Robotics uses a similar technique with minor differences. Before we begin creating the robot, we examine prior tournaments to



determine whether identical processes can be employed to execute certain elements of the game. For example, this year's flywheel is constructed similarly to the intake rollers utilized in the 2022 game, pitching in. We then look at designs shared on social media to get more inspiration. Following that, we build a robot and enhance it by gathering additional ideas, solving difficulties, and compacting



the robot as the season progresses. We will absolutely begin developing more prototypes after seeing the process NASA engineers go through, especially considering the results

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these engineers receive. These prototypes guarantee that we have understood the primary components that go into a particular mechanism, resulting in fewer issues when the robot is constructed. Ultimately, time management and the robot's overall design will be significantly improved. Lastly, these similarities in terms of engineering and the process involved with it demonstrates the preparation for NASA provided by VEX Robotics. The need for mathematical, scientific, engineering, and technical skills to pursue these STEM occupations is astounding, particularly at NASA, where advanced calculations are required to construct, program robots, and anticipate the launch date for missions based on planetary placements. VEX Robotics is well-known for developing these abilities, particularly among a younger audience. We can attest to this assertion as a group since our total knowledge has significantly increased, sharpening our capacity to think critically, our overall engineering talents, and our scientific and mathematical expertise. Furthermore, distinct levels depending on grade levels encourages us to strive harder and harder each year. In addition to the competitive component, this drives us to enhance our engineering talents as a result of the rise in complexity dependent on grade level. Furthermore, the variety of contests teaches us to develop various components for different seasons. This compels us to acquire new engineering knowledge, which broadens our understanding. This understanding is essential at NASA since engineers must construct robots for a variety of tasks. To conclude, NASA has attracted the attention of many interested in pursuing engineering careers, including students in VEX Robotics, due to curiosity, the engineering design process, and the training provided by VEX Robotics to prepare people for this opportunity.

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