

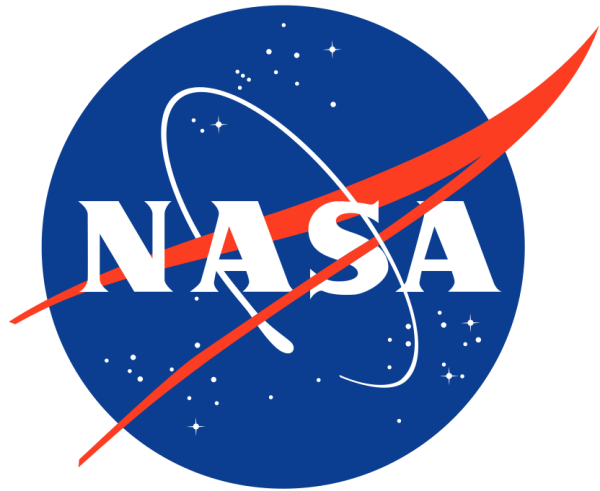
Career Readiness Online Challenge 2021-2022 Competition Season

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Team 8349P Peanut

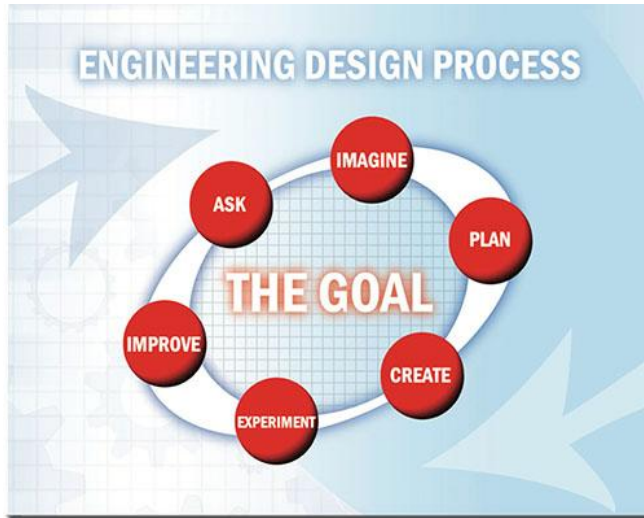
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When most people think of engineering companies NASA is one of the first to come to mind. With their incredible feats in the Aerospace Engineering field it can be easy to forget that they spend years on each one. Like many engineering companies NASA uses a cycle called the “engineering design process” to make sure



that every innovative idea has some weight to it. The most common engineering design process used is the one by Project Lead The Way (PLTW). VEX Robotics Competition encourages its team members to use this version of the design process. There are other sorts of design processes. NASA has created their own type and is using it currently. While there are differences between the two there are also similarities. Where they are similar is where it counts the most.

The PLTW design process is centered around testing each idea individually to get to one end goal. For example, if you wanted to have a robot that picks something up and sets it on a platform you can test each idea to make it work in regards to height, the style or lift, the clamp/lifting device itself, and the wheelbase to move it around. With NASA’s version of the design process you have all of the basic steps to the PLTW design process centered around the end goal. For example, the robot itself vs. the ideas involved in building it. This can be good in some situations; the whole team will be coordinated into one mindset and know exactly what the end result should look like. However, it makes it hard for the team to get multiple things done at once. It is designed to have the team working on every element of the project together rather than dividing the work. With the PLTW design process, you have multiple projects going at once that



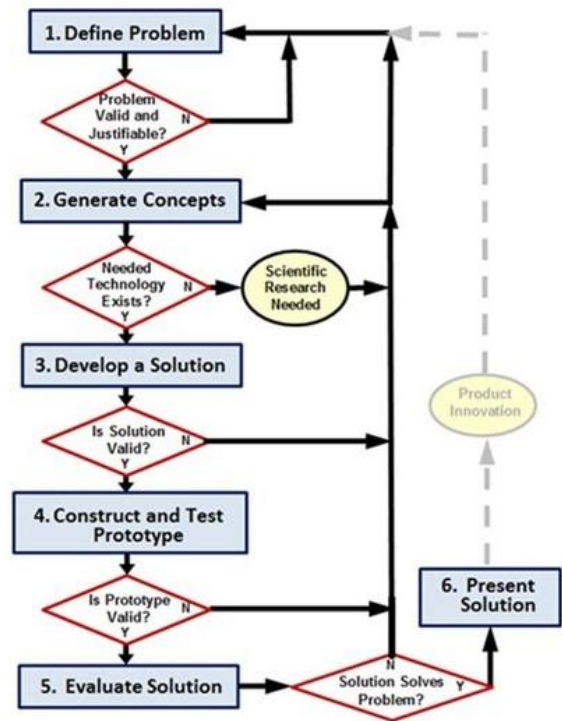
will be combined into the final end goal. This allows the team to accomplish more at a time and requires them to communicate and coordinate so as to not double up on projects.

VEX Robotics competitors use the PLTW design process rather than one designed by an engineering company such as NASA because PLTW designed their process with scholars as the

intended users. As stated previously the PLTW and NASA design processes have a lot in common in regards to their core ideas. However NASA designed their process with the approach that experienced and fully trained engineers would be using it every day. Engineers that have been in a team scenario for years would no longer need to be “trained” on how to communicate with others. VEX, however, knows that students aren’t that experienced, so they prefer to use the PLTW process. VEX chooses to use this process in their program because the PLTW design process is often used in schools to teach this lesson. After all, VEX Robotics is meant to teach many children about engineering and computer science, as well as leadership, communication, and teamwork.

And teach they do. Our whole team has been impacted by the lesson VEX Robotics chooses to teach its members. Our team’s programmer Michael Price has been introduced to new engineering principles and has been inspired to learn even more about coding and its different languages. He has also learned how to work well with different types of people and how to be a good sportsman in the face of defeat. Our driver and builder Katie Mosley learned more and continues to learn about teamwork, the importance of communication in that environment, and

new engineering principles and problem solving skills. The team's captain Rachel Baker eventually wants to work for VEX and start new programs where she can help teach children the same lessons that VEX has taught her in the engineering field and in the real world. VEX impacts every scholar differently, but the way they do so depends totally on the student. The lessons they want the kids to learn can all be seen in the different resources they list for children to use. From the equipment to the method it is clear VEX wants to prepare kids for what they will face when they become the next generation of innovators.



Work Cited

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