Coral Restoration: The Future with ROVs

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Abstract

This project included constructing and designing a fully functional ROV. Our goal was to create an ROV that was equipped with the maneuverability and stability to be able to complete all the tasks that were given to us for the seaperch competition. This project included testing, planning and building the ROV. We chose this project since we all had an interest in the ocean as well as STEM related topics. Our hypothesis was that we would create a well designed ROV that could complete the tasks given efficiently. Our anticipated outcome is that our ROV ends up being successful in completing the mission course and obstacle course in the upcoming competition.

Methodology

We approached this project diligently and ready to take on a challenge of building an ROV suitable enough for this competition. We wanted it to be the best and to achieve greatness. So overtime we realised that we were working too slow and so we picked up the pace in order to finish quicker and have more time to practice more for maximum greatness. Whenever we faced a problem we used the engineering design process to solve it.

Results & Discussion

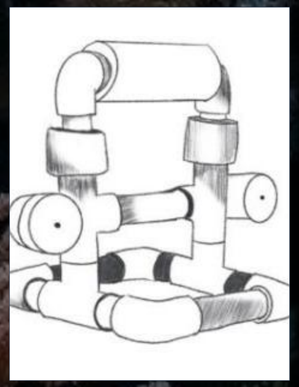
Doing this project we uncovered a lot of important findings and things that surprised us such as the importance stability and maneuverability in building an ROV. We were also surprised to discover that the ROVs performance in water differed to our expectations. We learnt many important lessons in this process including the importance of teamwork, the importance of testing and problem solving skills.

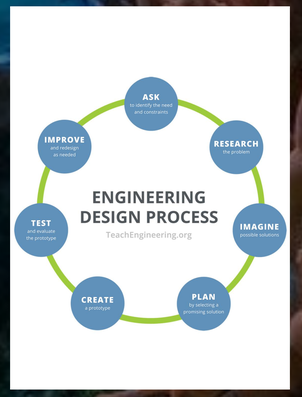
Conclusion

Our ROV is designed to be used for navigation through tight spaces, pick up coral fragments, complete missions, and be able to do simple tasks used to help coral restoration. That is why we find this project very important to us because these projects are being used to help something that we hold close to our hearts. We gained a lot of knowledge and life experiences from this project that we could use in the future to help underwater life. By creating our ROV it helps the scientists come up with better ways to save our beautiful oceans.

Background & Motivation

We picked this project because the ocean is very dear to us and we hold it close to our hearts. We would hate to see our oceans go down in shambles due to coral decline. We used this as a powerful motivator in our ROV building journey. It's important to carry out coral restoration and help benefit our environment.





Next Steps

Our next steps would be to use the ROV in real world applications to help benefit our environment. If we win and get to go to america than we will use the time we have till the competition to make our ROV quicker, more efficient, and overall superior to the old design to hopefully pull through and win the whole competition. If we do not win we will take this as a learning opportunity and recycle the knowledge next year. While creating this project we found many things interesting and questions that we could explore in the future however the question that really stood out to us is how can we apply the knowledge we gained from creating this ROV to create more advanced underwater vehicles that could benefit our environment.

Acknowledgements

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