



Central Valley Robotics

Judging Profile for Team 25243

Team Name: "MARLINBOTS"

Project Information

We had an amazing time with our project this year. It was a difficult choice as all of us initially searched the internet to come up with ideas on how to either conserve water, recycle or finding new ways of producing water. Ultimately, we decided on doing our project on fog nets. We learned that fog nets are currently being used around the world and is a great way of capturing water that otherwise would eventually evaporate back up to the atmosphere. As we were trying to figure out a better system for using the fog nets we decided that the biggest issue was that only a small amount of fog was actually captured and more would be captured if there was wind to direct the fog to the net. That is how we came up with using a fan to help direct the fog to the net. It was really cool actually performing our own experiment to prove our hypothesis. We constructed a small scale model, then used a spray bottle with water to simulate fog. We sprayed the water with a fan and then without a fan for the same number of times and then measured the amount of water collected. Wow, were we surprised when with the addition of the fan we collected 400% (yes 400% - not a typo) more water! As part of our research, we met a farmer in Madera by the name of Ron. Our trip to his farm was so much fun! We learned all about harvesting grapes, making raisins and how he waters all of his crops. Farmer Ron taught us about different sources of irrigation, how expensive it is to water all his crops on his farm and how our underground water source is becoming more and more limited due to our severe drought in California. The best part of our research was definitely meeting with Scientist Ian from the Discovery Zone who came to our school and gave our group a special presentation. He taught us about the different states of matter and how fog is really condensed water floating up on the grounds surface otherwise known as clouds but on the ground. We actually got to do different experiments with dry ice to see the different properties of water. As part of the Development portion, we realized that this is a very easy and inexpensive way of collecting water from a new source. The current large scale fog nets being used in South America and Northern Africa are 40 meters squared and collect approximately 2,000 liters of water per day which is approximately 525 gallons! The nets last approximately 10-15 years and cost approximately \$1500.00 to construct. There is no need for pumps or electricity because water flows by gravity flow therefore there is no additional cost. We added a fan which we figured would be a solar powered fan that would charge during the day and direct the fog to the net in order to optimize the amount of fog being captured. We shared our project with farmer Ron and his irrigation specialist

Team Roster

Name	Role
Coach Name	Coach
Coach Name	Coach
Site Coordinator Name	Site-Coordinator
Student Name	Team Member
Student Name	Team Member
Student Name	Team Member
Student Name	Team Member
Student Name	Team Member
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Student Name	Team Member
Student Name	Team Member
Student Name	Team Member
Student Name	Team Member
Student Name	Team Member

Team Photo



Robot Photo

that works on his farm with him. We also shared our project with Scientist Ian, our principal Mrs. Thomas and our school's office staff. We shared it with our friends and family all of which gave us lots of great feedback. Our final presentation will be with the Center for Irrigation at Fresno State which is coming up in the next few weeks. We sure hope they think it would help our local farmers and potentially individual families who live where there is lots of fog right here in the Central Valley. The best part of all was creating a project from an idea which included doing research on the topic, coming up with a hypothesis on how it can be improved, performing an actual experiment, sharing it with experts and realizing through our development process that our project can actually be made easily without utilizing a lot of resources or money!

Core Values Information

Our Oath is my journey does not end today. I hereby promise to continue my journey in innovation and to continue to share what I have learnt with my community. We practiced Core Value in our weekly Robotics meeting. We all brainstormed and prepared how to work together as a team. We had friendly discussions on how to solve problems. We huddled for core value activities and had lots of fun.

Our Moto are as follows: 1. We are a team 2. Brainstorm to find solutions with guidance from our coaches 3. We know our coaches do not have all answers, we learn together 4. We honor this spirit of friendly competition 5. We share our experience with other 6. What we discover is more important than what we win 7. We display gracious professionalism, and cooperation in everything we do 8. We had FUN!

Fun Facts

We had a lot of fun!!! Listen to our team's jingle (below) for the project and ask us to show you the dance that goes with it. MARLINBOTS - Fog Catchers Want some shower Use fog power Let a gust of air Like the wind that blows your hair Push some fog through a net To make it very very wet Fog catchers FFFog catchers Fog catchers FFFog catchers

Robot Design Information

Robot Name: MARLINBOT

The coolest design element of our robot is the "Slide". We built an attachment on the side of the robot that looks and works like a slide (see robot picture). It is connected to our forklift. When the forklift goes down, our slide is activated. We use our "Slide" to transport and drop the water barrels (big water) and the sling shot. We think this is clever because there is no lifting or grabbing involved. When the slide is activated, we let gravity do the work for us. It is so much fun to see the barrels roll down. We all love water slides! All of our attachments are simple and easy to add and remove. This helps us in reducing the time we spend on attachments and allows us to do many short runs.

