

THE VARMINT WEEKLY

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TEAM  VOLTAGE 386



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Inaugural Debut

Voltage 386 is a FIRST Robotic Competition team based out of Melbourne High School. For 18 years, Voltage has proudly served its community with a hands-on STEM Robotics education. Voltage is proud to announce the launch of our new publication, The Varmint Weekly, a weekly report to link Voltage with its community.

Voltage Challenge

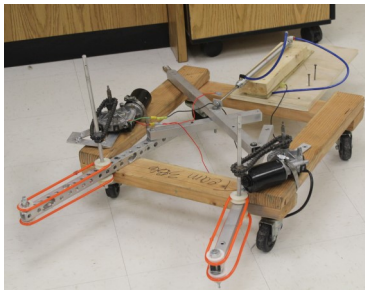
Our FIRST Lego League Voltage Challenge, held at Melbourne High school in Melbourne, Florida was an exceptional success; This January 13th, fourteen First Lego league teams came to our home base to compete with their Autonomous robots based on EV3 or NXT bricks. The theme this year was water management. As well as participating in the competition, the teams were asked to present a solution to global water consumption. These assorted primary school kids discovered new, more effective ways, to obtain, use, and preserve water. Teams presented excellent “gracious professionalism” and friendly competition as they showcased what they had worked so hard on over the past months. Voltage is exceptionally proud to have hosted such a skilled group of future leaders and looks forward to seeing what next years teams will bring.

Prototyping the Manipulation Aperture for FIRST Power UP

The first step in any winning strategy is as always trial and error.

continued pg. 2





Rubber Band Aperture

▣ Voltage started the build season with plenty of bright ideas to put to the test. This week we focused on creating an aperture to manipulate the cubes; the team developed three prototypes based on three ways to collect and deposit them. The first one we called the Costco-bot.

Square aluminum tubing attached to a shopping cart with mounted pneumatic cylinders. These cylinders formed a punching mechanism, pneumatic cylinder attached to an aluminum sheet with a sticker. In the meanwhile, the cube would be held by tread on a Plexiglas frame. This was the simplest idea. Another was a carpet dolly with a modified grabber utilizing wheels instead of tread to draw them in. This will allow for easier depositing and for an improved grip on the cube. The third prototype incorporated a plastic band method with aluminum square tubing connected to motorized bands allowing for adaption to the variation of sizes and possible angles we would encounter while receiving the cubes. We are currently trying to entertain a mix of these three design paradigms in order to create the best possible manipulator around which we will cater our strategies, both in design and on the field. ▣



Wheel Aperture

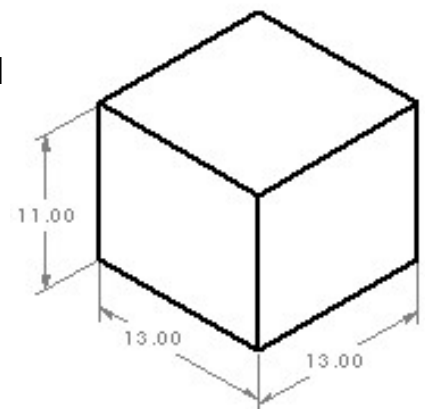


Costco Bot with Tread and Puncher.



This year's challenge is based off of old arcade games. Both alliances are trapped in the game and must get the highest score and defeat the boss to escape.

Teams must maintain control of a scale and switches by stacking on power cubes. These power cubes can also be exchanged for power ups that will help teams gain an advantage over their opponent. Check out the manual [here](#) for a detailed description of the game and its interactions.



Dimensions of Game Cube