2019 Tech Ramp Competition Challenges

The following projects were designed to compete in the 2019 Tech Ramp Competition.

EcoWords: A Clean Energy Library

New Horizons Governor's School for Science and Technology - Team Clean Energy Library

Our project addresses the issue of climate change and dying libraries. We created a modern, aesthetically-pleasing design that uses green energy while attracting younger generations. By using the disciplines of environmental engineering and architecture, we drew blueprints of the design, fabricated a 3D model, and created a schematic to show the library's energy flow. To evaluate the solution, we released a blueprint of the library and asked students if they would go to that library more often.

Inkwelle: A New Smart Stylus

New Horizons Governor's School for Science and Technology – Team Gedanken

Inkwelle, our new smart stylus, has the ability to work as a normal pen and a stylus on any surface, eliminating the constraint of having specific accessories and making it accessible to anyone. Its range of features could be easily adapted for individualized use. The device would be a multidisciplinary writing utensil that offers live digital text transfer from handwritten text, spell check, drawing abilities, and language translation, all nested in a single handheld device. Inkwelle offers a new design perspective on the writing experience that seamlessly blends technology and productivity for the user.

Decibel Monitoring Headphones

New Horizons Governor's School for Science and Technology - Team Client Impact Designs

Many people who have Autism are hypersensitive causing noises to be magnified, affecting their everyday life. Our project goal is to design a hearing aid that provides a noise cancelling in an environment when a certain decibel is reached. This would allow quick and convenient accommodation for the user in the event that the setting becomes too loud for comfort. The user would wear the noise cancelling headphones with the sound proof feature off and if the decibels of sound in the environment reaches a level, the sound proof feature will turn on, quieting the environment as heard by the user. The system will be designed so that the decibel level can be adjusted. We plan to work with local stakeholders to become more aware of Autism and receive advice on the features we plan to have in our device.

Device for the Visually Impaired

Smithfield High School – Team Packer Productions

We wanted to develop a system that could work with a "tried and true" GPS app for the blind that was not as obvious as a white cane. Our sensory belt has ultrasound sensors on the left, front and right. These sensors are connected to inexpensive servo motors that move and buzz when close objects are detected. These sensors give a person an idea of how close they are to objects such as people, walls, etc. It achieves the same purpose and is inconspicuous.

GPS Glasses

Landstown High School – Team Landstown Jags

Our challenge was to create a wearable system to provide auditory or tactile directions for the visually impaired to walk to a desired urban location.