August dazed? More like Technology Crazed!

As the summer winds down and school prepares to start back up, don't forget to check out our fall classes! We continue to provide classes during the school year and will be offering spots on several new exciting robotics teams this year, including our VEX IQ and BattleBot teams. This fall is going to be the best one yet!

Announcements

HIGH SCHOOL INTERN POSITIONS available during the fall semester! Receive class credit and work experience while learning about the latest technology! It doesn't matter whether you have tons of tech experience, or none at all; all responsible, eager-to-learn students are welcome to apply.

Our EMOTIV program will start in October! This new program will be led by **Dr. Carol Francis**. Sign up early for this opportunity to work with the latest EEG technology and recreate studies done by Binghamton University and major companies. It's sure to be mind-blowing!

New VEX IQ class starts Monday! Register now at PVNet.com!

Classes

STEM UNIVERSITY

We are so happy to see some of our former STEM University students in our other classes! These students had almost no tech experience at the beginning of the summer, but after coming back week after week for our STEM University class, they have learned so much and are now ready to immerse themselves in other classes, such as robotics and game design. STEM University is a great place for young kids to start learning about technology! Our curriculum is incredibly diverse, with lessons in: modeling, 3D printing, programming, and more, which exposes the students to many fields.

Software that our students learn to use include: Autodesk Maya, Autodesk Inventor, Tinkercad, and Scratch.

This week Intern **Eric** helped lead the 3D pen portion of the class, which was a favorite part of the day for most students. They were especially fond of drawing fishes and horses, creating whole schools and herds. Another popular activity this week was LittleBits, snap-able electronic circuits. The students enjoyed creating sounds and building new inventions while learning about electronics and engineering.
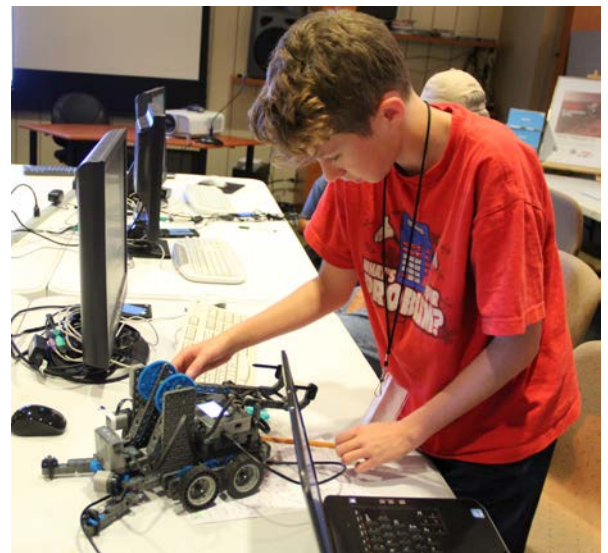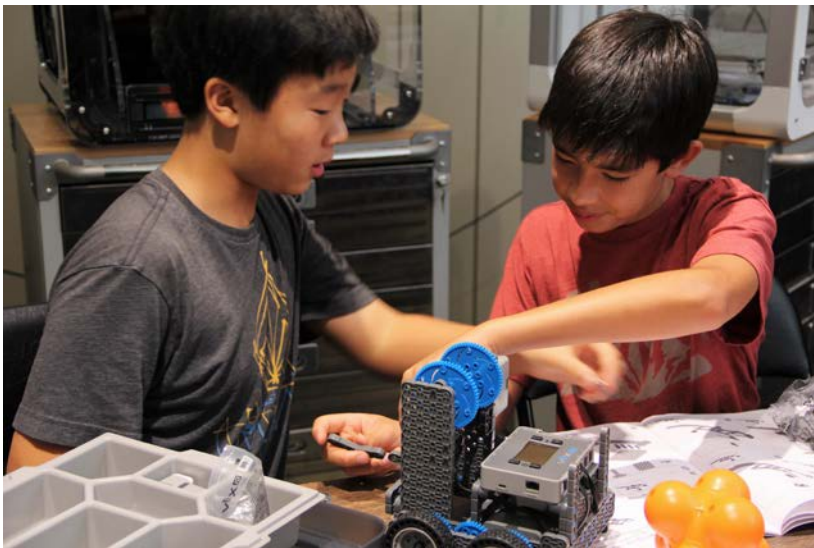
Check out **Zach's** Minecraft Creeper below right, which he designed using Tinkercad!
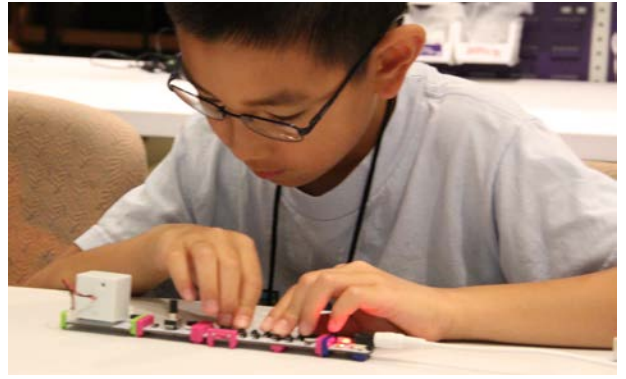
ROBOTICS

VEX IQ

Our students are making great progress in robotics! While some students used virtual robots to practice writing code in RobotC, others assembled robots and downloaded written code. They have been working very hard, and it shows!

Matthew and **Jeremy** are pictured on the left assembling a robot. They have been in the VEX IQ class for three weeks, and are on PVNet's robotics team. **RJ** is shown on the right downloading code that he wrote to the robot. He says, "I like robotics a lot. It's really fun!"

Anish, pictured to the right working with his virtual robot, says, "Robotics is my hobby. I want to work in Robotics when I grow up." Working with virtual robots helps the students learn how to program and control their bots safety. After three weeks of working on the computers, students transition to building and programming an actual robot, as **John** and **Michael** are doing below.

Michael says, "This week I finished the final challenge on RobotC, and that made me happy because I could start building my robot."

The team is preparing for two scrimmages coming up, one next Wednesday and one in September that will take place at PVNet.

Don't forget, robotics teams will soon start to be assembled for the school year!

BATTLEBOTS

Our instructors are hard at work developing the framework for this new club, which will start in the fall. If you missed the newsletter last week, BattleBots is a competition TV show where contestants build and operate remote controlled robots, which are armed and armored. They then compete in 3 minute battles, with the goal being to destroy the opponent's robot. We are so excited to bring a BattleBots club to PVnet! The designing, building, and competing of BattleBots is a creative and fun experience. If you are interested in robotics, check us out!

GAME DESIGN

VIRTUAL REALITY

In class, students experiment with our Oculus Rift and Vive sets, while working with the popular game engine Unreal Engine to design games. They became familiar with how virtual reality games are created, and how they are played. The class also incorporates coding, through Unreal Engine's Blueprint, a node based language that is simple to use. The students all created games by the end of the week. Pictured to the left are **Rose, Alexandra, and Lynn,** who are in their first week of class.

On the right is **Nicholas,** who is wearing the Vive. He and his friend **Cole** have also taken a Unity class at PVNet, but they say that they like working with Unreal Engine much more because, according to Nicholas, "You can work with virtual reality, and it's more user friendly", and according to Cole, "It's more commonly used."

Iris, who is in her second week of this class, says, "I like video game design because I can make stuff that you can't see in the real world and it's fun." She is pictured to the right working on her game, a first-person shooter.

PROGRAMMING

JAVA

In our weekly coding class, Instructor Peijay taught his students about the functions in a code and how certain scripts are used to make applications. They also learned how to declare strings and integers. Most of the programming students have been taking classes for several weeks now, and have improved greatly. Now Peijay is planning on working with his students to design an app!

MATLAB

Kirithika has been leading our MATLAB class for the past few weeks! Check out her to the right as she instructs future scientists and engineers. MATLAB is a high-performance language for technical computing. It is optimized for solving engineering and scientific problems. In industry, MATLAB is the tool of choice for high-productivity research, development, and analysis. For students interested in engineering, research, and graphical output of data, this is the language to learn!
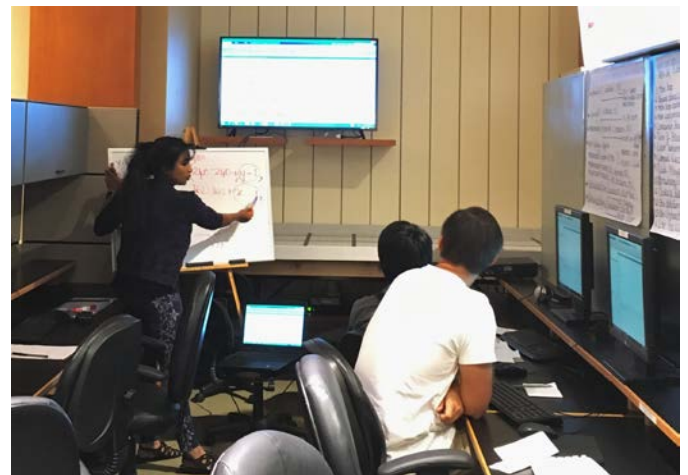
Projects

GAME DESIGN

Our game is finished and ready to play! Weeks and weeks of work has finally paid off, and you can now try our zombie game, titled "**Zombies on the Hill**" at PVNet. Come check it out!

Contributors:

Aysel- Modeler, Rigger, and Animator

Julianne- Modeler

York- Modeler

Lauren- Modeler

Josh- Modeler

Christian- Instructor, Animator, and Programmer

Tommy- Instructor and Programmer

Lochlan- Modeler and Animator (pictured to the right): "To be honest I wasn't sure if we could make a good game, but I was very impressed with our end results."

Michael- Environment Designer and Game Tester: "Learning about game design was a challenging process, but seeing the completed game was really satisfying."

VIDEO PRODUCTION

It is amazing how close the team is to finishing the PV Transit PSAs! This week, Editor Michael (pictured below) continued to record the scripts in multiple languages, and edit the audio. Thank you to Katy, Christian, Ted, Tommy, and Joseph, who donated time to translate and voice our scripts. We cannot wait to submit the finished products to PV Transit!

Peninsula High School UAV Video

Peninsula High School recently contacted us and asked for us to fly a camera-equipped UAV over their school campus, in order to create a video showcasing the results of construction over the summer. Currently, Intern Daniel is using Inventor to design a case that can hold both a regular GoPro camera, and one that will record infrared light. See him to the right working with the cameras. The case will be attached to the UAV and by combining the two footages, a more nuanced video will be created. We are very excited to be collaborating with Peninsula!

Interns

Daniel designed a very cool thank-you sign for Josh using Inventor. Josh graciously donated the materials and prizes for our Tamiya car races last weekend.

Lochlan, who is constantly improving on his modeling skills, is now working on a model of a Pikachu. Throughout the course of the summer, he has modeled two guns, a mouse, an axe, a tombstone, a hand, a bowl, a grenade, and a monster truck. Lochlan has also tackled Z-brush this week, a difficult digital sculpting tool, and is creating a dragon using the software.

Ian has been assembling Tamiya cars, or small remote controlled car kits, in preparation for a racing event this weekend.

Check out Aysel working on a dragon with a 3D pen below! This detailed behemoth may look incredibly complicated, but Aysel has a special technique. She first drew the outline of the body on her board, and then created small flat frames that she stood up the outline. These help her maintain the shape of her creatures. What will she create next? The possibilities are endless for our resident artist.

Laser Cutter

Our laser cutter is fully up and running! Check out these filament stands, and this woodcut that were made using the cutter. Below, Instructor **Raul** works on assembling more stands. Keep on the lookout for Laser cutter classes, which will be announced soon.
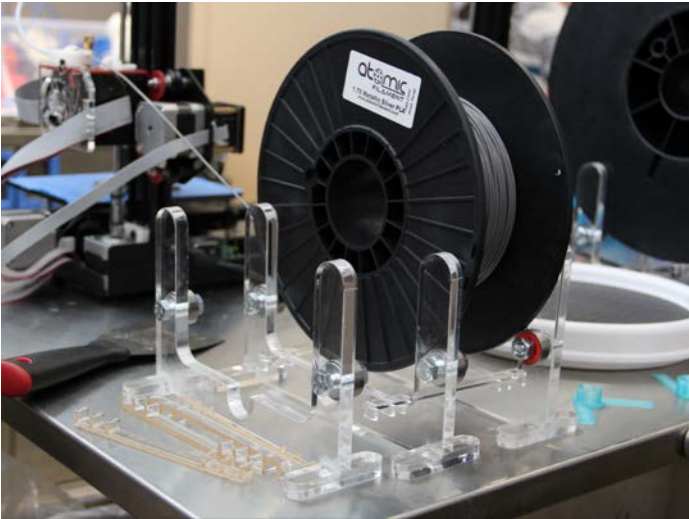
Thanks for reading! See you back one last time next week!

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