Technology Department

Students Participate In National Manufacturing Day

On October 10th Principles of Engineering Students visited PGT to learn about the company and the engineering opportunities within the local community. PGT Industries is the nation’s leading supplier of residential impact-resistant windows and doors. Students learned about engineering applications and the manufacturing processes that take place in the main PGT assembly plant/offices.

National Manufacturing Day is observed annually on the first Friday in October. These manufacturers create jobs through entrepreneurship, and their competitiveness revitalizes American manufacturing.

National Manufacturing Day addresses common misconceptions about manufacturing by giving manufacturers an opportunity to open their doors and show, in a coordinated effort, what manufacturing is — and what it isn’t. Today’s science, technology, engineering, and math graduates will power the next chapter of American production and innovation, and harnessing their potential is an economic imperative.
Digital Multimedia
The digital media students have endured several software issues to complete their first PVTV episode of the 2019-2020 school year, and despite all the growing pains that come with change, the new software upgrades to the Adobe Suite that were purchased over the summer have really enhanced the visual appeal of the video production class projects.

3rd Grade Tech Class
3rd Grade Tech is completing a document with borders and online pictures inserted. These were printed and the students are adding color to their documents. Keyboard skills are being reviewed and timed tests are happening, too.

Information and Communication Technology Essentials
In first quarter, Ms. Davidsmeyer’s middle school students began learning to code using javascript in the Code Studio environment. They have continued developing more complex programming skills this quarter. For the culmination of the unit, students create their own game from the ground up. This project is an opportunity to showcase technical skills, provide constructive peer feedback, and repeatedly use the problem solving process as they encounter obstacles along the way. This project provides an empowering and memorable conclusion to this unit. And students end with a game they can play on their phones and share with friends and family.

AP Computer Science Principles
In November, Ms. Davidsmeyer’s high school students will complete unit 4: Big Data and Privacy. The goals of this unit are to develop a well-rounded view about data in the world, including the positive and negative effects, and to understand the basics of modern encryption. Following completion of this unit, students will work on their Explore AP Performance Task. For this task, they will research, then explain and represent the impact, function, and societal effects of a computing innovation. They will create a computational artifact and provide written responses to questions. Students are given eight hours of in-class time to work on this important project, which counts for 18% of their AP grade for the course. This project must be completed entirely by the student (no help from parents, other family members, or friends!) Even I as the teacher am not allowed to answer questions specific to their research! Students will complete this project prior to the Winter Break.
Project Lead The Way Engineering

Introduction to Engineering Design

In the Introduction to Engineering Design (IED) class, students have begun working with the Autodesk Inventor software focusing on modeling 3D models in digital space. These will later be applied in class for future modeling and product designing projects. The classes later move on to 3D object constrains and linear motion in 3D model assemblies - building a single CAM automata machine with a CAM follower. Students also were introduced to the iProperties function allowing them to change the material of your model which gave them a virtual analysis of the object including weight, mass, surface area and density.

Principles of Engineering

Principles of Engineering students recently began calculating reaction and member forces for truss systems. Students were later able to verify their work using MDSolids software. MDSolids and these concepts will be used for future projects where students will design their own trusses for weight/strength ratios. Thus demonstrating practical application of the calculated paper designs and theory. We look forward to the exciting ‘in class’ truss competition in the weeks to come.

Aerospace Engineering

Recently in Aerospace Engineering, students conducted experiments using VEX parts to test the force of propellers with different blade pitch criteria. This segwayed into the class looking at different atmospheric propulsion on planes as preparation for the use of engineSim. Using engineSim, students will later design engines to meet specific performance criteria. Last week, students were introduced to NTSB Reports. National Transportation Safety Board (NTSB) investigates aviation accidents and incidents within the United States and has made this information available to the public since 1962. Students researched, investigated and presented incidents and accidents on a plane of choice to the class. Students learned the importance of being informed about aircraft accidents/incidents and the implemented changes as a result.

Engineering Design and Development  (Written by the students)

Engineering Design and Development (EDD) is the capstone course in the PLTW high school engineering program. It is an engineering research course in which students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process.

Team 1: Last week, we created a decision matrix to see which qualities would be considered in the implementation of a Solar Road. Reni came up with a new idea to have something plug in the charging port while driving, which we decided would be the best and have the most “positives” on the matrix. Other ideas were considered, and we decided to incorporate both the solar panels on the side of the road and a modified charger to be able to charge the car (including existing ones) to provide driving charge. - D.M.

Team 2: We worked on further refining our design and choosing what designs we wanted to use. we worked on a design matrix to choose what design to use. We chose to use the trash trap, a crab trap like device that uses solar power to power rotors like car washing. It should be able to move around a bay, harbor, or shoreline and interdict trash before it gets into oceans. It was favored over other designs because the maintenance and initial costs are not as high as others, making it build-able by us, and it can be used in coastal areas near us. - A.G.
First Robotics Competition | FIRST
First (For Inspiration and Recognition of Science and Technology) is an international non-profit organization that encourages students from around the world to pursue opportunities in science, technology, engineering, and mathematics (STEM). The program revolves around competitions at the elementary, middle school, and high school levels, where teams of students design, build, and program robots to compete in new challenges released every year.

Jungle Robotics is a First Robotics Competition (FRC) team – the high school level of First. The team is completely student-run and open to high school students from the entirety of Sarasota County. In these last few months, team members have been directly contacting local businesses by phone and email to try and find sponsorship opportunities. Team members also directly meet with these businesses: in September, three members did a robot demonstration for Witzco Trailers Inc. While three other members went and met with Keiser University to discuss sponsorship details. For an FRC team, securing sponsors is extremely critical in preparation for Build Season (the six-week period when members design, build, program, and test the robot for competition in March and April), which begins early January.

Pine View Biomedical Engineering Society (PVBMES) Student Chapter
The Biomedical Engineering Society’s (BMES) student chapter is the foundation for our society, uniting and promoting the future of the biomedical engineering profession. This chapter is to offer high school students the chance to establish leadership skills, networking skills, as well as the opportunity to participate in a student design competition, an annual meeting, and a poster presentation in a BME related field. PV BMES is the 2nd high school student chapter established in the nation.

Comprehensive Photography
Educate and improve club members skills in an environment equally utilizing film and digital photography.

Minecraft Club
The purpose of Minecraft Club is to deliver a fun activity to students that enjoy Minecraft. Students play together as a group on Minecraft Education Edition building massive statues and houses in mountainsides and have fun with friends.

Competitive Programming Club
Community of enthusiastic programmers showing and practicing quick and efficient programming techniques and algorithm for competitive use. Competitions may include ASACO, TSA, Google codejam, and more.
The Technology Student Association (TSA) is a national organization of students engaged in science, technology, engineering, and mathematics (STEM).

TSA chapters take the study of STEM beyond the classroom and give students the chance to pursue academic challenges among friends with similar goals and interests. Together,

TSA chapter members work on competitive events, learn and apply leadership skills, and may attend conferences at the state, regional, and national levels. TSA chapters also are committed to a national service project and are among the most service-oriented groups in the community.

The cost to students: their event materials, TSA outfit, hotel and food for overnight competitions. All students of Pine View have their membership and event fees paid for though the District CTE Department.

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**Pine View's Competitive Drone Club**

As apart of the The Technology Student Association (TSA), the Pine View Competitive Drone Club is apart of pioneering drones in Sarasota County Schools.

This last year's competition:

As part of your city's Emergency Services Response Unit, you are responsible for responding to emergency situations and using your UAS as required. This competition will test your preparation in designing and building a UAS that has advanced features, as well as your piloting capabilities.

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**VEX Robotics Club**

In the VEX Robotics Competition, teams of students are tasked with designing and building a robot to play against other teams in a game-based engineering challenge. Classroom STEM concepts are put to the test as students learn lifelong skills in teamwork, leadership, communications, and more. Tournaments are held year-round at the regional, state, and national levels and culminate at the VEX Robotics World Championship each April!

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Career and technical education will help your child to be more than just an average student. Career and technical education can give your child what's needed to succeed for life: technical skills, academic skills and employability skills. In addition, career and technical education helps students see how what they're learning applies to the needs of employers.

Regardless of whether students are headed for college or the workforce, this type of education will help them prepare for the future. In fact, college-bound students can get job experiences to help them define their career plans, identify an appropriate course of study and help pay for tuition.

Just think of the benefits your child will receive by gaining not only a solid foundation in academics, but also hands-on, technical experience and know-how.

TECHNOLOGY DEPARTMENT CLUB MEETING TIMES

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Event</th>
<th>Room</th>
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<tbody>
<tr>
<td>Tues</td>
<td>1-2pm</td>
<td>PV Drone Club (TSA Event)</td>
<td>013</td>
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<tr>
<td>Tues</td>
<td>1-2pm</td>
<td>Middle School Minecraft Club - Room 015</td>
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<tr>
<td>Tues</td>
<td>2-3pm</td>
<td>Biomedical Club - Room 121</td>
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<tr>
<td>Wed</td>
<td>1-3pm</td>
<td>Competitive Programming Club - Room 015</td>
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<tr>
<td>Wed</td>
<td>2-3pm</td>
<td>Competitive Coding - Room 015</td>
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<tr>
<td>Thurs</td>
<td>1-2pm</td>
<td>VEX Robotics (TSA Event)</td>
<td>013</td>
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<tr>
<td>Thurs</td>
<td>2-3pm</td>
<td>Technology Student Association - Room 013</td>
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<td>Thurs</td>
<td>3-5pm</td>
<td>FIRST Robotics Competition - Room 013</td>
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** CTSO(s) - Career and Technical Student Organizations (CTSO) enhance student learning through contextual instruction, leadership and personal development, applied learning and real world application.

CAREER TECHNICAL EDUCATION

Career & Technical Education courses and pathways in Sarasota County Schools prepare students to be college and career ready by providing core academic skills, industry-recognized certifications, and technical, job-specific training.

Becoming educated in high-wage, high-skill, high-demand careers in established and emerging local industries is an integral part of CTE education. Through hands-on activities and peer collaboration, students use industry standard equipment and real world examples in laboratory settings to remain highly engaged while learning skills that will help them in their future careers.