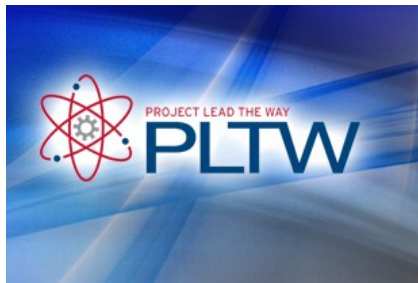
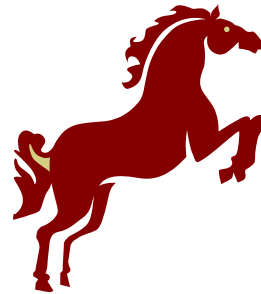


Engineering Pathway

The Engineering Pathway at Cumberland Regional High School incorporates problem solving curricula based on the principles of Engineering. Students in this pathway are also required to take a Math class and Science class each school year. By following the selection of courses, students will be prepared to study in the STEM fields of Science, Technology, Engineering or Mathematics at the collegiate level after high school graduation.



Engineering Courses are from
Project Lead the Way.



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Pathway to Engineering

 Cumberland Regional High School



Engineering Curriculum Provided by
Project Lead the Way (PLTW)

Tel: (856) 451-9400

Pathway to Engineering

The PLTW Pathway To Engineering (PTE) program is a sequence of courses, which follows a proven hands-on, real-world, problem-solving approach to learning. Throughout PTE, students learn and apply the design process, acquire strong teamwork and communication proficiency and develop



Students will work collaboratively to solve real world problems.

organizational, critical-thinking and problem-solving skills. They discover the answers to questions like how are things made and what processes go into creating products? Students use the same industry-leading 3D design software used by companies like Intel, Lockheed Martin and Pixar. They explore aerodynamics, astronautics and space life sciences. Hello, NASA. Students apply biological and engineering concepts related to biomechanics – think robotics. They design, test and actually construct circuits and devices such as smart phones and tablets

and work collaboratively on a culminating capstone project. It's STEM education and it's at the heart of today's high-tech, high-skill global economy.

Introduction to Engineering Design (IED)

The first course in the CRHS STEM PTE progression. Students use the design process and industry standard 3D modeling software to design solutions to solve proposed problems.

STEM Art

This course is a ninth grade course for students accepted into the STEM Academy. Innovation is a hallmark of success in STEM and in art, and drives quantum advances in all fields. Units of study in this course include: Art Elements; Value, Shading and Chiaroscuro; Botanical Studies; The Science of Glass; The History of Painting Clay and the Science of Glazing; Metal Tooling and Enameling; Color and Light; and, Animation. This course fulfills the fine art graduation requirement.

Digital Electronics (DE)

The second course in the CRHS STEM PTE progression. Digital electronics is the foundation of all modern electronic devices such as mobile phones, MP3 players, laptop computers, digital cameras and high-definition televisions. Students are introduced to the process of combinational and sequential logic design, engineering standards and technical documentation.

Principles of Engineering (POE)

The third course in the CRHS STEM PTE progression. Students are exposed to major concepts like mechanisms, energy, statics, materials and kinematics.

Engineering Design and Development (EDD)

The capstone course of the CRHS STEM PTE progression. Students work in teams to design and develop an original solution to a valid open-ended technical problem by applying the engineering design process.

PLTW is the leading provider of rigorous and innovative Science, Technology, Engineering, Mathematics (STEM) education curricular programs used in middle and high schools across the U.S. Students in PLTW programs create, design, build, discover, collaborate and solve problems while applying what they learn in math and science. The hands-on, project-based engineering and biomedical sciences courses engage students on multiple levels, expose them to areas of study that they typically do not pursue and provide them with a foundation and proven path to college and career success. The PLTW curriculum is founded in the fundamental problem-solving and critical-thinking skills taught in traditional career and technical education, but at the same time integrates national academic standards and STEM principles to create a model for 21st century learning.



In all four courses, students are taught problem solving skills via the Engineering Design Process.

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