PLTW Gateway Unit Descriptions

Design and Modeling
Students discover the design process and develop an understanding of the influence of creativity and innovation in their lives. They are then challenged and empowered to use and apply what they’ve learned throughout the unit to design a therapeutic toy for a child who has cerebral palsy.

Automation and Robotics
Students learn about the history and impact of automation and robotics as they explore mechanical systems, energy transfer, machine automation, and computer control systems. Using the VEX Robotics® platform, students apply what they know to design and program traffic lights, robotic arms, and more.

App Creators
This unit will expose students to computer science as a means of computationally analyzing and developing solutions to authentic problems through mobile app development, and will convey the positive impact of the application of computer science to other disciplines and to society.

Computer Science for Innovators and Makers
Throughout the unit, students will learn about programming for the physical world by blending hardware design and software development, allowing students to discover computer science concepts and skills by creating personally relevant, tangible, and shareable projects.

Energy and the Environment
Students are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. They use what they’ve learned to design and model alternative energy sources, as well as evaluate options for reducing energy consumption.

Flight and Space
The exciting world of aerospace comes alive through the Flight and Space (FS) unit. Students become engineers as they design, prototype, and test models to learn about the science of flight and what it takes to travel and live in space. They solve real-world aviation and space challenges and plan a mission to Mars.

Science of Technology
Science impacts the technology of yesterday, today, and the future. In this unit, students apply the concepts of physics, chemistry, and nanotechnology to activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nanomaterials.

Magic of Electrons
In this unit, students examine the behavior and parts of atoms as well as the impact of electricity on the world around them. They learn skills in basic circuitry design and use what they know to propose designs such as a burglar alarm for an art museum.

Green Architecture
In this unit, students learn how to apply green concepts to the fields of architecture and construction. They explore dimensioning, measuring, and architectural sustainability and apply what they have learned to design affordable housing units using Autodesk’s® 3D architectural design software.

Medical Detectives
Students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. They solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, examine nervous system structure and function, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction.