



"As a teacher, I'm always more concerned with teaching students how to think than what to think. In PLTW, we don't supply students with clear answers – we only give them problems to solve along with the tools needed to discover creative, workable solutions. In addition, the PLTW curriculum becomes a means for students to aspire to accomplish great things in our world for the good of others. When you tap into that instinct in kids – helping others in need – it not only makes teaching more meaningful, but also helps them see beyond mere content, giving them insight into how they can make a real difference in today's world."

Jason R. Williams, PLTW Gateway Teacher
Fall Creek Valley Middle School, Lawrence Township, Indianapolis, Indiana

Preparing Students for the Global Economy

Project Lead The Way (PLTW) is a 501(c)(3) nonprofit organization and the nation's leading provider of K-12 STEM programs. Through world-class, activity-, project-, and problem-based curriculum, high-quality teacher professional development, and an engaged network of educators and corporate partners, PLTW helps students develop the skills needed to succeed in our global economy.

PLTW courses are aligned with national standards in math and English language arts, Next Generation Science Standards, and CSTA K-12 Computer Science Standards. Courses and units are designed to complement math and science courses, and in some instances, are used as the core curriculum.

Find us

www.pltw.org

Like us

Project Lead The Way

Follow us

@PLTWorg

Join the conversation

#PLTW

Project Lead The Way

877-335-7589 (PLTW)

schoolsupport@pltw.org

PG-1501

ENCOURAGE EXPLORATION OF THE UNKNOWN WHILE IGNITING STUDENTS' INTEREST AND CONFIDENCE IN STEM

Today's students need to possess certain knowledge and skills to thrive, no matter their chosen life and career paths. Being comfortable taking intellectual risks, adept at collaboration, confident in the face of challenges, and skilled at devising solutions are just a few of these essential skills. With access to hands-on, project-based STEM curriculum that emphasizes critical and creative thinking, these skills are easily within reach.

The opportunities in STEM are tremendous. By 2018, the United States will have more than 1.2 million unfilled STEM jobs. STEM occupation options are varied, including aerospace engineer and zoologist, computer programmer and architect, which affords students many options. Despite this vast opportunity, 75 percent of students talented in math and science decide not to pursue STEM in college. If young people are to pursue these possibilities, they need inspiration. They need to see how what they learn is relevant to their lives. How do we prepare and inspire students to hold onto their natural curiosity and continue STEM learning in high school and beyond?

PLTW Gateway

PLTW Gateway™ challenges and inspires middle school students while offering schools variety and flexibility. In the program, middle school students engage in creative problem solving related to real-world challenges, such as cleaning up oil spills and designing sustainable housing solutions. PLTW Gateway is divided into eight independent, nine-week units, assuming a 45-minute class period. The program is designed to be taught in conjunction with a rigorous academic curriculum. Schools that offer the program implement both Foundation Units and may add any combination of the Specialization Units.

PLTW Gateway Curriculum

Foundation Units

Design & Modeling

Students apply the design process to solve problems and understand the influence of creativity and innovation in their lives. They work in teams to design a playground and furniture, capturing research and ideas in their engineering notebooks. Using Autodesk® design software, students create a virtual image of their designs and produce a portfolio to showcase their innovative solutions.

Automation & Robotics

Students trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics® platform to design, build, and program real-world objects, such as traffic lights, toll booths, and robotic arms.

PLTW Gateway Curriculum

Specialization Units

Energy & the Environment

Students think 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 design and model alternative energy sources and evaluate options for reducing energy consumption.

Flight & Space

The exciting world of aerospace comes alive through Flight & Space. Students explore the science behind aeronautics and use their knowledge to design, build, and test an airfoil. Custom-built simulation software allows students to experience space travel.

Introduction to Computer Science I

Studies show that by 2018, 1.4 million job openings will be available for computer specialists. In this unit, students discover the principles of this fast-growing field by focusing on creativity and an iterative design process as they create their own basic apps using MIT App Inventor.

Introduction to Computer Science 2

Students continue to explore the fundamentals of the stimulating career path of computer science. They venture into text programming through Python and, in the final problem, develop an app to crowdsource and analyze data on a topic of their interest.

Science of Technology

Science impacts the technology of yesterday, today, and the future. Students apply the concepts of physics, chemistry, and nanotechnology to STEM activities and projects, including making ice cream, cleaning up an oil spill, and discovering the properties of nano-materials.

Magic of Electrons

Through hands-on projects, students explore electricity, the behavior and parts of atoms, and sensing devices. They learn knowledge and skills in basic circuitry design and examine the impact of electricity on the world around them.

Green Architecture

Today's students have grown up in an age of "green" choices. In this unit, students learn how to apply this concept to the fields of architecture and construction by exploring dimensioning, measuring, and architectural sustainability as they design affordable housing units using Autodesk's® 3-D architectural design software.

Medical Detectives

Students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a "crime scene." They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health.