Career Learning in Middle School

Middle school is a time of exploration – a time when students are figuring out what they're passionate about today and how that relates to who they'll become tomorrow. During this transitional time, PLTW Gateway's 10 units inspire career confidence among students in the middle grades and empower them to lead their own discovery.

The hands-on program boosts classroom engagement and excitement, drives collaboration, and sparks "aha!" moments and deep comprehension – and as students engage in PLTW's pathways in computer science, engineering, and biomedical science, they see the range of career paths and possibilities available to them.

- **Career learning experiences** offer students the opportunity to see and explore career paths.
- PLTW's **activity-, project-, problem-based (APB) instructional approach** supports student ownership of their learning, provides appropriate scaffolding, and prepares students to tackle real-world challenges.
- **Industry-validated curriculum** empowers students to gain the in-demand, transportable skills that are highly sought-after by employers.
- Our **PreK-12 pathway** progressively prepares students for more challenging, higher-level work throughout the PreK-12 continuum, and ensures students have the opportunity to develop a deep understanding of concepts and practices as they advance to high school.
- **Robust professional development** empowers teachers to facilitate a transformative learning experience, providing them with new tools and resources to engage and prepare their students.

" I learned about engineering and what it takes to excel in an industry dominated by people who didn't look like me or speak like me. "

PLTW Gateway Student,
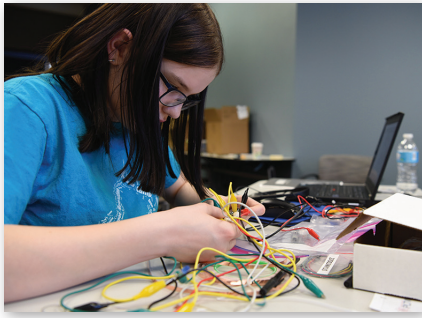Coulwood Middle School,
Charlotte, North Carolina

Career Learning in Action with PLTW Gateway

Computer Science for Innovators and Makers

Focus:
Students learn programming, and work with different inputs and outputs to see how physical computing can be used in a variety of ways to design wearable safety technology, create an interactive public art display, and more.

Students think like hardware and software engineers, physical computing technicians and artists, and wearable technology designers.

Design and Modeling

Focus:
Students work in teams and use their creative problem-solving abilities to design a therapeutic toy for a child with cerebral palsy, and help their patient overcome physical, sensory, or cognitive challenges.

Students assume the roles of drafting engineer, design engineer, mechanical engineer, and statistician as they use the design process and solve problems.

Medical Detectives

Focus:
Students investigate an outbreak of a mysterious toxin endangering the health of a community, determine the source of the toxin, and present their findings to help community leaders mitigate the situation.

Students explore a variety of career paths as they act as medical detectives, emergency room doctors and nurses, microbiologists, neurologists, epidemiologists, and more.

PLTW Gateway Illuminates the Possibilities

Because real-world problems are not confined to one discipline, PLTW Gateway engages students in interdisciplinary learning through pathways that integrate multiple fields of study.

PLTW Gateway's activities, projects, and problems help students not only build knowledge and skills in the pathways of computer science, engineering, and biomedical science, but also empower students to develop in-demand, transportable skills, such as problem solving, critical and creative thinking, collaboration, communication, and ethical reasoning.

With PLTW Gateway, you can choose to start with a single unit, implement all 10 units, or anything between. No matter what approach you take, PLTW team members will be with you every step of the way to support successful implementation and continued growth of your program.

> "PLTW has made me think of goals that I never would have even thought of in the first place, and given me the confidence to pursue them."
>
> **Madeline Pasche,
> PLTW Gatway Alumna**

Explore PLTW Gateway

App Creators
Students use computer science as a means of computationally analyzing and developing solutions to authentic problems through mobile app development.

Automation and Robotics
Students trace the history and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems.

Computer Science for Innovators and Makers
Students learn about programming for the physical world by blending hardware design and software development.

Design and Modeling
Students discover the design process and develop an understanding of how creativity and innovation influence the world around them.

Energy and the Environment
Students explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world.

Flight and Space
Students exercise their design and building skills as they create a functioning airfoil and explore the science behind aeronautics.

Green Architecture
Students learn how to apply the concept of "green choices" to the fields of architecture and construction by exploring dimensioning, measuring, and architectural sustainability.

Magic of Electrons
Students examine the behavior and parts of atoms as well as the impact of electricity on the world around them, learning skills in basic circuitry design.

Medical Detectives
Students perform hands-on lab work, and collect, analyze, and interpret data as they assume the roles of real-life medical detectives to diagnose disease.

Science of Technology
Students apply the concepts of physics, chemistry, and nanotechnology to STEM activities and projects

= Computer Science   = Engineering   = Biomedical Science

PLTW Gateway offers career learning experiences for all students, with units available in both **English** and **Spanish** beginning in the 2019-20 school year.

pltw.org

Preparing Teachers to Transform the Classroom Experience

At PLTW, our mission — empowering students to thrive in an evolving world — drives our actions. One of the most important ways we can transform students' lives is to support the work of the teachers who facilitate their learning.

Through PLTW Professional Development, teachers gain the training, resources, and support they need to engage students in a transformative learning experience:

More options and flexibility – including in-person, online, and job-embedded training experiences – meet teachers' varied backgrounds and learning styles.

Hands-on learning experiences challenge teachers to look at their classrooms in a new way and immerse them in the role of the student.

Expert guidance helps teachers build confidence to transform their classrooms with PLTW's activity-, project-, problem-based instructional approach.

Ongoing support through myPLTW and the PLTW Solution Center allows teachers to focus on inspiring, empowering, and engaging students.

> **"The networking and building of meaningful relationships during Core Training was only the beginning, and I feel that it will continue to grow for years to come. I am honored that I get to be part of such a great teaching community that inspires our children for the future."**
>
> Linda Ha, PLTW Gateway Teacher

PLTW Professional Development is an unmatched experience that extends beyond Core Training.

- **Industry Experience Opportunities:** PLTW Core Training participants have the opportunity to see firsthand what challenges businesses are solving and how they value PLTW students' knowledge and skills. PLTW brings industry experiences to life and empowers teachers to take their career learning experiences back to their classrooms.

- **Continuing Education Units:** PLTW is proud to be an Accredited Provider by the International Association for Continuing Education and Training (IACET). This designation certifies that PLTW complies with the ANSI/IACET Standard, which is recognized internationally as a standard of excellence in instructional practices. All teachers who successfully complete their PLTW Core Training will receive IACET CEUs.

- **PLTW Training Guarantee:** PLTW protects a district's investment in training a PLTW teacher by guaranteeing if a teacher leaves within three years of earning a PLTW credential and goes to another PLTW district, PLTW will provide a grant in the amount of the training fee for the district to train a teacher in the same course and prevent disruption in student learning. Guarantee applies to any credentials earned beginning June 1, 2019, and afterward. Other restrictions may apply.