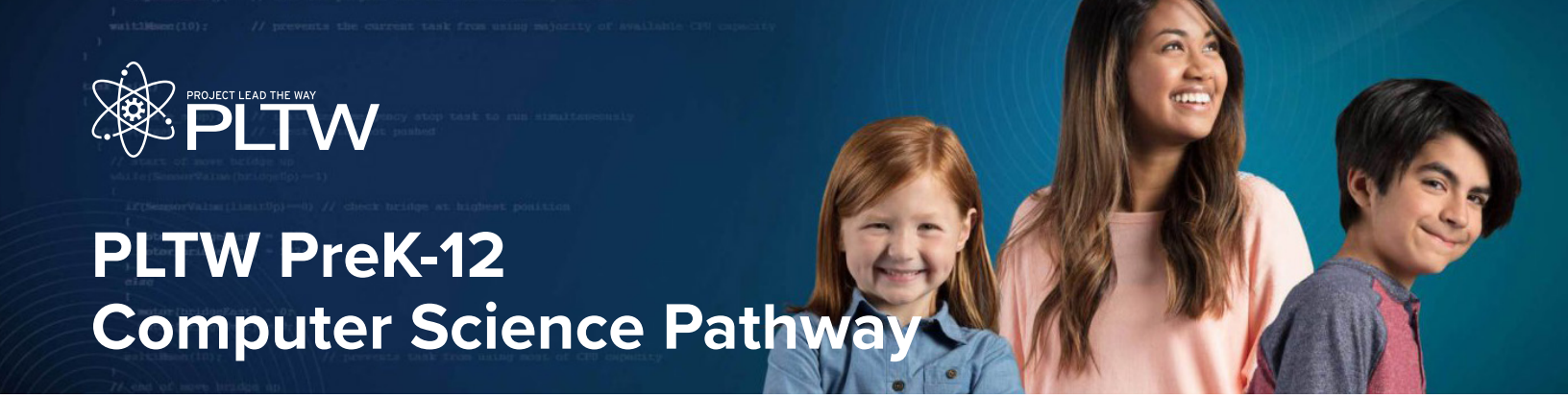

PLTW PreK-12 Computer Science Pathway

Project Lead The Way believes all students – beginning at a young age – need access to real-world, applied learning experiences that empower them to gain the skills they need to thrive in college, career, and beyond. That's why our pathway in computer science provides hands-on learning opportunities from the first day of pre-kindergarten through senior year.

PLTW's PreK-12 computer science pathway empowers students to discover and explore interests, imagine and design solutions to real-world challenges, and become independent, confident problem-solvers.

- **Early access** to computer science ensures all students have the opportunity to gain the knowledge and skills needed to thrive.
- Our **PreK-12 pathway** progressively prepares students for more challenging, higher-level work throughout the PreK-12 continuum.
- 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.
- **Inspiring career learning opportunities** allow students to see and explore career paths.
- **Industry-validated curriculum** empowers students to gain the in-demand, transportable skills that are highly sought-after by employers.
- **Robust professional development** supports and prepares teachers to confidently bring computer science to the classroom.

Building In-Demand, Transportable Skills Across PreK-12

PLTW's computer science pathway scaffolds student learning, empowering students to build and grow their skill sets as they advance through the PreK-12 continuum.

Grades PreK – 5

PLTW Launch
In PLTW's PreK module Spatial Sense and Coding, students create code that will lead them to the location of a hidden item.

Grades 6 – 8

PLTW Gateway
In PLTW'S middle school unit Computer Science for Innovators and Makers, students choose to design and create one of the following to solve a problem: a wearable safety device, an engaging art installation, or a mechanical dispenser.

Grades 9 – 12

PLTW Computer Science
In PLTW's high school course Computer Science Essentials, students develop a program that directs a group of self-driving vehicles to navigate an arbitrary environment.

– Computational Thinking & Problem Solving +

PLTW Programs
PreK-12 Computer Science Experiences

PLTW Launch

PLTW Launch taps into students' exploratory nature, engages them in learning that feels like play, and encourages them to keep discovering – now and for years to come. PLTW Launch's seven computer science modules bring learning to life and empower students to adopt a design thinking mindset.

Spatial Sense and Coding (PreK)
Students develop spatial sense as they engage in activities that explore directional movement – over, under, through, and around.

Animals and Algorithms (K)
Students explore the ways people control and use technology, as well as program their own digital animations.

Animated Storytelling (1)
Students build computational-thinking skills by creating animations based on their own short stories.

Grids and Games (2)
Students learn about the sequence and structure required in computer programs and work in teams to build tablet games.

Programming Patterns (3)
Students discover the power of modularity and abstraction and then use what they know to create a video game for a tablet.

Input/Output: Computer Systems (4)
Students explore how computers work and create a reaction-time computer program to assess a baseline before a concussion occurs.

Infection: Modeling and Simulation (5)
Students investigate models and simulations and apply their knowledge to program a model that simulates the spread of infections.

PLTW Gateway

PLTW Gateway illuminates the range of paths and possibilities students can look forward to in high school and beyond. PLTW Gateway's two computer science units empower students to discover the principles of computer science, while exploring computer science careers as they delve into programming and apply their skills to solve real-world problems.

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

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

PLTW Computer Science

PLTW Computer Science's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Computer Science Essentials
Students experience the major topics, big ideas, and computational-thinking practices used by computing professionals to solve problems and create value for others.

Computer Science Principles
Students explore and become inspired by career paths that utilize computing, discover tools that foster creativity and collaboration, and use what they've learned to tackle challenges like app development and simulation. This course is endorsed by the College Board, giving students the opportunity to take the AP CSP exam for college credit.

Computer Science A
Students collaborate to create original solutions to problems of their own choosing by designing and implementing user interfaces and web-based databases, as well as creating a game for their friends or an app to serve a real need in their community. This course is aligned to the AP CSA framework.

Cybersecurity
Whether seeking a career in the growing field of cybersecurity or learning to defend their own personal data or a company's data, students in Cybersecurity establish an ethical code of conduct while learning to defend data in today's complex cyberworld.