

COMPLETER: Computer Science - Project Lead the Way Endorsement

CREDITS: 4

- Guideline for Course Selections
- Refer to Graduation Requirements in the Program of Studies for specific course requirements in each content area

Grade →	9	10	11	12
Exact scheduling depends on student's plan and school's master schedule.	English 9 (1)	English 10 (1)	❖AP Language and Composition (1)	English 12 (1)
	US Government (1)	US History (1)	World History (1)	
	Conceptual Physics (1)	Chemistry (1)	Biology (1)	
	Algebra I (1)	Geometry (1)	Algebra II (1)	Higher Level Math (1)
	PE (.5) / Health (.5)		PE (.5) / Financial Literacy (.5)	
	Fine Arts (1)	Foundations of Technology or Exploring Computer Science (1)		
	World Language (1)	World Language (1)		
Completer Program Requirements			Computer Science Essentials (1) PLTW AP Computer Science Principles (1)	PLTW Cybersecurity (1) PLTW AP Computer Science A (1)
Career Specific Electives (may be taken any year offered after prerequisites have been satisfied) 8 credits possible per year	❖Recommended AP Connections: AP Calculus AB (1), AP Statistics (1) Graphic Communications (1), Script Writing and Video Production (1), Business Communications & Keyboarding (1), Managing Personal Finances Using Excel (1), Math Elective Beyond Alg. II (.5-1), Honors Accounting I (1), Accounting II (1), Business Law (1), Principles of Business Administration and Management (1), Internship (.5-1)			
Value Added:	Up to 12 Articulated credits			
From:	Carroll Community College			
Program:	Computer Information Systems			
End of Program Test:	Advanced Placement Computer Science A Exam			
Industry:	College Board			
Taken:	Spring after AP Computer Science II			

PLTW COMPUTER SCIENCE ESSENTIALS

Course: 550918 (Honors) 1 credit

This course is a part of the Project Lead The Way Computer Science Program. PLTW Computer Science Essentials introduces students to coding fundamentals through an approachable, block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text-based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python® programming language. The course engages students in computational thinking practices and collaboration strategies, as well as industry standard tools authentic to how computer science professionals work. Students will learn about professional opportunities in computer science and how computing can be an integral part of all careers today.

Prerequisites and other notes: This course is a level 8 course, and is part of a 4 credit completer program. Students are required to take end of program assessments.

Continued on next page....

PLTW AP COMPUTER SCIENCE PRINCIPLES

Course: 550519 (AP) 1 credit

This course is a part of the Project Lead The Way Computer Science Program. PLTW CSP aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration. The course also aims to build students' awareness of the tremendous demand for computer specialists and for professionals in all fields who have computational skills. Each unit focuses on one or more computationally intensive career paths.

The course aims to engage students to consider issues raised by the present and future societal impact of computing. Students use Python* as a primary tool and incorporate multiple platforms and languages for computation. Students practice problem solving with structured learning experiences and progress to open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills. Problems aim for ground-level entry with no ceiling so that all students can successfully engage the problems. Students with greater motivation, ability, or background knowledge will be challenged to work further.

Prerequisites and other notes: This course is a level 9 AP course, and is part of a 4 credit completer program. Students are required to take end of program assessments.

PLTW AP COMPUTER SCIENCE A

Course: 550619 (AP) 1 credit

This course is a part of the Project Lead The Way Computer Science Program. PLTW AP Computer Science A (CSA) course covers all student learning outcomes and topics addressed in the College Board's AP Computer Science A course description. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems.

Prerequisites and other notes: This course is a level 9 AP course, and is part of a 4 credit completer program. Students are required to take end of program assessments.

PLTW CYBERSECURITY

Course: 550718 (Honors) 1 credit

This course is a part of the Project Lead The Way Computer Science Program. Cybersecurity introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in SEC, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends, citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely.

Prerequisites and other notes: This course is a level 8 course, and is part of a 4 credit completer program. Students are required to take end of program assessments.