



# 2018-19 Career Technical Education Intermediate School Course Descriptions

## Automation & Robotics (PLTW)

6129A/AF/AS

**Level 1.** 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 VEX Robotics® platform to design, build, and program real-world objects such as traffic lights, toll booths, and robotic arms. **ALA, Carr, Esqueda, Lathrop, MacArthur, McFadden, Mendez, Santiago, Villa, Willard**

## Careers in Education

**Level 1.** This course is in development for **Villa**.

## Computer Science for App Creators (PLTW)

6161A/AF/AS

**Level 1.** This course is designed to give students a background in Computer Science through creating computer apps. App Creators introduces students to the field of computer science and the concepts of computational thinking, through the creation of mobile apps. engaging, authentic problems. Students experience the positive impact of the application of computer science to society as well as other disciplines, particularly biomedical science. **ALA, Carr, Esqueda, Heninger, MacArthur, McFadden, Sierra, Villa, Willard**

## Computer Science for Innovators and Makers (PLTW)

6162A/AF/AS

**Level 1.** Computer Science for Innovators and Makers teaches students that programming goes beyond the virtual world into the physical world. Students are challenged to creatively use sensors and actuators to develop systems that interact with their environment. Designing algorithms and using computational thinking practices, they code and upload programs to microcontrollers that perform a variety of authentic tasks. The unit broadens students' understanding of computer science concepts through meaningful applications. Teams select and solve a personally relevant problem related to wearable technology, interactive art, or mechanical devices. **ALA, Carr, Heninger, MacArthur, McFadden, Sierra, Villa**

## CS Discovery (Code.org)

**Level 1.** This course is an introduction to computer science that empowers students to create authentic artifacts and engage with computer science as a medium for creativity, communication and problem-solving. This course teaches

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students to develop their own website, design an app, build a game, and create a physical computing device. Beginning students are introduced to tools and programming languages, while more advanced students have opportunities to create sophisticated projects. Students will transition programming skills from block typed code at their own pace while learning JavaScript. **Lathrop, MacArthur, Mendez, Villa**

## **Design & Modeling (PLTW)**

**6139A/AF/AS**

**Level 1.** Students discover the design process and develop an understanding of the influence of creativity and innovation in their lives. The course challenges and empowers students to use and apply what they've learned throughout the course to design a therapeutic toy for a child who has cerebral palsy. **ALA, Esqueda, Lathrop, McFadden, Mendez, Santiago, Spurgeon, Villa, Willard**

## **Flight and Space (PLTW)**

**6159A/AF/AS**

**Level 1.** During this course, students delve into the history of flight and space, discover the science behind aeronautics, and explore traveling and living in space. Students are challenged to use their knowledge to design, build, and test an airfoil. **Escada, McFadden**

## **Foundations of Film**

**3310T/TF/TS**

**Level 1.** Throughout the course, students will learn the language of film, storytelling and cinematography to develop an appreciation for how movies are created. Through lecture, readings, class discussions as well as audio and visual examples, students will shape a foundation for films' past as well as current practices. A history of cinema and how technology and techniques have progressed will be presented. The three stages of film development; pre-production, production, post production will be studied and practiced throughout the course. Students will apply what they have learned to develop their own short video projects. Focus will be given to the techniques used to create films: camera shots, sound, lighting, special effects and editing. **Carr, Willard**

## **Medical Detectives (PLTW)**

**6149A/AF/AS**

**Level 1.** 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. **Lathrop, MacArthur, McFadden, Santiago**

## **STEAM Microsoft/Google**

**8140A/AF/AS**

**Level 1.** In this course, students will begin to learn how to use computer applications (Goggle/Microsoft) word processing, spreadsheet, and presentation software and at the end receive a certificate indicating competency in these applications that are so common in school and the workplace. Achieving this certification will enable students to master skills that are so essential to learning in schools and also for success in the workforce. **Carr, Mendez, Villa**

## **STEAM Digital Media**

**8142A/AF/AS**

**Level 1.** This course introduces students to digital media and how it penetrates all aspects of the world. Students will identify how digital media is supported by many platforms that continually change as technology improves. Students

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will demonstrate how digital media is created, viewed, distributed, modified and preserved on computers. Students will review all aspects of digital media. Students will study the aesthetics of art and graphic design to develop perception and analysis skills that they can employ to critically examine their own work and the work of others. Students will demonstrate their knowledge of the elements of art and principles of design while development and refining their creative skills utilizing a variety of media including digital media. **McFadden**

## **STEAM Maker**

**6160A/AF/AS**

**Level 1.** STEAM Maker course will give students an introduction to the tools, materials, and “Maker Culture” associated with a Makerspace at their school. Students will develop creative solutions to authentic challenges. Students will learn the design thinking process that includes ideation, prototyping and the iteration process. They will explore making with physical and digital materials. Students will apply the process of design thinking through their participation in a variety of design challenges. They will work to build understanding about how innovation and creativity of arts drives the fields of science, technology, engineering, and mathematics. **ALA, MacArthur, McFadden, Spurgeon, Villa**

## **Wood Beginning**

**9789U/UF/US**

**Level 1. Sierra**

## **Wood Intermediate**

**9789V/VF/VS**

**Level 1. Sierra**

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