



Park Hill School District

Building Successful Futures • Each Student • Every Day

Eighth Grade Computer Science for Innovators and Makers and App Creators

PLTW Computer Science for Innovators and Makers Course Description: Computer Science for Innovators and Makers (IM) 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. While designing algorithms and using computational thinking practices, students 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. © 2017 Project Lead The Way

PLTW App Creators Course Description: PLTW App Creators introduces students to the field of computer science and the concepts of computational thinking, through the creation of mobile apps. Students are challenged to be creative and innovative, as they collaboratively design and develop mobile solutions to engaging, authentic problems. Students experience the positive impact of the application of computer science to society as well as to other disciplines, particularly biomedical science.

The unit provides students opportunities for self-expression. Teams identify a personal or community problem of interest to them that can be solved with a mobile app solution. The problem can address issues such as health and wellness, the environment, school culture, emergency preparedness, education, community service—the options are endless! © 2017 Project Lead The Way

Scope and Sequence:

Timeframe	Unit	Instructional Topics
9 Weeks	PLTW Computer Science for Innovators and Makers	Topic 1: Blink! Topic 2: The Ins and Outs Topic 3: Programming the Physical World
9 Weeks	PLTW App Creators	Topic 1: Let's Create an App Topic 2: Taking it to the Next Level Topic 3: The App Challenge

Unit 1: PLTW Computer Science for Innovators and Makers

Subject: 8th Grade Introduction to Computer Science

Grade: 8

Name of Unit: PLTW Computer Science for Innovators and Makers

Innovators and Makers Unit Description: Computer Science for Innovators and Makers (IM) 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. While designing algorithms and using computational thinking practices, students 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. © 2017 Project Lead The Way

Topic 1: Blink!

Activity	Title
Lesson 1.1	The Brain
Lesson 1.2	What to Do
Lesson 1.3	How to Do It
Lesson 1.4	Crush the Bug
Lesson 1.5	The Blinking Message

Topic 2: The Ins and Outs

Activity	Title
Lesson 2.1	Need Input
Lesson 2.2	Responding Output
Lesson 2.3	Get Connected
Lesson 2.4	Secrets and Safes

Topic 3: Programming the Physical World

Activity	Title
Lesson 3.1	Clean Up Your Code
Lesson 3.2	Interactions

Unit 2: PLTW App Creator

Subject: 8th Grade Introduction to Computer Science

Grade: 8

Name of Unit: PLTW App Creator

PLTW App Creators Unit Description: PLTW App Creators introduces students to the field of computer science and the concepts of computational thinking, through the creation of mobile apps. Students are challenged to be creative and innovative, as they collaboratively design and develop mobile solutions to engaging, authentic problems. Students experience the positive impact of the application of computer science to society as well as to other disciplines, particularly biomedical science.

The unit provides students opportunities for self-expression. Teams identify a personal or community problem of interest to them that can be solved with a mobile app solution. The problem can address issues such as health and wellness, the environment, school culture, emergency preparedness, education, community service—the options are endless! © 2017 Project Lead The Way

Topic 1: Let's Create an App

Activity	Title
Lesson 1.1	The App Revolution
Lesson 1.2	Amazing Algorithms
Lesson 1.3	The Germ Guide App
Lesson 1.4	Coding with Conditions
Lesson 1.5	Decision Time
Lesson 1.6	Bug Blasters
Lesson 1.7	Game Time
Lesson 1.8	Build-a-Body

Topic 2: Taking it to the Next Level

Activity	Title
Lesson 2.1	Keep Me in the Loop
Lesson 2.2	Programming with Procedures
Lesson 2.3	Playing with Lists
Lesson 2.4	Disease Tracker
Lesson 2.5	Fitness Challenge App

Topic 3: The App Challenge

Activity	Title
Lesson 3.1	The Great App Challenge