



CODE YOUR WORLD

There are 627,000 open tech jobs in the U.S. alone and the majority are software developers or engineers. High demand means job opportunities.



OVERVIEW

Throughout this unit, students will be exposed to some of the aspects that a computer programmer would consider when coding a simple animation or game. Students will learn basic coding terms such as algorithm, conditional statements, loops, and events.

The goal of this kit is for students to begin thinking about how video games and computers function. Students will practice coding skills by playing with OSMO's coding game as well as create an animation using Scratch Jr.

MATERIALS

- Osmo Coding Game Set (4)
- Osmo Starter Set (4)
- scissors (30)
- glue sticks (30)
- construction paper (1)
- deck of cards (4)
- Legos (1)
- Lego baseplates (4)
- Lego people (4)

COPIES OF

- Algorithm Cereal poster (1)
- Making a Sandwich worksheet (30)
- cards for Lego mazes (4 sets)
- Scratch Jr Cards (15 each)

***Requires iPad or Fire Tablet, Minimum 4 per kit/Ideal 15 per kit



CODING WITH COLOR

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OVERVIEW

The Coding with Color kit teaches students about programming. They learn that, in addition to different spoken and written languages existing, there are also many different programming languages being used. Programmers choose to learn specific programming languages based on what they will be creating.

In this kit, students will become the programmer and learn the Ozobot's color language. They will then create color codes to move an Ozobot and teach science concepts. These codes will tell the robot how to dance and move down a catwalk, as well as how to engineer rescue plans.

MATERIALS

- ream of copy paper
- Ziploc freezer bag
- scissors (10)
- ruler (10)
- compass (12)
- protractor (10)
- Lego (1)
- Ozobot (15)
- Ozobot marker set (20)

COPIES OF

- computer science unplugged activity (1)
- Ozocards (30)
- fashion show rubric (30)

***Device Required - iPad, Android, Fire Tablet, Chromebook, or computer, Minimum 6 per kit/Ideal 15 per kit



COMMUNICATION, CODING, AND MINI SPHERO

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OVERVIEW

This STEAM kit will teach students to code Mini Sphero through drawing, block, and text coding. Students will explore various types of communication and relate them to the ways they can communicate with Mini Sphero. As students start to learn coding, they will discover how to relate block coding to text code. In addition to coding and communication, students will expand their knowledge of geometry and physics concepts.

MATERIALS

- Mini Sphero (15)
- student journals (30)
- rulers (15)
- construction paper (1)
- glue sticks (12)
- transparent rulers (10)
- 2" painter's tape (12)
- flexible straws (1 pack)
- scissors (12)
- wood sticks (1 pack)
- pipe cleaners (1 pack)

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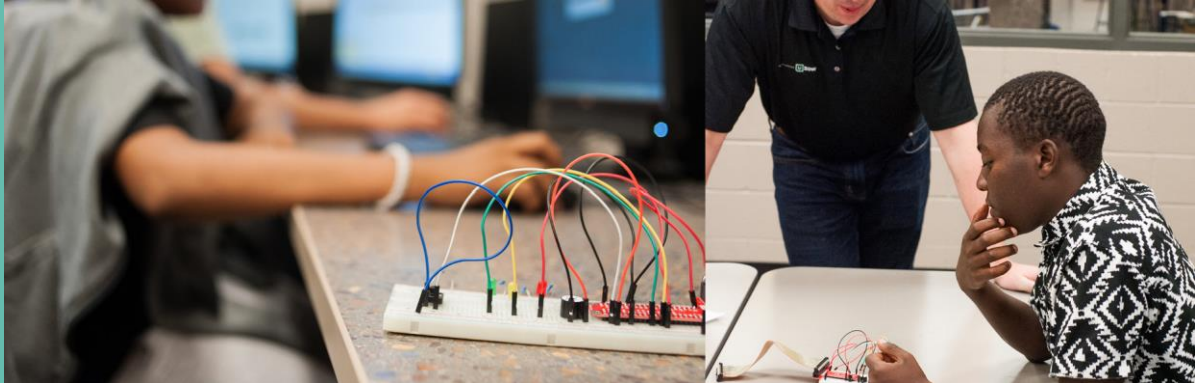
- Morse Code Chart (15)
- Exit Ticket (30)
- QR Codes for Module 1 (1)
- Nautical Flag Chart (15)
- Presentation Rubric (10)

*** Device Required – iPad, Android, Fire Tablet, or Chromebook – minimum 15 per kit



CODING FOUNDATIONS

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OVERVIEW

Students in this course will gain the core knowledge needed to program in any language. They will begin by exploring programming including variables, input and output, conditions, loops, and expressions and quickly move on to using block coding to code sprites as well as a Raspberry Pi and Breadboard. With this practical introduction to computer science concepts, students will be prepared to take their knowledge of programming to the next level.

MATERIALS

- Raspberry Pi (15)
- Raspberry Pi Starter Kit (15)
- 32GB Micro SDHC UHS-I Card (15)
- 7 inch Monitor (15)
- Keyboard (15)
- mouse (15)
- flash drive (15)
- timer
- ream of paper

*** Device Required – Any – minimum 15 per kit/
Ideal 1 per student

COPIES OF

- Quiz - Thinking Like a Computer (30)
- Code.org Name Tracking Sheet (1)
- Scratch Help Handouts (30)
- Broadcasting Handout (30)
- Story Grading Rubric (30)
- Story Peer Review Instructions (30)
- Story Voting Ballot (30)
- Guided Practice - Pong Game (30)
- Game Grading Rubric (30)
- Game Peer Review (30)
- Game Play (30)
- Raspberry Pi Breadboard Assignment 1 (30)
- Raspberry Pi Breadboard Assignment 2 (30)
- Raspberry Pi Breadboard Assignment 3 (30)
- Raspberry Pi Use and Safety Quiz (30)