



Exploration of the Internet of Things

Designed for learners in Grades 6-8



Course Description:

With IoT, everything is online, including homes, cars, people, medical devices, and even farming equipment. In this course, students will explore example IoT applications, and plan a project to solve problems for an end-user. Students will program a microcomputer to build an IoT device.

Equipment, Curriculum, and Training Available:

- Classroom set of HaloCode Kits
- 15 Lesson Hours
- Curriculum and Supporting Materials
- Ongoing product and curriculum support
- Professional development
- Facilitation by a trained STEM instructor (optional)

LESSONS	LEARNING TARGET EXAMPLES
Lesson One: Exploring Internet of Things (IoT) Devices	I can design an IoT device that either solves a problem or provides a benefit
Lesson Two: Programming with mBlock 5	I can navigate the block-based coding environment to program a Sprite and make it move
Lesson Three: Coding Costumes and Sounds with Sprites	I can create a program with costumes and sounds to use with a Sprite
Lesson Four: Tell a Story, Part One	I can design and create a program in mBlock 5 to tell a story
Lesson Five: Tell a Story, Part Two	I can use loops, backgrounds, and functions in my story program
Lesson Six: Meet HaloCode	I can create a HaloCode program that lights the LEDs when it is shaken
Lesson Seven: Make a Smiling Face	I can program the HaloCode's LED lights to show a smiling face
Lesson Eight: Lighting Up LEDs	I can create a program in mBlock 5 to light two LEDs
Lesson Nine: Animate a "Meteor"	I can use the "repeat" control to create a program "loop."
Lesson Ten: Volume Detector	I can program a HaloCode to turn on LEDs to indicate volume loudness
Lesson Eleven: Compare Strength	I can use operators in mBlock 5 that activate different LEDs, depending on the strength of shaking a HaloCode.
Lesson Twelve: Energy Ring	I can use operators and variables in mBlock 5 that activate different LEDs, relevant to HaloCode movement, to store energy when worn on a wristband.
Lesson Thirteen: Dance Contest, Part One	I can create a new, original dance contest in mBlock 5's stage programming with two or more Sprites
Lesson Fourteen: Dance Contest, Part Two	I can navigate mBlock 5 to add sounds and/or recordings to my dance contest
Lesson Fifteen: Creation and Exploration with HaloCode LEDs	I can navigate mBlock 5 to add different light colors and events to my HaloCode program