

Computer Science for Innovators and Makers

STEM

Grade 8, Duration 1 Semester

Rationale

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 micro-controllers that perform a variety of authentic tasks. The unit broadens students' understanding of computer science concepts through meaningful applications.

Scope and Sequence**Timeframe****Unit****Instructional Topics****Course Description**

Students learn about programming for the physical world by blending hardware design and software development. Using micro-controllers with inputs and outputs, they develop code that brings their physical designs to life.

Course Objectives

1. Students will use block-based code to create, download, and upload programs to the micro:bit micro-controller.
2. Students will learn processes and skills to debug programs.
3. Students will create their own input device to interact with a program they will develop on a micro-controller.
4. Students will work as a team to apply physical computing knowledge and skills to design and create one of three problem options.
5. Students will collaborate and solve authentic problems using communication, math, and science skills.

BOE 6/8/17

Course Details**Learning Targets****Standards Covered****Primary Standards Targeted**

Mehlville School District

Computer Science for Innovators and Makers

STEM

Grade 8, Duration 1 Semester

Mehlville School District

Computer Science for Innovators and Makers

STEM

Grade 8, Duration 1 Semester

Course Audit Trail

Course Last Updated by: Janet Altmann on 06/14/2017 03:53 PM

