

HIGH SCHOOL DESIGN BRIEF

Foundations of Technology and Engineering

Course Description: *Foundations of Technology and Engineering* prepares students to understand and apply technological concepts and processes that are the cornerstone for the high school technology and engineering program. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Technology and Engineering content, resources, and laboratory/classroom activities apply student applications of science, mathematics, and other school subjects in authentic situations. The educator is offered the choice to use [Onshape](#) or CAD for Unit 5/5a when teaching the courseware.

Course Objective: Unit 1B focuses on problems that can be solved in different ways; some problems can be solved using computer programming (coding). In this Learning Cycle we will use coding to solve a navigation challenge using a robot or create a device that can count the number steps a person takes.

Challenge: Engineering Design Teams will design/program using block coding, a working solution to the problem using their selected possible solution. Since programming is an iterative process, the students will be required to test and refine their solution numerous times until they achieve the desired result.

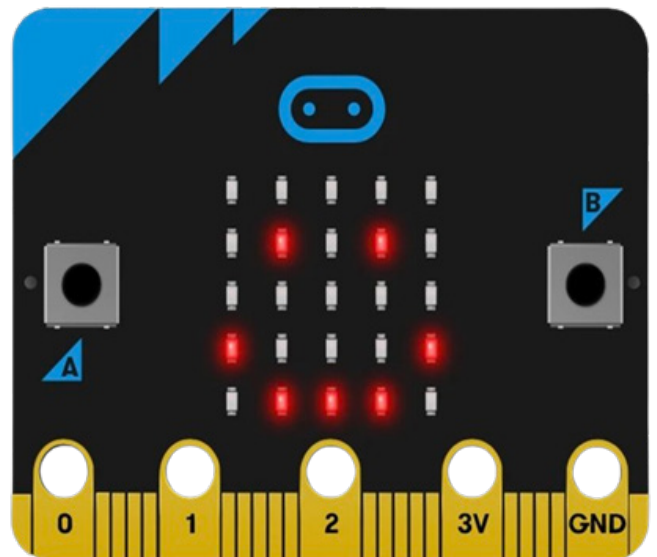
Criteria: Students will walk through the first steps tutorials to understanding the Micro:bit platform.

Materials: This activity requires a computer for the Micro:bit website or app. With a purchase of a hands on Micro:bit kit or simulation on [makecode.org](#).

Time Frame: 4 hours

Evaluation: Students will be evaluated using the rubric provided on a handout.

ITEEA EbD Foundations of Technology and Engineering:
[FoundationsofTechnologyandEngineeringAtAGlance.pdf](#)



This EbD™ High Design Brief was authored by Ashley Fore and ITEEA's STEM Center for Teaching and Learning.