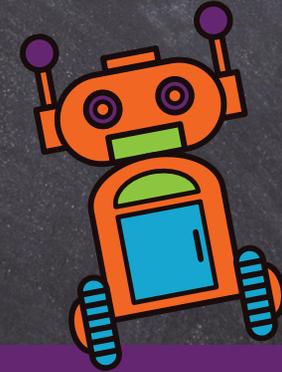




NextWaveSTEM

## Exploration of Robots: Coding mBot for a Purpose

*Designed for learners in Grades 6-8*



### Course Description:

How important are robots to our everyday lives? How can we be creators of this amazing technology as opposed to being just consumers of what robots produce? These are just a few of the questions that students will explore as they learn how to build, code, and operate the mBot robot! Students build connections to real-world robotics by responding to and avoiding objects, recognizing and following line marks combining skills to complete multiple competition challenge.

### Equipment, Curriculum, and Training Available:

- Classroom set of mBot® Robots
- 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

1: What is a Robot?	I can explain what a robot is and design a robot to solve a problem.
2: Meet mBot 2	I can describe the function of mBots components and assemble an mBot.
3: Speaking the Language of Code	I can create an algorithm for someone to follow.
4: Block Coding	I can use the mBlock Blockly app to program a robot.
5: Loops, Wait, Branch	I can improvise and use creativity to find solutions to programming challenges.
6: Distance Measurement	I can make the robot travel a certain distance
7: Competition #1 Parking Space	I can move the robot in a straight line
8: Line Follower	I can design, test, and debug a line follower track for the mBot.
9: Competition #2: Line Follower	I can design, test, and debug a line follower track for the mBot that other robots will follow.
10: Robots at Work	I can form and support an opinion about robots doing human jobs.
11: Obstacle Detection	I can program the mBot robot to use the ultrasonic sensor.
12: Competition #3 Obstacle Detection and Avoidance	I can program my robot to detect and avoid obstacles
13: Light Sensor and Competition #4 Red Light, Green Light	I can program my robot to use the light sensor
14: Competition #5 Maze	I can program my robot to navigate a maze
15: Competition #6 Create Your Own Competition	I can create a challenge for other robots to complete