

Exploring Robotics Curriculum Plan
Exploring Robotics with mTiny

For: MakeBlock mTiny Robot

Grades: PK to 2 **Ages:** 4 to 8

Level: Beginner



Exploring Expeditions with mTiny

An integrative STEAM curriculum for exploring coding with a robot while developing literacy, numeracy, science, cognitive and socio-emotional skills.

Number of Lessons: 18

Length of Lessons: 30 to 55 min (with 15 to 20 minute activities)

Course Length: Adjustable 5 to 18 Days

Description

mTiny is a fun animated robot that is driven with a remote control that easily fits in the small hands of early learners. No screens are required to interact with and program this robot.

The mTiny toolkit includes large puzzle pieces and coding direction cards, along with a fun robot and remote control. The screen-free programming interface uses touchable cards that students tap with the remote control. Pictures cards guide the robot actions. By connecting the coding cards, and tapping each one in sequence, students learn to control the direction and movement of the robot. The facial expression cards also produce sounds, eye movements, and interactions on the robot that engages students and makes learning fun.



mTiny engages students in 21st Century skills of information literacy, media literacy, and technology literacy. Students learn coding concepts, develop hand-eye coordination, motor skills, shape and pattern recognition, analysis, sequence, and much more by following instructions and guided activities as they progress through several fun puzzles where they interact with characters in stories that spur their imaginations.

Developing early literacy and numeracy through hands-on activities, the curricula has been designed to help educators learn, plan, and implement joyful robotics activities in K-2nd grade educational settings. The printed Teacher Guide and online lessons are suitable for educators with or without experience of programming or computer science. This robot and the lessons are adaptable, flexible, and easy to use. The guide not only explains some of the basic programming concepts but also offers lessons with example STEAM learning activities using mTiny. Hands-on activities and teacher-directed lessons include language arts and literacy, mathematics, cognitive development, physical development, and socio-emotional development.

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Curriculum Outcomes/Objectives

- Understand the concept of robots and the possible applications in daily life;
- Interpret the use of various robots in different situations;
- Create and narrate stories about robots in the future society.
- Understand the relationship between the robot and the Tap Pen Controller;
- Use the Joystick to make mTiny move or stop according to the instructions.
- Understand the relationship between the robot and the map blocks with an object;
- Use appropriate ways to trigger different interactive effects of mTiny
- Understand the use of the Tap Pen Controller and the Coding Cards;
- Use appropriate coding tools to make mTiny move or stop according to instructions.
- Understand the representation of the right and left from different points of view;
- Use the appropriate Action Cards to make mTiny turn right or left at the corner.
- Understand the sequence (or relations) of numbers;
- Perceive the concept of sequence through first-hand coding practice.