

# Where Dreams

Come to  **Real Life**



**Microbit Robotics**

**Discover Create Robotify!**

**Grades 1-5**

Live 1:1 or 1:2 Online | Offline classes  
Personalised curriculum | Monthly Fee structure



# Welcome to Roboticschools

## **Program Overview**



Children have an innate love for all things joyful and fun. Our mission is to unleash their full potential through a wide range of interactive and multidisciplinary programs.

At Roboticschools, we've redefined learning by making it a delightful and playful experience. We encourage children to explore their passions and uncover their hidden talents. Our curriculum takes a playful approach to cover a wide spectrum of subjects, from coding and design thinking to cutting-edge technologies like AR, VR, Robotics, IoT, and the ever-evolving domains of artificial intelligence and machine learning.

A Roboticschools student embarks on a journey of self-discovery and skill development, reaching their maximum potential through our meticulously crafted programs. These skills complement their regular school curriculum, leading to improved academic performance.

Our methodology is designed to help students grasp complex concepts in science and mathematics through coding, visualizations, and animations. We offer a unique curriculum that instills new-age skills in children, preparing them for success and the ability to tackle any challenge that comes their way. As they learn with us, their relationship with technology shifts from that of a consumer to that of a creator.

**Join Roboticschools and let your child's learning journey be a joyous adventure in discovery and creativity."**

# About Curriculum

At Roboticschools, our curriculum is meticulously crafted to unlock the genius within your child. We offer a comprehensive technology program for kids, spanning from laying a strong foundation in coding to fostering scientific exploration, nurturing design thinking skills, and delving into the world of robotics. What sets us apart is our commitment to providing specialized expertise across various technology domains, making us the premier choice for holistic tech education.



Hands-On Learning

Creativity  
and Problem-Solving



Progressive Skill Building

Fun engagement



Advanced technology



## Module 1

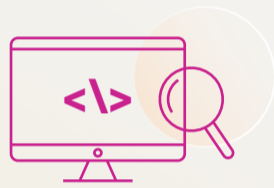
# Computing with Microbit



- Microbit makes coding hands-on and fun for kids, allowing them to actively engage in programming.
- Kids connect Microbit to sensors and LEDs, exploring the interaction between code and hardware.
- Microbit computing sparks creativity as kids design various projects, enhancing problem-solving skills through hands-on exploration.



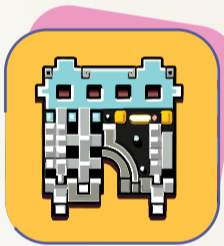
**40** Classes



**30** Projects



**65** Concepts



### 1: Introduction to **Microbit and LED's**

**Objective:** Get familiar with Microbit by programming it to control LEDs.

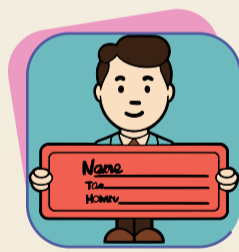
**Learning Outcomes:** Understand basic Microbit functionality, practice LED control, and explore the coding environment.

### 2: **Flashing Heart & Shining Sunbeam**

**Objective:** Program Microbit to display a flashing heart pattern.



**Learning Outcomes:** Learn about animation in Microbit, timing control, and basic blocks.



### 3: **Data Types Strings - Name Tag**

**Objective:** Introduce string data types by displaying a personalized name tag.

**Learning Outcomes:** Understand string data types, string manipulation.

### 4: **Data Types - Numbers Game Counter**

**Objective:** Explore number data types by creating a game counter on Microbit.



**Learning Outcomes:** Understand numeric data types, variable assignment.



### 5: **Inputs - Smiley Buttons**

**Objective:** Use button inputs on Microbit to display different smiley faces.

**Learning Outcomes:** Learn about button inputs, conditional programming.





### 6: Variables I - Voting Machine

**Objective:** Use variables to create a simple voting machine simulation on Microbit.

**Learning Outcomes:** Understand variable usage, updating variables based on input, and simulate a basic voting process.

### 7: Variables II

#### Digital Wallet

**Objective:** Implement a digital wallet system on Microbit using variables.



**Learning Outcomes:** Updating balances, and simulate a basic digital financial transaction.



### 8: Conditions I Coin Flipper

**Objective:** Simulate a coin flip using conditional statements on Microbit.

**Learning Outcomes:** Learn randomization, and simulate a simple probability experiment.

### 9: Conditions II

#### Microbit Dice

**Objective:** Create a Microbit-based digital dice using conditional statements.



**Learning Outcomes:** Simulate dice rolling, and explore applications of randomization in games.



### 10: Hack Headphones

**Objective:** Use Microbit to create a simple music player interface.

**Learning Outcomes:** Practice using buttons for user input, and create interactive music player.

### 11: Banana Piano

**Objective:** Create a virtual piano using bananas as touch-sensitive keys.

**Learning Outcomes:** Understand capacitive touch sensing, and explore creative applications of input sensors.



### 12: Light Sensor

#### Morning Alarm

**Objective:** Use a light sensor to create a morning alarm that activates when light increases.

**Learning Outcomes:** Learn to use light sensors, and create a simple environmental trigger.



### 13: Sound Sensor Clap Lights

**Objective:** Make lights are activated by clapping, using a sound sensor.

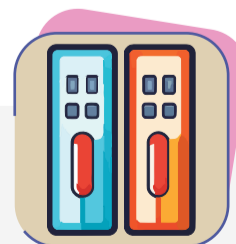
**Learning Outcomes:** Understand sound sensors, sound input, and create a responsive system.

### 14: Temperature Sensor

#### Weather Display

**Objective:** Display current temperature on Microbit using a temperature sensor.

**Learning Outcomes:** Learn to use temperature sensors, and create a weather display system.



### 15: Accelerometer I Step Counter

**Objective:** Use the accelerometer sensor to count steps and display the count.

**Learning Outcomes:** Understand accelerometer sensors, reading and interpreting sensor data.



### 16: Accelerometer Sensor II - Rock, paper and scissors

**Objective:** Use accelerometer sensor to create a virtual RPS game.

**Learning Outcomes:** Understand accelerometer data interpretation and create an interactive game.

### 17: Compass Sensor I

Where is North?

**Objective:** Use the compass sensor to code and display the direction of North.



**Learning Outcomes:** Learn to use compass sensors, interpret sensor data for direction.



### 18: Compass Sensor II Simple Door Alarm

**Objective:** Implement a door alarm system using Microbit and a compass sensor.

**Learning Outcomes:** Learn conditional programming based on compass data.

### 19: Microbit Maze Game

**Objective:** Develop a simple maze game using its sensors and display.



**Learning Outcomes:** Integrate multiple features and create an interactive game with sensors.



### 20: Bluetooth Controlled Microbit Display

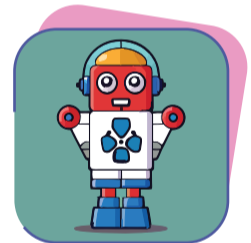
**Objective:** Enable Bluetooth control for a Microbit dot matrix display.

**Learning Outcomes:** Create a remotely controlled display system and display widgets.

### 21: Microbit Mathbot

**Objective:** Create a Mathbot that generates and quizzes users on math problems.

**Learning Outcomes:** Random number generation, implement basic arithmetic operations, and develop an interactive educational application.



### 22: Button Password System

**Objective:** Implement a password system using buttons for access control.



**Learning Outcomes:** Handling multiple inputs, Conditional program for password validation.



### 23: Microbit Pet

**Objective:** Develop a virtual pet simulation on Microbit with interactive features.

**Learning Outcomes:** Create a responsive system based on user input, and sensor integrations.

### 24: Microbit Watch

**Objective:** Transform the Microbit into a digital watch with various features.



**Learning Outcomes:** Understand time-related programming and list concept.



### 25: Catch the Dot Game

**Objective:** Develop a game where users catch a moving dot on the LED display.

**Learning Outcomes:** Integrate user input for gameplay, and create a simple interactive game.





## 26: Dot Dodger Game

**Objective:** Create a game where users navigate a dot to avoid oncoming dots.

**Learning Outcomes:** Collision detection, develop game mechanics for avoiding obstacles.

## 27: Scratch Paint

**Objective:** Create a digital painting application with various drawing tools.



**Learning Outcomes:** Basic Scratch-Microbit blocks, creative expression through coding.

## 28: Racing Game

**Objective:** Develop a racing game where users control a character.



**Learning Outcomes:** Sprite movement and collision detection, and create game dynamics.

## 29: Space Invaders

**Objective:** Create a Space Invaders game where users shoot down alien invaders.



**Learning Outcomes:** Learn about game design in Scratch, sprite control and animation.

## 30: Interactive Story with Sensors

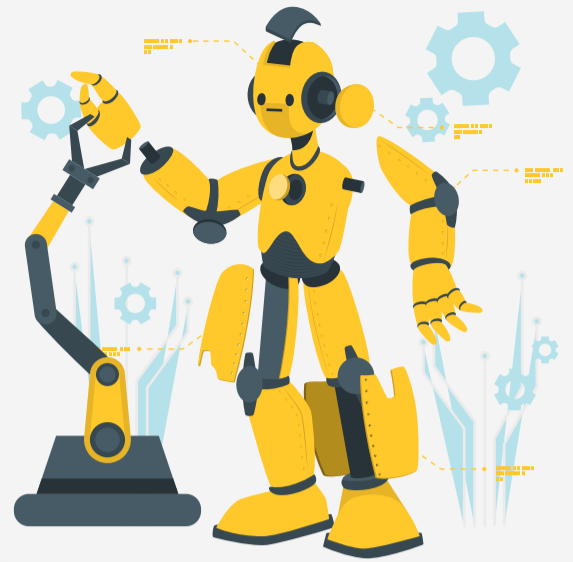
**Objective:** Scratch with external sensors to create an interactive story.



**Learning Outcomes:** Integrate external input with Scratch and responsive scratch sprites.



# Microbit Robotics



- Microbit robotics provides a user-friendly platform for kids to program robots effortlessly.
- Kids gain hands-on experience integrating motors and sensors into Microbit-powered robots.
- Microbit robotics sparks creativity as kids design and program unique robot behaviors.



**65** Classes



**40** Projects



**95** Concepts



## 1: Conductivity Tester

**Objective:** Build a conductivity tester to explore material conductivity.

**Learning Outcomes:** Understand basic circuit connections, learn about material conductivity, and practice using Microbit sensors.

## 2: Paper circuits

**Objective:** Create a paper circuit for hands-on circuitry exploration.



**Learning Outcomes:** Basic understanding of circuits, express creativity in circuit.

## 3: LED Blink

**Objective:** Program Microbit to make an LED blink with circuit.



**Learning Outcomes:** Microbit programming, digital output, and basic coding concepts.

## 4: Button control LED

**Objective:** Develop a circuit where a button press controls an LED.



**Learning Outcomes:** Button interfacing and control LEDs based on user input.

## 5: Touch detection LED

**Objective:** Implement touch detection to control Microbit's LED.



**Learning Outcomes:** Touch sensor integration, Interactive microbit electronics.





### 6: Clap the LED

Program Microbit to respond to claps by toggling an LED.

**Learning Outcomes:** Learn sound detection, conditional statements, and understand basic sound-controlled systems.

### 7: Mobile control LED

**Objective:** Enable Microbit LED control using a mobile device.



**Learning Outcomes:** Introduce wireless Bluetooth connectivity with Microbit.



### 8: Microbit Guitar

**Objective:** Create a Microbit-based guitar with button-triggered

**Learning Outcomes:** Map button inputs to sounds, understand basic music programming.

### 9: Traffic Lights

**Objective:** Simulate a traffic light system with Microbit for sequential control.



**Learning Outcomes:** Understand sequential control, and learn traffic light logic.



### 10: RGB Colors

**Objective:** Use Microbit to display different RGB colors on an LED.

**Learning Outcomes:** Explore RGB color mixing, Understand RGB color values.

### 11: RGB random colors

**Objective:** Program Microbit to display random RGB colors on an LED.

**Learning Outcomes:** Explore randomization in programming, practice RGB color representation, and understand Microbit's LED control.



### 12: RGB color switcher

**Objective:** Switch between different predefined RGB colors on an LED.



**Learning Outcomes:** color transitions, conditional statements, and color switching logic.



### 13: App control RGB LED

**Objective:** Enable control of an RGB LED with Microbit using a mobile device.

**Learning Outcomes:** Bluetooth connectivity with Microbit, and learn remote control of RGB colors.

### 14: Automatic street LED

**Objective:** Simulate an automatic street lights system using Microbit.



**Learning Outcomes:** Practice sequential programming, and learn automation concepts.



### 15: Servo motor control

**Objective:** Connect Microbit to control a servo motor for basic motion.

**Learning Outcomes:** Learn about servo motors, output control, and understand coding extension.





### 16: Inchworm Robot

**Objective:** Create a simple inchworm robot using Microbit and servo motor.

**Learning Outcomes:** Basic robotics concepts, understand servo movement, and Servo motor programming.

### 17: Hack Google Dino

**Objective:** Use Microbit to modify or hack the Google Chrome dinosaur game.



**Learning Outcomes:** Understand basic game modification concepts, Microbit's input control.



### 18: Surprise Box

**Objective:** Create a Micro-bit-controlled surprise box with lights or sounds.

**Learning Outcomes:** Integrate multiple components, practice event-driven programming.

### 19: Mini Tablefan

**Objective:** Build a Micro-bit-controlled mini table fan to explore motor control.



**Learning Outcomes:** Practice Microbit's motor control, and integration of hardware components.



### 20: Microbit Sunflower

**Objective:** Develop a project to mimic sunflower movement using a servo motor.

**Learning Outcomes:** Understand servo motor control, Light sensor integration.

### 21: Microbit Robot car

**Objective:** Build a Microbit-controlled robot car for basic motion and direction control.

**Learning Outcomes:** Understand motor control, directional programming, Importing extension into the makecode.

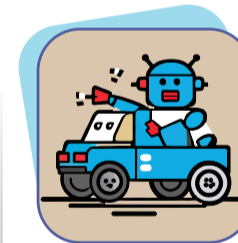


### 22: Button controlled Robot

**Objective:** Develop a Micro-bit robot that responds to button inputs for movement.



**Learning Outcomes:** Learn input handling, and understand how to control a robot using buttons.



### 23: Clap Robot

**Objective:** Program a robot to respond to claps for various actions.

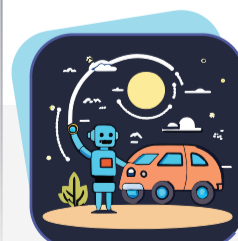
**Learning Outcomes:** Learn sound detection, and understand how sound sensor works.

### 24: Light Following Robot

**Objective:** Build a Microbit robot that follows light sources for navigation.



**Learning Outcomes:** Understand sensor input, explore the concept of light-based navigation.



### 25: App controlled Robot

**Objective:** Enable control of a robot with Microbit using a mobile device.

**Learning Outcomes:** Apply wireless communication for remote-controlled robotic systems.





### 26: Distance range Finder

**Objective:** Connect microbit with a distance sensor for obstacle detection.

**Learning Outcomes:** Understand sensor integration, conditional statements for obstacle avoidance, and explore the concept of range finding.

### 27: Smart Dustbin

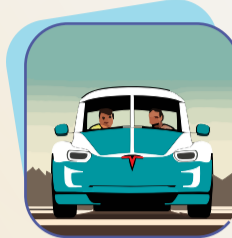
**Objective:** Build a Micro-bit-controlled dustbin with automatic lid opening.



**Learning Outcomes:** Integrate sensors for object detection, understand smart systems.

### 28: Autonomous Robot

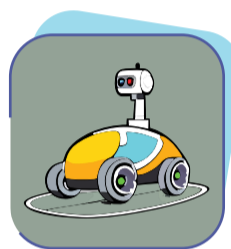
**Objective:** Create a Micro-bit based robot capable of autonomous movement.



**Learning Outcomes:** Understand basic autonomy in robotics and ultrasonic connections.

### 29: Autopilot Robot

**Objective:** Develop a Micro-bit robot with autopilot capabilities using sensors.



**Learning Outcomes:** Integrate multiple sensors for navigation, and practice complex robotic programming.

### 30: Automatic Door Opening system

**Objective:** Use Microbit to control an automatic door opening system.



**Learning Outcomes:** Microbit's output control, and explore applications of automation.

### 31: Line following Robot

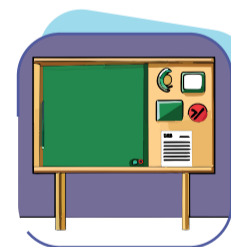
**Objective:** Build a Microbit robot capable of following a predefined line.

**Learning Outcomes:** Understand infrared sensor principles for line tracking in robotics.



### 32: Program a Notice Board

**Objective:** Develop a digital notice board using programming.



**Learning Outcomes:** Digital signage, text display, and dynamic content updating.

### 33: Wireless Notice Board

**Objective:** Upgrade the notice board to a wireless system for remote updates.



**Learning Outcomes:** Learn remote data transfer, and IoT applications of LCD display.

### 34: Mobile controlled Plant Watering system

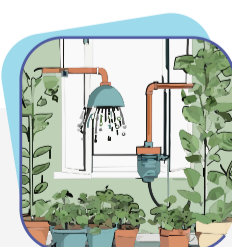
**Objective:** Automate plant watering using a mobile app.



**Learning Outcomes:** Sensor data with mobile app integration, and plant care automation.

### 35: Automatic Plant Watering system

**Objective:** Design a system that waters plants based on soil moisture.



**Learning Outcomes:** Understand soil moisture sensing, irrigation control, and smart gardening.





### 36: Temperature Monitoring system

**Objective:** Develop a system to monitor and display temperature data.

**Learning Outcomes:** Learn temperature sensor integration, data display, and environmental monitoring.

### 37: Keypad controls

**Objective:** Interface a keypad for user control in electronic projects.



**Learning Outcomes:** Keypad interfacing, secure code entry, and user-controlled systems.



### 38: Password Door Security System

**Objective:** Design a door security system using a password.

**Learning Outcomes:** Understand password security, electronic door locking mechanisms.

### 39: Keypad Calculator

**Objective:** Create a calculator using a keypad for numerical input.



**Learning Outcomes:** Learn calculator logic, keypad mapping, and user-friendly interfaces.



### 40: Home Automation

**Objective:** Develop a home automation system for controlling appliances.

**Learning Outcomes:** Sensor integrations, remote control, and smart home applications.





**Register Now**



**ROBOTIC  
SCHOOLS**

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