

Robotics Programme Catalogue

ROBOTICS PROJECTS



ADM
EDUCATION

LIMITED LIABILITY PARTNERSHIP



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Product Design Projects

QUICK PROJECTS IN MAKECODE TO HELP STUDENTS GET THE MOST OUT OF THE MICRO:BIT'S FEATURES



SENSORY TOY

Students will use the micro:bit's built-in accelerometer sensor inputs and new expressive sounds as outputs to create a toy that could help learners who respond well to stimulation through touch, light and sound.

SENSITIVE STEP COUNTER

Students will use the micro:bit to collect numerical acceleration data and apply thresholds to sensor data in order to make an accurate step counter that is tailored to their own walking style.

PIR MOVEMENT ALARM

Students will build a PIR (passive infra red) sensors which are wireless intruder alarms that uses a movement detector and are commonly used in burglar alarms and office lighting systems to detect movement.

REACTION GAME

Students will make two physical input switches using cardboard and tin foil and create a reaction game with real physical switches that they can bash as hard as they like.



Electronics Projects

QUICK PROJECTS IN MAKECODE TO HELP STUDENTS GET THE MOST OUT OF THE MICRO:BIT'S FEATURES



PRESSURE SWITCH ALARM

Students will create a wireless intruder alarm that will warn you when someone steps on a home-made pressure sensor.

GUITAR 1 - TOUCH TUNES

Students will create a micro:bit guitar to play different tunes by using the micro:bit's touch sensor using crocodile clip leads and tin foil that are connected to the micro:bit's pins.

GUITAR 2 - CHORDS

Students will make their micro:bit guitar and play a broken chord with a single touch, which are 3 notes from any chord that sound good when played one after another.

GUITAR 3 - OCTAVES

Students will improve your micro:bit guitar by shifting the pitch up and down octaves by storing the frequency of each note in variables called F, A, C and E.

Weather & Climate Projects

QUICK PROJECTS IN MAKECODE TO HELP STUDENTS GET THE MOST OUT OF THE MICRO:BIT'S FEATURES



SUNLIGHT SENSOR

Students will turn the LED display into a sensor and make the micro:bit react to light by measuring the amount of light falling on them.

THERMOMETER

Students will show how hot or cold the micro:bit is by taking a reading using the built-in temperature sensor in its processor in °C (Celsius).

MAX-MIN THERMOMETER

Students will track highest and lowest temperatures using the temperature sensor inside the micro:bit's CPU in 3 variables: currentTemp is the current temperature reading, max is the maximum and min is the minimum.

NIGHTLIGHT

Students will use the micro:bit's LEDs as a light sensor input to light up their micro:bit's LED display in the dark.



Global Goals Projects

QUICK PROJECTS IN MAKECODE TO HELP STUDENTS GET THE MOST OUT OF THE MICRO:BIT'S FEATURES



SAVING SEA TURTLES

Students will build a prototype of beach lighting for paths that guides humans safely but doesn't distract turtles by using the micro:bit's LEDs as a light sensor input.

LIGHT-UP FISHING NETS

Students will use the micro:bit to create a prototype of LED lights that can stop unwanted fish, turtles and birds from getting trapped in fishing nets by using the micro:bit's LEDs as a light sensor input.

ANIMAL TRACKER

Students will use the micro:bit's accelerometer and radio features to make a prototype of a device to help scientists track polar bears or other animals and discover how they are being affected by climate change.

CALMING LEDS

Students will turn the micro:bit into a simple digital device to helping people to relax by slowing and regulating their breathing using a simple animation sequence that is built in a 'forever' loop to keep it running.

