

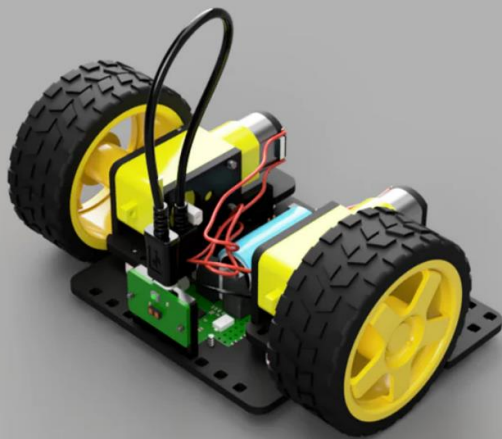


Scout Quick Start Guide

Build and drive your personal Robot!

Drive your Scout Robot!

Build and play robot that uses as student friendly coding environments based on block coding or JavaScript.



Features

- Control robot via Scratch software or Virtual Remote
- Various code examples provided across every platform
- Simultaneous Motor control
- Bluetooth 5 for increased range
- Access to STEM based lessons, experiments, and coding examples to enrich the learning experience

Designed for teaching

- Robotics
- Computing
- Circuitry
- IoT
- Logic
- Block Coding

package includes

- 1 Scout Robotics Kit
- 1 MODi sensor
- 1 Battery Charger
- Unlimited access to MantisCode

MantisCode is compatible with





**Charge your
battery First!**



ICR 18350 (Use Only)

- **Size: (18.3 x 35 x 35 mm)**
- **Maximum Continuous Charging Current (1A)**
- **Standard Continuous Charging Current (220mA)**
- **Charging Temp: (41F to 115F)**





Charging Temp: 41F to 115F

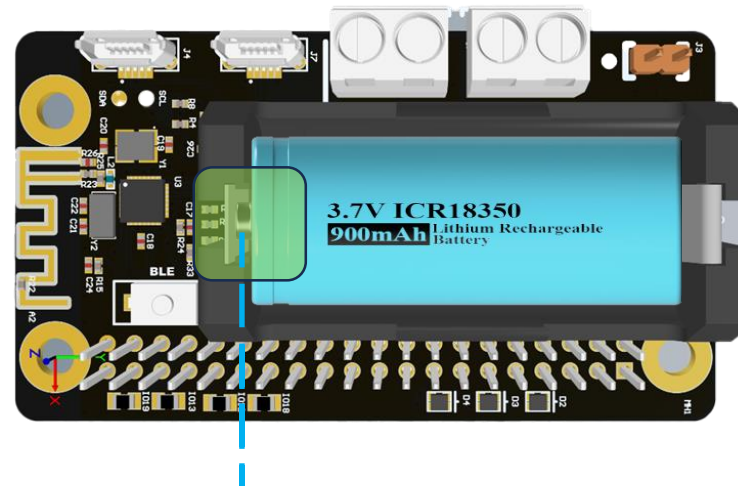


Charge Complete

**Battery now ready to power your
Mantis Scout Robot!**

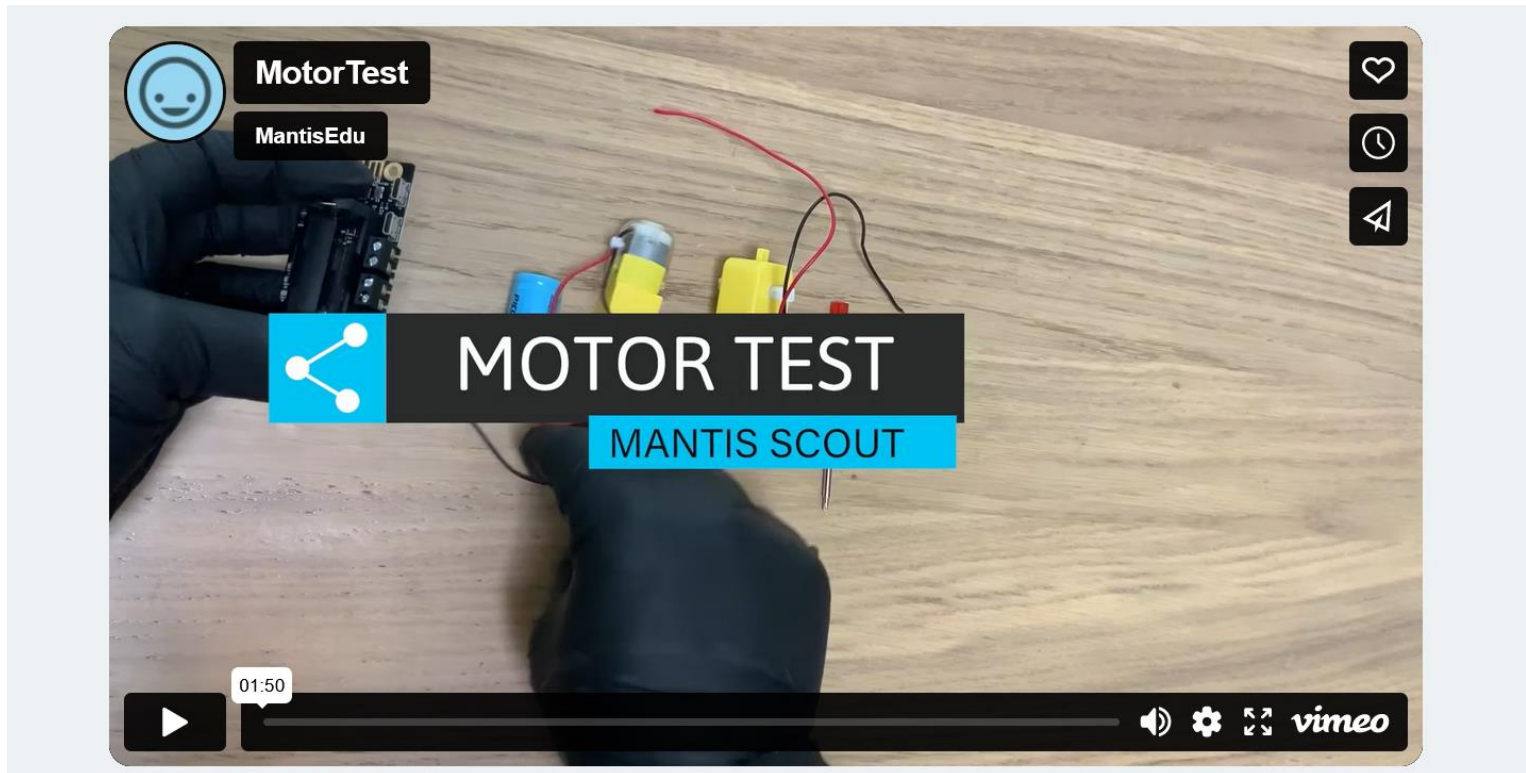


Check polarity on
the install!



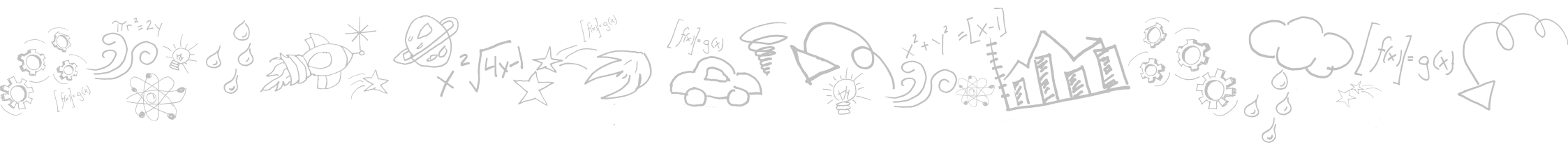
Battery Polarity (+) Direction

Positive terminal of battery should be facing this way.



Before you code, now would be good time to check out the Motor Test Example:

<https://scout.mantismc.com/quick-start-guides/motor-setup>



Follow this link to access the screen below.

<https://scout.mantismc.com/scratch-examples/mantiscode>

Mantis Code Link

Click here for preloaded Scratch Examples

Mantis Scout

Search

Mantis Scout Documentation

QUICK START GUIDES

- Rechargeable Battery Care
- Motor Setup Test
- Enable/MODI Test
- MODI Red LED Error

ASSEMBLY GUIDE

- Animated Video Tutorials
- Live Video Tutorials**
- Printed Instructions
- 3D CAD Model

SCRATCH EXAMPLES

- MantisCode**
- Connect Sensor
- Modi Sensor
- Condition Based Logic based on Sensor Values
- Functions
- Avoid Obstacles
- File Logging
- RGB Sensors
- LED Sensors

JAVASCRIPT EXAMPLES

- Motor Setup
- Man-In-The-Loop Obstacle Avoidance Tutorial
- Lidar Obstacle Avoidance Tutorial
- Support

Powered by GitBook

MantisCode

MantisCode is a browser-based software, that's based on the Scratch programming language. With MantisCode, you can connect to MantisEDU sensors for data collection and other experiments.

Using MantisCode does not require any software to be installed. The user must simply have access to an internet connected device that runs a modern web browser that supports WebBluetooth. Most modern web browsers support this, with the exception of Safari on MacOS, and Firefox. Google Chrome or Edge are recommended for best results. Mobile browsers are not typically not supported.

To access MantisCode, visit <https://mantiscode.azurewebsites.net/app/>.

Coding with MantisCode.

Mantis Sensors
Example projects that connect to Mantis Sensors. These are pre-built examples to help getting you started.

Scratch 3 Playground
Start a blank Scratch 3.0 project. This includes access to blocks for interacting with the Mantis sensors.


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MantisCode Sensor Code Examples

Below you will find links to examples for each of the supported Mantis™ sensors. Click on the sensor of interest to access examples. Find out more about Mantis at www.mantisedu.io



Mantis Code Link
Navigate the Sensors tile
to the Scout Examples




Coding with MantisCode.



Mantis Sensors

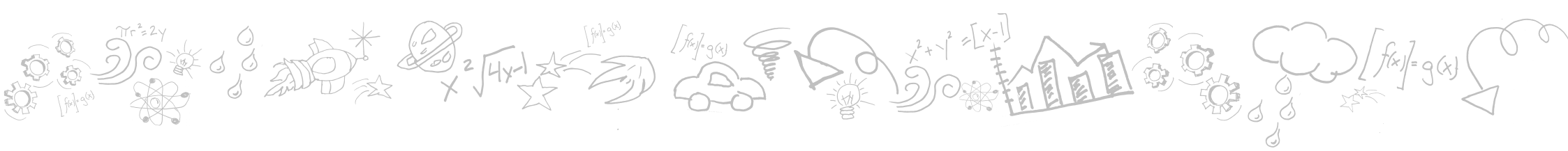
Example projects that connect to Mantis Sensors. These are pre-built examples to help getting you started.



Scratch 3 Playground

Start a blank Scratch 3.0 project. This includes access to blocks for interacting with the Mantis sensors.

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Mantis Code Link

Navigate the Sensors tile
to the Scout Examples



← Mantis Code with the Mantis Scout

The following are examples to connect and code with the Mantis™ Scout. Click on one of the options to get started.



PWM Motor Controls

Load Project



Modi Distance

Load Project



Modi Distance (Function)

Load Project



Conditional Logic w/ MODI

Load Project



Modi CSV

Load Project



Modi Avoid Object

Load Project

PWM Motor Control Example

Let's check out the PWM Motor Control Example



Step 2

Click to select the desired sensor you want to connect with

Step 3

Press the Pair button to complete the process

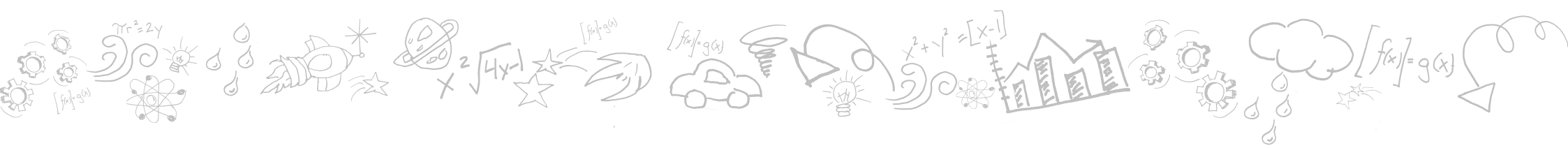
Step 1

Press the Green Flag to Start the Program

The screenshot displays the MONTIS EDU programming environment. On the left, a sidebar contains categories like Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, and My Blocks. The main workspace is divided into three sections:

- Pairing Dialog:** A modal window titled "mantiscode.azurewebsites.net wants to pair" is open. It shows a list of sensors, with "SCT_B010A0AC8D15 - Paired" selected. A "Pair" button is visible at the bottom right of the dialog.
- Code Editor:** The workspace is filled with various programming blocks. Key blocks include:
 - When Device is Connected:** A block that triggers a "set MODI Shield to 0" and a "forever" loop containing a "set MODI Shield to SCT: 1 distance" block.
 - When Key Pressed:** Multiple blocks for different keys (up arrow, down arrow, left arrow, right arrow) that trigger actions like "SCT m1 speed", "say Forward", "say Backwards", "say Turn Left", and "say Turn Right".
 - Wait Blocks:** Several "wait 1 seconds" blocks are used throughout the code.
- Stage Area:** On the right, the stage area shows the "MONTIS EDU" logo, a "Scanning for Device" message, and a small image of a blue circuit board. Below the stage, there are controls for the sprite (Sprite1) and stage (Stage).

At the bottom of the interface, there is a "Backpack" section with a "Backpack" button.



Stop Command

Press the Red Circle to stop the Program

Montis Edu SCT_PWM_Controls

Code Costumes Sounds

Variables

- Make a Variable
- Amps
- b1
- b2
- g1
- g2
- IR1
- IR2
- MACAddress
- ☒ MODI Shield
- ModiShield_inches
- moving
- r1
- r2
- speedbackwards
- speedforward
- w1
- w2

My Blocks

- Make a List
- Make a Block

Code Blocks:

- when s key pressed: SCT turn modi on 1; say Reconnect Device to Start for 2 seconds
- when d key pressed: disconnect from SCT 1
- when I receive connected: set MODI Shield to 0; forever loop: set MODI Shield to SCT 1 distance
- when space key pressed: SCT m1 speed 0 duration 0 m2 speed 0 duration 0 1; say stop; wait 1 seconds
- when up arrow key pressed: SCT m1 speed 100 duration 0 m2 speed 100 duration 0 1; say Forward; wait 1 seconds
- when down arrow key pressed: SCT m1 speed -100 duration 0 m2 speed -100 duration 0 1; say Backwards; wait 1 seconds
- when left arrow key pressed: SCT m1 speed 100 duration 0 m2 speed 0 duration 0 1; say Turn Left; wait 1 seconds
- when right arrow key pressed: SCT m1 speed 0 duration 0 m2 speed 100 duration 0 1; say Turn Right; wait 1 seconds
- when I receive connected: set MODI Shield to 0; forever loop: set MODI Shield to SCT 1 distance

Sprite1: MODI Shield 82

Sprite: Sprite1 x: 14 y: -78

Show: [on] [off] Size: 100 Direction: 90

Backdrops: 1

Backpack

Modi Shield Value

If the Modi is enabled, the distance value will display here.

Verify Connection

Once connection, the status label should now say connected. Now, you can issue commands using the keyboard.

The screenshot displays the Montis Edu software interface, which is a Scratch-like environment for programming a robot. The top menu bar includes 'File', 'Edit', and 'SCT_PWM_Controls'. The left sidebar contains various categories: Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, and My Blocks. The main workspace is a grid where code blocks are placed. The script area on the left contains a 'when green flag clicked' event, a 'say' block, and a 'when key pressed' block. The 'when key pressed' block has several sub-blocks for controlling the robot's movement and sensors. The right sidebar shows a 'Sprite1: MODi Shield' sprite with a 'Connected' status label. The bottom status bar shows 'Backpack'.

Program Command Legend

Space Bar Command

Press the space bar to stop both motors

Up Arrow Command

Press the up arrow to move both motors forward

Down Arrow Command

Press the down arrow to move both motors backwards

S Key Command

Press S key to enable the Modi sensor. Only needed once! Device will reboot after.

Right Arrow Command

Press the right arrow motor 2 only

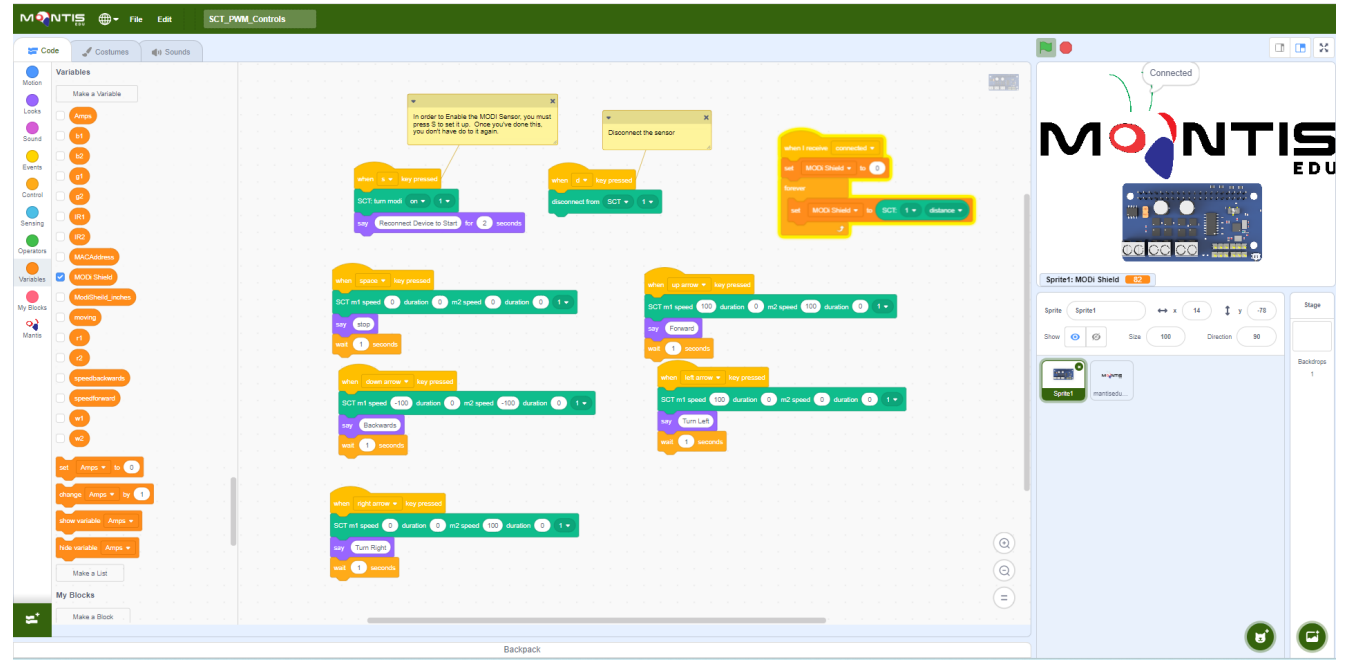
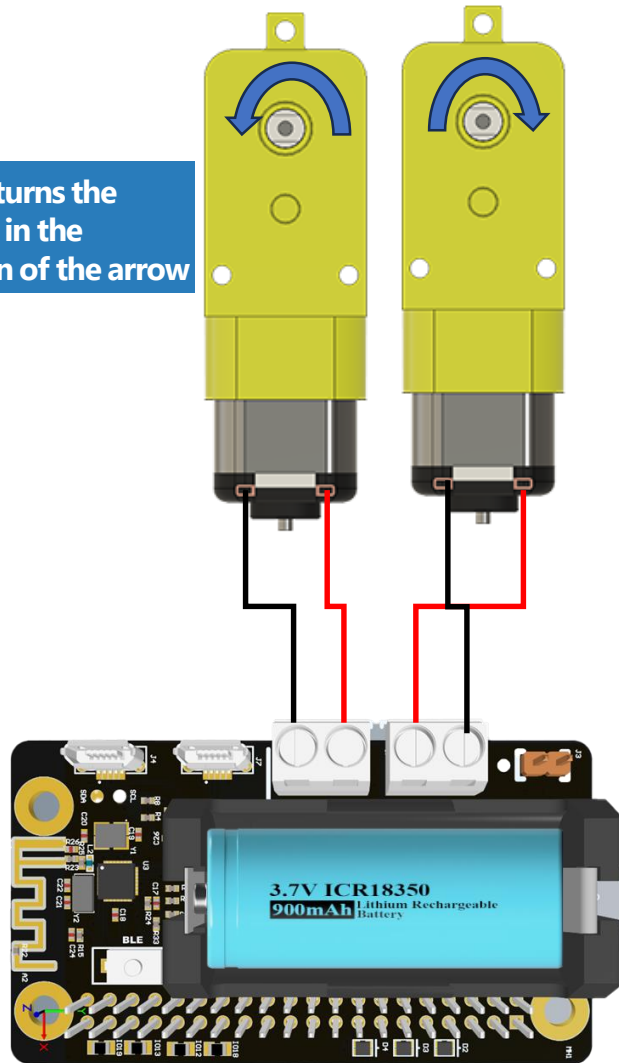
Left Arrow Command

Press the left arrow to move motor 1 only

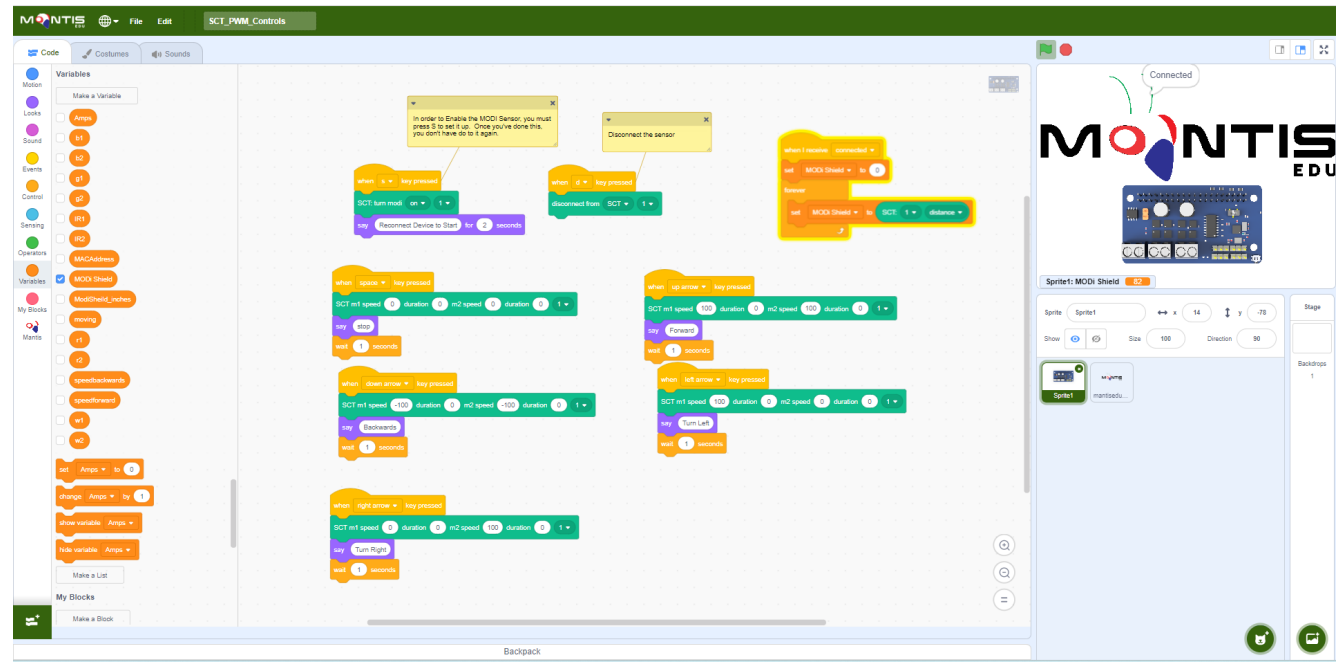
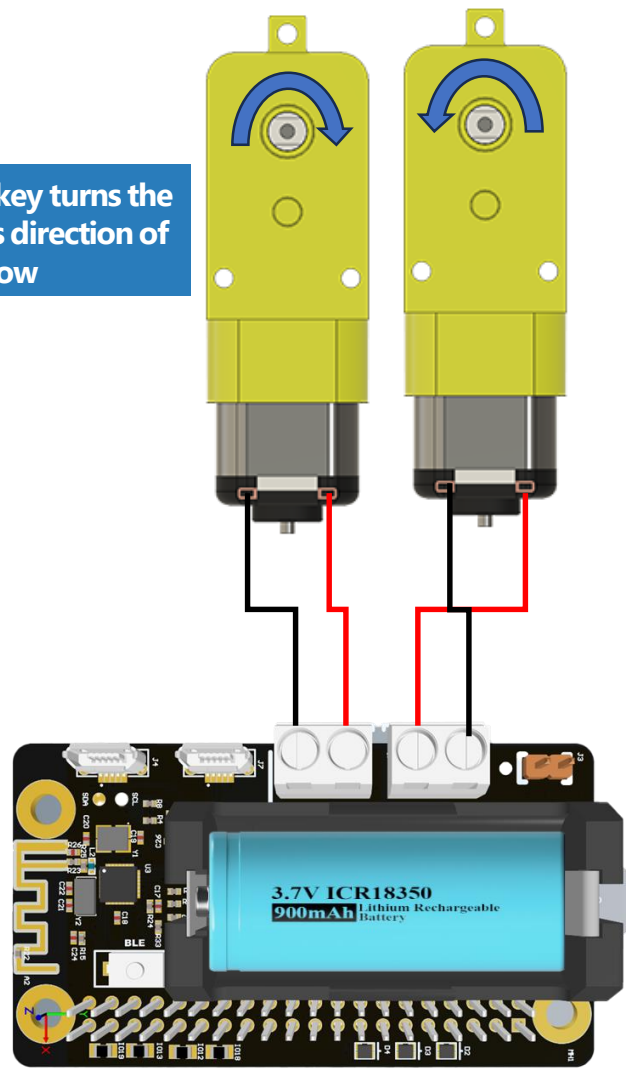
D Key Command

Press the d key disconnect from the sensor

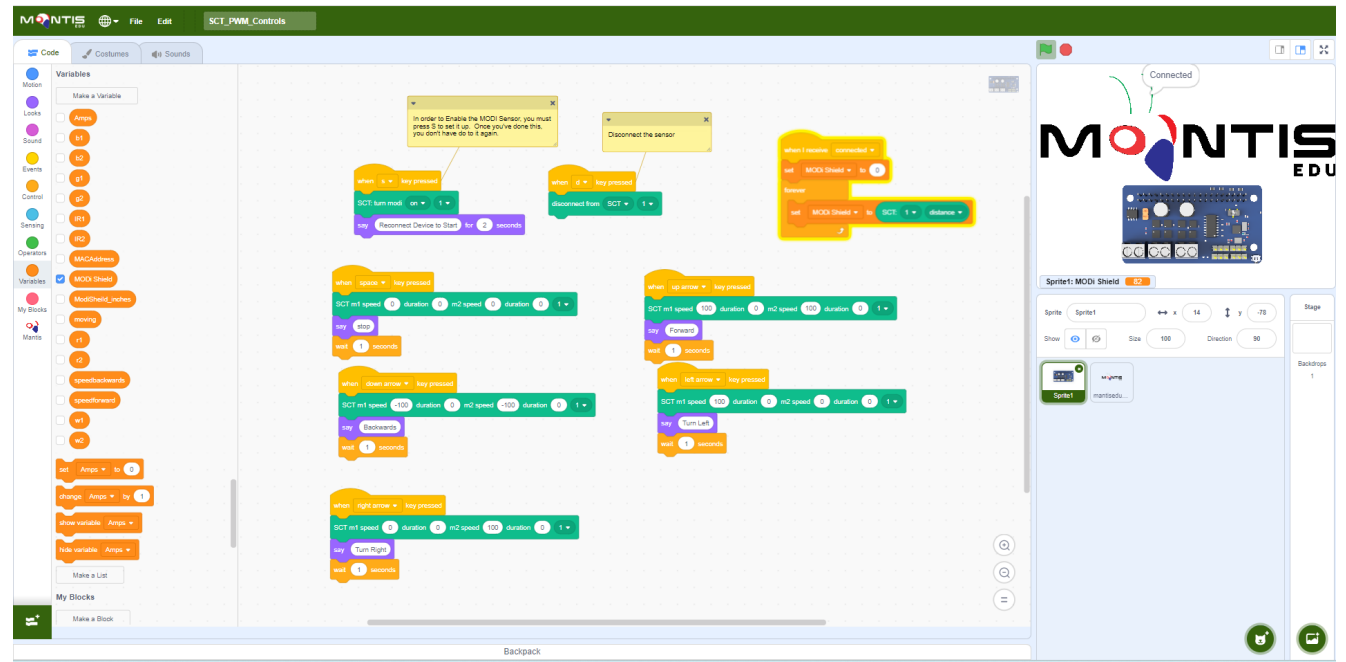
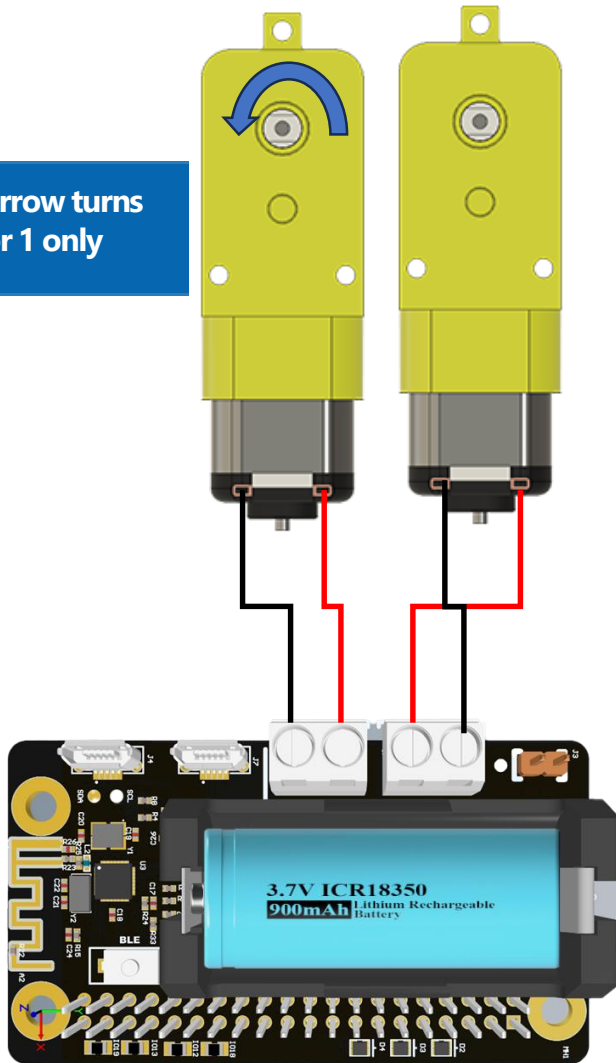
Up key turns the motors in the direction of the arrow



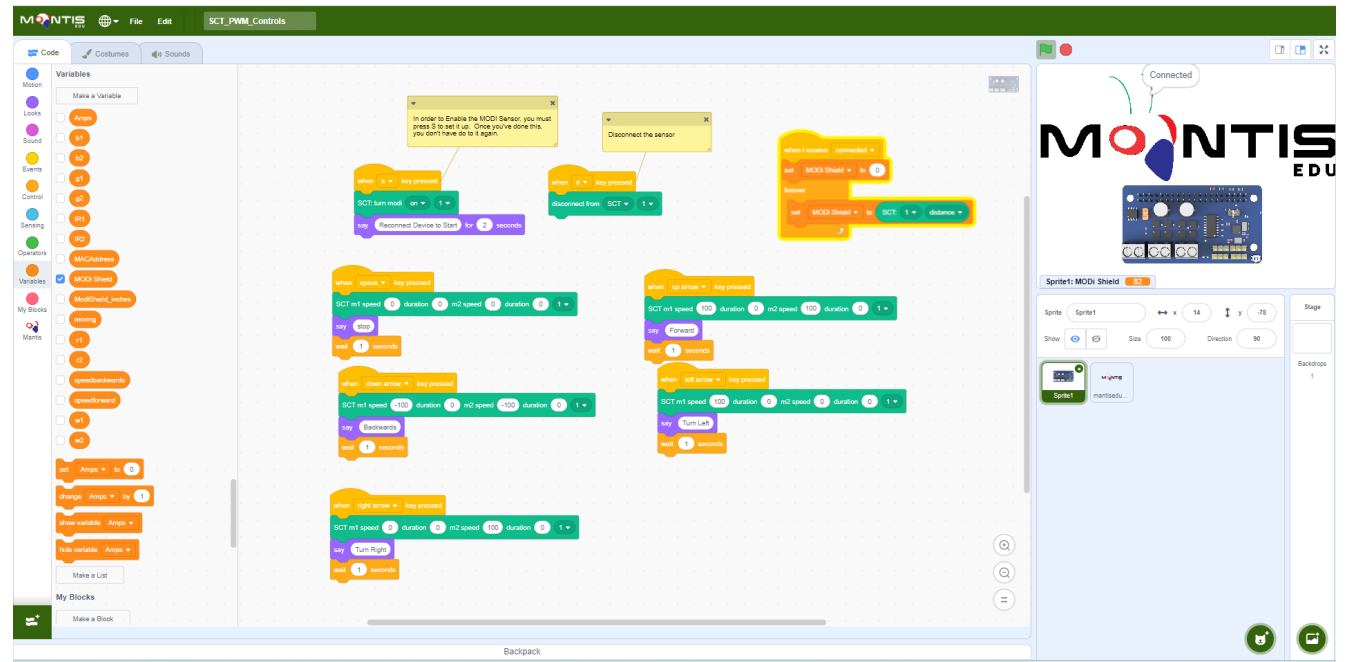
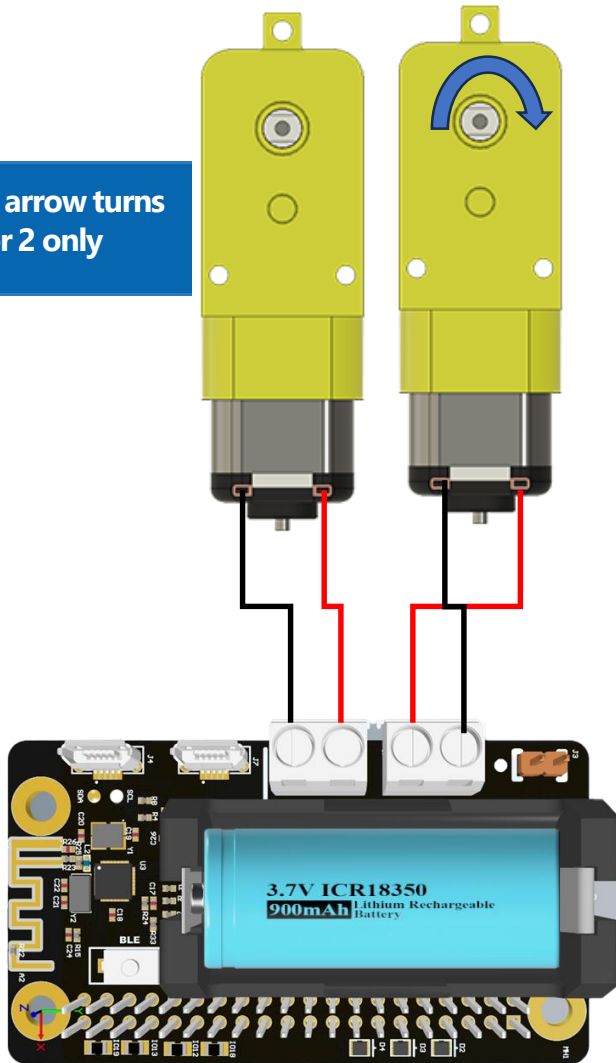
Down key turns the motors direction of the arrow



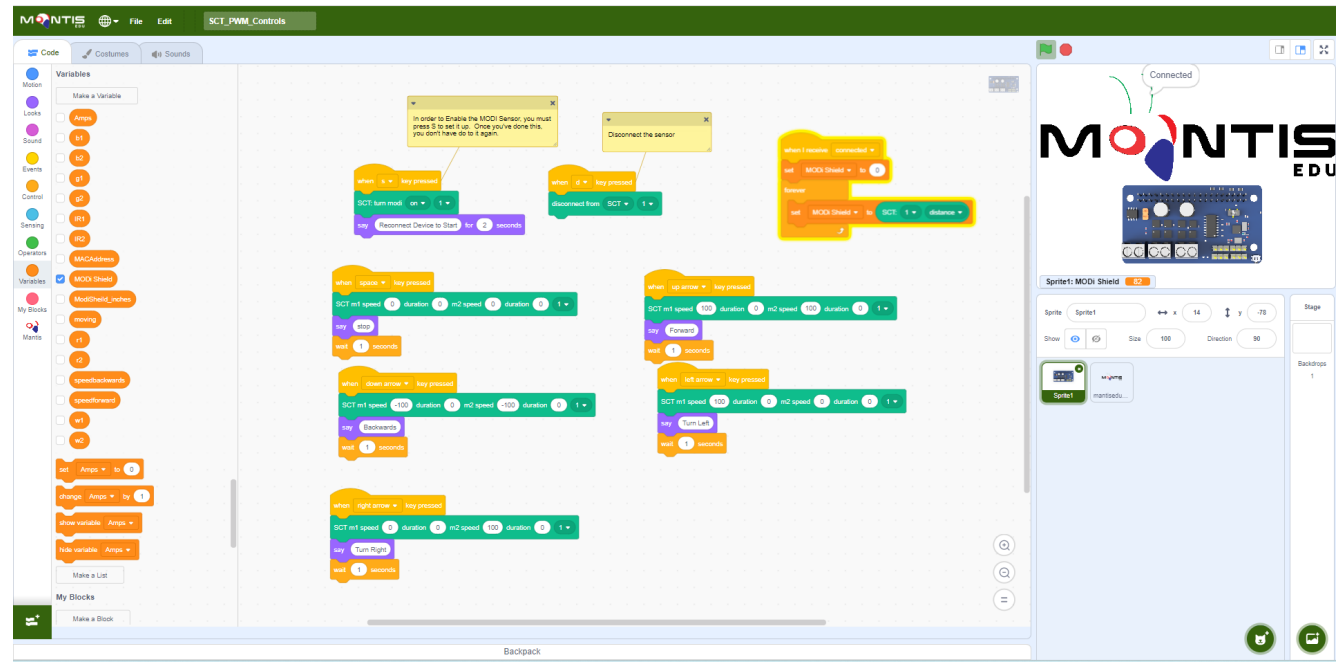
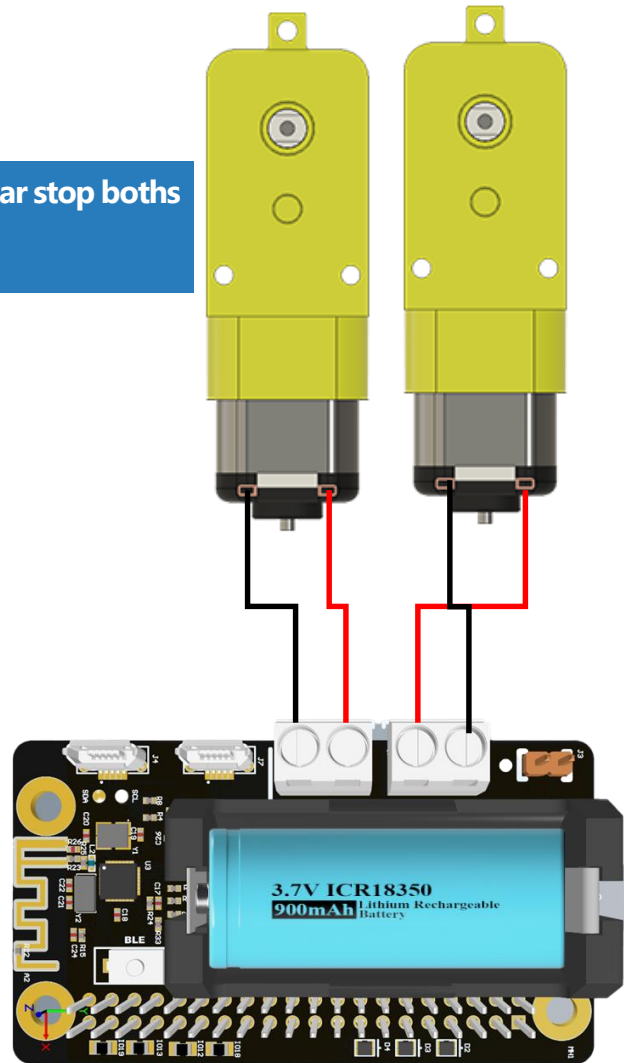
Left arrow turns
Motor 1 only



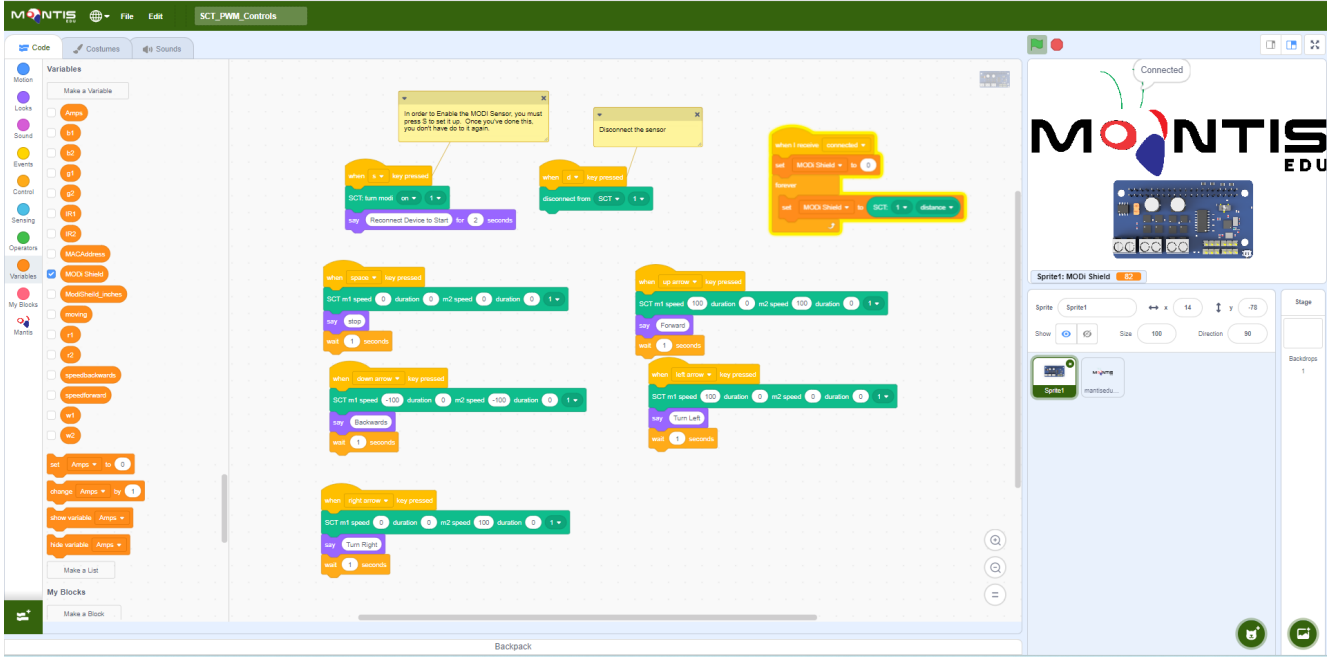
Right arrow turns
Motor 2 only



Space bar stop boths motors



S key Enables the MODI and disconnects.



D key disconnects the Motorhat

