Makeblock
Construct Your Dreams

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MAKER WORKS TECHNOLOGY INC

Technical support: support@makeblock.cc
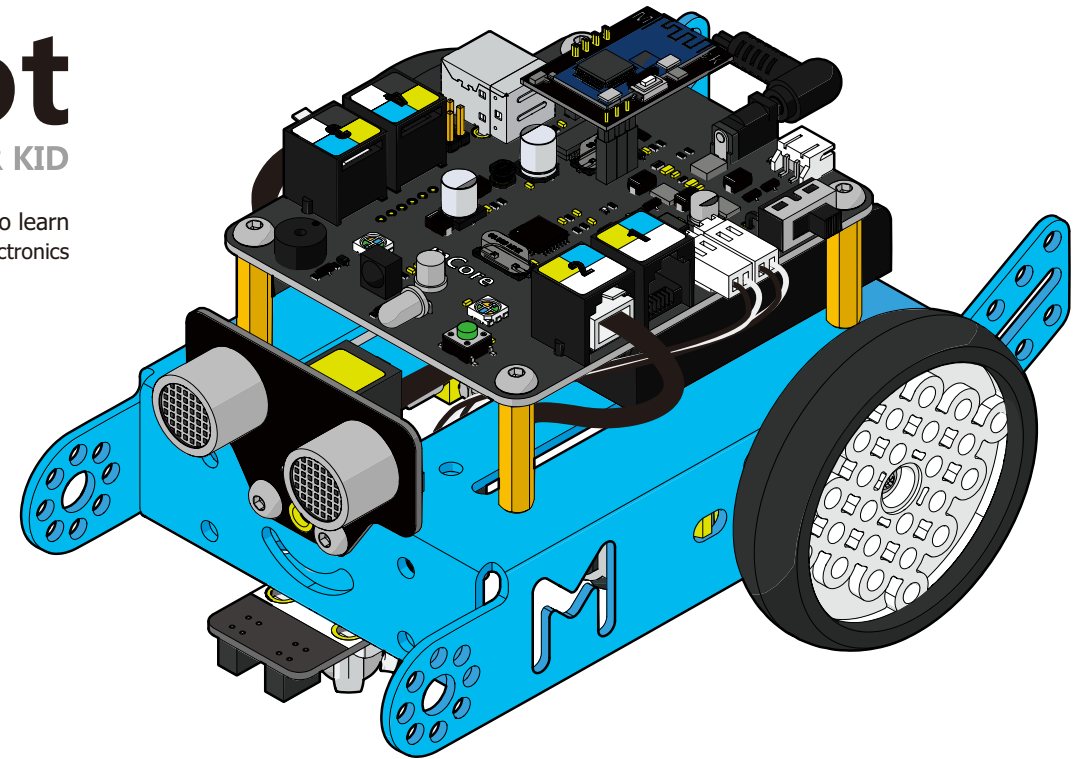
www.makeblock.cc

:@Makeblock   : @Makeblock   : +Makeblock

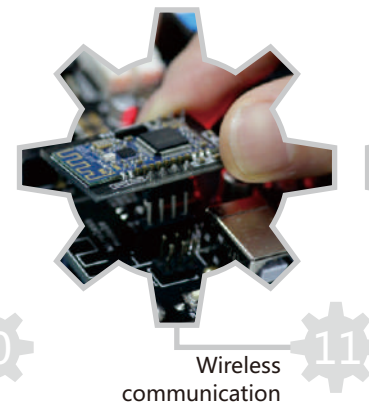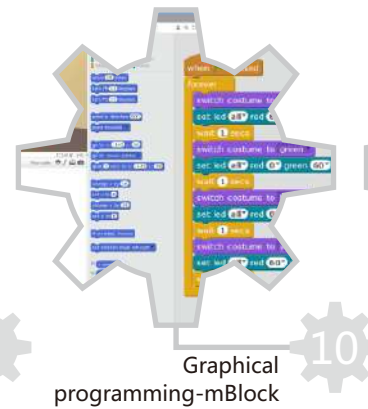# Makeblock
Construct Your Dreams

mBot
ONE ROBOT PER KID

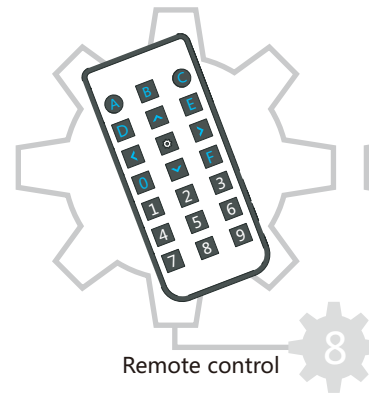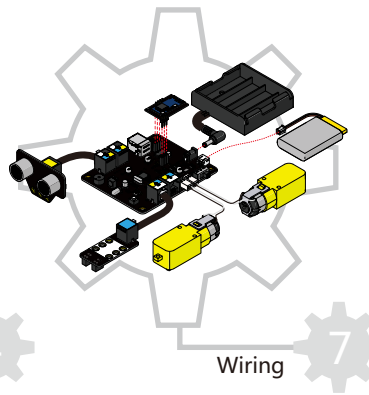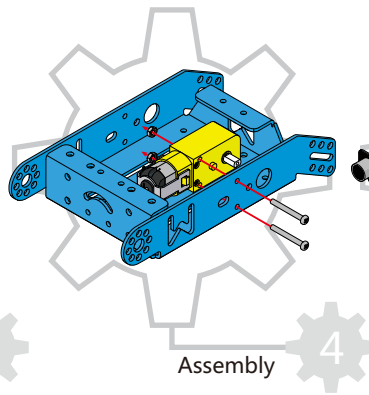Great tool for beginners to learn graphical programming, electronics and robotics.

Quick Guide

mBot is an educational robot kit for beginners to get hands-on experience about graphical programming, electronics, and robotics. It is an all-in-one solution for robotics learning and designed for STEM education.

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Part List

Bluetooth/2.4G module

mCore

Screw M4×8

Motor R

Chassis

Me Ultrasonic Sensor

Screw M4×8

Roller Ball

Screw M4×8

Motor L

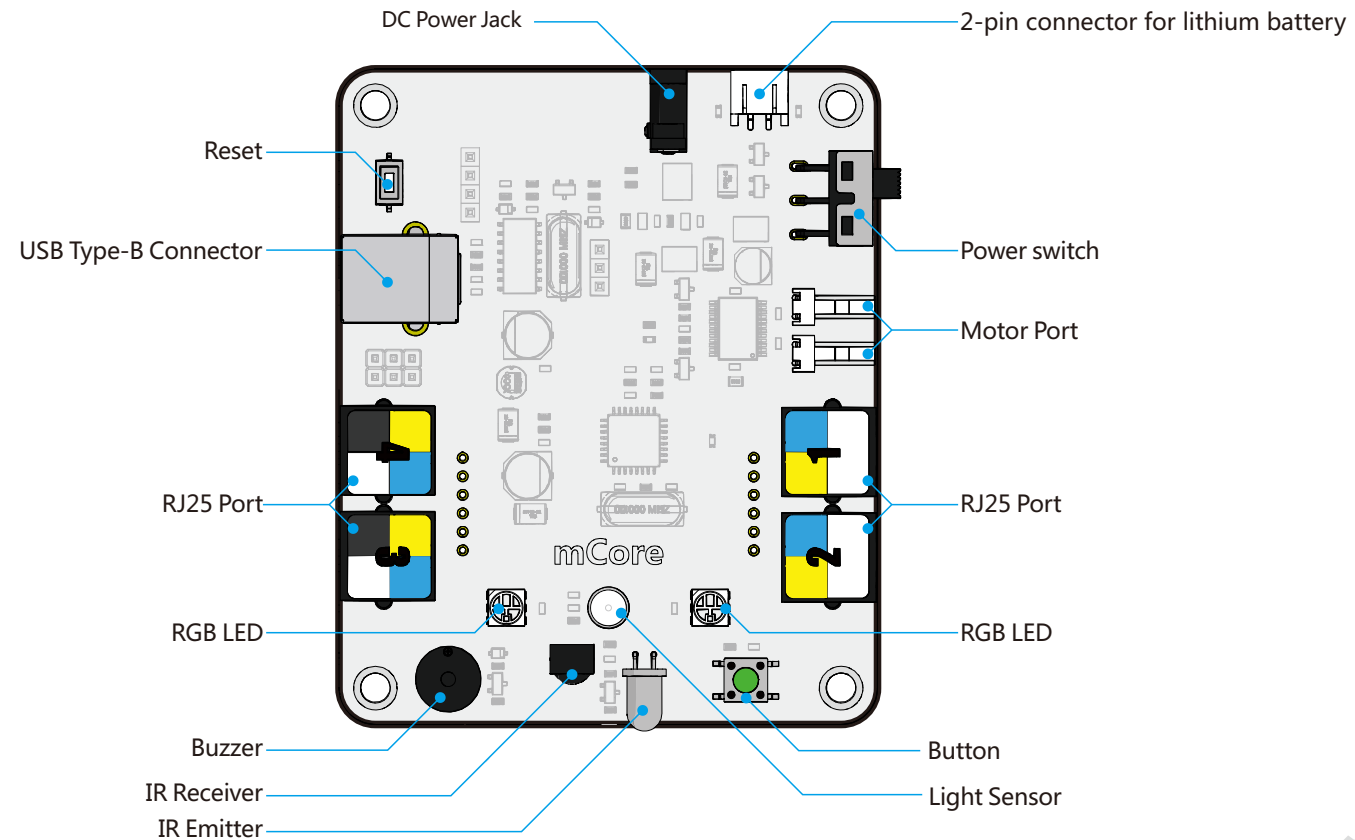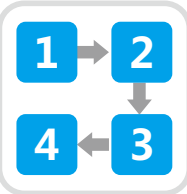Me Line Follower

Wheel

M3 nut

Screw M3×25

Brass Stud M4×25

Velcro

Battery Holder
(4 x AA batteries ,not included)

Screw M2.2×9

USB cable

6P6C RJ25 Cable

Screw driver

mCore

DC Power Jack

2-pin connector for lithium battery

Reset

USB Type-B Connector

Power switch

Motor Port

RJ25 Port

RJ25 Port

RGB LED

RGB LED

mCore

Buzzer

IR Receiver

IR Emitter

Button

Light Sensor
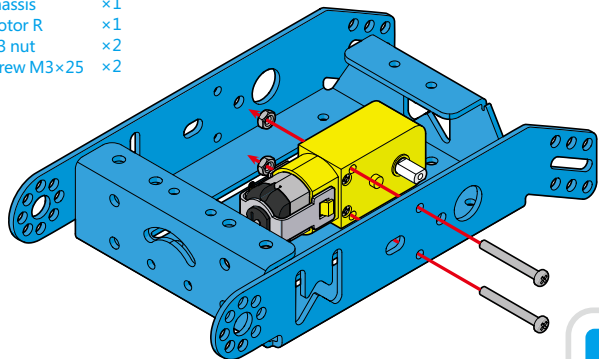
Assembly

Chassis ×1
Motor R ×1
M3 nut ×2
Screw M3×25 ×2

Motor L ×1
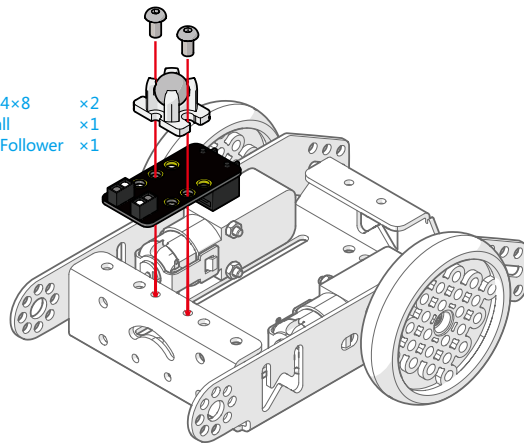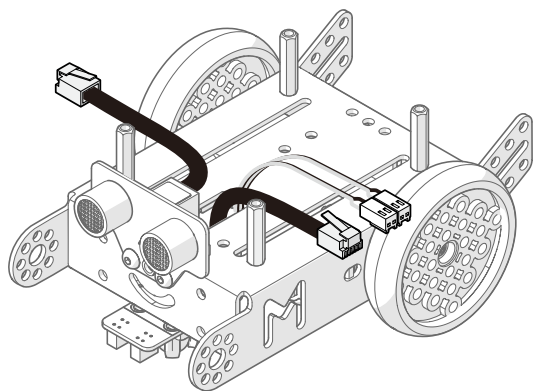M3 nut ×2
Screw M3×25 ×2

Screw M4×8 ×2
Roller Ball ×1
Me Line Follower ×1

Screw M4×8 ×2
Me Ultrasonic Sensor ×1

1 → **2**
4 ← **3**

5 → **6**
8 ← **7**

Screw M2.2×9 ×2

Wheel ×2

RJ25 Cable ×2
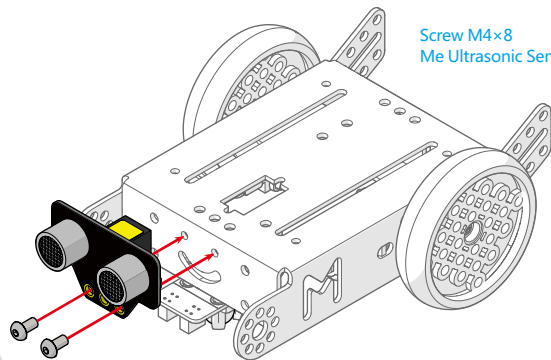
Brass Stud M4×25 ×4
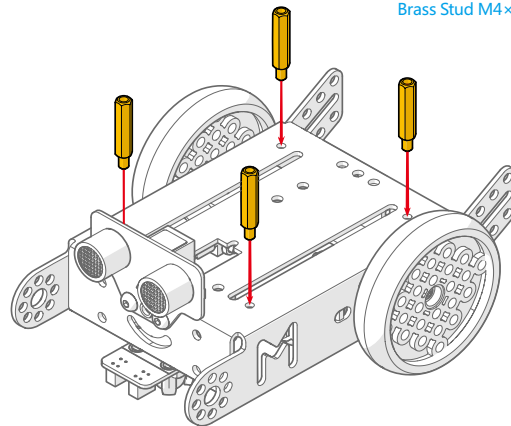
Battery Holder ×1
Velcro ×1

Screw M4×8 ×4
mCore ×1

Bluetooth/2.4G module ×1

9 → 10
↓
12 ← 11

Wiring

AA battery holder

Bluetooth/2.4G module

Me Ultrasonic Sensor

Lithium battery
(Not included)

Motor R

M2

M1

Me Line Follower

Motor L

Motor R

Motor L
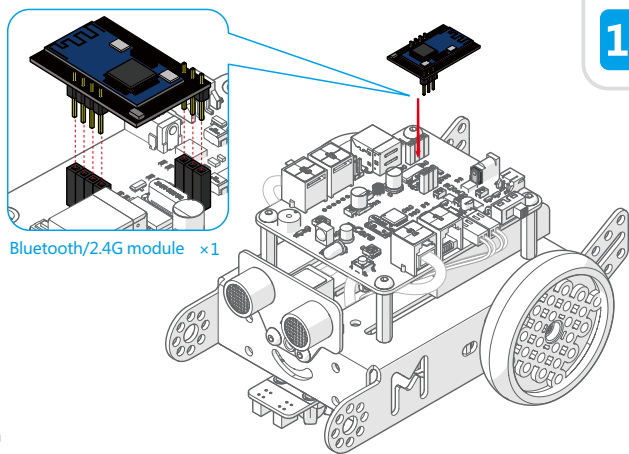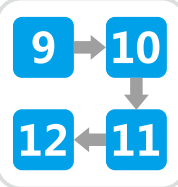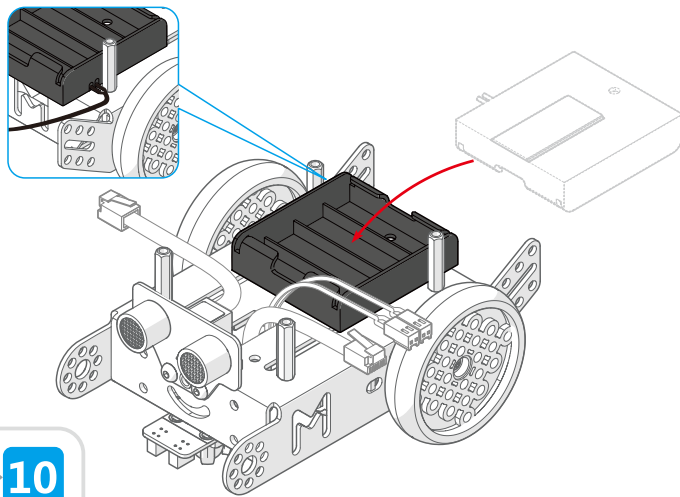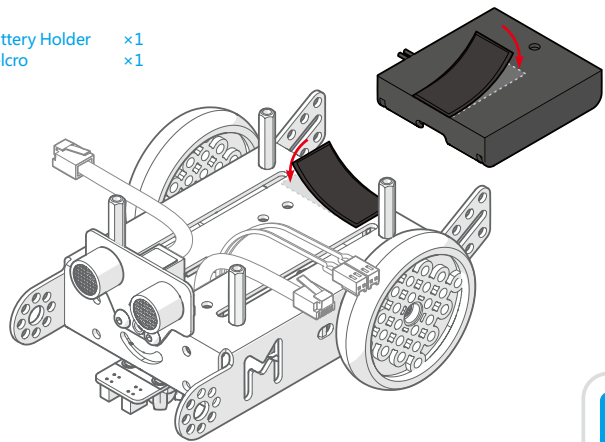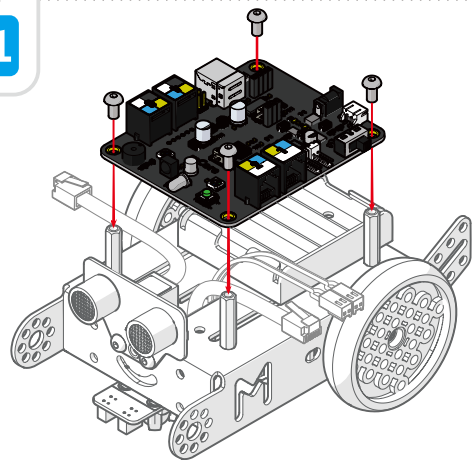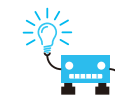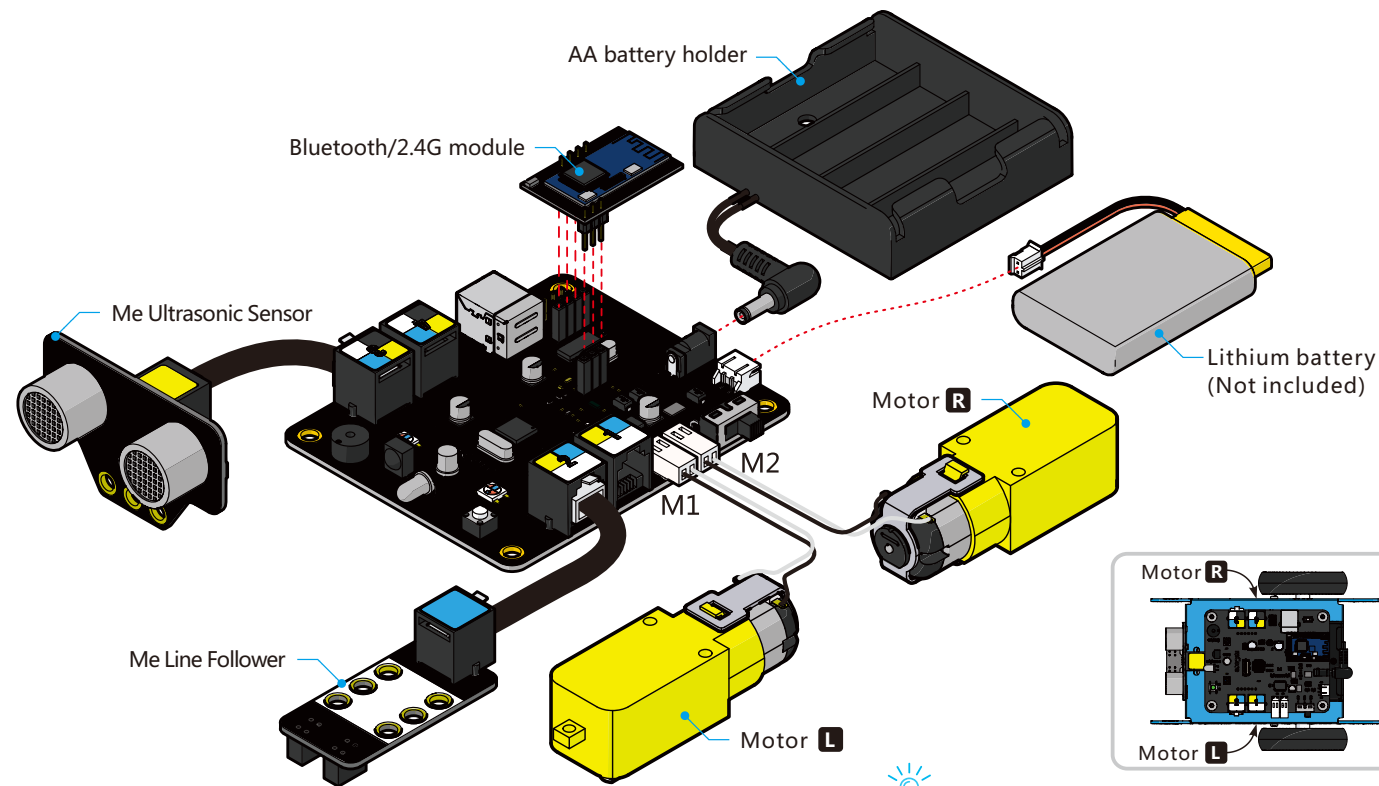
You may need to switch the order of two
wires(M1, M2) to correct the rotation direction

Batteries Suggestion

mCore's power supply: 3.7V DC — 6V DC

Option 1:
4 × AA batteries(Not included)
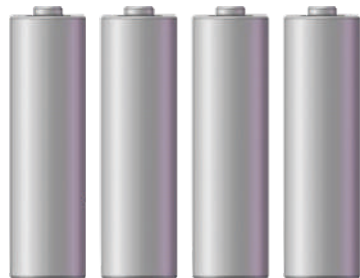
Option 2:
3.7V lithium battery(Not included) with a standard 2-pin JST-PH connector.
Support on-board charge via USB cable.

Notice:
CR2025 button cell battery for remote control is not included .

Remote Control

Mode 2: Wall avoidance robot

Mode 1: Remote manual control

Line follower robot

Forward

Left

Right

Backward

Set the speed of the robot.

Suggestion: Play mBots on the flat surface

Mode 1: Remote manual control
Users can use buttons to control the direction and speed of mBot.

Mode 2: Wall avoidance robot
A robot that can avoid walls and obstacles while moving.

Mode 3: Line follower robot
Line follower is a robot that can follow a path. The path can be visible like a black line on a white surface (or vice-versa)

Graphical Prgramming-mBlock

Introduction

mBlock is a free modified version of Scratch 2.0 developed by MIT Media Lab. Added some hardware-related blocks based on the original Scratch, mBlock enables users to read sensors, control motors and even the whole robot with ease.

Download: http://mblock.cc/download/

Get started with mBlock to program the mBot:
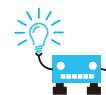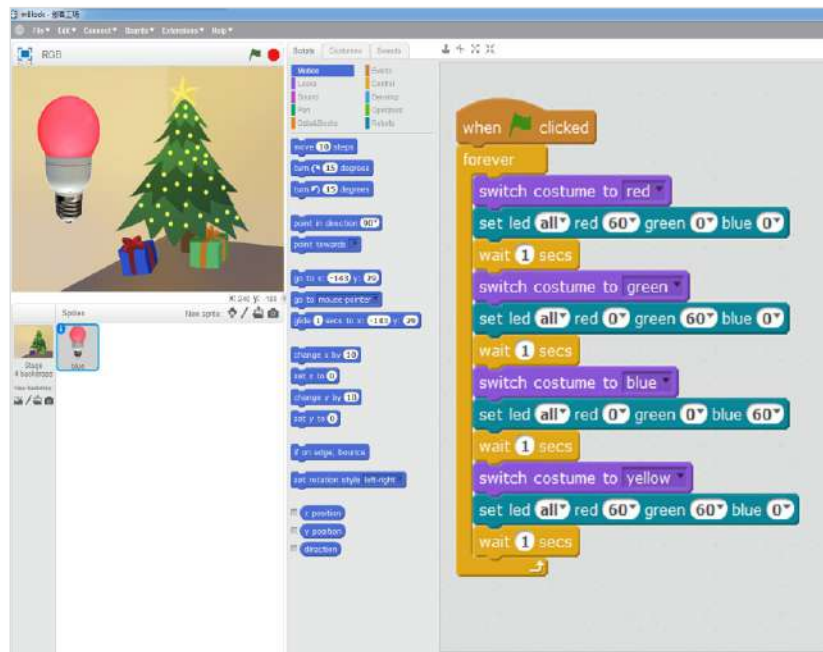http://learn.makeblock.cc/mbot/

Wireless Communication

1. Introduction of Bluetooth module

This Bluetooth module is designed specially for mCore with the support of Bluetooth 2.0 and 4.0. It's suitable for both individual users and family. Users can use their smart phones or computers to control the mBots wirelessly with this module.

More detailed tutorials:
http://learn.makeblock.cc/mbot/
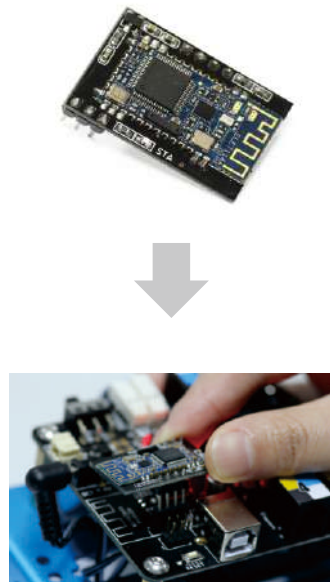
2. Introduction of 2.4G wireless serial

The 2.4G wireless serial includes two parts: 2.4G wireless serial-USB for computer; 2.4G wireless serial-module for mCore. It uses the same technology as wireless mouse and is very suitable for classroom. No driver and pairing needed.

More detailed tutorials:
http://learn.makeblock.cc/mbot/
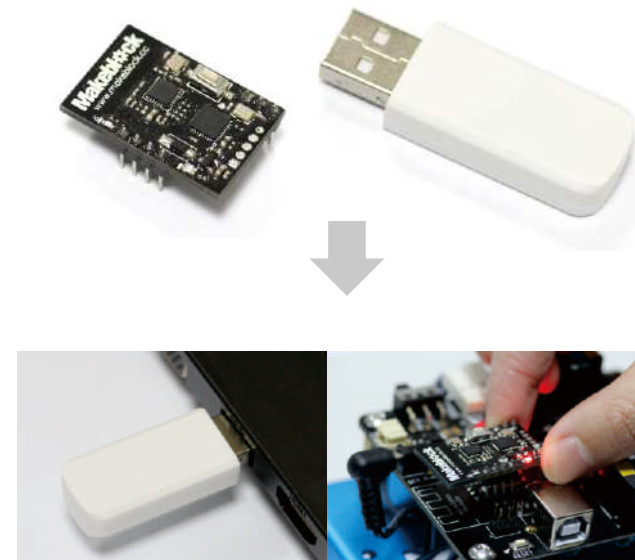
Arduino Programming(C language)

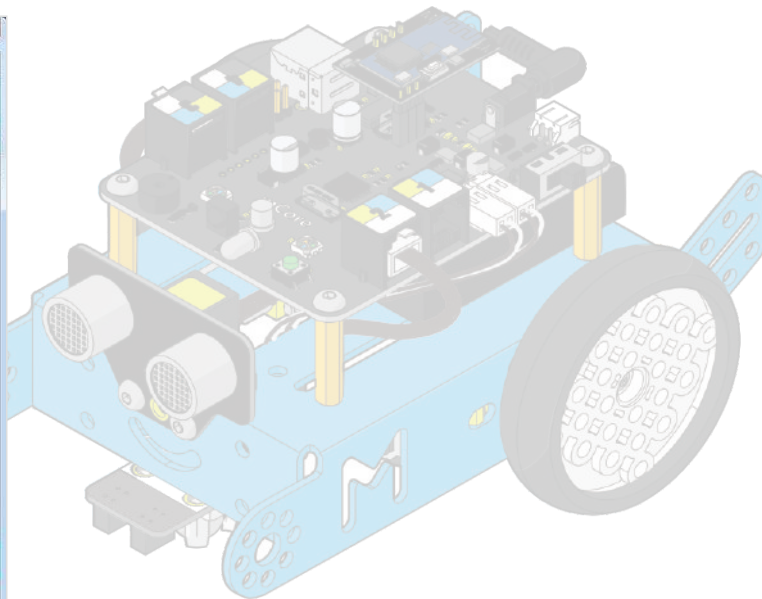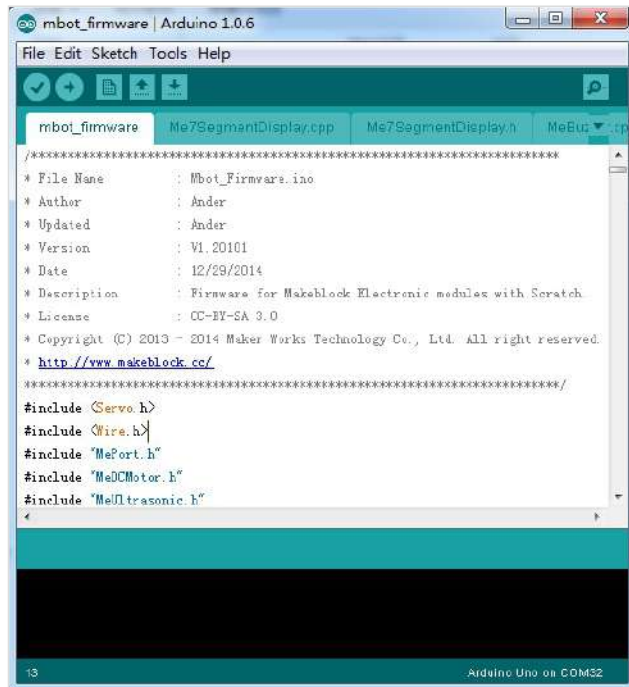Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. The Arduino software consists of a development environment(IDE) and the core libraries. The IDE is written in Java and based on the Processing development environment.

More detailed tutorials:
http://learn.makeblock.cc/mbot/

Electronic Modules on Makeblock--Further Exploration

	Me 3-Axis Accelerometer and Gyro Sensor is used to measure the angular rate and the acceleration information of your robot or other devices. It is useful for sumo robots to detect bumps.
	Me 7-Segment Display is a display module with four digits tube which can show some data....some data, such as speed, time, score, and etc.
	Me Potentiometer can convert rotary motion to an analog input which can be used to control the speed of a mobile robot, the brightness of RGB LEDs, or others.
	Me Joystick is normally used to control the moving direction of object.

	Me Sound Sensor can measure the volume.It can be used in some sound interactive projects,such as an voice operated switch.
	Me Temperature Sensor is a stainless steel tube sensor which is used for measuring temperature.
	Me PIR Motion Sensor can detect infrared ray which derives from animals/humans within 19.7 feet (6 meters)

See More on Makeblock Platform