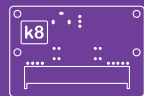


What's in the box?



1 x k8 Circuit Board



1 x Face Plate



2 x Side Walls



1 x PCB Plate



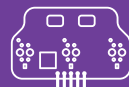
2 x Wheels



2 x DC Motors



1 x Ultrasonic Sensor



1 x IR Sensor



1 x Servo Motor



1 x Battery Box



10 x Screws & Fasteners



3 x Cable Connectors

Included Guided Resources

Every k8 Modular Robotics Kit comes with online video assembly instructions and comprehensive micro:bit coding and physical computing lessons. Each lesson will guide users through coding and programming the various robotic parts of k8.



k8 Assembly: Building Your Robot
This introductory course will help you get your k8 robot assembled and ready for programming.



k8 Lesson 1: Hello World!
Get started learning about programming your k8 robot with micro:bit and MakeCode.



k8 Lesson 2: Motor Control
Get k8 moving around and learn how to control the motors that drive your robot.



k8 Lesson 3: Line Following
Use your robot's Infrared Sensors to line follow a 2D course.

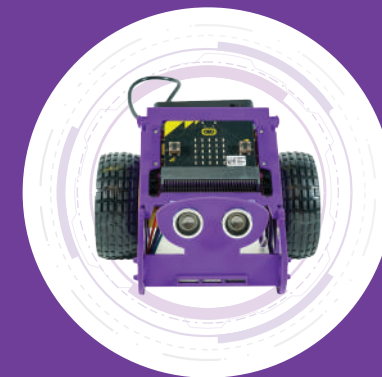


k8 Lesson 4: Sonar
Use your robot's Ultrasonic Sensors to navigate around and avoid obstacles.



k8 Lesson 6: Servo Control
Use your robot's servo motors to create grabbers and lifters.

Go to: www.eduk8.ca to access the included coding and robotics courses.



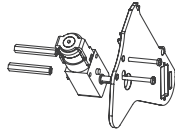
Welcome to your k8 Robotics Kit!

k8 Assembly Guide

For instructional assembly videos, please visit: www.eduk8.ca

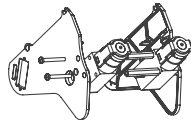
1. ASSEMBLE SIDEWALL

Using **2 x long screws** and **2 x black hex bars**, attach **1 x DC Motor** to **1 x Sidewall**. Line up the axle, screw holes and plastic nub on the DC Motor with the holes in the plastic Sidewall.



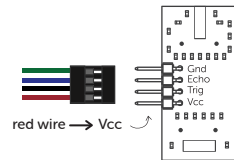
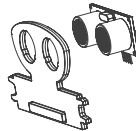
2. JOIN SIDEWALLS

Repeat the previous step with the remaining **1 x Sidewall** and **1 x DC Motor**. Use the additional **2 x long screws** to secure this assembly to the **black hex bars** already installed.



3. INSERT ULTRASONIC

Insert the **Ultrasonic Sensor** into the **Face Plate** (fit will be snug). Note the direction of the pins. Once inserted, connect the **4-Pin Cable** to the Ultrasonic Sensor. The red wire needs to connect to the 'Vcc' pin on the Ultrasonic Sensor.



red wire → Vcc

Grnd
Echo
Trig
Vcc

Black = Ground

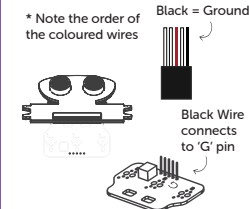
* Note the order of the coloured wires



Black = Ground

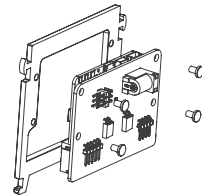
Black Wire connects to 'G' pin

Insert the **Infrared Sensor** into the slot on the **Face Plate**. The pins on the board should be facing up. Once inserted, attach the **5-Pin Cable**.

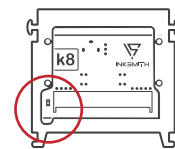


5. ATTACH K8 BOARD

Line up the **k8 Board** on the **PCB Plate**, with the edge connector protruding through the opening. Use the **4 x plastic fasteners** to attach the Board to the Plate.



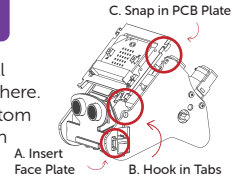
*Correct Orientation



Note that there is a front and back side of the PCB Plate. The cut-out on the PCB plate should be on the left side, allowing the LED light on the k8 Board to show.

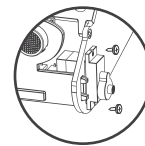
6. ADD FACE & PCB PLATE

Snap the **Face Plate** into the small slots on each Sidewall, as shown here. Next, hook in the tabs on the bottom of the **PCB Plate** into the holes on each Sidewall, and snap closed.



7. ADD SERVO MOTOR

Thread the cable of the **Servo Motor** through the rectangular hole on either of the Sidewalls, from the outside to the inside. Screw the Servo Motor in place.



8. CONNECT CABLES

Hook up the robotic components to the **k8 Board** using this diagram.

HELPFUL HINTS:

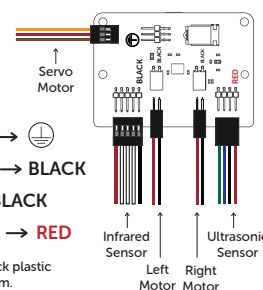
Servo Motor: Brown Cable →

Infrared Sensor: Black Cable → **BLACK**

DC Motors: Black Cable → **BLACK**

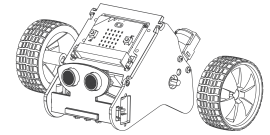
Ultrasonic Sensor: Red Cable → **RED**

*Be careful to note which side of the black plastic connector cable is showing in the diagram.



9. ATTACH WHEELS

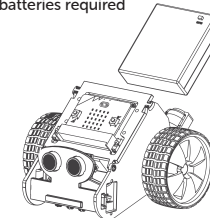
Once the k8 Board is wired up, attach a **Wheel** to each **DC Motor** axle. Be careful to line up the flat parts of the axle with the slot in the Wheel.



10. ADD BATTERY PACK

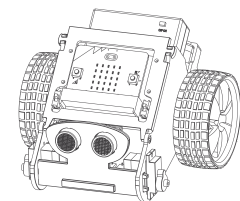
Slide the **Battery Pack** between the notches on either side of the Sidewalls, from the back of the robot. It should fit securely in place. Plug in the cord from the Battery Pack to the 6V connection on the back of the **k8 Board**.

* 4 x AA batteries required



11. INSERT MICRO:BIT

Lastly, insert a **micro:bit** into the edge connector on the **k8 Board**. The micro:bit's LED lights and buttons should be facing out. Make sure the **Battery Pack** is switched to ON to operate the robot.



12. START CODING!

Use the **USB cable** to connect the **micro:bit** to a computer to start coding with Microsoft Makecode. Be sure to add the custom k8 Extension blocks to the Makecode coding environment. Go to: www.makecode.microbit.org