

# Lego Mindstorm EV3 robots

The background is a solid teal color. It features several faint, semi-transparent graphic elements: a large donut chart in the upper right, a smaller pie chart to its right, a bar chart in the bottom right corner with four bars of increasing height, and several other smaller pie charts scattered throughout the right side of the image.



# Educational robotics

Educational robotics involves a series of educational activities in which children strengthen their knowledge and skills by designing, creating, assembling and programming robots.

It is a learning environment in which the people involved are motivated to design and build their own robots. These creations are designed in the first instance in a mental form and later in physical form, being controlled by a computer system (microchips).

For children, robots are toys they enjoy experimenting with and learning to play with.



Today, robotics and programming are very easy to follow, as children see the results of their work immediately. Thus, through experiments and interactive lessons, they discover how the wheels of the car spin, how a robot moves, avoids an obstacle and much more, all for the child's development.

Robotics lessons are very useful for children, because they help them gain a certain skill and an understanding of devices, equipment, (even machinery at a lower level.)

Robotics and programming for children mean more than the development of technical skills, because in addition to the technical and mechanical parts, robotics teaches children how to experiment, how to think logically, how to answer certain questions on their own.



## LEGO MINDSTORMS EV3

Lego Mindstorms EV3 is a "smart toy", a programmable robot for kids ages 10 to 16. Lego Mindstorms says the robots' modular designs can enable a youngster to build and program a robot in as little as 20 minutes.

That would just be the start, of course — hobbyists can hack away from there. There are many enthusiasts, with Lego leagues and robotics competitions.



## EV3 components

The EV3 system is powered by an "Intelligent Brick" that has an ARM processor, embedded 16 megabytes of Flash memory, 64 MB of RAM, plus an SD expansion slot. The Linux operating system is at its core, and the brick has USB 2.0, Wi-Fi, Bluetooth and ports that would let you connect up to four other bricks. Out of the box, the EV3 is compatible with iOS and Android, letting you control robots with your phones or tablets.

To help kids get started, EV3 includes building instructions for 17 robots. These include "Everstorm" a Mohawk-sporting humanoid that shoots mini-spheres as it walks, "Spiker" a scorpion-like robot and "Reptar" a robotic snake that slithers, shakes.

# EV3 - Home Edition



# EV3 - Home edition

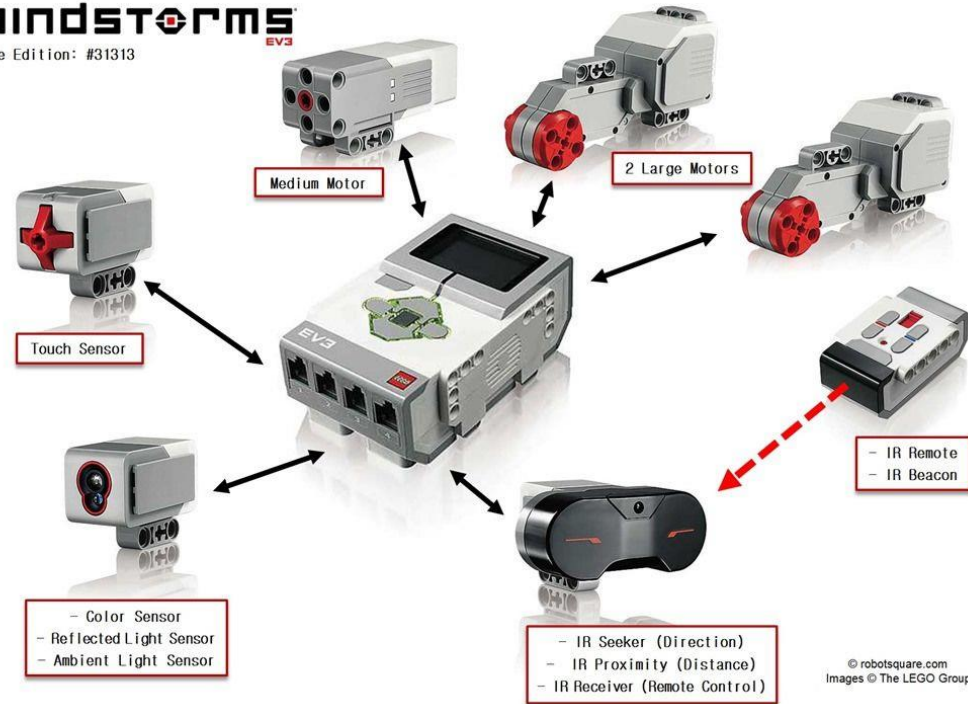
EV3 Brick with 2 large motors

1 medium motor - connected on port A

sensors:

- Touch Sensor
- Color Sensor
- Infrared Sensor

**MINDSTORMS**  
EV3  
Home Edition: #31313





# EV3 for Education







# TRACK3R

We especially use this model with different accessories: claw

<https://youtu.be/K0yVrFNnn68>



# Programming the EV3

For programming the robot we can use the dedicated application:



LEGO MINDSTORMS Education EV3 Teacher Edition



Prepare

Try

Use

Next Steps



01

Welcome to the EV3 Lab. Now we will now guide you through a few steps that will prepare your EV3 Core Set for the activities that are to come. If you are starting with a new set, these steps can take up to 45 minutes.

Open

# Connect the robot



A sequence of three EV3 program blocks. The first block is a green 'Start' block with a green play button icon. The second block is a green 'Motor' block labeled 'C', featuring a red motor icon, a speed dial set to 50, a rotation count of 1, and a checkmark. The third block is a green 'Motor' block labeled 'B+C', featuring a red motor icon, an upward-pointing arrow, a speed dial set to 0, a rotation count of 50, and a rotation count of 1.

A single green 'Motor' block labeled 'A', featuring a grey motor icon, a speed dial, a rotation count, and a stop icon.

A color sensor block with a green top and a row of seven colored buttons: green, yellow, red, blue, cyan, and magenta.

A row of seven port connector icons for the EV3 brick, each with a green top and a different motor or sensor icon.

The connection panel for the EV3 brick. It includes a refresh button, a USB icon, a Bluetooth icon, and a Wi-Fi icon. The text 'No Brick Connected' is displayed in the center.

A vertical column of control buttons for the EV3 brick, including a power button, a play button, and a stop button.

# TRACK3R with hammer and Infrared Sensor

<https://vimeo.com/561039899>



# EV3 SPIK3R

This model uses the same 2 large motors, 1 medium motor and 1 infrared sensor, but they are arranged differently and the programming of this model is different.

<https://www.youtube.com/watch?v=KiPleETDrnU>

