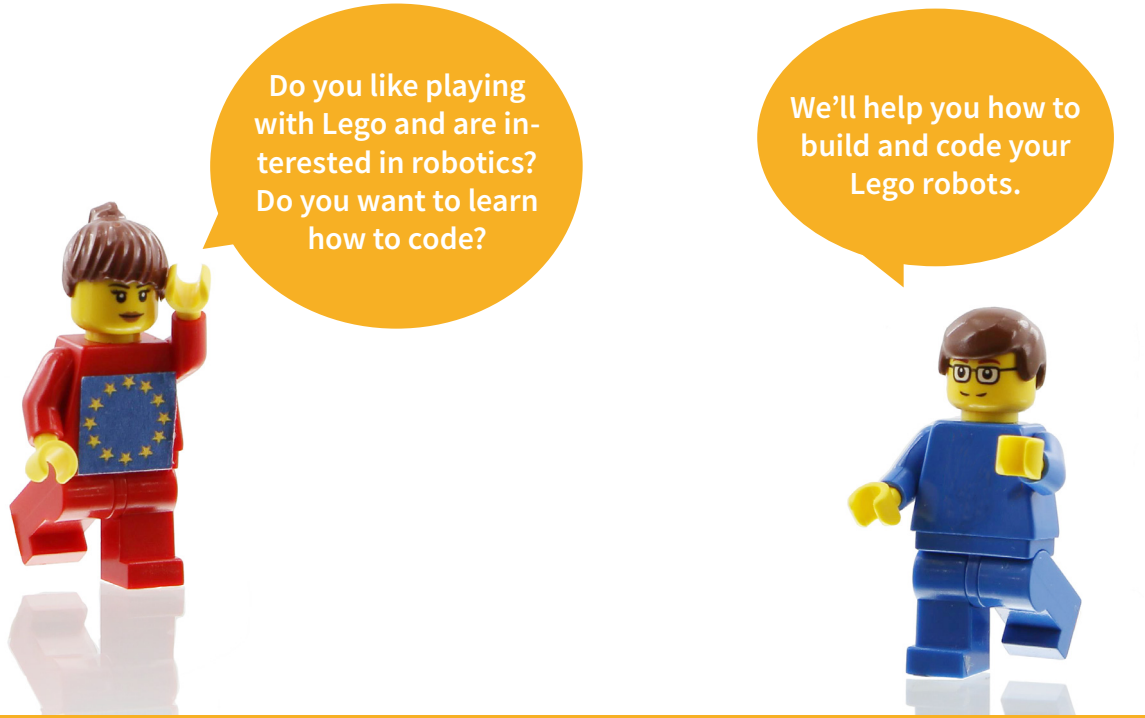
Building and Coding with Lego WeDo 2.0 Robots

What you need before you get started:

- WeDo 2.0 (Nr.: 45300)
- Tablet or PC
- QR-Code Reader



Watch out for the different colours on each page.
orange – Information
blue – Task
green – Construction Manual
red – Coding

QR Codes will direct you to YouTube Videos where everything is explained in detail. However, always try to solve the problem yourself first.

Basics 1

Information

To build a robot with LEGO Educational packs 45300, we must download the WeDo 2.0 software from *www.legoeducation.com*

Information

These videos show you how to insert the batteries and connect the smarthub with your tablet.

It's easy – try it out!

insert batteries

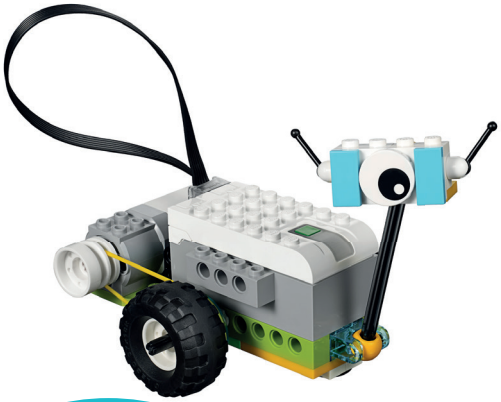
connecting with the tablet

connecting the motor

Let the motor work!

Task

1. Open WeDo 2.0 and tap on the **+** button
2. Tap on the icon with the books on top of the screen.

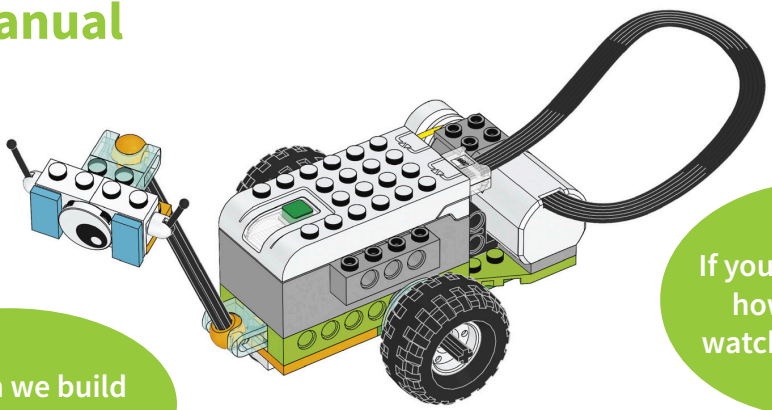


LEGO WeDo 2.0 has lots of different robots. The most famous one is Milo. And I like it so much!

how to open the Milo programme

Let's build it, come on!

Construction Manual



How can we build the robot Milo?

building Milo

If you don't know how to do it, watch this video.

Coding

How can we code the motor, the LED and the sensors?

coding the motor

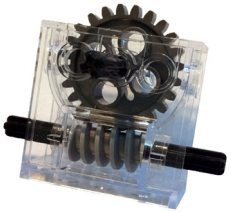
coding the motor & tilt sensor

changing the LED colours

coding the motor & motion sensor

Basics 2

Information



Worm Gear Block

Motor

How does a worm gear block work?

how to build a worm gear block

Let's try and see!

Task

1. Build a moveable bridge which opens and closes by using the motor and the worm gear block.
2. Try to make the moveable bridge open. Then the bridge should remain open for four seconds.

Let's think about how to open and close the bridge using WeDo.

moveable bridge working

Let's build a bridge!

Construction Manual

construction manual
for the bridge

Coding

down

up

coding instructions

Basics 3

Information

Tilt Sensor

Motion Sensor

Motor

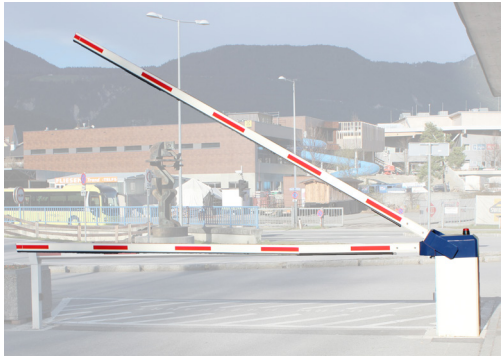
How do sensors work?

control of motor and sensors

That's easy – try it out!

Task

1. Build a barrier which opens and closes with the help of your coding.
2. Extend the function of the barrier by using the tilt sensor.
3. Now bring the motion sensor into play.



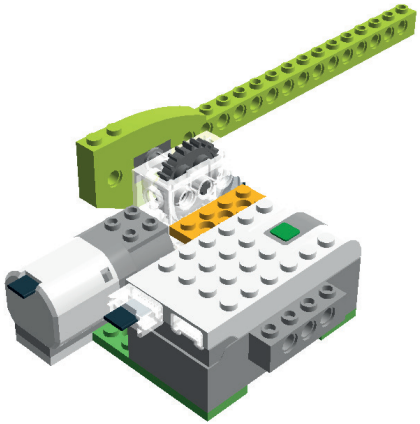
Try to figure out how to build and code the barrier on your own by using WeDo.

If you don't know how to do it, watch this video.

barrier building

Construction Manual

Sensors will make your barrier work perfectly.



If you don't know how to do it, watch this video.

barrier with tilt sensor

barrier with motion sensor

Coding

up

down

tilt sensor

up

down

up

down

motion sensor

up

down

up and down

Basics 4

Information

see how the motor beats the drums.

Task

1. Build drums which play the rythm ♩ ♩ ♩ ♩ da - da - da - da

2. Try to build drums which play a different rythm ♫ ♩ ♫ ♩ di-di-da - di-di-da

I need to figure out how to build these drums.

drums working with quarter notes

drums working with eighth notes

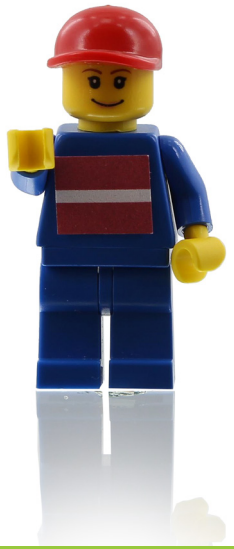
These videos will help you with the task

Construction Manual

I think I know how to make the drums play now!

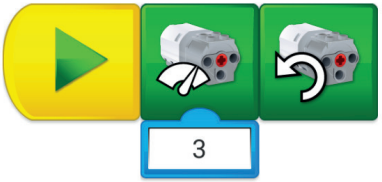
construction manual

Great work!



Coding

How can we code the motor?



It's just a small code.