

Robotics with LEGO® WeDo (III)

An introduction to robotics for the young with LEGO® WeDo

By Diego Gálvez

In the last part we saw an introduction to the programming environment of the WeDo software. We used motor blocks to add movement to a prototype. Continuing with the WeDo programming tutorial, we will have a look at the blocks that control the power and direction of the motor.

Motor power

This block allows you to control the power with which the motor turns.



If you drag it into the canvas you will see it comes with another block attached.



Number input

This is used to work with numerical values. The block can be attached to several different blocks (e.g. the motor power block)



If you want to change the number that appears in the block all you need to do is place the cursor over the block until it turns into a T:



Don't click, but the moment you see the T simply write the value you wish to use, e.g. 10.



This way you can change the value for the motor power block. Accepted values for the motor power block go from zero to 10, being zero no power (motor stopped) and ten maximum power. Any other value will not be accepted by the block. Example:



The motor turns slowly.



The motor turns fast.

Motor on for

The next block allows you to program how long the motor should turn before stopping.



Just like the motor power block, this block comes with the number input block attached, to indicate the time the motor should turn before stopping.

What unit of time does the motor on for block use?

The units are tenths of seconds, in other words, if you want the motor to turn for one second you should use the value 10 in the in the motor on for block. If you want it to be 10 seconds you should write 100.

Example:



Motor turns clockwise during 1 sec. and then stops.

Motor off

This block allows you to stop the motor.



Wait block

With this block you can add time between actions, as well as work with sensor values.



The time unit in this block is the same as the one used in the motor on for block (tenths of a second).

Similarities between blocks

If you run the following programs you will notice they both result in the same action.

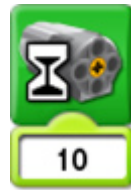


Motor turns during 1 sec. and then stops.



Motor turns during 1 sec. and then stops.

But that does not mean the two programs are the same.



While the outcome for both of the above programs was the same, what would happen if you run the following two programmes?



Motor turns during 1 sec. and then stops.



Motor never turns

As you can see in this case the results are completely different.

This brings us to the end of the explanations about the motor blocks you can use to interact with the WeDo motor. In the next instalment we will have a look at the display and math blocks (Add, Subtract, Multiply and Divide).

On the website notjustbricks.blogspot.com you will find multimedia materials (images and videos) of the creations of the author, some of which come with building instructions. #

