

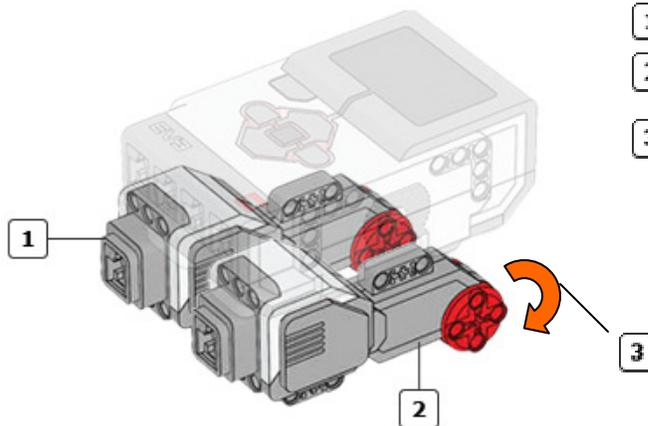
Action Blocks Explained

Move Steering Block



The Move Steering block is used to make your robot drive forward, backward, turn, or stop; it also adjusts the steering to make your robot go straight, drive in arcs, make tight turns or spins.

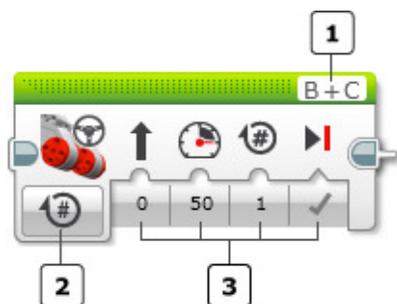
The Move Steering block can control both left and right drive motors at the same time, to drive your vehicle in the direction that you select.



- 1 Left motor, typically on Port B
- 2 Right motor, typically on Port C
- 3 Positive Power Rotation

Note: Make sure that with your robot facing “forward”, the motor on the left side is the first one listed in the Port Selector. Otherwise, your robot will turn in the wrong direction. Robot vehicles with two drive motors can also be controlled by the Move Tank block. The Move Tank block is similar to the Move Steering block, but has a different way of controlling turns with more direct control of individual motors.

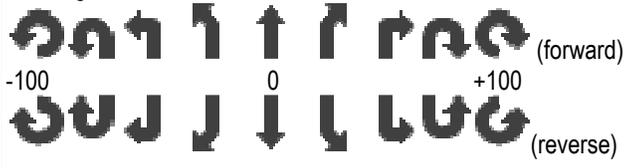
CHOOSING YOUR MOTOR PORTS AND CONTROL MODE



- 1 Port Selector (combination of A, B, C or D)
- 2 Mode Selector (
 - On,
 - Off,
 - On for Seconds,
 - On for Degrees,
 - On for Rotations)
- 3 Inputs (Steering , Power , Duration (Seconds /Degrees or Rotations), Brake /Coast at End.

MOVE STEERING BLOCK INPUTS

The inputs of the Move Steering block control the details of how the motors will operate. You can enter the input values directly into the block. Alternatively, the values can be supplied by Data Wires from the outputs of other Programming Blocks. The inputs available and their functions depend on the control mode you selected.

Input	Type	Allowed Values	Notes
Steering	Numeric	-100 to 100	Steering direction. 
Power	Numeric	-100 to 100	Motor power level. (Neg.Power to reverse, Pos.Power to go forward) 
Brake at End	Logic	True/False ✓ / ✗	Applies when the block finishes. If True ✓, the motors are stopped immediately and held in position  . If False ✗, motor power stops and the motors are allowed to coast  .
Seconds	Numeric	≥ 0	Movement time in seconds. 
Degrees	Numeric	Any Number	Amount of movement amount in degrees. 
Rotations	Numeric	Any Number	Amount of movement in rotations. 

Steering input

You can control the speed and direction of your robot using the Power and Steering inputs. The Power input accepts a number from -100 to 100. Positive (forward) and negative (backward) numbers for Power make the Large Motor turn in different directions. The distance that your robot will travel depends on the Duration input. However, the distance also depends on the diameter of the drive wheels used and other physical factors. The internal rotation sensors in the motors measure the amount of rotation at the motor hubs.

If the Steering input is not zero, one of the motors will be slowed down or reversed to make the robot turn. The Move Steering block makes your robot turn by running the two motors at different speeds. For very tight turns, one of the motors will be reversed.

Note that the Degrees and Rotation inputs measure the amount of motor rotation of the faster motor, not the change in the robot's direction when turning. The change in the robot's direction will depend on wheel diameter, wheel spacing, and other factors.

EV3 Action Blocks Explained

The Steering input accepts a number from -100 to 100. A value of 0 (zero) will make your robot drive straight. A positive number (greater than zero) will make your robot turn to the right, and a negative number (less than zero) will make your robot turn to the left. The farther the steering value is from zero, the tighter the turn will be. The Steering input icon on the Move Steering Block will change with the Steering input value as shown below:

Forward (Pos. Power)									
Steering numeric input (-100 to +100)	-100 to -95	-94 To -63	-62 to -37	-36 to -6	-5 to +5	6 to 36	37 to 62	63 to 94	95 to 100
Backward (Neg. Power)									

The motor power function for the left (blue) and right (red) motors for negative (left) and positive (right) Steering input values would look something like the following:

