07.The lawn mower

1.Introduction

One morning, Strange was awakened by a noise.

He looked out the window and saw his neighbour mowing his garden with a lawnmower.

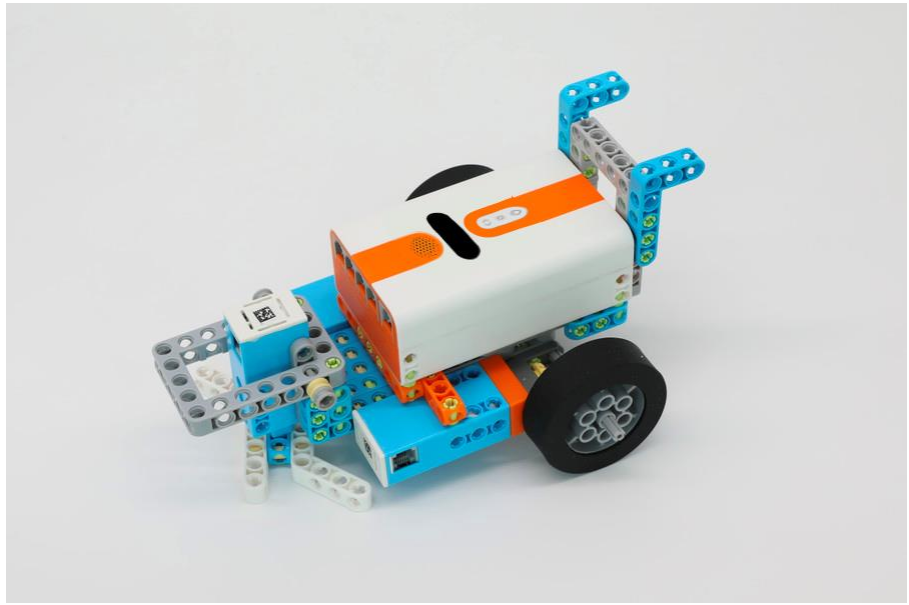


1.Introduction

Despite being woken up, Strange is intrigued by the machine that can mow the garden.



2.Exploration



How many motors do we need to make a lawn mower?

2.Exploration

We need at least three motors for the mower to be fully powered.

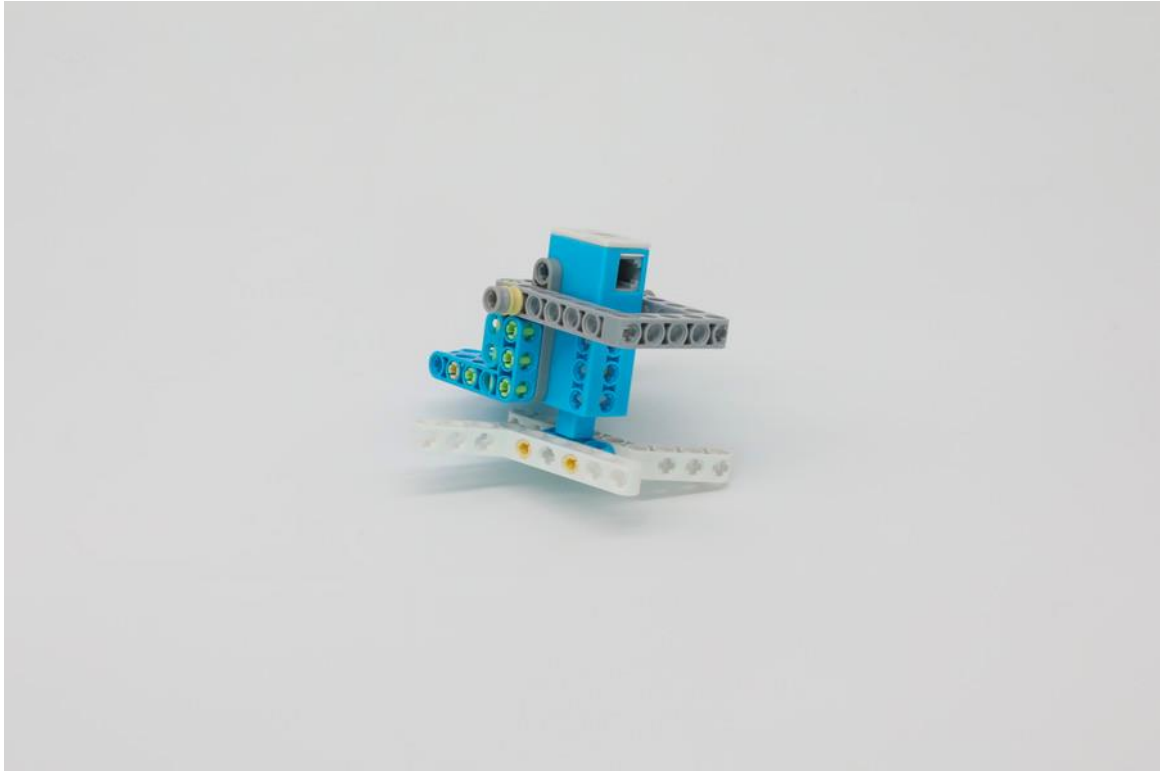
To reduce the size of the machine, bevel gears can be used to change the direction of the motor power.



3.Construction



3.Construction



3.Construction



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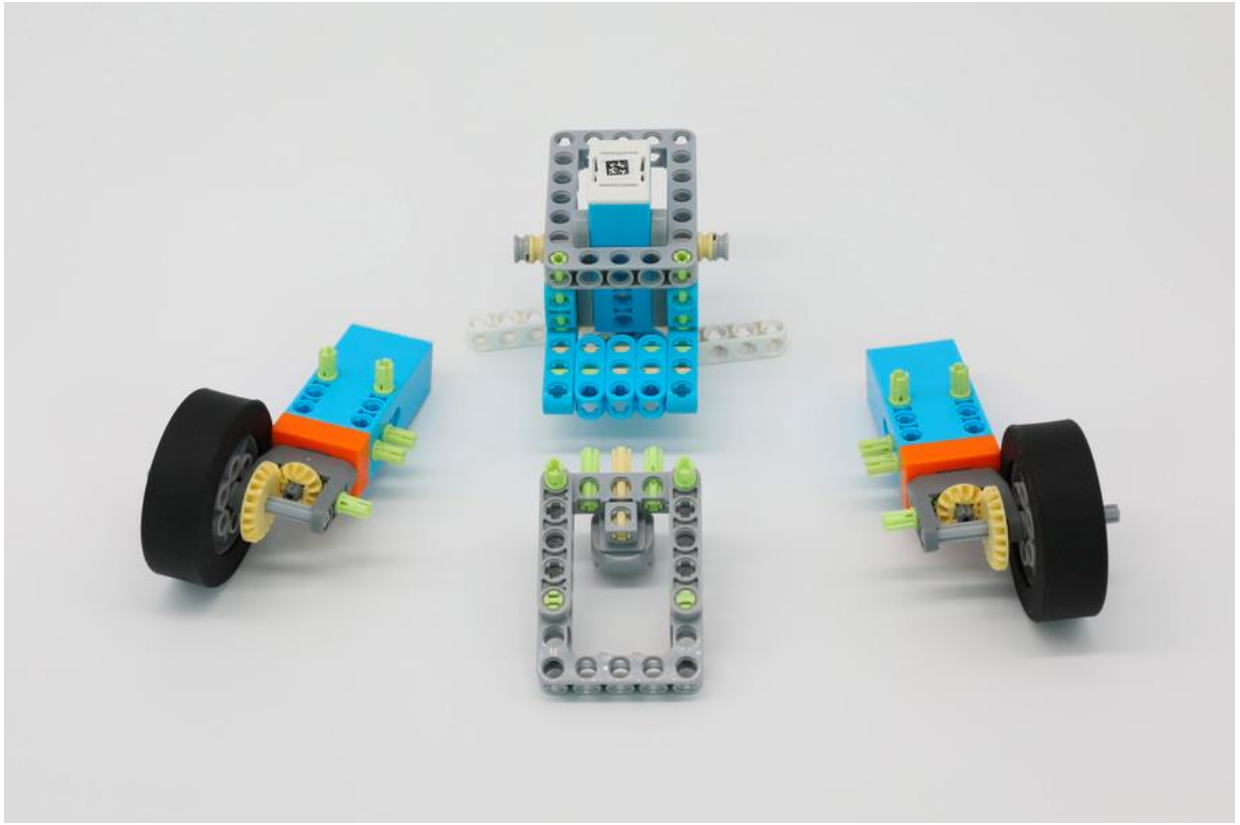
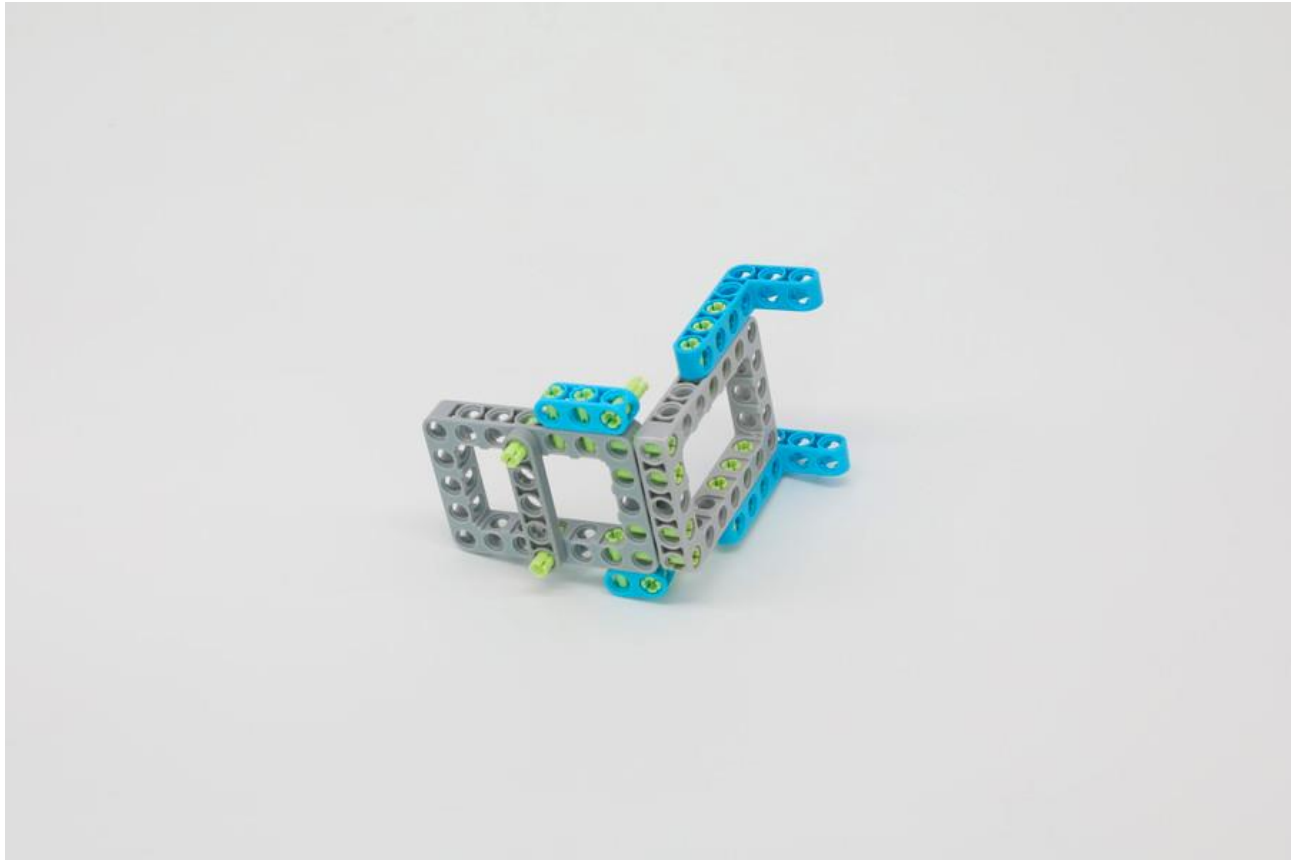
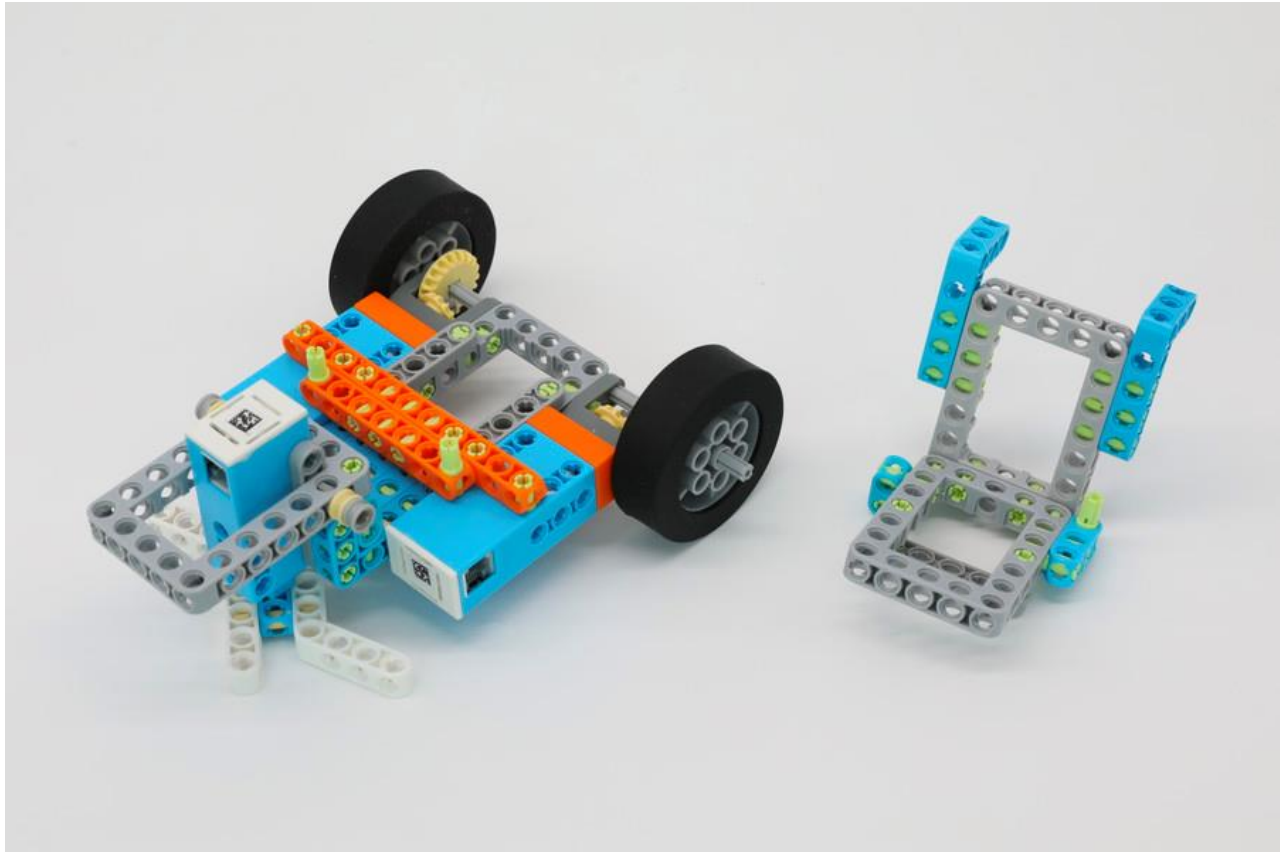


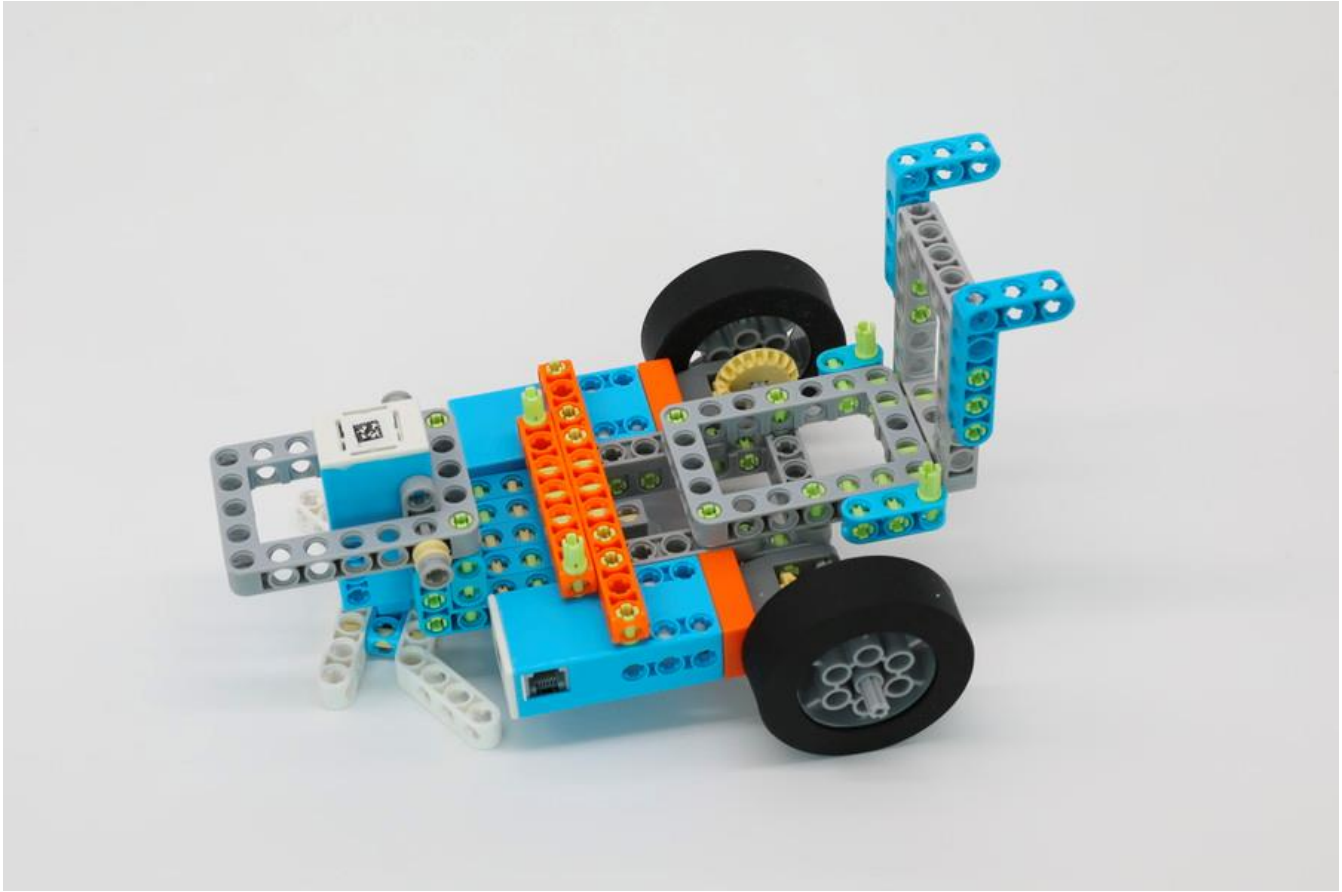
3.Construction



3.Construction



3.Construction



3.Construction

Connect the two motors responsible for moving forward to port A and B, and the motor responsible for cutting grass to port C.

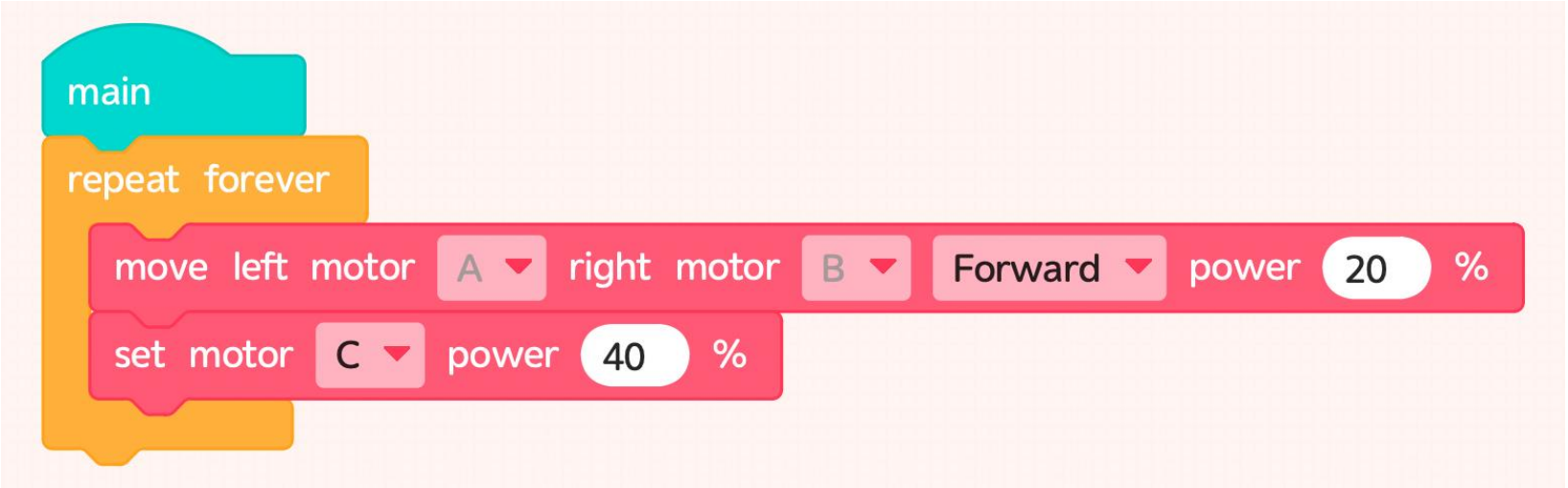


4.Coding

Let the mower cut the grass as it moves.



4.Coding


main
repeat forever
move left motor A right motor B Forward power 20 %
set motor C power 40 %

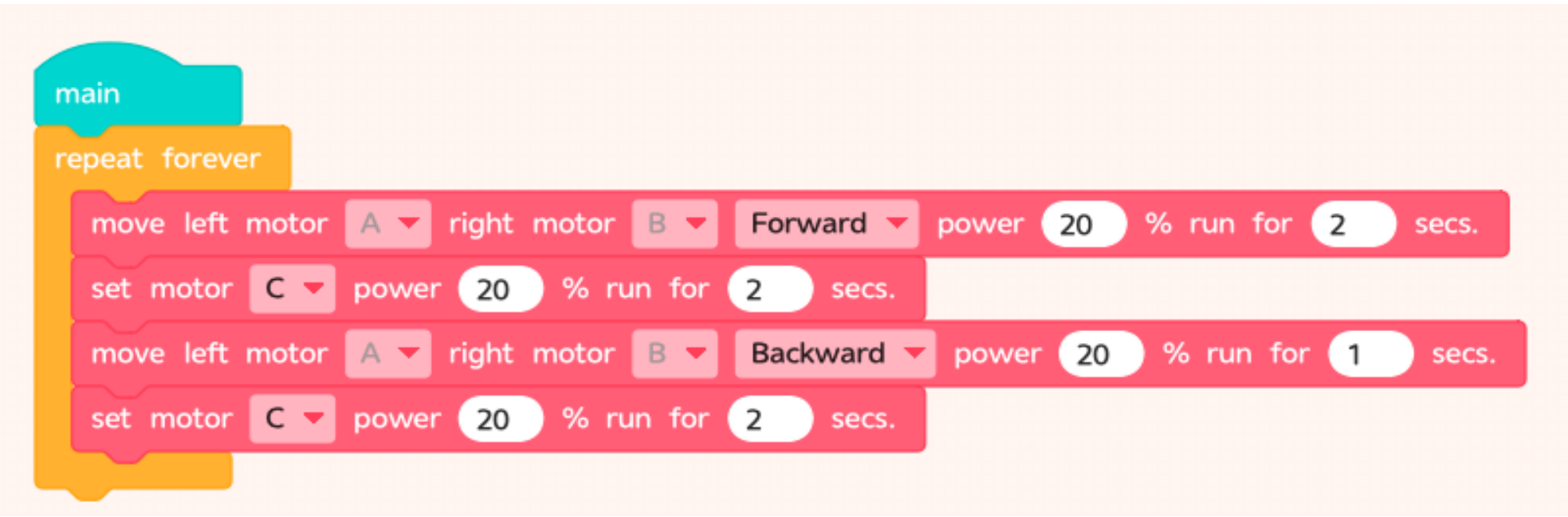
4.Coding

Now, let amend the coding as below requirement

The machine moves forward for 2 seconds, cut the grass for 2 seconds. Then backward for 1 second, cut the grass for 2 seconds.



4.Coding


main
repeat forever
move left motor A right motor B Forward power 20 % run for 2 secs.
set motor C power 20 % run for 2 secs.
move left motor A right motor B Backward power 20 % run for 1 secs.
set motor C power 20 % run for 2 secs.

5.Evaluation

How many motors does a lawn mower have?
What is the function of each motor?

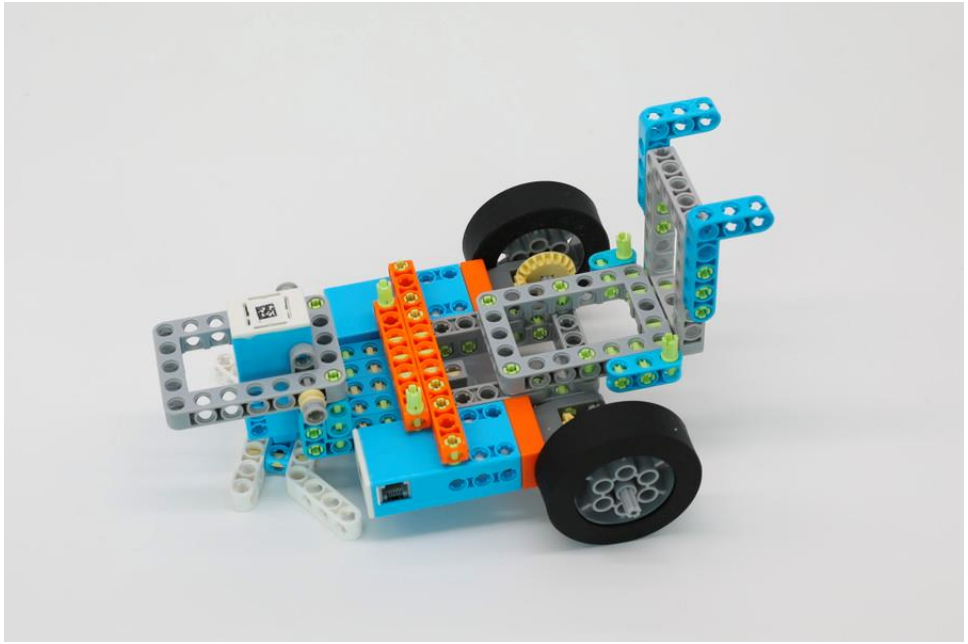
The lawn mower consists of three motors.

Two motors are mounted at the back, each connected to the rear wheels, which drive the lawn mower.

The remaining motor controls the rotation of the lawn mower blade.



7.Show Time



Use some parts as grass and have a mowing race.