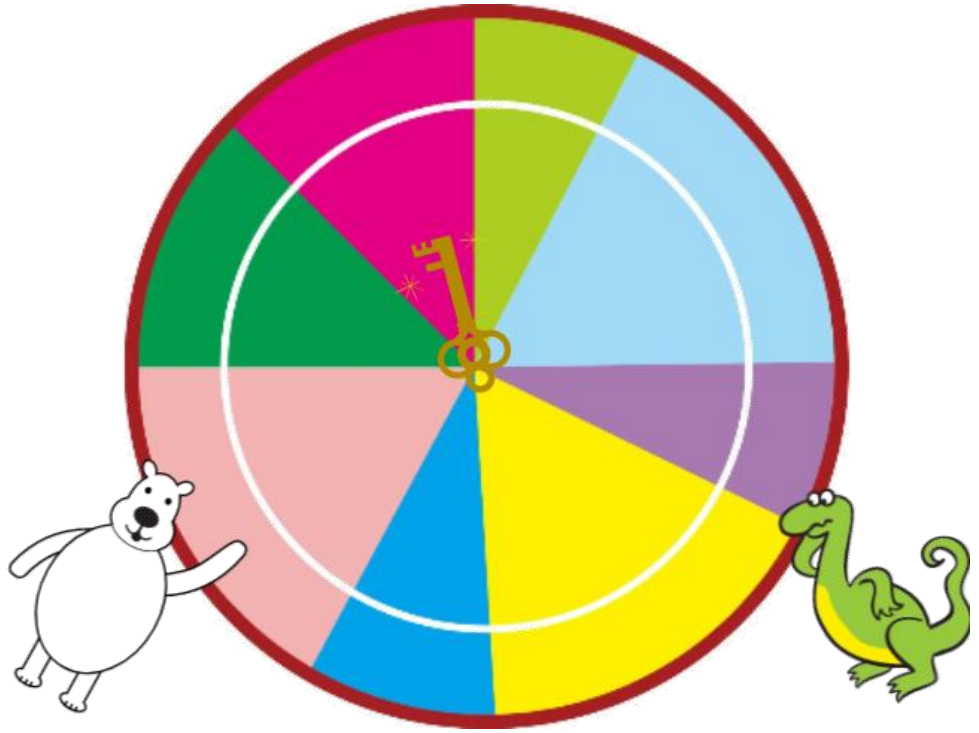
1.Lucky Wheel

1.Introduction

Maybe you see something like this when you are in the mall.

It has a pointer and people rotate the pointer and it stops at a random position.

Various gifts and awards are written on the wheel.

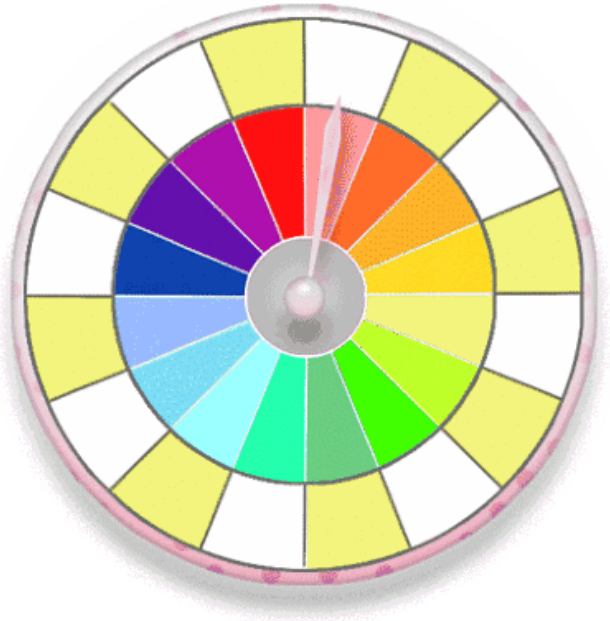


1.Introduction

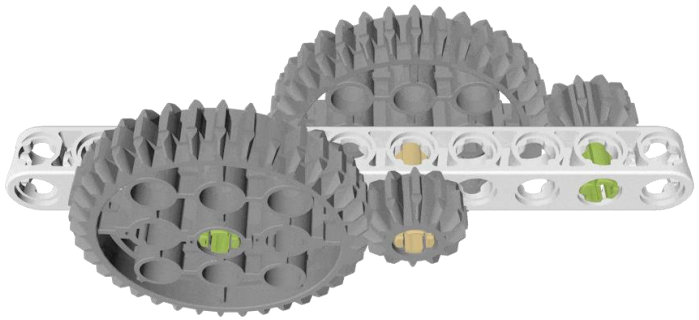
In fact, it is very difficult for us to get big prizes through Lucky wheel.

This is due to the wining probabilities are different for each prizes.

The probability of the first prize is the lowest, and the probability of not winning is the highest.



2.Exploration

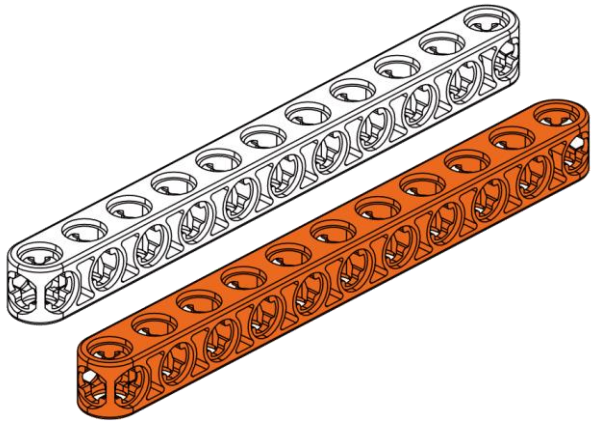


How do we make the pointer go fast?

The acceleration structure of gears may help us.

If it isn't fast enough, we could also try the second stage acceleration of the gears.

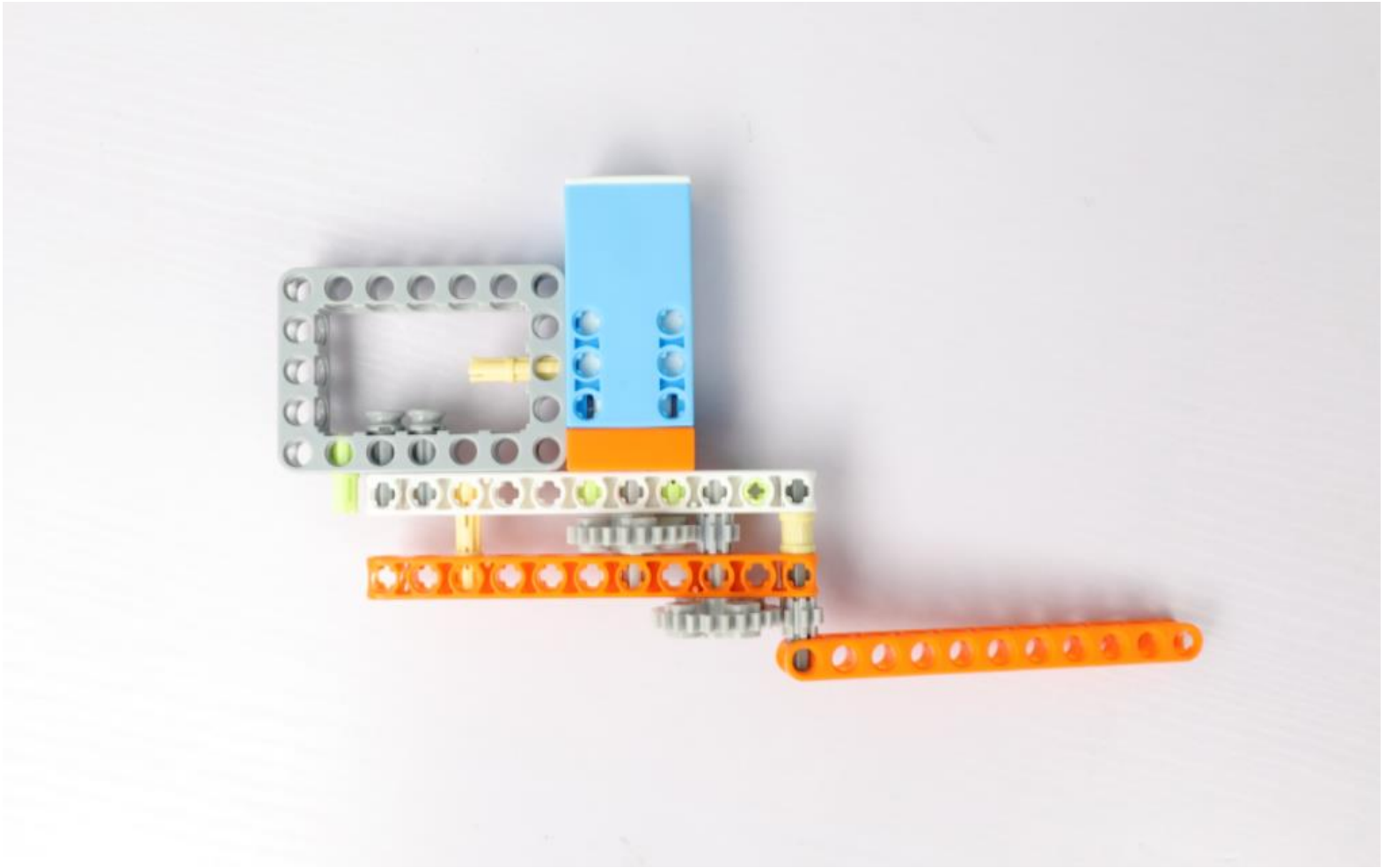
2.Exploration



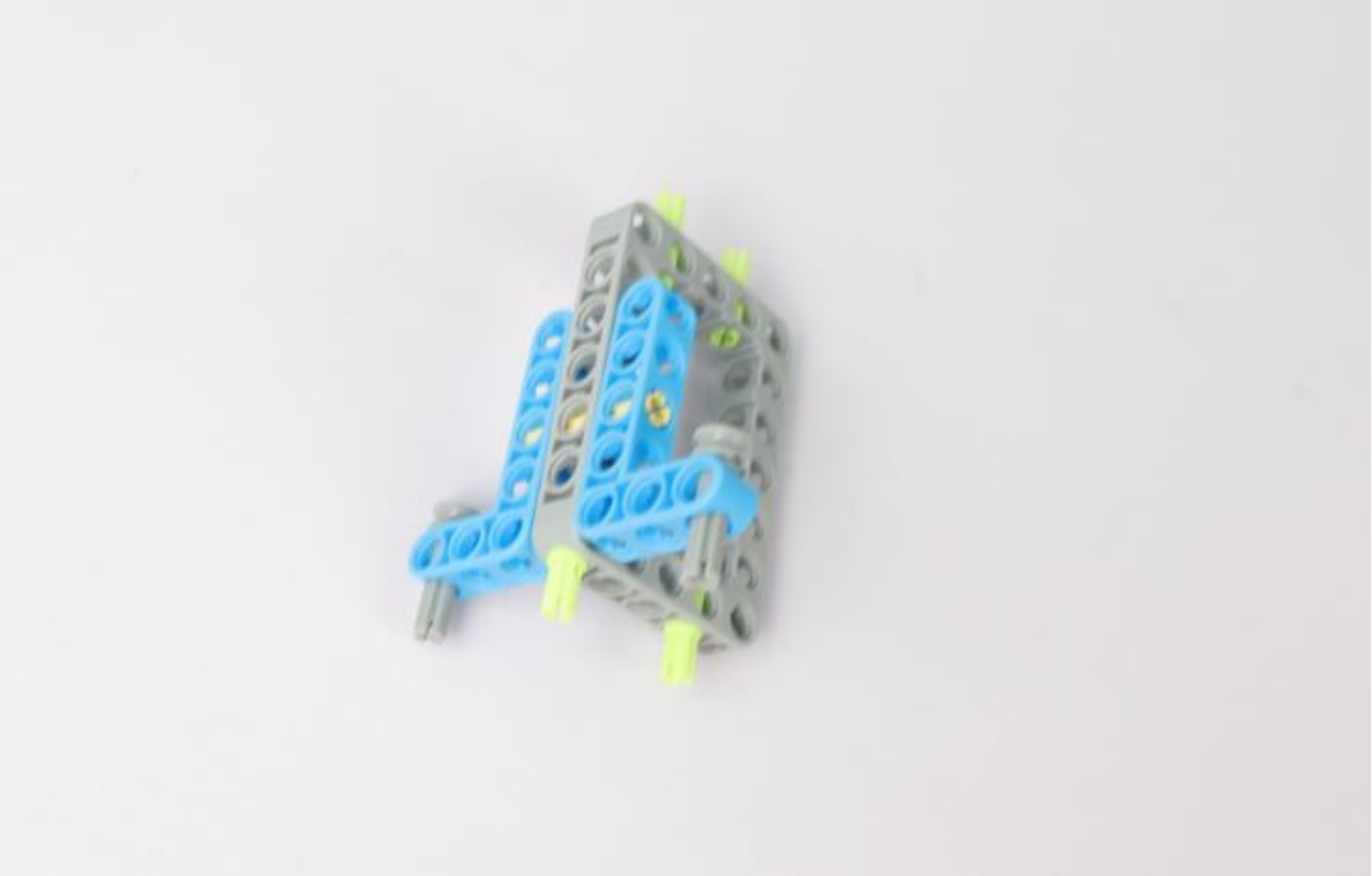
Next we need to think about how to make a disc.

We can do it in a simple way, we may just make a square.

3.Construction



3.Construction



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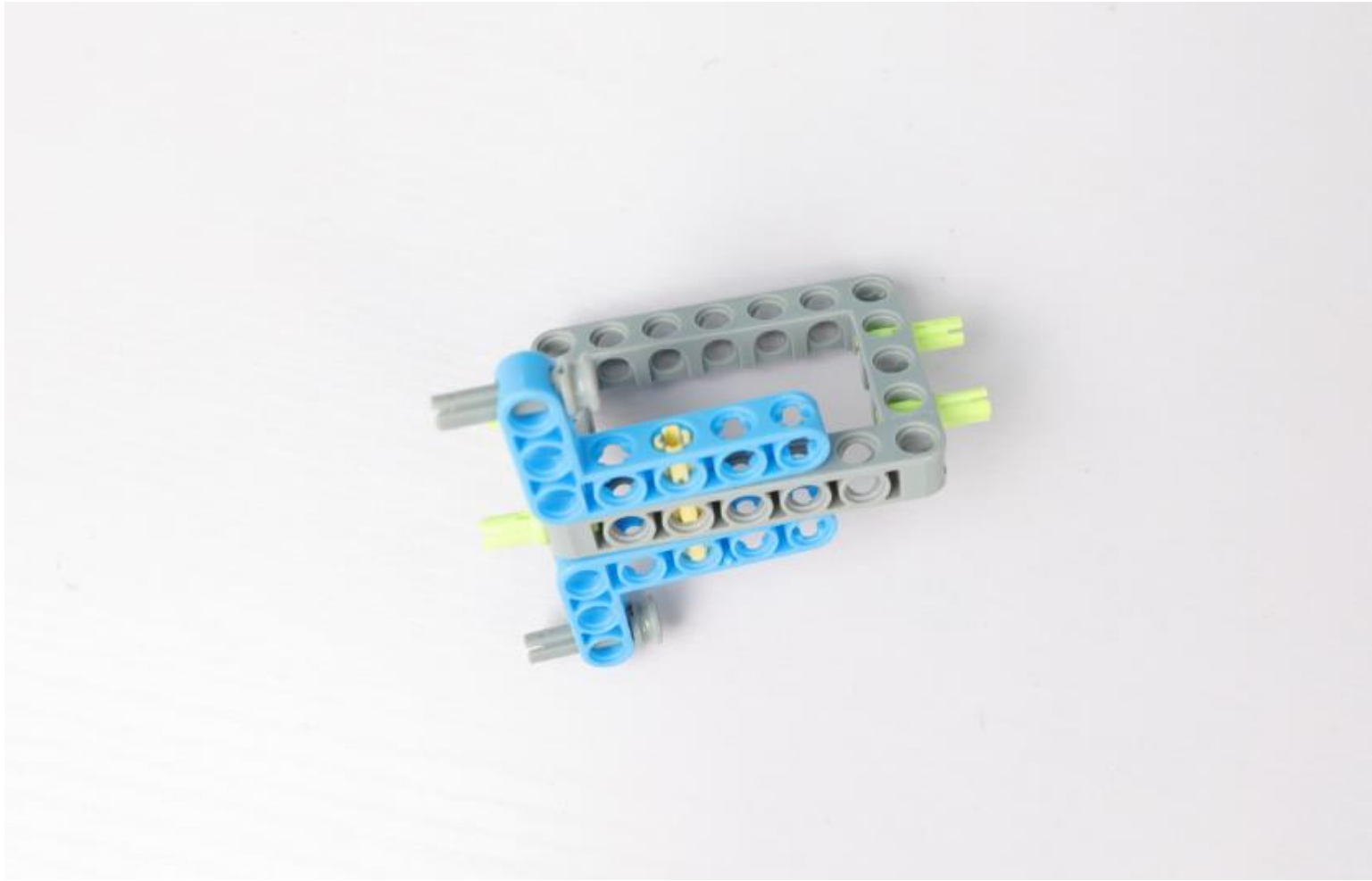
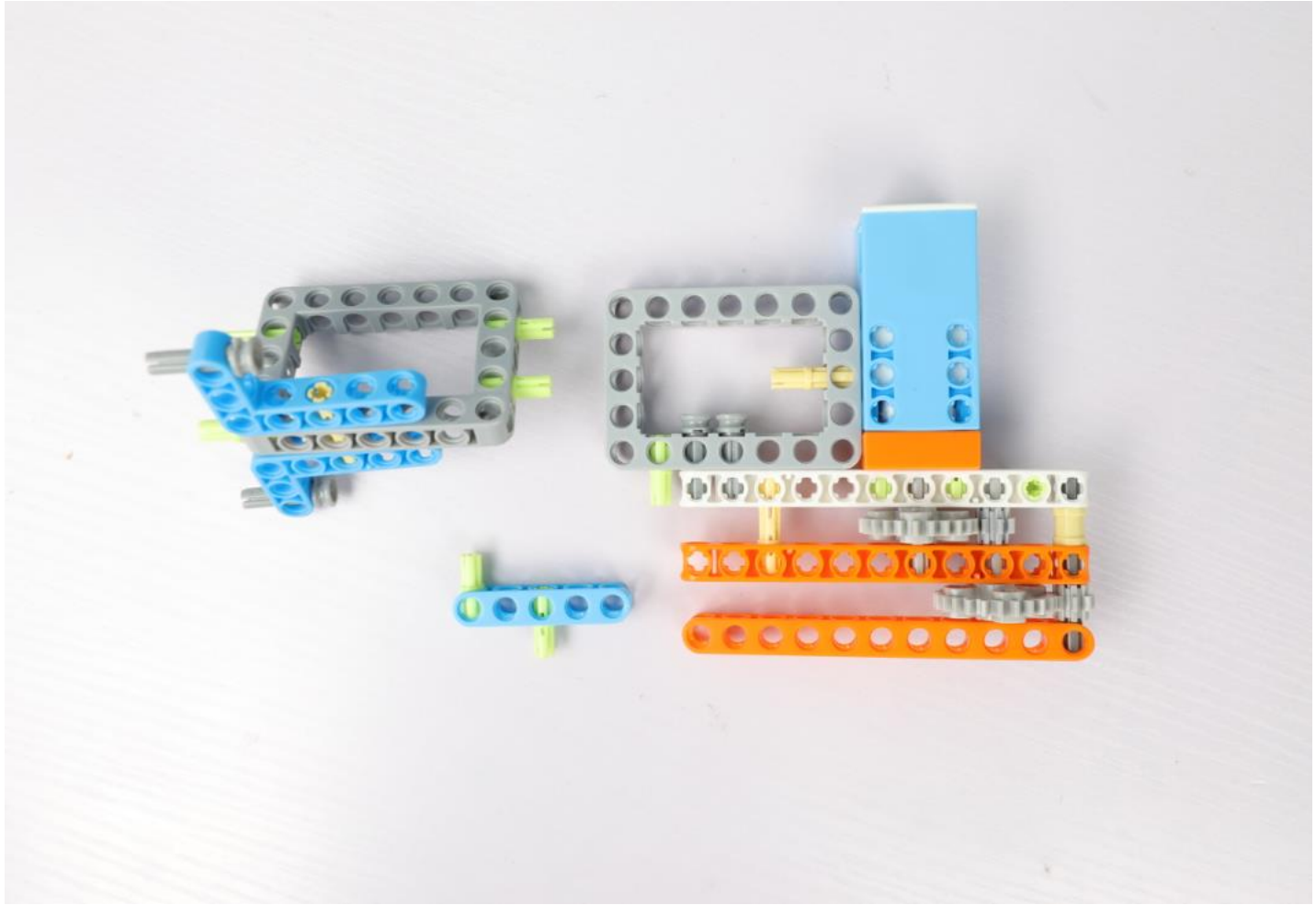
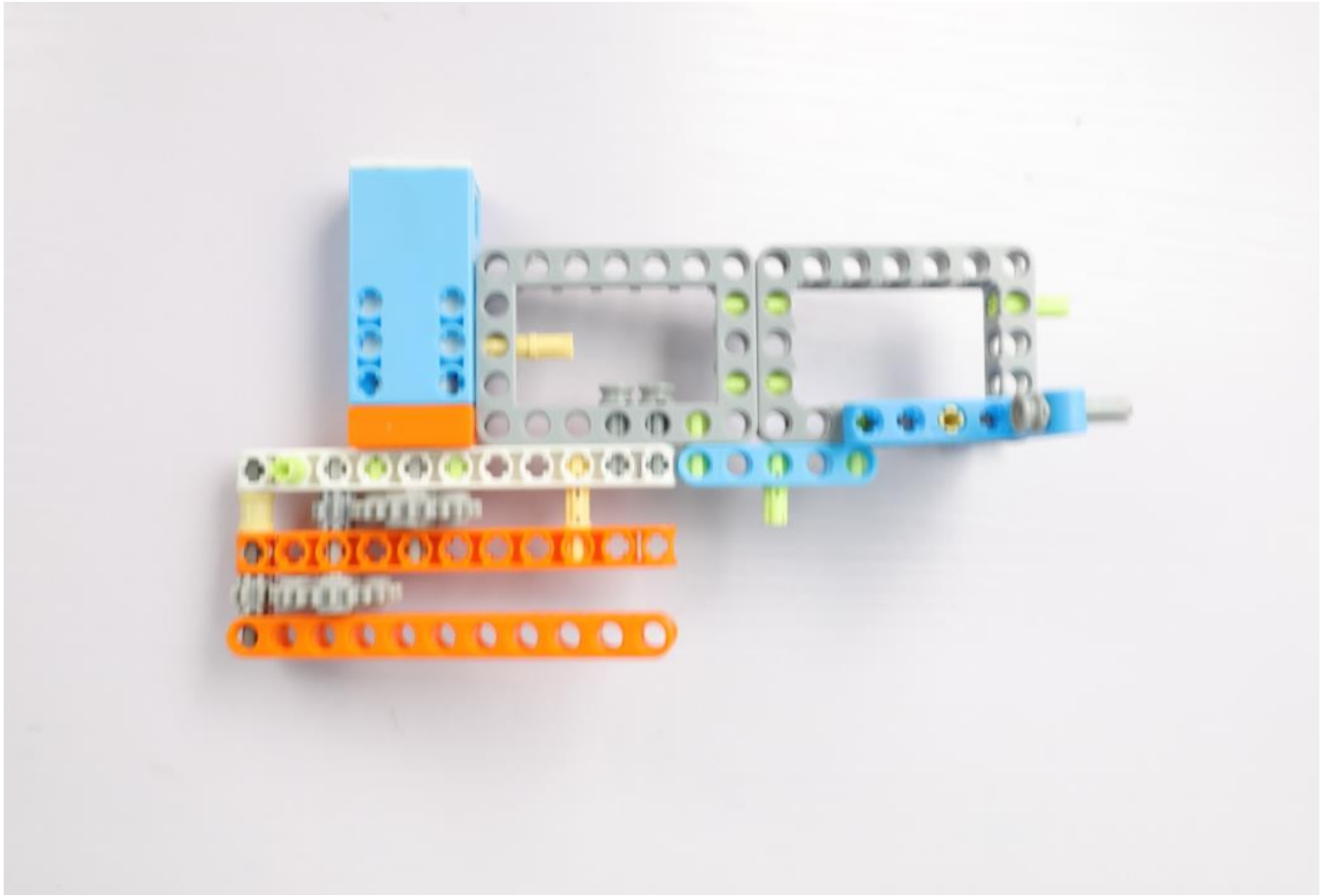


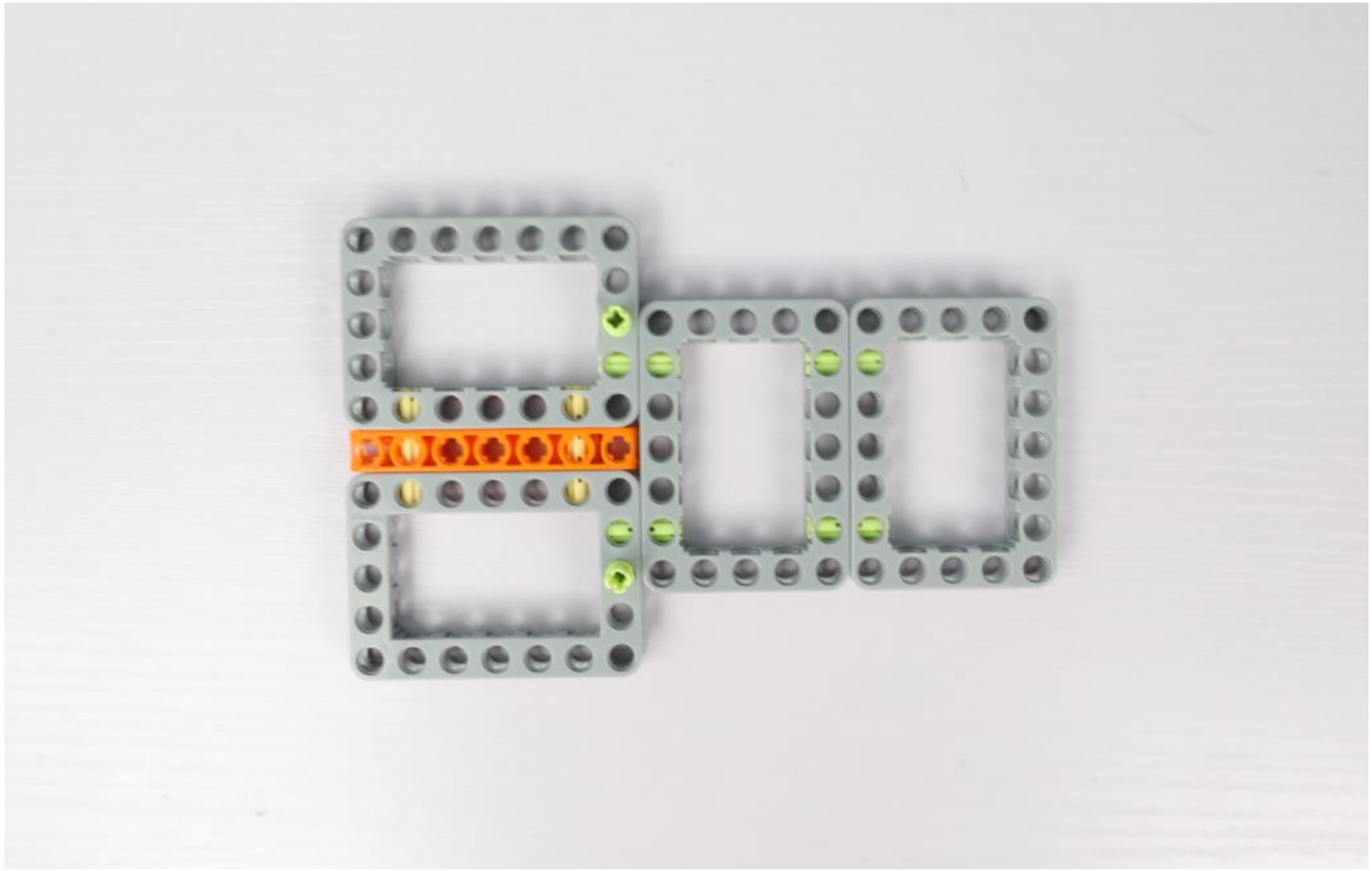
3.Construction



3.Construction

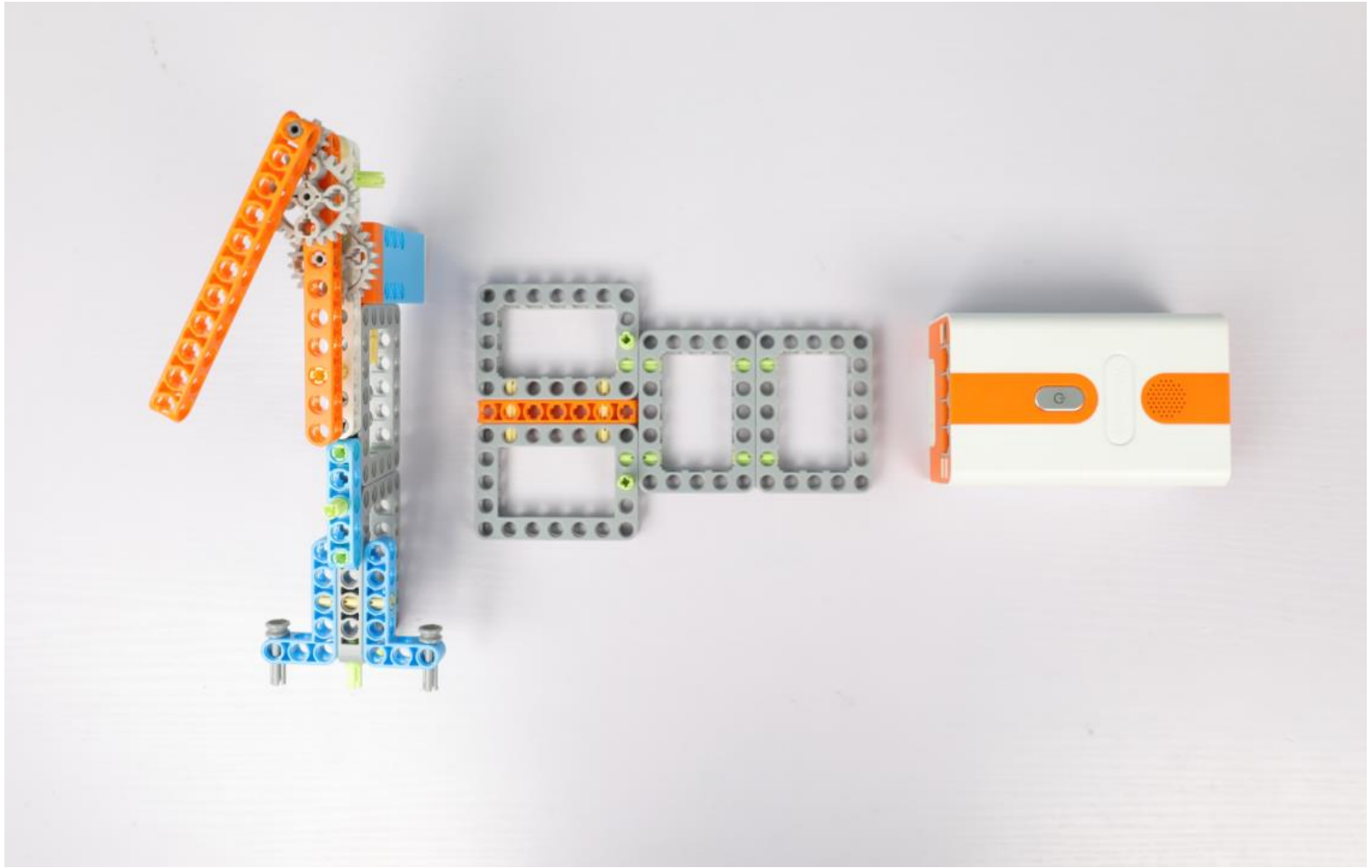


3.Construction



In case not having enough grey color rectangle parts, use the base instead.

3.Construction



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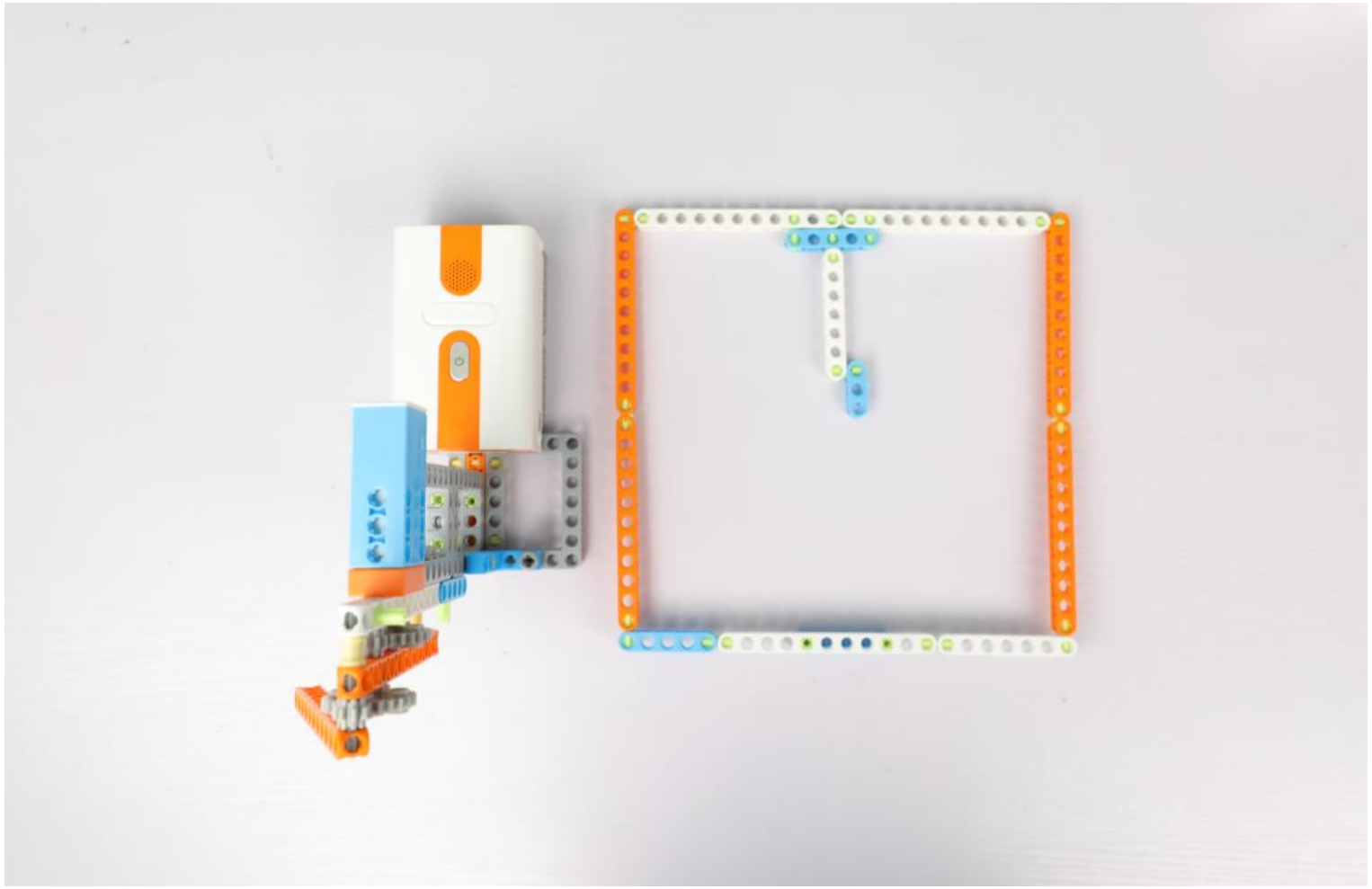

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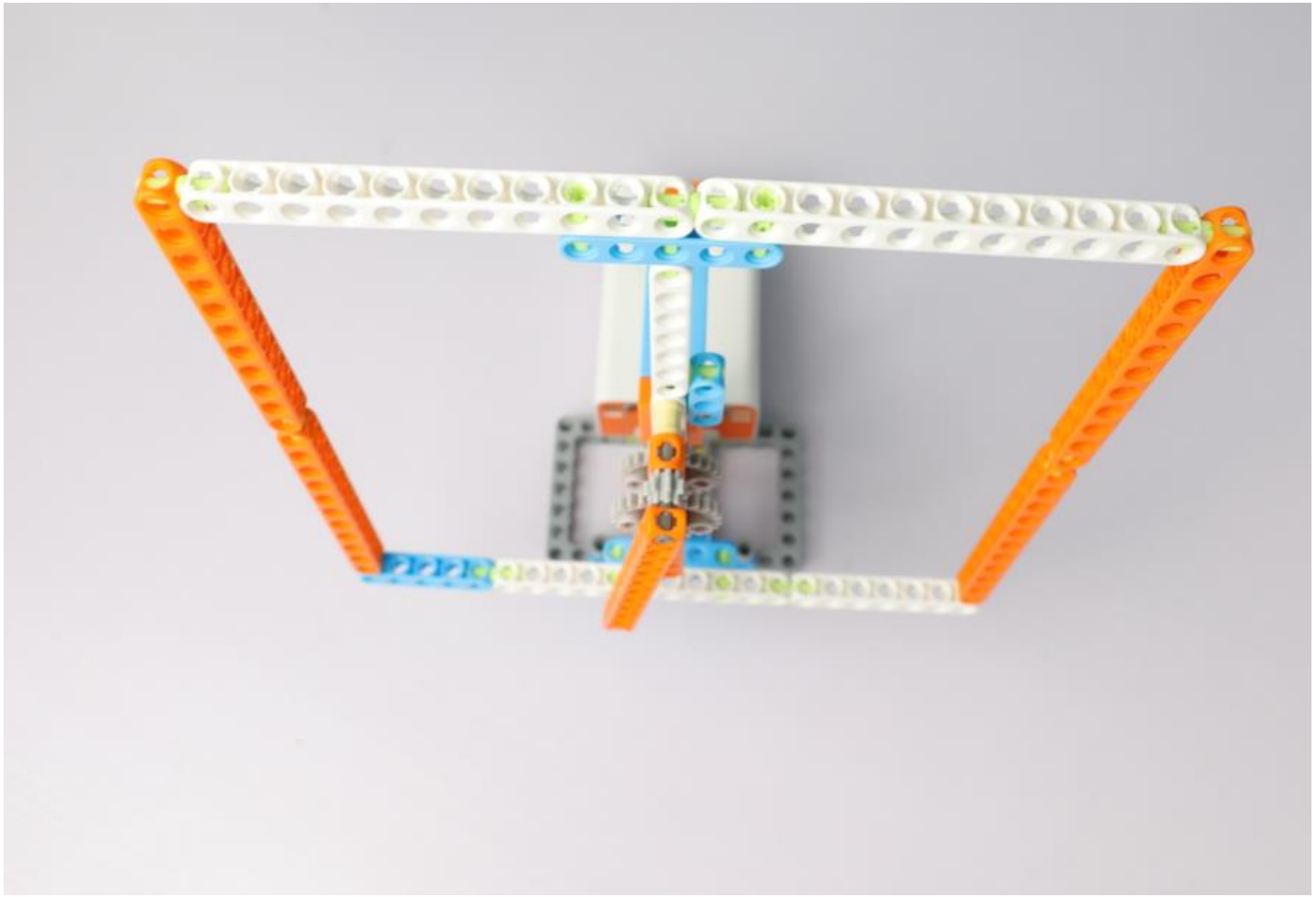
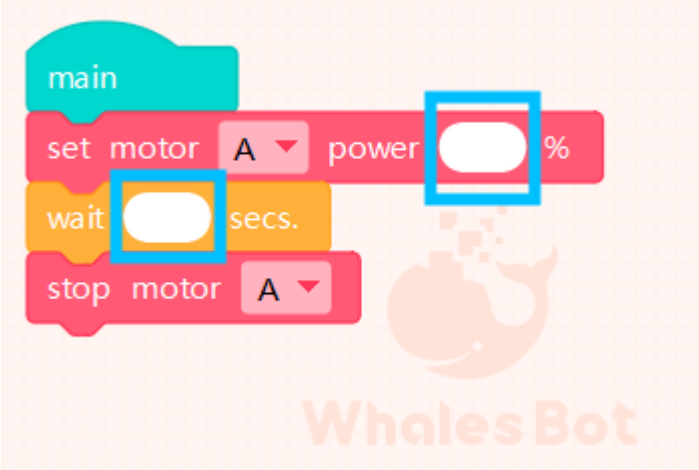


4.Coding



Task 1:

Use program to control the motor and try to adjust different time and speed parameters.

Observe the movement of the pointer and record the result.

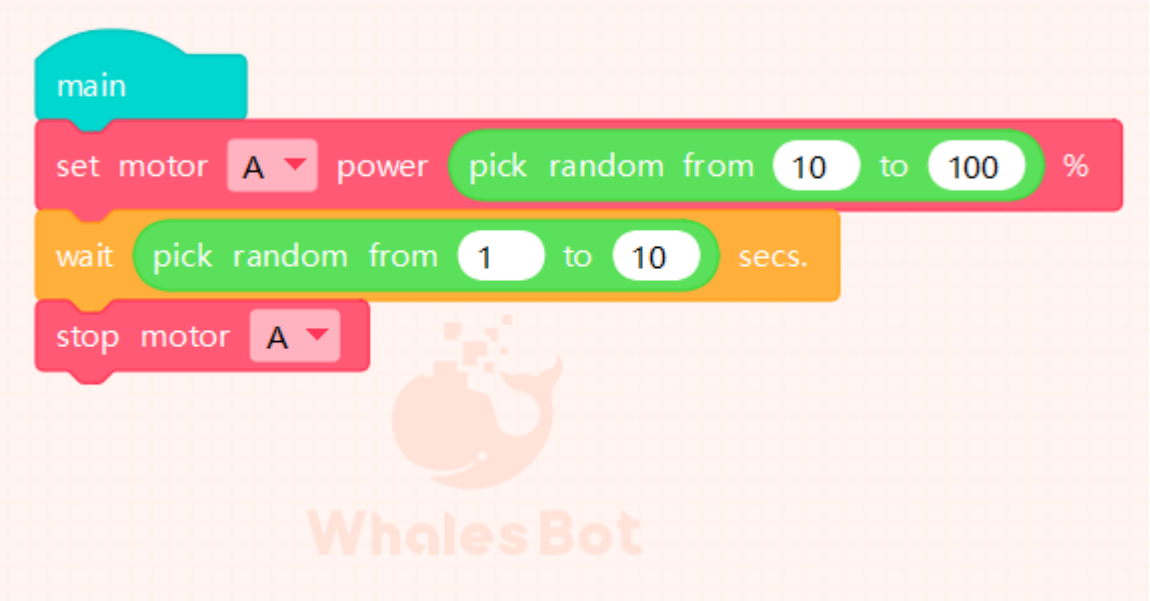


4.Coding

	Student A	Student B	Student C	Student D
Test 1				
Test 2				
Test 3				



4.Coding



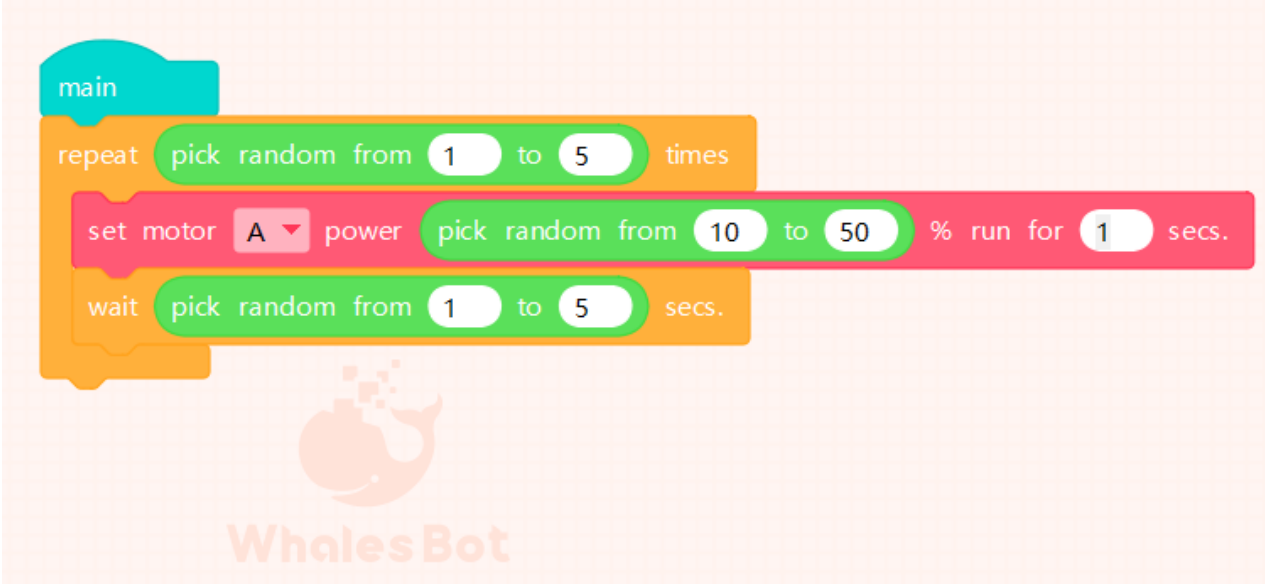
Task 2:

Now let's learn how to set random numbers for the speed of the motor and the timing of the motor.



4.Coding

Could you please explain what is the meaning of random numbers in the program?





6.Challenge



Where else do you think random numbers are used in our lives? Please give an example.

In case, there are parts getting loose due to the high speed rotation, do find ways to reinforce the structure.

6.Challenge

In case, there are parts getting loose due to the high speed rotation, do strengthen the structure.