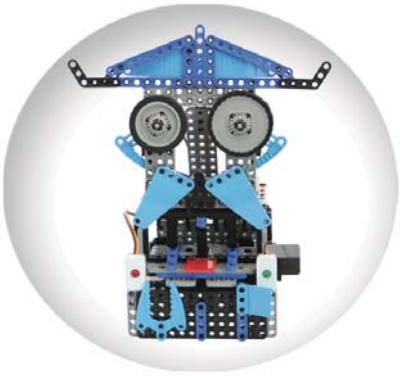
Introducing STEAM : Fusing the education of various creative talents

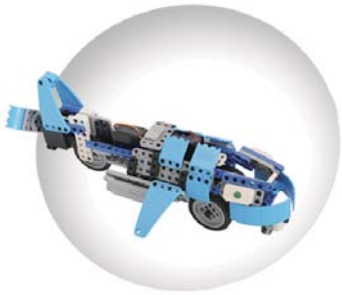
What is STEAM ?

An education model to cultivate creative talents by fusing
Science · Technology · Engineering · Arts and Mathematics

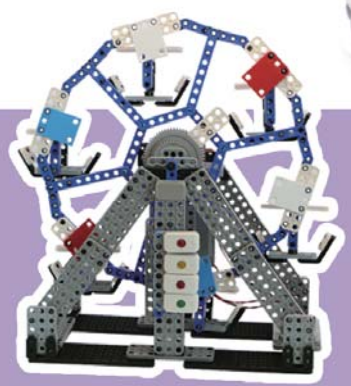
ROBO TAMI ACE LAB 4

TAMILAND





GOOD DESIGN China Good Design



www.robotron.co.kr

robotron

4. Safaricar

Operate old Safaricar using
a servo motor.

This safari is known to be filled with animals that don't exist anywhere in the world.
It is so dangerous that you need to move around with the monorail in place.

But, the monorail was broken due to lack of maintenance.
So, we may have to ride on an old Safaricar for a while.

This car is operated by a servo motor. Can you operate it?

Coding Capacity | Assembly Capacity | Learning Capacity | Application Capacity | Attitude Capacity

Mission 1 Let's change directions of Safaricar using a servo motor!

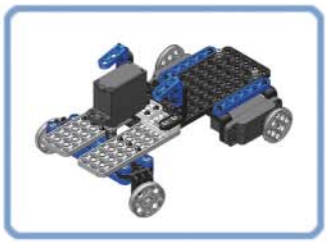
Items in Use

1. Make Safaricar g o forward when button on the remote control is pressed. +1
2. Make Safaricar go left when ◀ button on the remote control is pressed. +1
3. Make Safaricar go right when ▶ button on the remote control is pressed. +1
4. Make Safaricar stop if none of the buttons on the remote control is pressed. +1

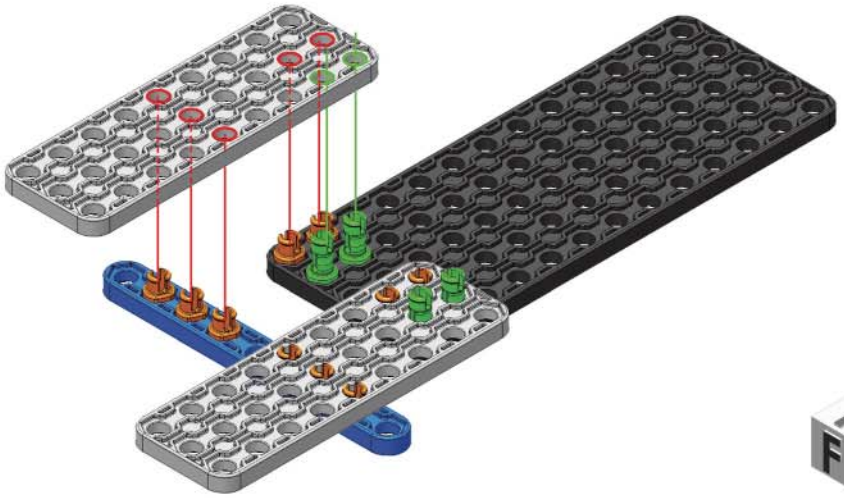
Mission 2 Let's change directions of Safaricar using a servo motor!

Items in Use

1. Make Safaricar reverse straight when the function B button and ▼ button on the remote control are pressed simultaneously. +1
2. Make Safaricar reverse left when the function B button and ◀ button on the remote control are pressed simultaneously. +1
3. Make Safaricar reverse right when the function B button and ▶ button on the remote control are pressed simultaneously. +1
4. Make Safaricar stop when the function B button and ▲ button on the remote control are pressed simultaneously. +1



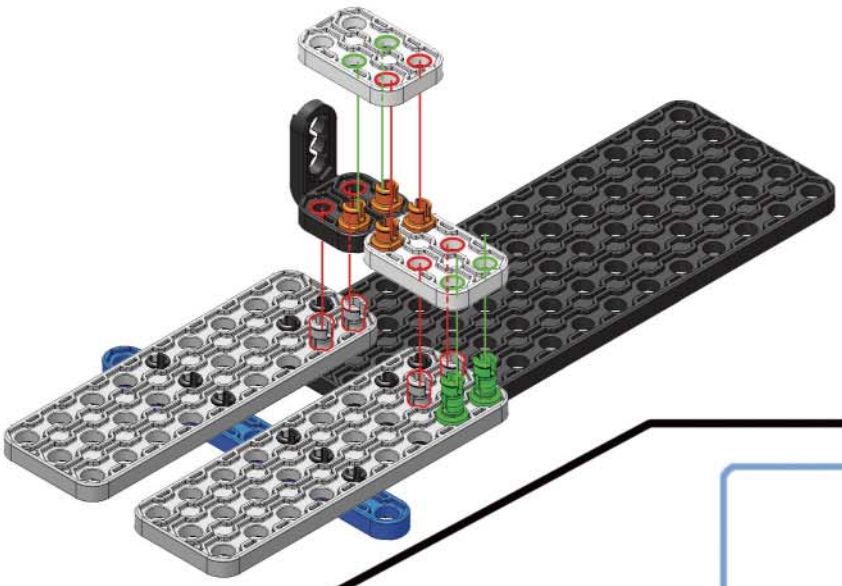
1



5x13
x1
3x9
x2
1x9
x1
x4
x10

T
F
S

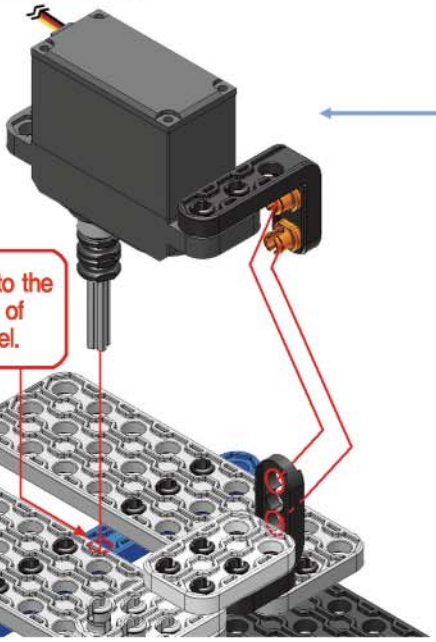
2



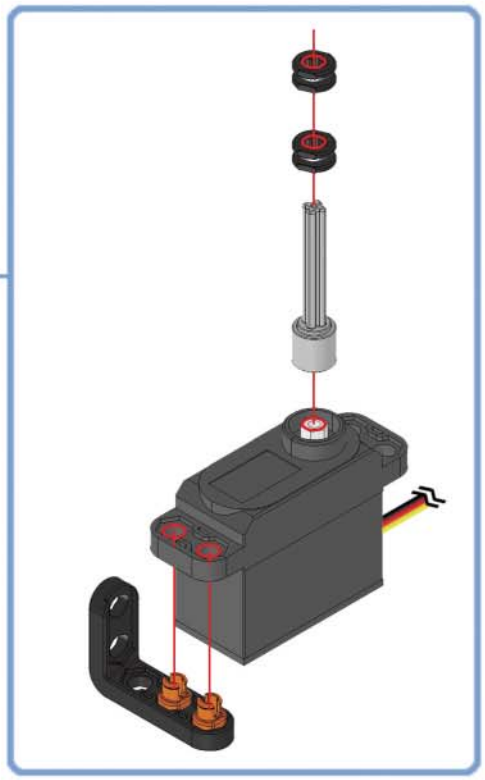
2x3
x2
Chair bracket
x1
x2
x4

3

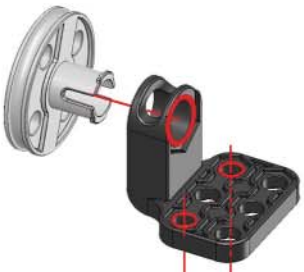
Servo motor
x1
x4
x1
L-bracket
x1
x2


Connect to the center of 9 panel.

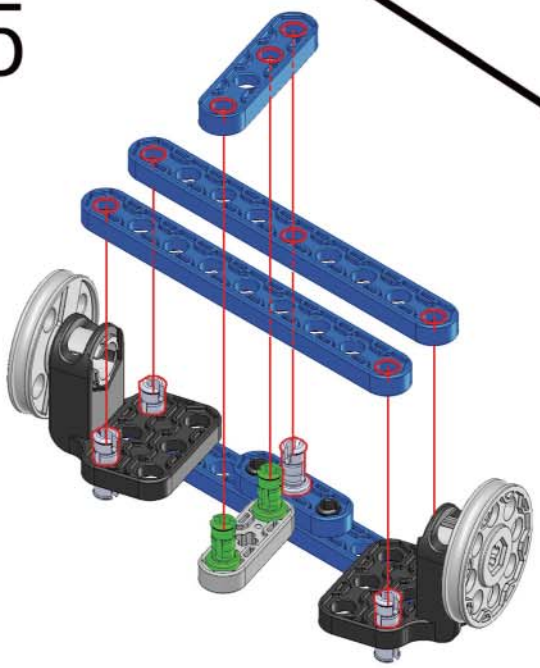
S
R

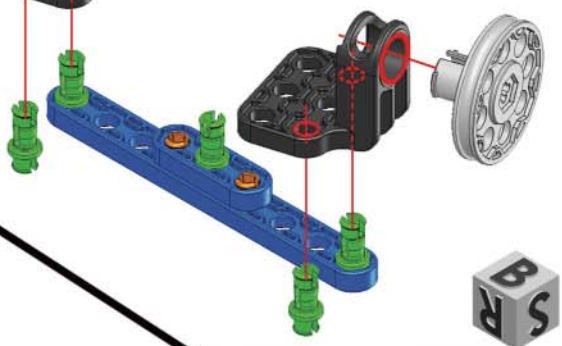


4

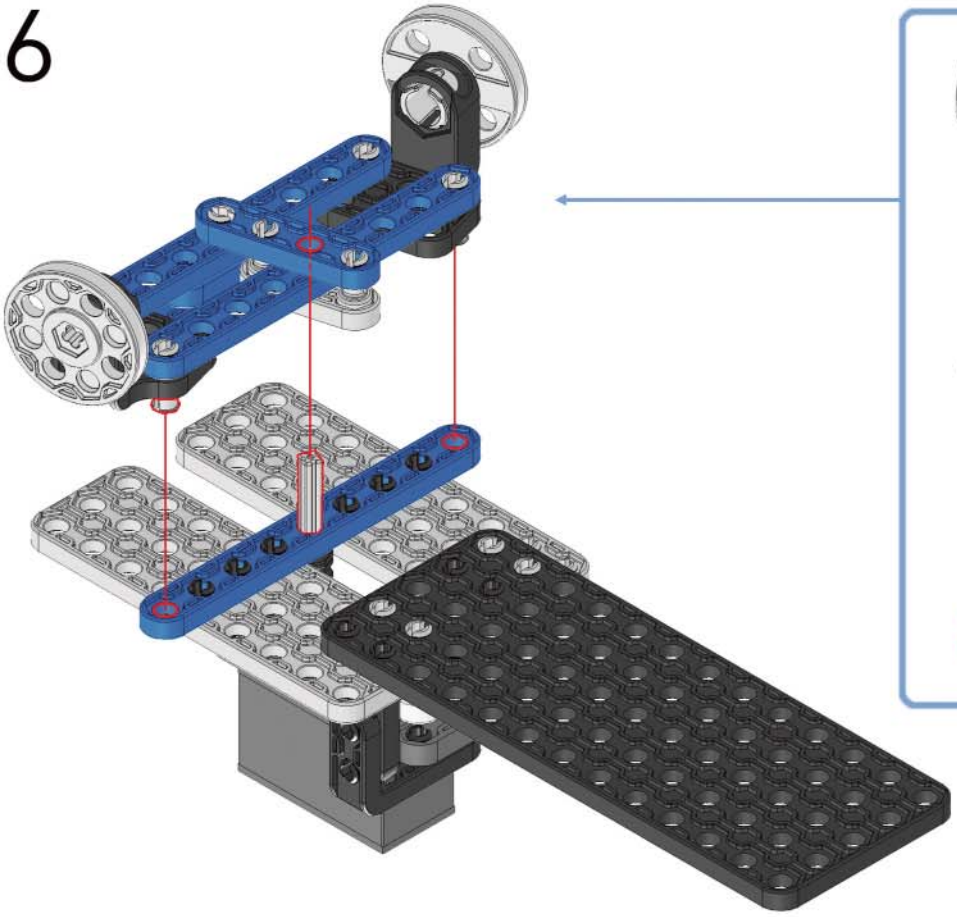


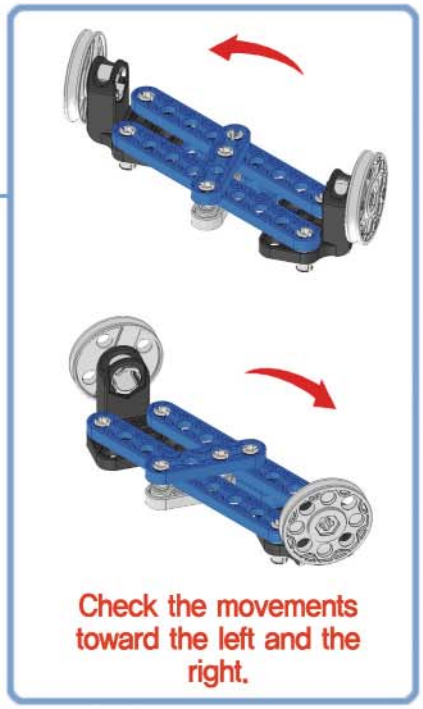
5





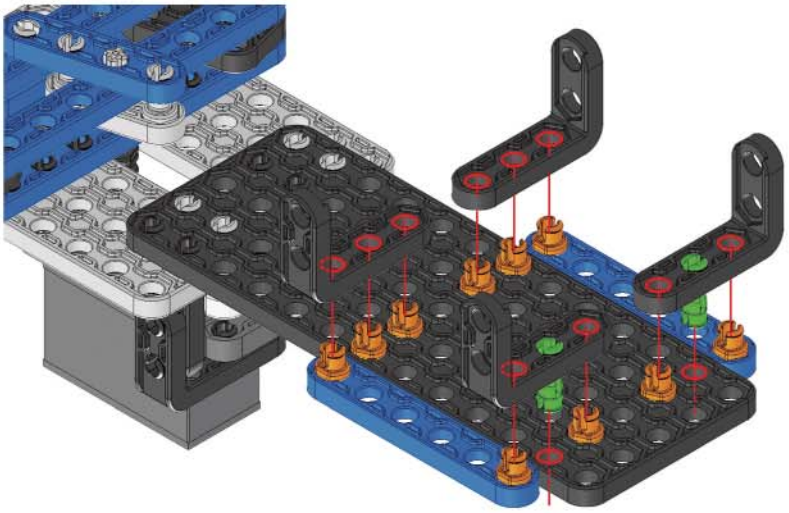
6





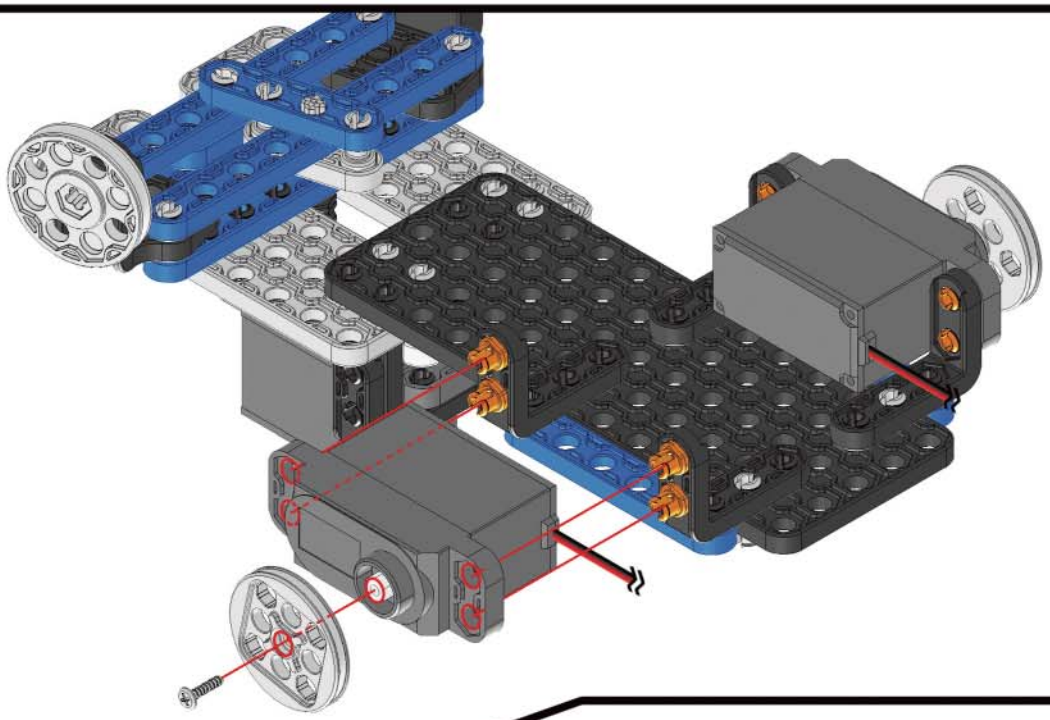
Check the movements toward the left and the right.

7



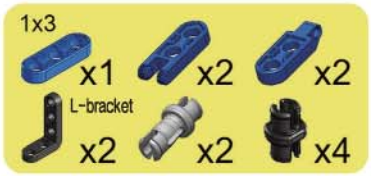
1x6
x2
L-bracket
x4
x2
x10

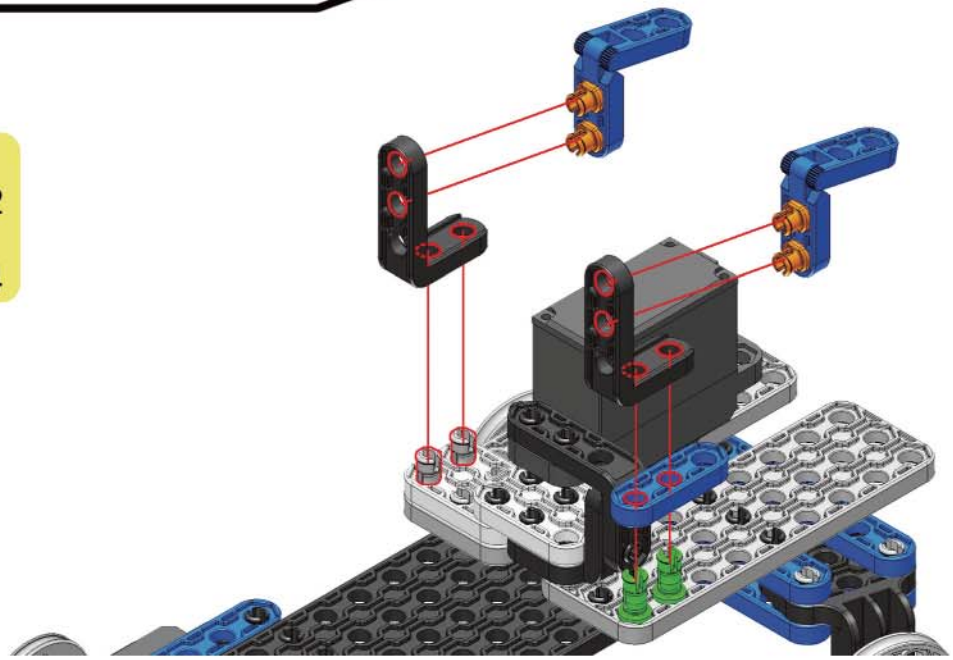
8



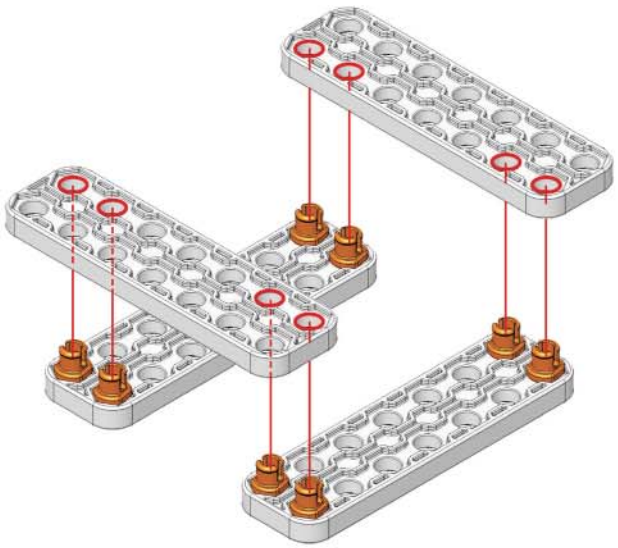
DC motor
x2
Wheel guide
x2
x2
x8

9

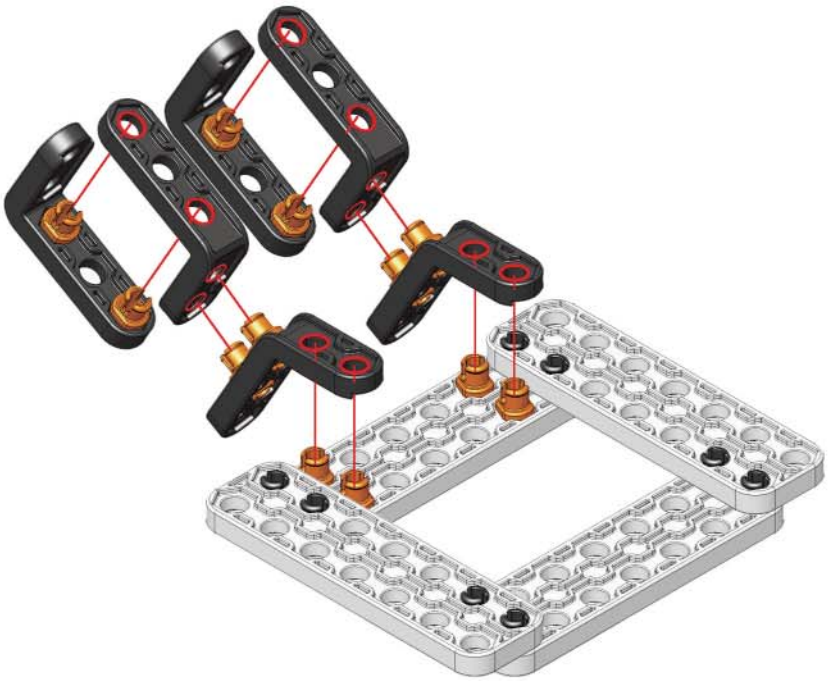

1x3
x1
x2
x2
L-bracket
x2
x2
x4



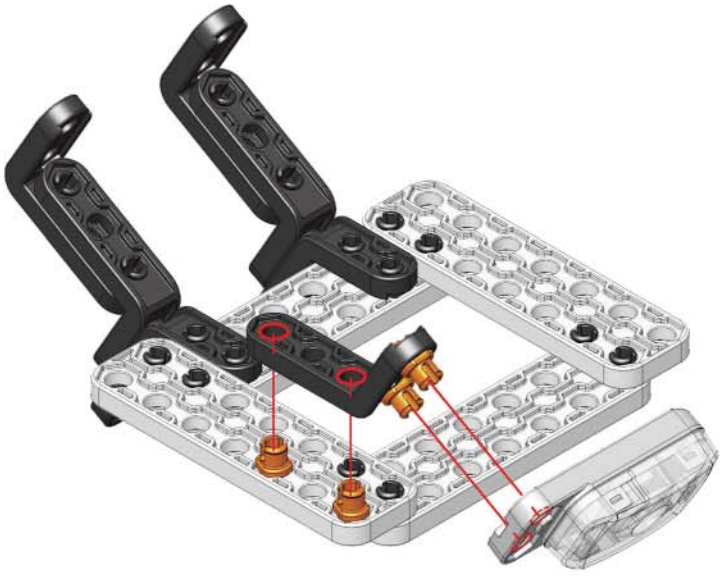
10



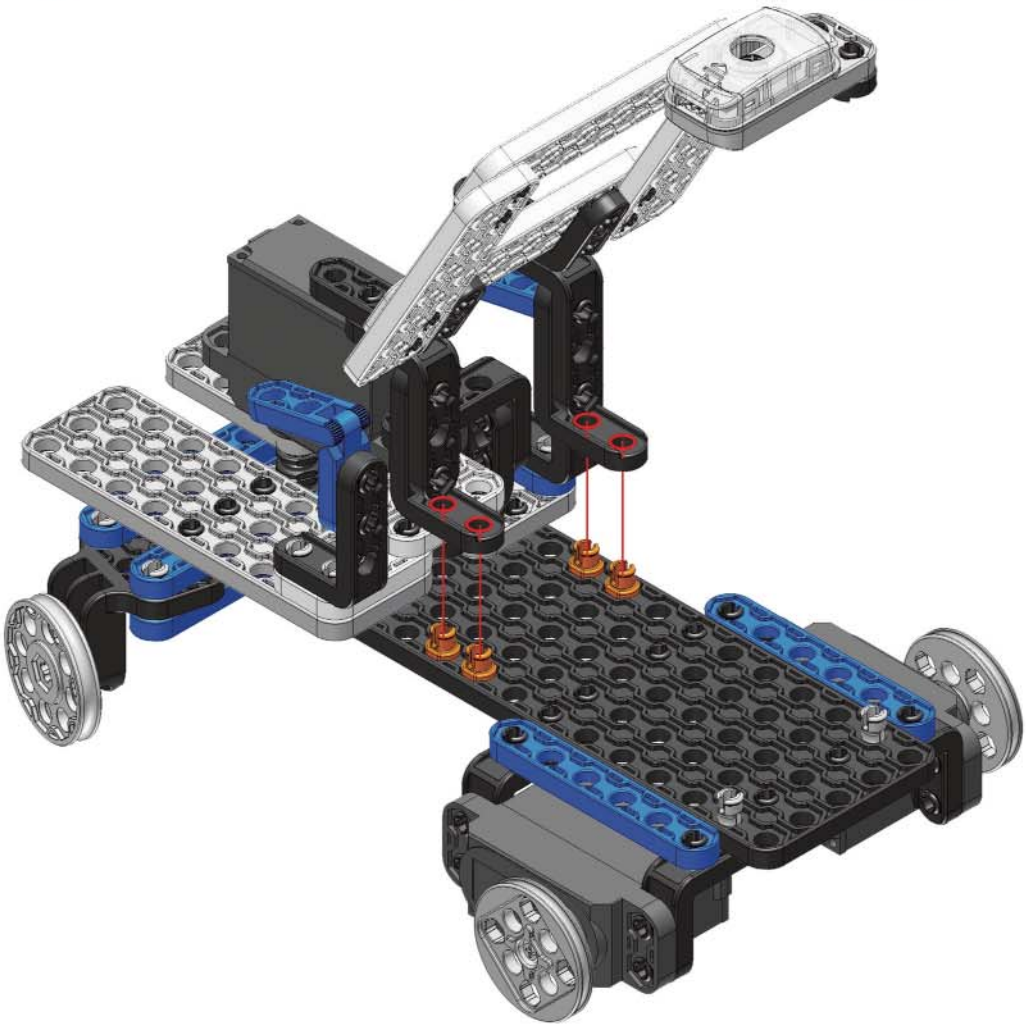
11



12

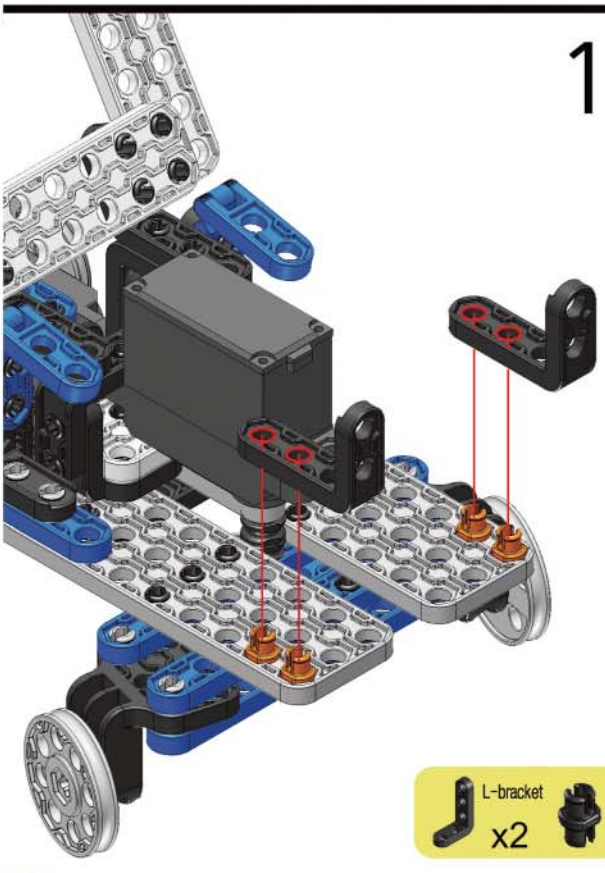


13



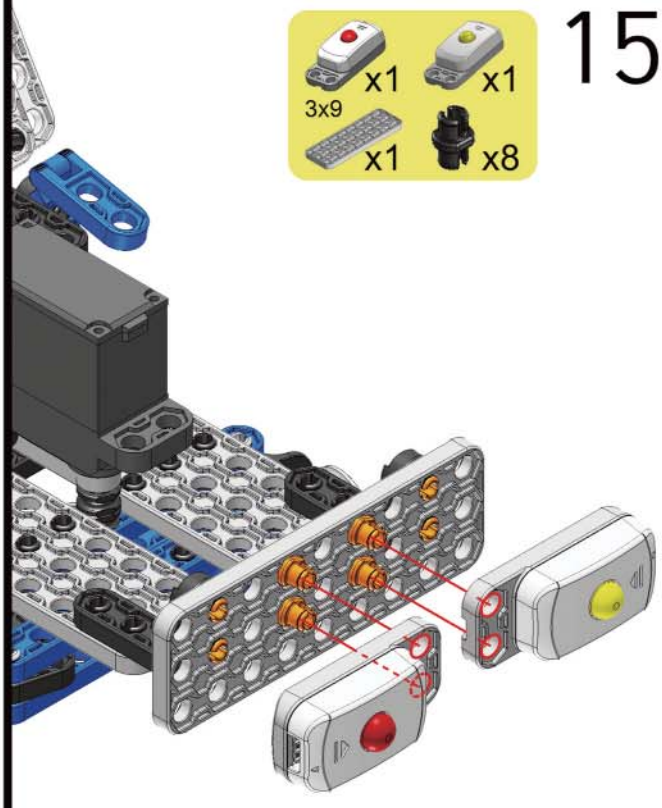
x4

14

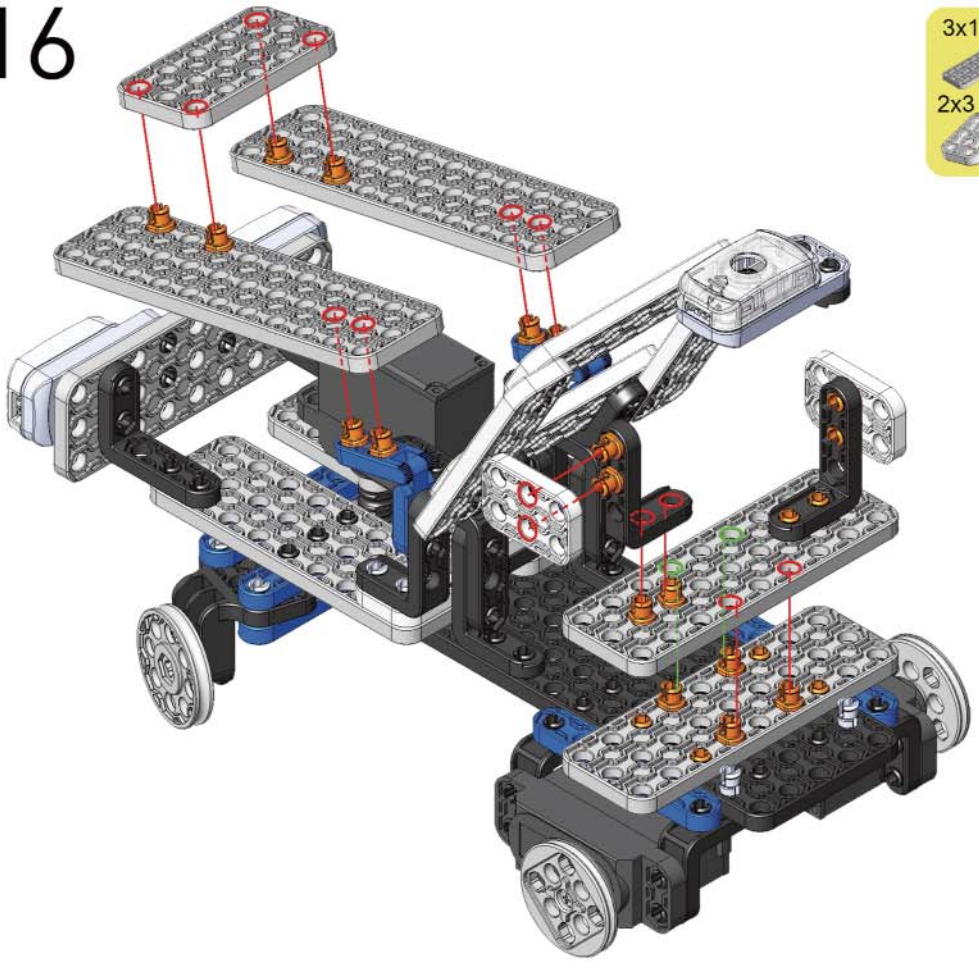


L-bracket x2 x4

15



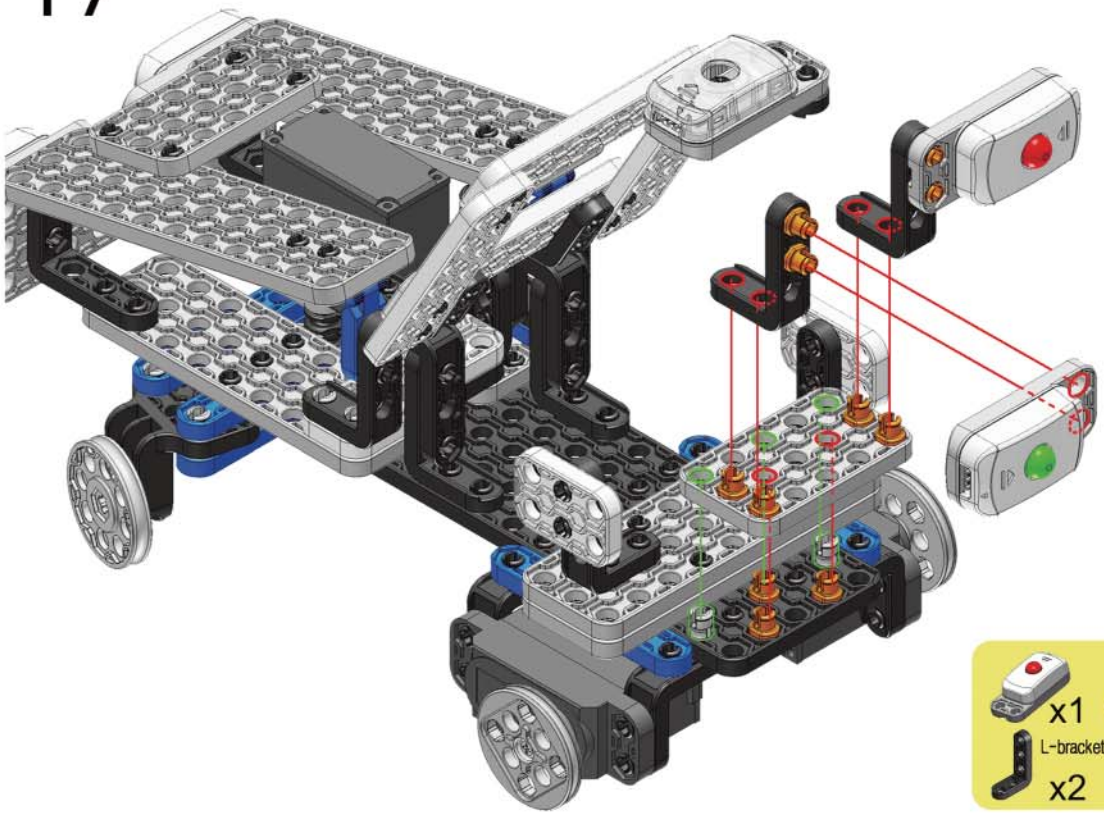
16

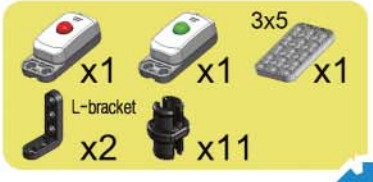


3x11
x2
3x9
x2
3x5
x1
2x3
x2
L-bracket
x2
x24

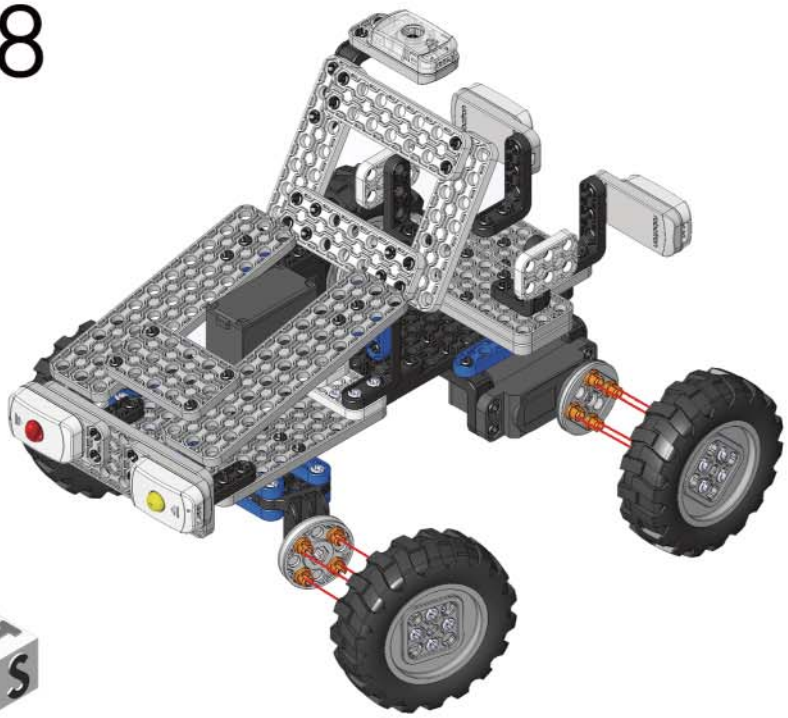
S
R

17

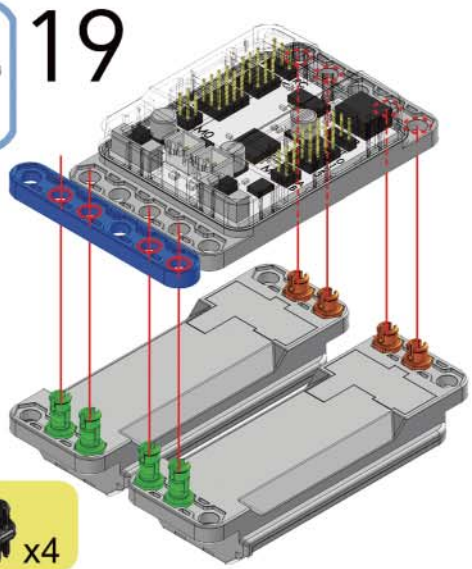


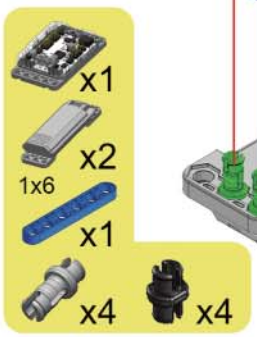

x1
x1
3x5
x1
L-bracket
x2
x11

18

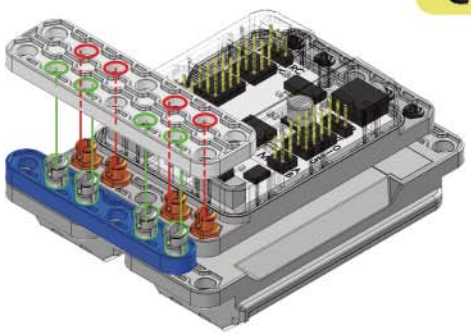


19

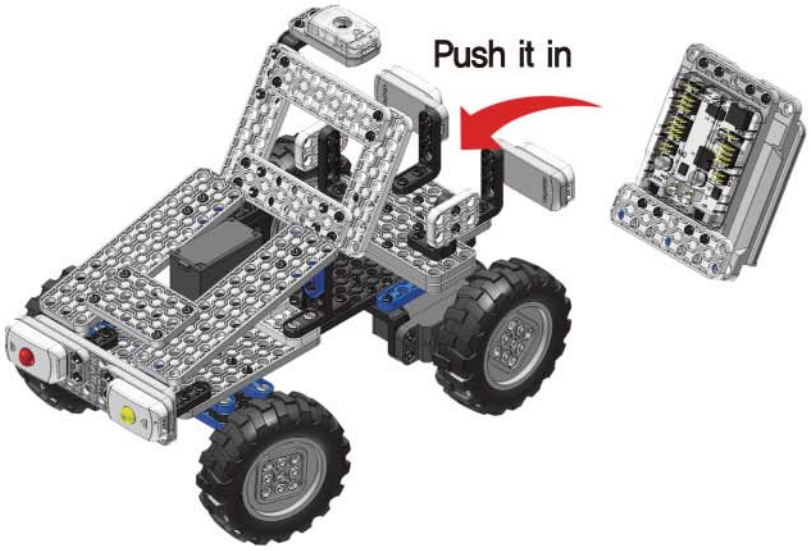




20

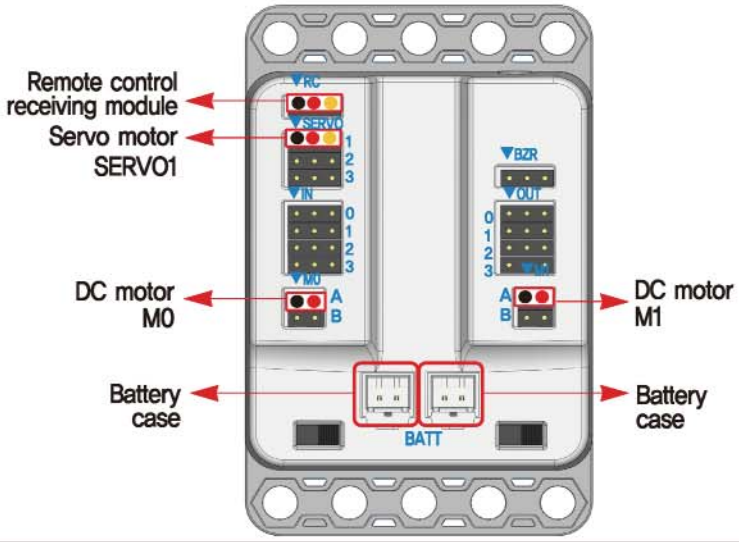


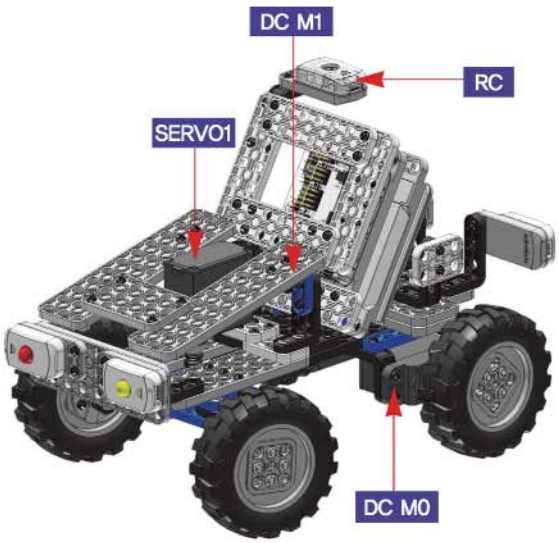
21



Complete.

connection





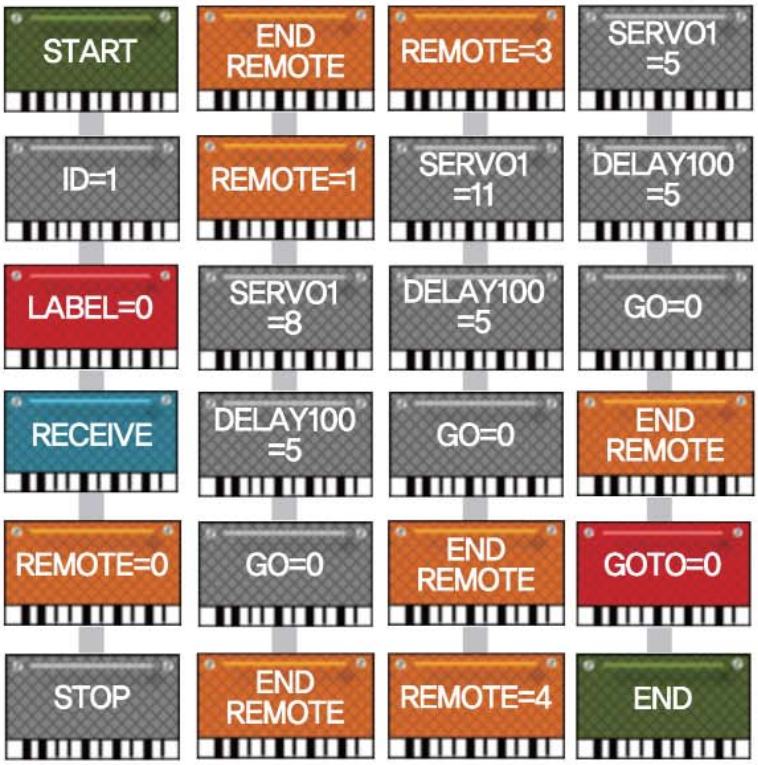
Decorate the final product.

Mission 1

Solving the mission

Now, shall we start using a remote control that we briefly used before in the previous chapter of Instant Camera?
What commands should be used to operate a remote control?
What processes should be done to control the robot that you created with a remote control?

- When ▲ button of the remote control is pressed, it goes toward the direction of servo motor 8.
  When ◀ button is pressed, it goes toward the direction of servo motor 11.
  When ▶ button is pressed, it goes toward the direction of servo motor 5.



Application Mission 1

What should be done to create smaller circles when Safaricar turning left and creating circles?

Mission 2

Solving the mission

What should be done to make the car turn right or left while moving backward, following the instructions from the function and direction buttons on the remote control?
Will you refer to the program that I wrote for ideas?

- When ▲ button and the function B button (No. 5) of the remote control are pressed, it stops.
  When ▼ button and the function B button (No. 6) are pressed, it reverses toward the direction of servo motor 8.
  When ◀ button and the function B button (No. 7) are pressed, it reverses toward the direction of servo motor 11.
  When ▶ button and the function B button (No. 8) are pressed, it reverses toward the direction of servo motor 5.

Application Mission 2

How about writing a program for new movements when ▼ direction button is pressed and when the function B button and ▲ direction buttons are pressed?

3 Work Chamber of Miss Tami

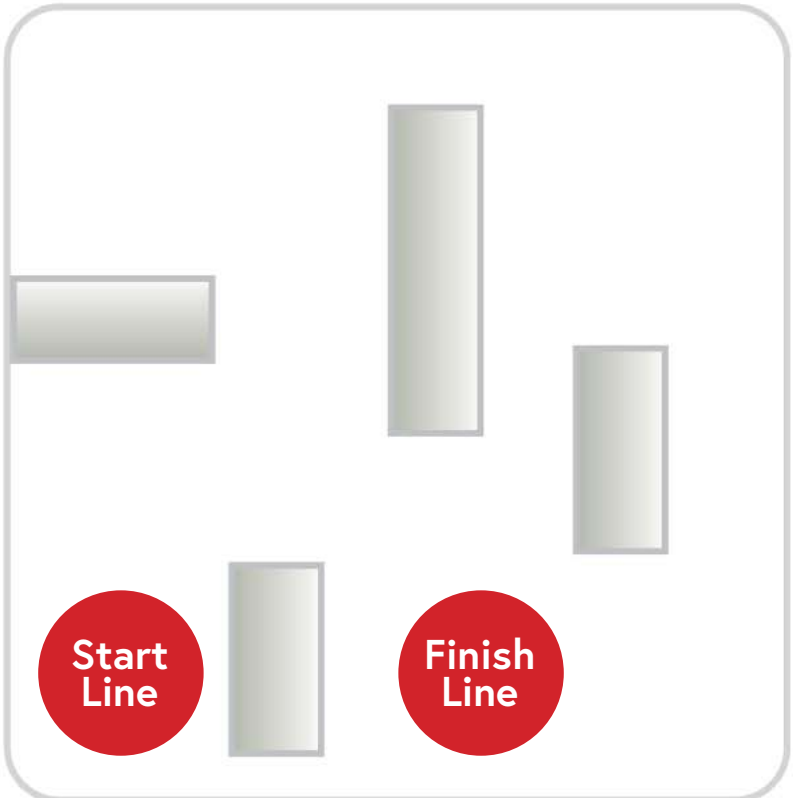
Shall we begin an obstacle race with Safaricars you guys have made?
Starting at the start line, you should avoid obstacles in the way till the finish line. You have three chances to go so let's start and aim to finish the whole race .

Remodeling the Robot

Start and continue the game by controlling the speed and the rotational angles of the servo motor.

Obstacle Race

Set the start and the finish lines and place obstacles in between to make a race arena.

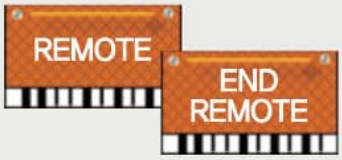


Have you reached the finish line safely after weaving through obstacles in between?

+2

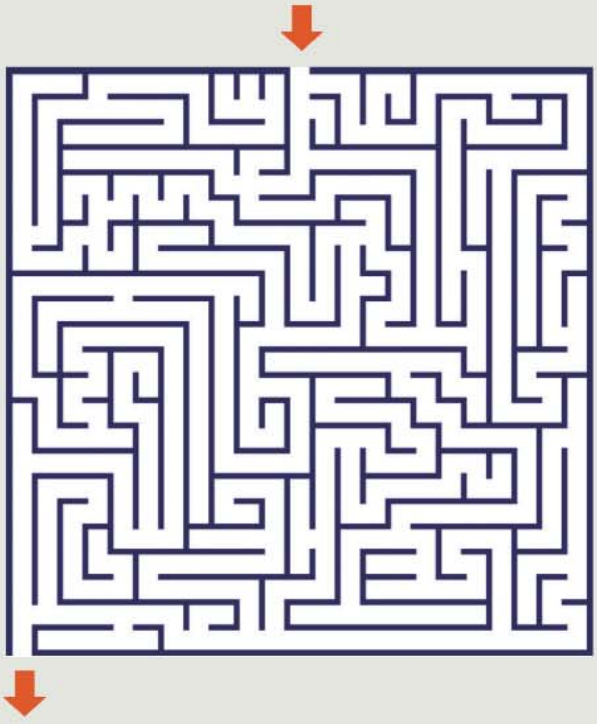
4 Chance for Raising Capacity Score

Decorate your Safaricar with fascinating imagination.



Explain

cards.



Make your way out from a complex maze.