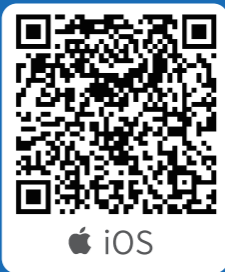
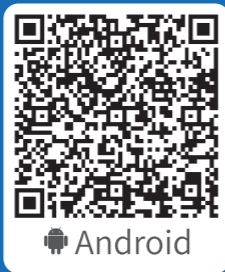


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iOS



Android

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SUPERBOT MASTER MANUAL

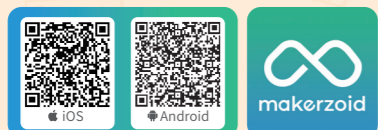


CREATING
STEAM



Science · Technology · Engineering · Arts · Mathematics

APP Introduction



APP Download

APP icon

① Scan the QR Code

② APP store-search
"makerzoid"



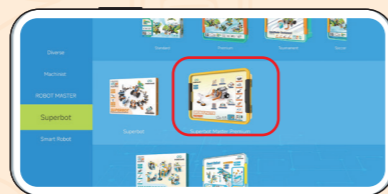
IOS

② APP store-search
"makerzoid"



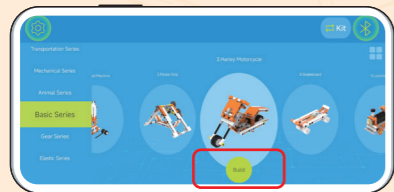
Android

① APP Download



The APP includes different robot kits, you can choose the kit you have purchased

② Choose the Robot Kit



It teaches you how to build a robot

③ Build a robot

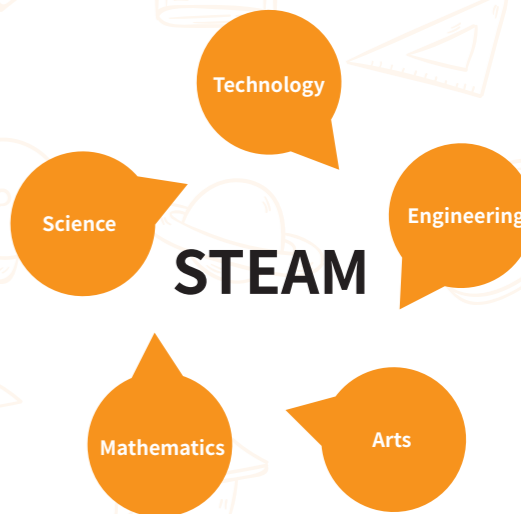


Please scan the QR code to enter our website:
www.makerzoid.com

What is STEAM?

STEAM is the abbreviation of Science, Technology, Engineering, Arts and Mathematics. The foundation of STEAM education lie in inquiry, critical thinking, and process-based learning. It is very popular in all over the world.

Using STEAM education results in students who take thoughtful risks, engage in experiential learning, persist in problem-solving, embrace collaboration, and work through the creative process.



contents

Chapter 1 Robot Introduction

1. Host Controller	02
2. IR Sensor	09
3. Grayscale Sensor	10
4. Servo Motor	11
5. Motor	12
6. Remote Controller	13

Chapter 2 Basic Knowledge About Robot Parts

1. The Unit Size	15
2. Differences Between The Parts	16
3. Disassembly Skills	18

Chapter 3 Programming Instructions

1. App Coding	19
---------------	----

2. PC Coding	25
--------------	----

Chapter 4 Building Instructions

1. Intelligent Car - Obstacle Avoidance	28
2. Intelligent Car - Line Following	32
3. Corsair	35
4. Skiing Man	42
5. Rocking Horse	50



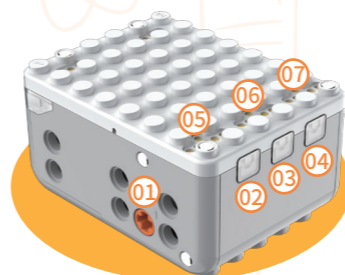
APP Download

APP icon

Chapter 1 Robot Introduction

1.Host Controller

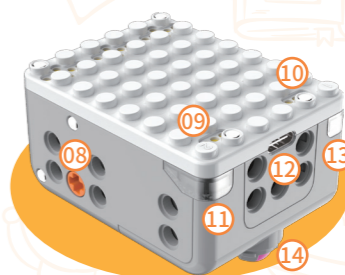
Standard Version



FRONT

- 01. Built-in Motor Power Output#1
- 02. Button #1
- 03. Power Button
- 04. Button #2
- 05. Extended Motor Port
- 06. Extended Motor Port
- 07. Extended Motor Port

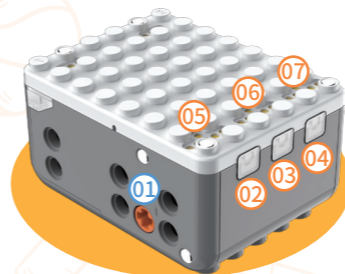
Standard Version



BACK

- 08. Built-in Motor Power Output#2
- 09. Sensor Interface#2
- 10. Sensor Interface#1
- 11. LED Light#2
- 12. Charging Interface
- 13. LED Light#1
- 14. Universal Wheel

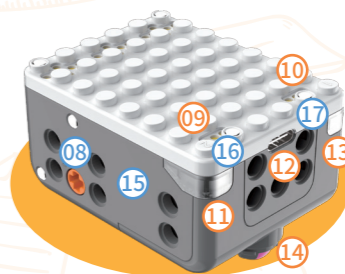
Premium Version



FRONT

- 01. Built-in Encoder Motor Power Output#1
- 02. Button #1
- 03. Power Button
- 04. Button #2
- 05. Extended Motor Port
- 06. Extended Motor Port
- 07. Extended Motor Port

Premium Version

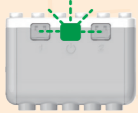


BACK


- 08. Built-in Encoder Motor Power Output#2
- 09. Sensor Interface#2
- 10. Sensor Interface#1
- 11. LED Light#2
- 12. Charging Interface
- 13. LED Light#1
- 14. Universal Wheel
- 15. 6-axis Gyroscope
- 16. Microphone
- 17. Built-in Speaker

1.1 HOW TO USE HOST CONTROLLER

Bluetooth Mode



- 1 Short press the power button, green light is flashing.



- 2 Open the App and click on the Bluetooth, then entering Bluetooth Mode.

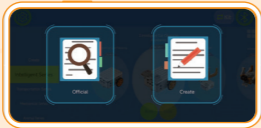


- 3 Bring your device closer to the host controller and until the App shows 'Successfully Connected'. The LED constant green light.

Offline Mode



- 1 Click the 'Code' to enter the programming interface.

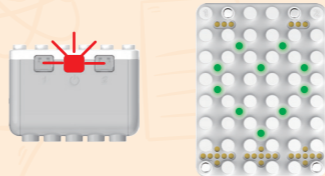


- 2 Chose 'Official' or 'Create' to the the programming interface.

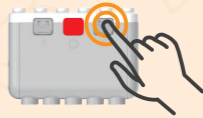


- 3 After completing the programming, you can save it and click 'Upload' in the upper right corner to upload the offline program.

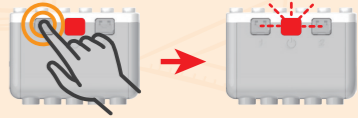
(1) How to execute the uploaded programs (Offline Mode)



- 1 Long press the power button, LED constant red light meaning now it's on Offline Mode. The matrix screen displays the shape of a heart.



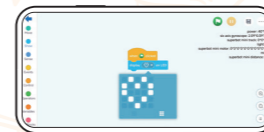
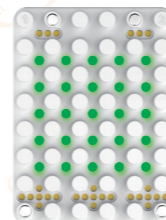
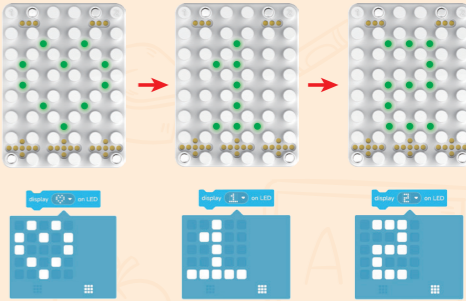
- 2 Select the uploaded programs: Short press the button#2 to select the uploaded program. (e.g. If you select the program 1, the matrix screen shows '1').



- 3 Execute the uploaded programs: Short press the button#1 to confirm to execute the program. LED light flashes meaning it's executing the selected program.

1.2 LED Matrix Screen Introduction

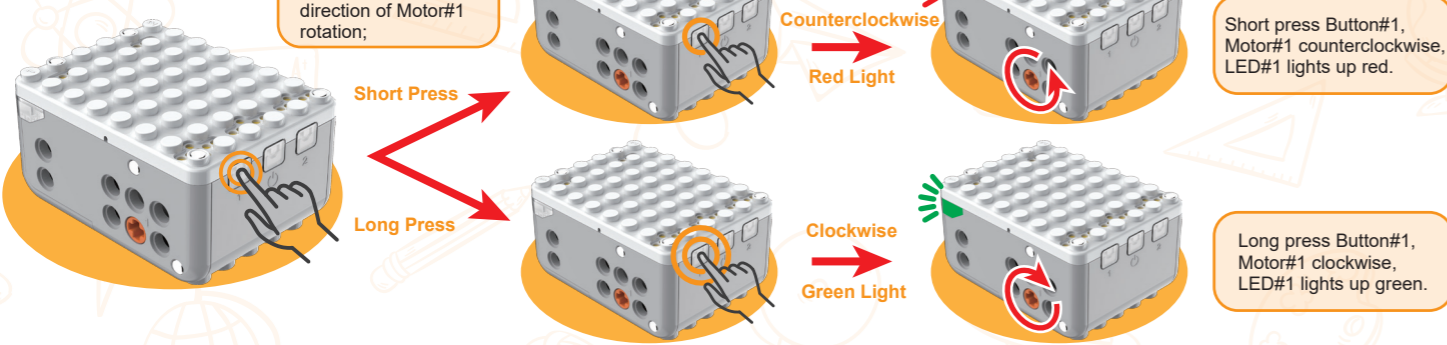
The host controller has one matrix screen, which consists of 25 LED lights, forming a 5*5 matrix. The pattern on the matrix screen can be controlled through the Makerzoid App.

Example

1.3 Built-in Motor Instruction

Motor#1



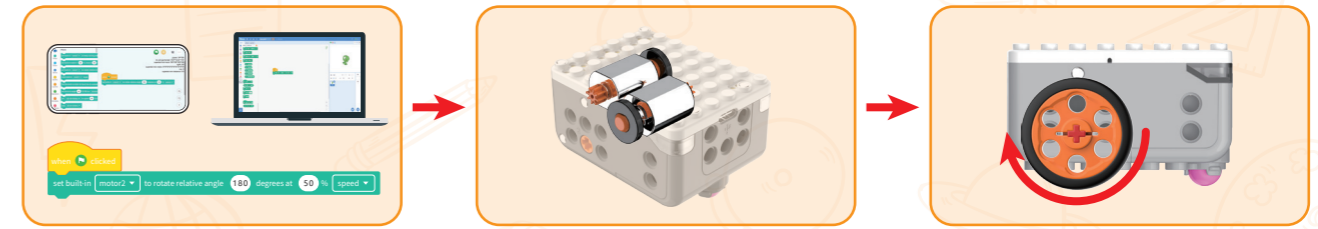
Motor#2



Encoder Motor Instruction

Principle of Encoder Motors

The motor is closed-loop controlled and equipped with a magnetic ring and an encoder. The encoder obtains signals through the rotation of the magnetic ring. The built-in advanced chip can directly sample and calculate the feedback signal of the motor encoder. It internally forms a position loop and a speed loop. Therefore, the rotation speed, rotation angle, rotation direction, etc. of the motor can be controlled through programming to achieve precise movements.



How To Use The Encoder Motor

Specified angle rotation
The motor is programmed to rotate to a specified angle.

Programming: Motor #1 rotates at a relative Angle of 90 degrees at 50% speed.

Specified speed rotation
The motor is programmed to rotate at a specified speed.

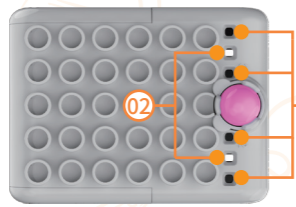
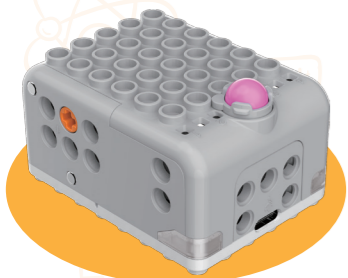
Motor#1 30% 50% Motor#2

Programming: Motor #1 rotates at 30% speed, motor 2 rotates at 50% speed.

CAUTION
Do not manually rotate the motor. Do not manually push the motor to rotate.

This may cause the gears inside the controller to break or damage.

1.4 Introduction Of The Line Sensor

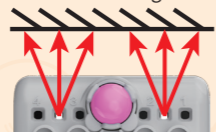


01. sensor receiving tube

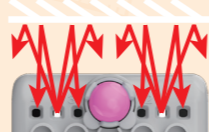
02. sensor transmitting tube

Color Influence

When the ground is black, black absorbs all the light, causing the light to not reflect. Therefore, the sensor receiving tube cannot receive the signal light from the sensor transmitting tube.

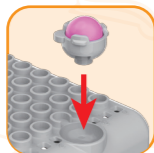
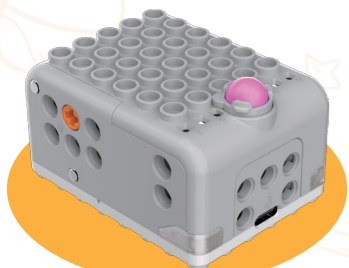


When the ground is white, white reflects all the light. So the sensor receiving tube can receive the signal light from the sensor transmitting tube.



1.5 Introduction Of The Wheel

The universal wheel refers to a 360° rotating wheel mounted on the bottom. It plays a supporting role in static load, and can rotate 360 degrees horizontally in dynamic load.

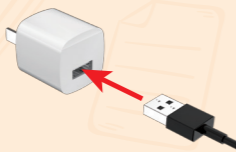


1.6 How To Charge

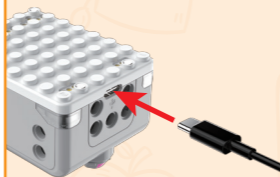
Charging Voltage: 5V/0.5A (Do not support fast charging.)

Charging Time: About 10 hours from 0% to 100%.

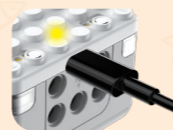
Note: It's necessary to turn off the device during the charging process. A blinking power indicator means it's not turned off.



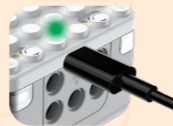
Insert the data cable Type-C header (small header of the data cable) into the charging port of the main control.



LED constantly in yellow when charging.

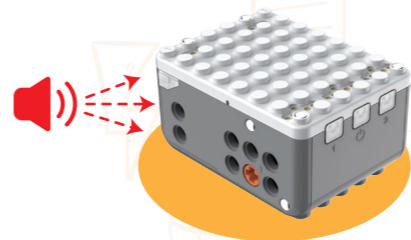


LED constant green light when the battery is fully charged.



1.7 Microphone Introduction (Premium version features)

A built-in microphone that can receive the external sound, the range (0-100). The current volume value received by the microphone can be obtained through Makerzoid App.



microphone(0~100)

1.8 Speaker Introduction (Premium version features)

A built-in speaker that can play specified sounds through Makerzoid App.

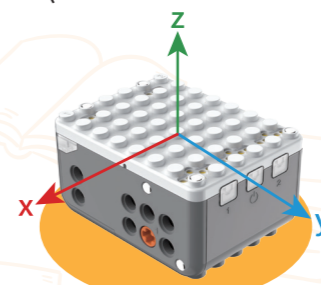


play built-in sound

- 1
- 2
- 3
- 4
- ✓ 5

1.9 Six-axis Gyroscope Introduction (Premium version features)

The host controller is equipped with a built-in six-axis gyroscope capable of detecting values for x, y, and z angles with a resolution of 0.01 degrees.



6-axis gyro X-axis angle

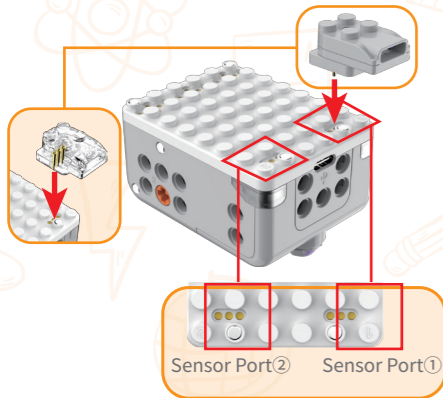
- ✓ X-axis
- Y-axis
- Z-axis

6-axis gyro zero the z-axis

- ✓ zero the z-axis calibrate

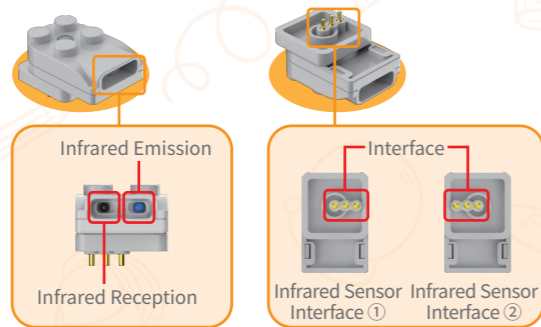
2. IR Sensor

Connect to the host Controller

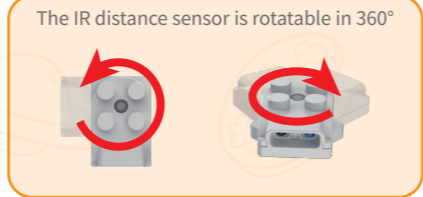


IR Sensor Introduction

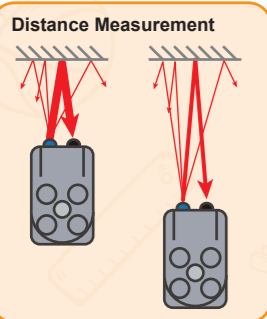
The infrared distance sensor uses the principle of infrared light to determine distance and obstacles. There are two eyes inside the sensor, which are responsible for transmitting and receiving.



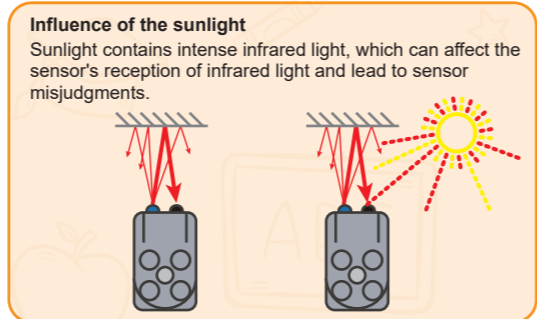
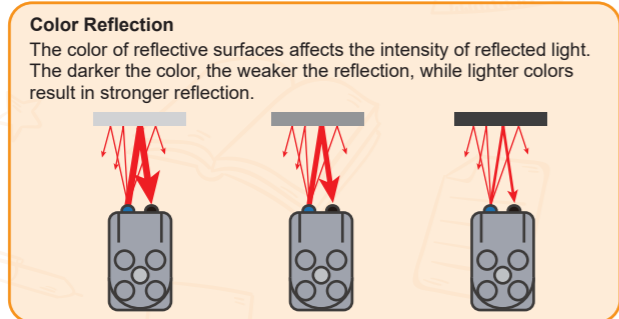
Notice:
When removing the sensor connector, please use a removal tool (Splitter) and avoid forcing it.



How the IR Sensor works

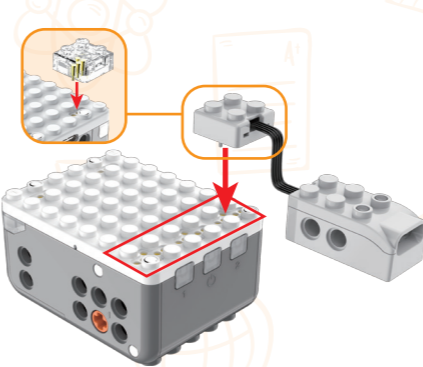


Sensor Usage Reminder



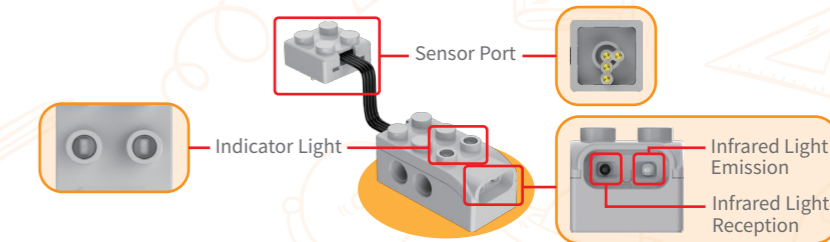
3. Grayscale Sensor (Premium Version Accessories)

Connect to the host controller



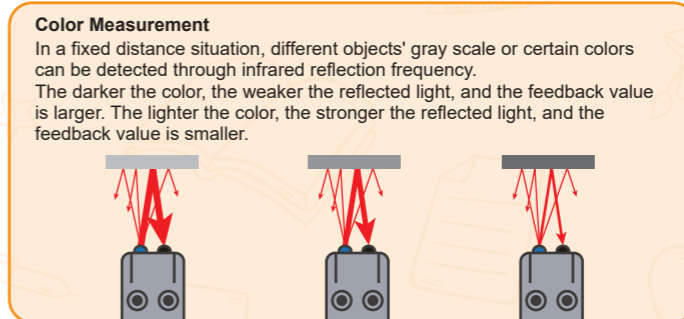
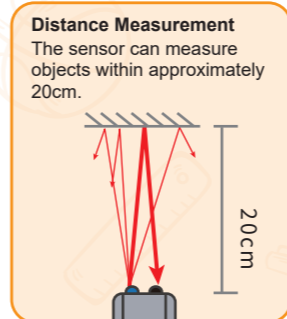
Grayscale Sensor introduction

The grayscale sensor utilizes the principle of infrared light reflection to detect the distance and the grayscale of objects. The sensor is equipped with digital technology to filter out the interference of infrared light with common intensity.

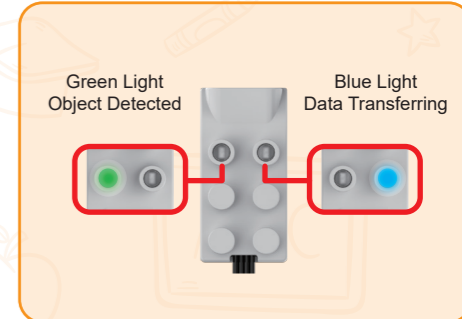


Notice:
1. The sensor cable is made of silicone. Please avoid pulling, stretching or using building blocks or gears to squeeze it which may cause the cable to break.
2. When removing the sensor, please use a splitter. Do not pull the wires.

How the Grayscale Sensor works



Indicator Light Explanation

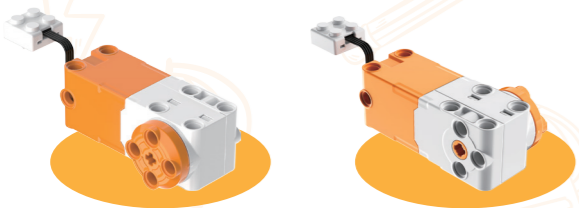


4. Servo Motor (Premium Version Accessories)

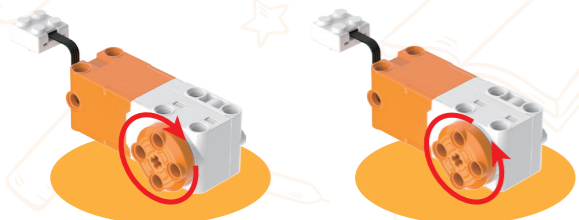
The servo motor is extremely powerful as it serves both as a motor and a sensor.

When used as a motor, it harnesses electrical energy to convert into kinetic energy, providing power for the robot to move. Additionally, as an advanced sensor, it can precisely read the servo motor's instantaneous angle and current speed during movement.

We can manually rotate the motor and observe the current angle data in the programming interface.



Principle: The servo motor operates on closed-loop control. It is equipped with advanced chips that directly sample and calculate the feedback signals from the motor encoder. Internally, it consists of position and velocity loops, allowing the motor to achieve precise movements.



How To Use The Servo Motor

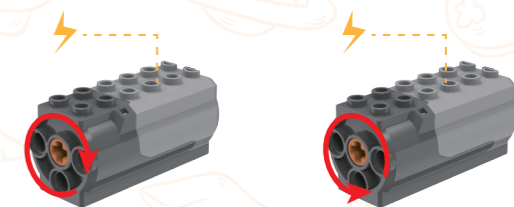
There are five ways to control the servo motor during the programming process.

Modules (Motor Control)	Functions
	By setting the power, you can control the motor's rotation. The higher the power, the greater the motor output, and the faster the rotation. Power range is (-100 to 100).
	By setting the speed to control the motor's rotation, the motor can maintain a stable speed. The faster the speed is set, the faster the rotation will be. Speed range (-100 to 100).
	By setting the absolute angle, the motor can be precisely controlled. The angle range is from (0 to 359 degrees).
	The servo motor stop mode includes options to maintain position, coasting, braking, or maintaining the last set value.
	Relative position reset allows you to set any position as the zero point for relative angles.
	Relative angle refers to the rotation starting from the position set as zero. It can rotate to any angle you set, with each full circle being 360 degrees, and the maximum value is +-800,000,000 degrees.
	By setting the circumference of the wheel, you can specify it in millimeters, centimeters, or inches.
	By setting the circumference of the wheel, you can enable precise distance travel for the car using servo motors, with options for millimeters, centimeters, and inches as units.

5. Motor (Premium Version Accessories)



The motor utilizes the principle of converting electrical energy into kinetic energy, providing strong power to the robot, enabling it to move.



Clockwise

Counterclockwise

Note:

1. The motor wire is made of silicone. Please avoid pulling, stretching or using building blocks or gears to squeeze it which may cause the wire to break.
2. When removing the motor connector, please use a splitter. Do not pull the wire.

Modules (Data Reading)	Functions
	Read current power of the motor.
	Read current speed of the motor.
	Read current absolute angle of the motor.
	Read current relative angle of the motor.
	Detect whether the motor is stalled.
	Detect whether the motor has completed rotation.

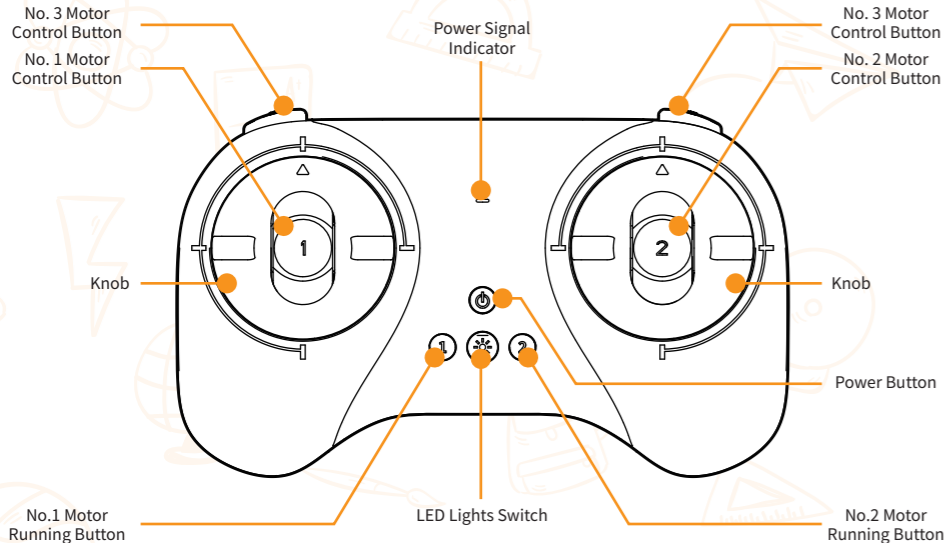
Note:

1. The motor wire is made of silicone. Please avoid pulling, stretching or using building blocks or gears to squeeze it which may cause the wire to break.
2. When removing the motor connector, please use a splitter. Do not pull the wire.

Battery Installation Instructions

1. Non-rechargeable batteries cannot be charged.
2. Rechargeable batteries should be charged under adult supervision.
3. Different battery models or new and old batteries should not be mixed.
4. Depleted batteries should be removed from the product.
5. Toys should not be connected to more than one power source.
6. Rechargeable batteries should be removed from the toy before charging.
7. Batteries should be inserted with the correct polarity.
8. Power terminals must not be short-circuited.

6. Remote Controller (Premium Version Accessories)



How to use the Remote

Power Button

1. Long press: Re-pairing (LED light flashes quickly), disconnect the paired host controller and search for the new host controller.
2. Short press: Connect to the paired Host Controller (the Host Controller has to be turned on and disconnected to the mobile phone first, then the Remote Controller can be connected within the remote control range).

LED Lights Switch

1. Short press the LED Lights Switch after power on: Switch the light color.
2. When shutting down, press the LED Lights Switch, then press the Power Button to turn on, and then release the LED Lights Switch: Enter the "Slave Mode", can be connected to the Host Controller as a programming control joystick.

No. 1 and No. 2 Motor Control Button

1. Short press after power on: the motor clockwise.
2. Long press after power on: the motor counterclockwise.

No. 3 Motor Control Button

1. The motor keeps rotating: Press the button, the motor rotates, release it immediately.
2. The motor stops working: Press the button, the motor rotates, then release it after a while.
3. Re-calibrate the joystick: Press the No. 3 buttons on both sides at the same time, then press the Power Button to turn on, and then release it.

Parameter

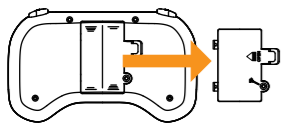
Connection Mode: Bluetooth connection
Remote Control Distance: Within 15 meters

Battery Instructions

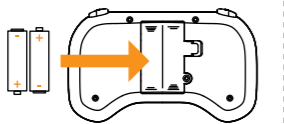
1. Non-rechargeable batteries cannot be charged.
2. Please charge the rechargeable battery under adult supervision.
3. Batteries of different sizes or old and new batteries cannot be used together.
4. Used batteries should be removed from the product.
5. The toy cannot be connected to more than one power source.
6. The rechargeable battery should be removed from the toy before charging.
7. The battery should be inserted with the correct polarity.
8. The power terminals should not be short-circuited.
9. This product does not contain batteries.

How to install the battery

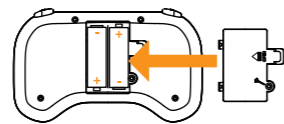
1 Remove the battery cover



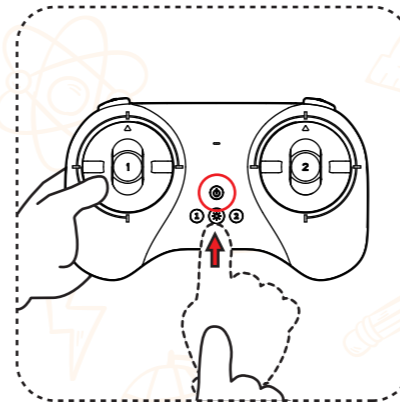
2 Insert 2×AA batteries



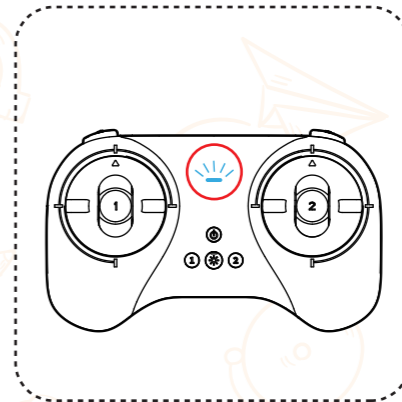
3 Put the battery cover into the remote



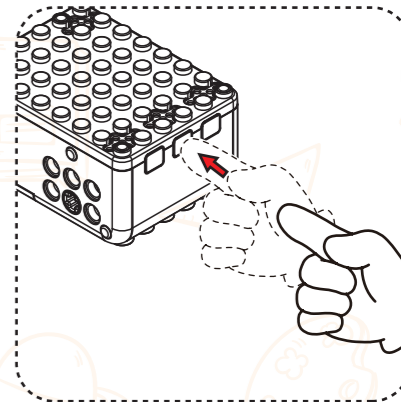
How to connect to the host controller



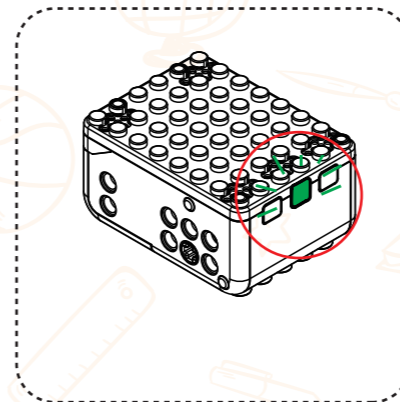
Press the Power Button of the remote



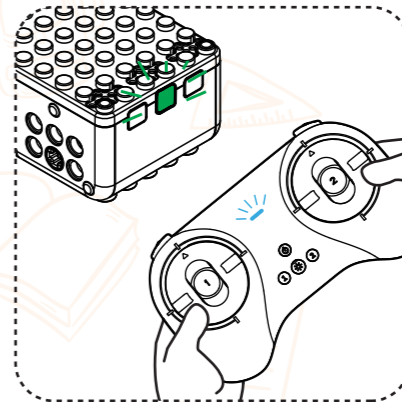
The green light of the remote flashes when turn on



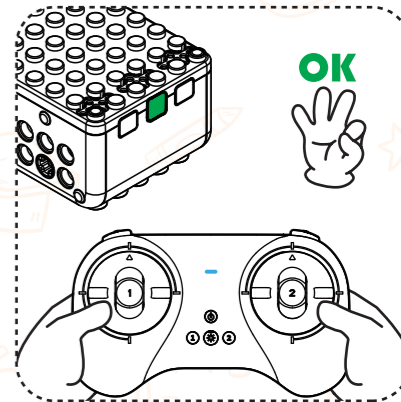
Turn on the host controller



The green light of the host controller flashes when turn on



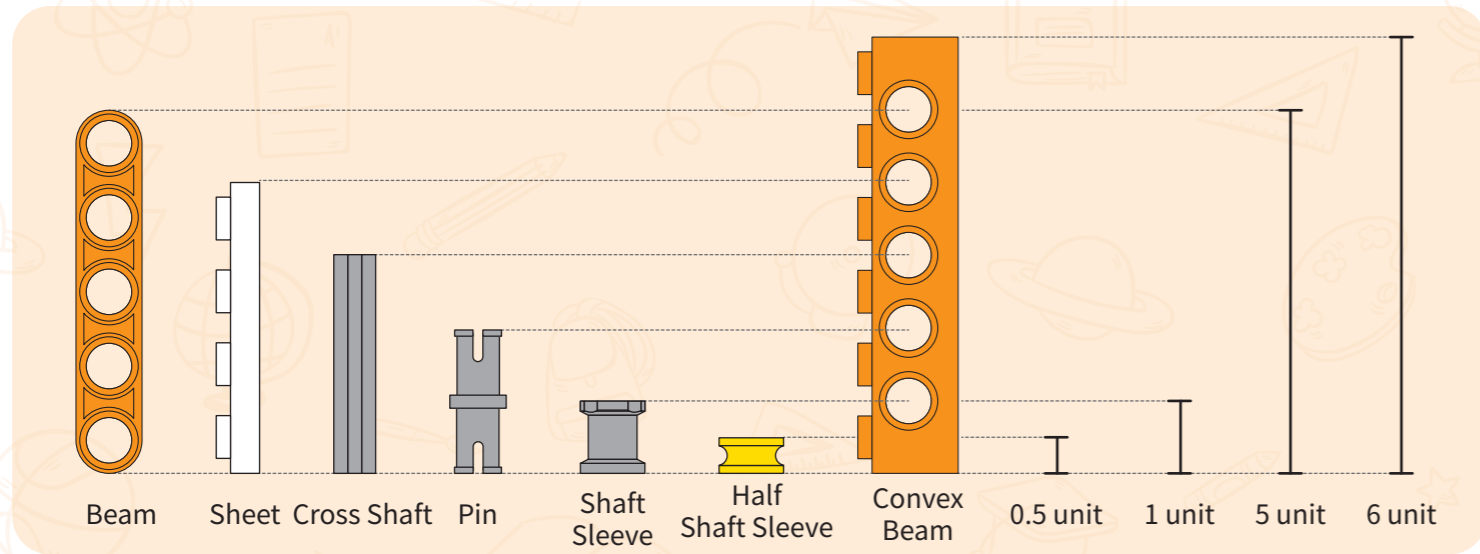
Put the remote close to the host controller, the remote starts to pair with the host controller




When the green light of the host controller flashes, it can connect to the remote or mobile app

CHAPTER 2 BASIC KNOWLEDGE OF ROBOT PARTS

1. The Unit Size











○ 1 unit = 8mm. Generally the width, height, length of the parts are integral multiples of the size of the unit.

Example:  The part is called beam. Its Length is 5 unit and width is 1 unit.

2. Differences Between The Parts

1. Difference between pins

Semi-latch		1 latch unit is equivalent to half of a catch unit, commonly used for secure connections.
Half pin		The half part of it is combined with a 0.5 unit accessory.
Grey pin		It has little friction with the hole, so it's easy to rotate.
Black pin		It has great friction with the hole, so it's mostly used for fixation.
Half pin shaft(loose)		The pin of it has little friction with the hole, so it's easy to rotate.
Half pin shaft(tight)		The pin of it has great friction with the hole, so it's mostly used for fixation.
Long half pin		It has little friction with the hole, so it's easy to rotate.
Long pin		It has great friction with the hole, so it's used for fixation.


2. Difference between gears

8-teeth gear		Combined with 24-teeth gear to achieve a triple acceleration or deceleration.
12-teeth gear wheel		Mostly Used to change the direction of axis hole's motion.
12-teeth gear		Combined with 20-teeth gear to achieve acceleration or deceleration.
20-teeth gear wheel		Mostly Used to change the direction of axis hole's motion.
20-teeth gear		Combined with 12-teeth gear to achieve acceleration or deceleration.
24-teeth gear		Combined with 8-teeth gear to achieve a triple acceleration or deceleration.
2M worm		Mostly used to combine with gears to achieve acceleration or deceleration.

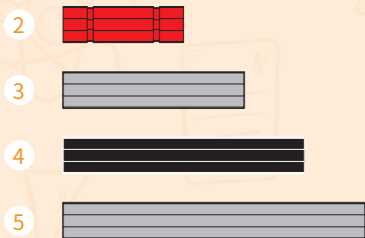
4. Difference between sleeves

Shaft sleeve		Mostly used to steady the parts in the cross shaft in 1 unit.
Half shaft sleeve		Mostly used to steady the parts in the cross shaft in 0.5 unit.

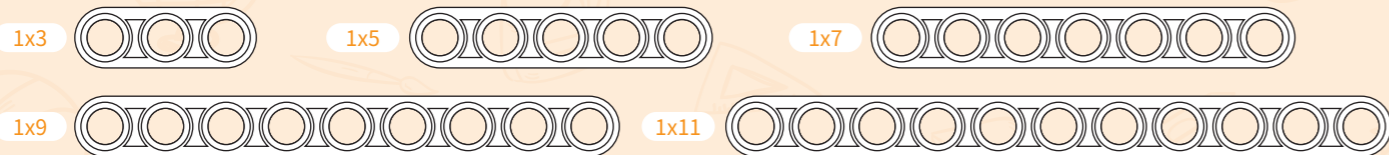
3. The Function of Soft Rubber Beams

Soft Rubber Beams		Soft rubber is commonly used to increase traction on the ground.
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Size Reference List - Shaft



Beam Reference List-Plate



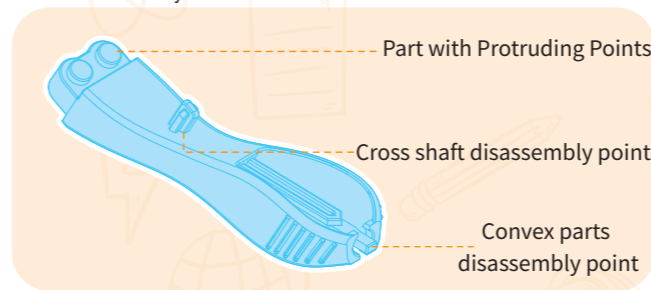
NOTICE

When you receive the product, please read the contents on the "Parts List" first. Understanding the shapes of various parts and confirm the number of the parts received according to the list would be highly recommended. The tutorials will be much easier to understand afterwards. (Colors of the parts you see on the illustrations may be different from the actual ones due to the need for production batches or display. Please distinguish different parts based on their shapes. If there are any parts missing, please contact customer service.)

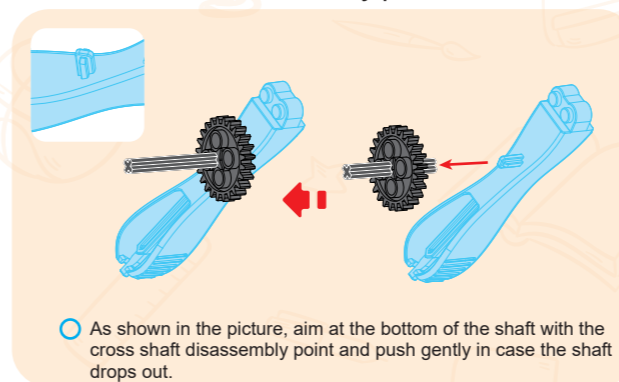
3. Tips for Using Disassembly Tools

How to Use Disassembly Tools

The purpose of disassembly tools is to utilize the lever principle to dismantle components. They are convenient to use and allow for quick disassembly.

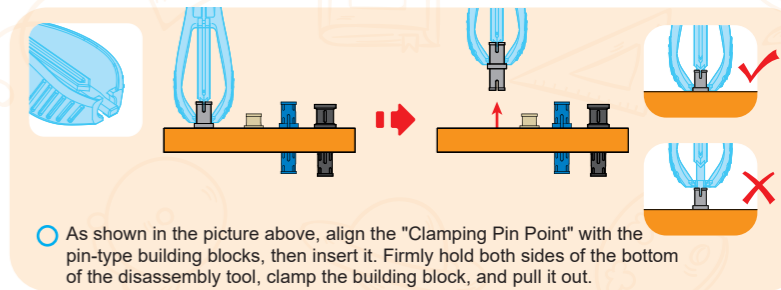


2. Cross shaft disassembly point

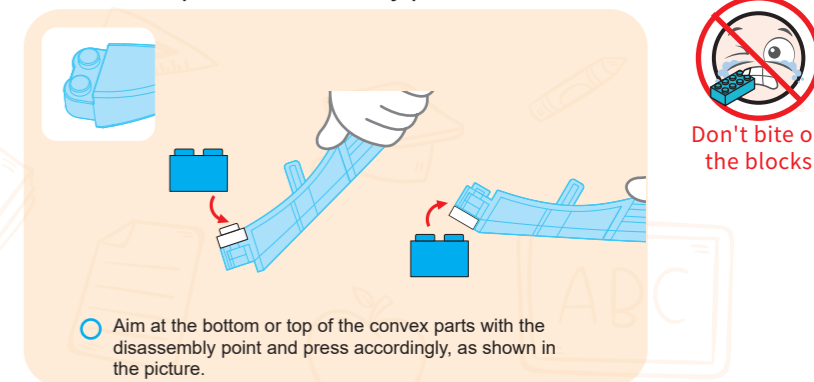


Disassembly Technique

1. Clamping Pin Point



3. Convex parts disassembly point



CHAPTER 3 PROGRAMMING INSTRUCTIONS

1. APP Coding

What is Makerzoid Graphic Programming?

In order to let people learn robot programming better, Makerzoid developed a graphical programming tool with the combination of Scratch 3.0, a programming tool by MIT. It changes the programming language into building block program modules and stack them according to your ideas, so that the robot can perform the corresponding tasks according to your ideas.

How to enter the programming page

Method 1: Enter the APP, connect the APP to the host controller by bluetooth, click on "Create" or select the robot that needs to be programmed, click on the "Code" in the page to enter the programming page.

Method 2: Some robots contain official programming tutorial. You can choose official programming or my creation to make a program for your robot.



In the page of "Create", click on "Code" and then enter the programming interface.

1 My Creation

In this page, choose the robot, click on "Code" and then enter the programming interface.

2 Building Page

Some robots have official program, you can choose official program or write your own program for the robot.

3 Start Programming

1.2 Introduction to the Programming Area

In the programming page, there are **Module area**, **Editing area**, **Menu**, **Data area** and **View area**.

Module area:

Provide modules of different function to choose and use.

Menu:

- Start button
- Pause button
- Save button
- Function button (code, share and upload)

Editing area:

Drag the modules you need here to make an executable script according to your ideas.

- Code View the code of the program
- Share Share your program or ask for other's program
- Upload Upload the program to the host controller

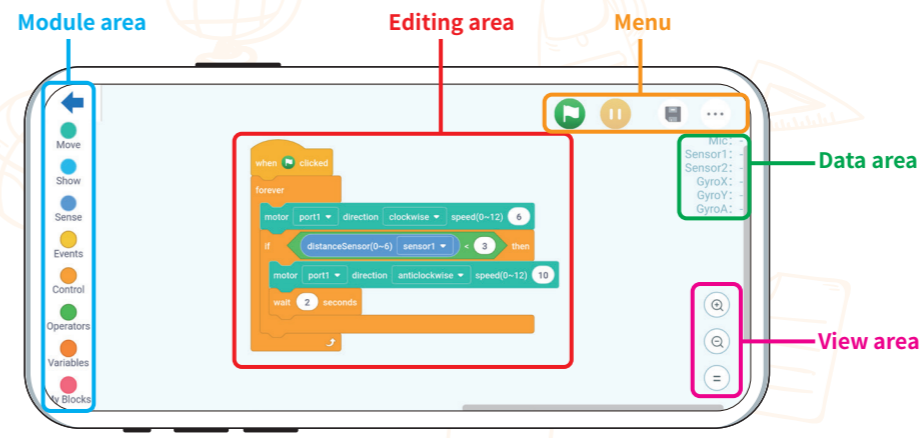
Data area:

Display the value of the sensor

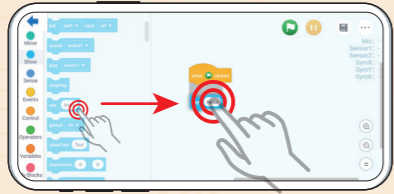
- Mic: - Microphone value
- Sensor1: - Sensor value
- Sensor2: - Sensor value
- GyroX: - Gyro value
- GyroY: - Gyro value
- GyroZ: - Gyro value

View area:

- Enlarge the programming area
- Reduce the programming area
- Programming area in the middle

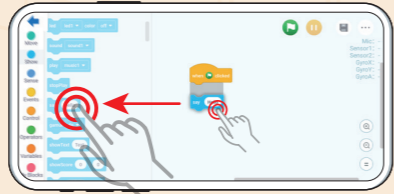


1.3 Programming Tutorials



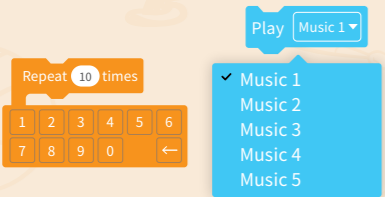
Choose the module and drag it to the module "when it is clicked".

1 Drag the module



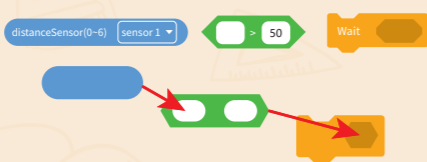
Drag the module not needed to the code area.

2 Delete the module



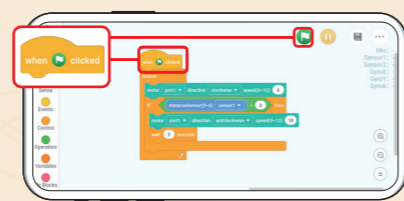
Some modules can be selected and some modules can be entered.

3 Enter/Select



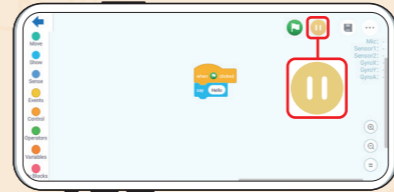
Different shapes in the modules deliver different content and can be inserted to different slots.

4 Insert the module



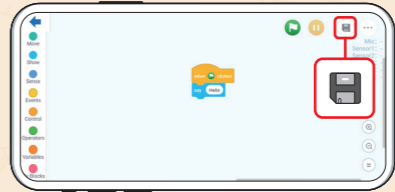
Click on the start button, then the program starts.

5 Start the program



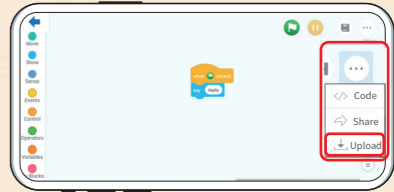
Click on the pause button then the program is stopped.

6 Stop the program



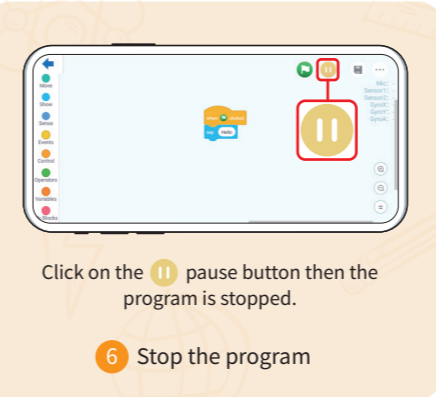
Click on the save button then the program is saved.

7 Save the program



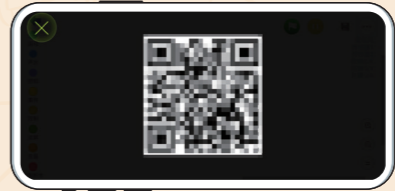
Connected to the host controller and click on the save button, then the program is uploaded to the host controller, thus offline mode is available.

8 Upload the program



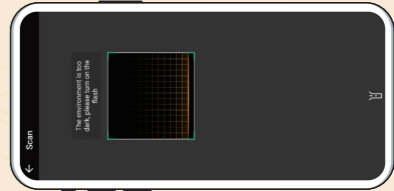
Click on the share button, you can share your program or ask for other's program.

9-1 Share/Ask for



Choose "share" then there is a QR code, your friend can get your program by scanning the code.

9-2 Share the program

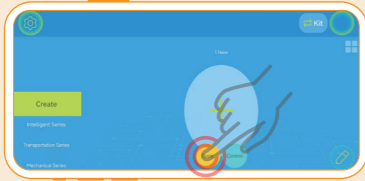


Choose "ask for" and then scan the code from your friends.

9-3 Ask for the program

1.4 Programming Case Study

Play music



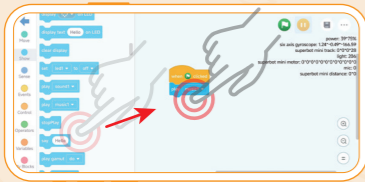
Click on the "Code" and enter the program.

1 Enter the program



Find the "Play" module in the module area "Show".

2 Choose the module



Long press the "Play" and drag it to the editing area.

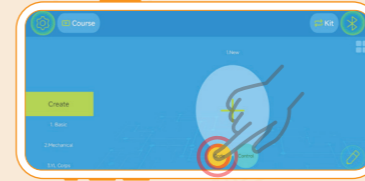
3 Drag the module



Click on the start button to start the program.

4 Start the program

Switch music



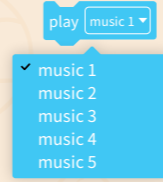
Click on the "Code" and enter the program.

1 Enter the program



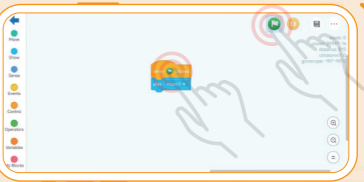
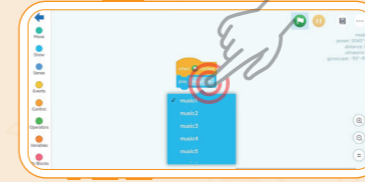
Long press the "Play" and drag it to the editing area.

2 Choose the module



Click the "Play" module to switch different music.

3 Module placement



Click on the start button to start the programming program.

4 Start the program

2. PC Coding

1. Software Download



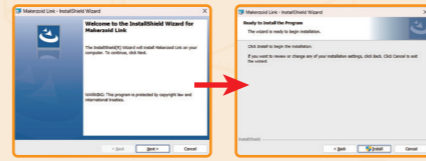
Enter the URL:
<https://software.makerzoid.com/makerzoidlab/index.html>

1 Open The Webpage



Download 'Makerzoid Link' based on the different systems.

2 Download The Plugin



Open the downloaded file and proceed with the installation.

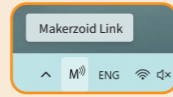
3 Install The Plugin



Double-click the 'Makerzoid Link' icon to open the plugin.

4 Open The Plugin

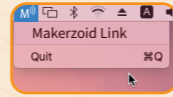
Windows



After startup, the icon of Makerzoid Link will appear in the Windows system tray.

5 Display of Plugin

MacOS



After startup, its icon will appear in the top menu bar of the screen.

2. How to program

2.1 Connect to the host controller



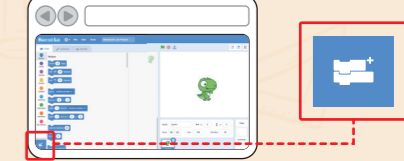
Enter the URL:
<https://software.makerzoid.com/makerzoidlab/index.html>

1 Open The Webpage



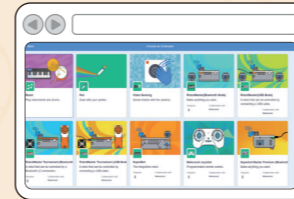
Click "Let's start programming" to enter the programming interface.

2 Enter programming.



After entering the programming interface, click on the icon in the bottom left corner to access the devices selection page.

3 Interface Introduction.



In the devices selection interface, choose the corresponding devices.

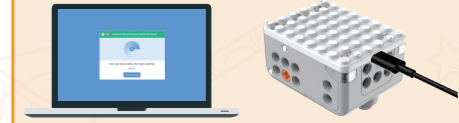
4 Select Devices.



Press the host controller switch to initiate pairing.

The computer must have Bluetooth functionality.

5-1 Bluetooth Connection.

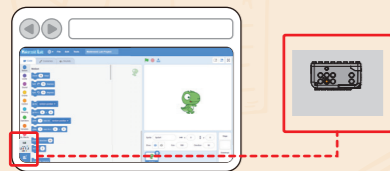


Insert the Type-C connector into the charging port of the main control, and plug the other end into the USB port of the computer.

5-2 How to Connect

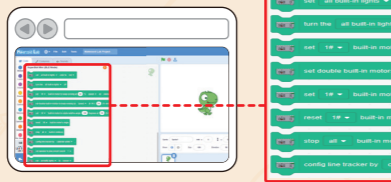
2.2 How to program

Programming Example




In the bottom-left corner, a new connectivity kit icon will be added. Click on the icon to open the programming module corresponding to the kit.

1 Clicking on the Kit



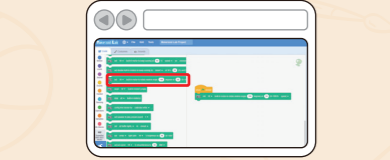
After clicking on the kit icon, a programming module corresponding to the kit will be added next to it.

2 Programming module



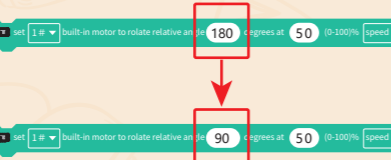
Locate Events in the module area, drag When Clicked into the program editing area.

3 Select the module



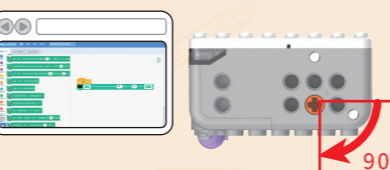
From the Variables section in the module area, find the Relative Angle Module, drag it into the program editing area.

4 Select the module



Change the relative angle in the module to 90 degrees.

5 Modify the parameters



Click When Clicked to execute the program. Built-in motor 1 turns 90 degrees at 50% speed.

6 Run the program

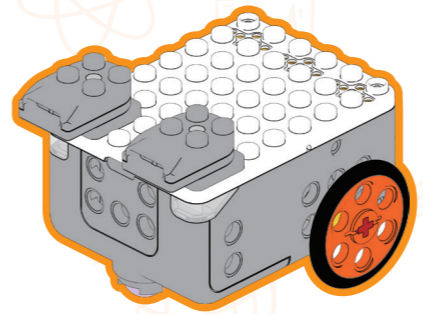
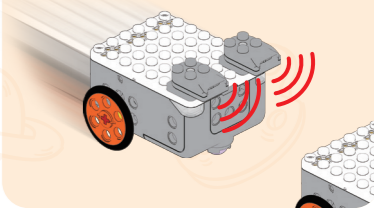
Intelligent Car - Obstacle Avoidance

Scenario:

Hey guys, have you ever seen an automatic car?
An intelligent car can drive and stop automatically with computer, AI and Automatic Control technology.

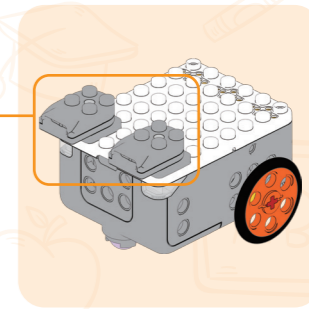


Would you like to build your own intelligent car?
Let's do it together!



Knowledge Window: Principle of Obstacle Avoidance

The car is equipped with two Rotating IR Sensor, acting as the eyes of the car. They continuously detect if there are objects ahead. When the car is in motion and the sensors detect an obstacle, the program adjusts the car's direction accordingly.

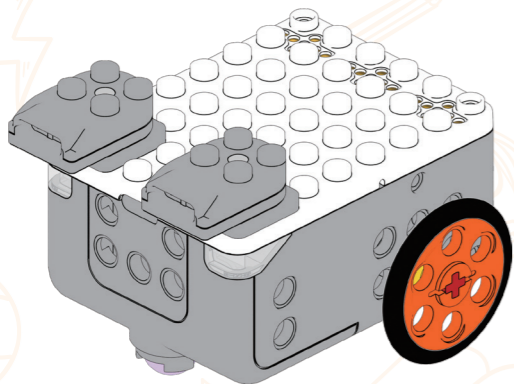


Intelligent Car - Obstacle Avoidance

★ ☆ ☆ ☆ ☆

Build:

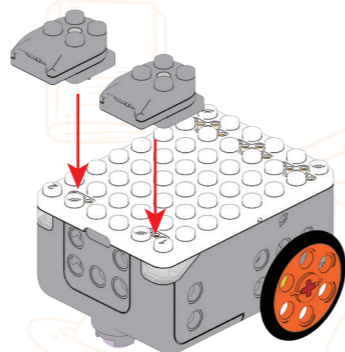
Hey guys, please follow the steps to build the intelligent car with your fastest speed, You will find something interesting and useful!



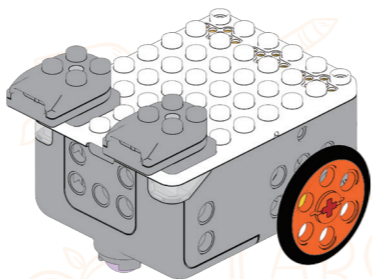
Target:

1. Understand the principles of sensors through building the car.
2. By adjusting the Rotating IR Sensor, make the car capable of autonomous driving, automatically avoiding obstacles when encountered. Understand how the car's program works.

01

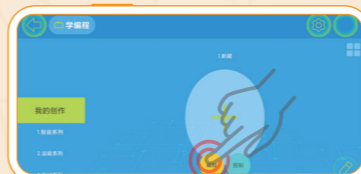


02



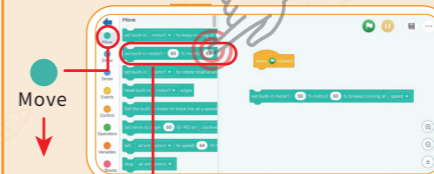
Obstacle Avoidance Car Programming

Start Coding



Open the program and click on 'Code' to enter the coding interface.

1 Start Programming



The car needs to start moving, so it needs to find the motor operation module from the module area Motion.

2 Select Module



Hold down the Motor operation module, drag it into the program editing area, click to select 'Power'.

3 Drag In Module



From the Module area and find the 'Wait' module, add a waiting time for the car.

4 Select the Module



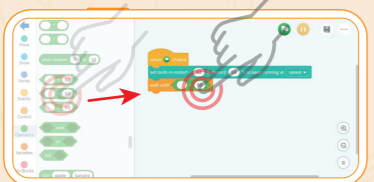
Long-press the 'Wait' module, drag it into the program editing area.

5 Drag In Module




From the module area, find the '<50' module.

6 Select the Module



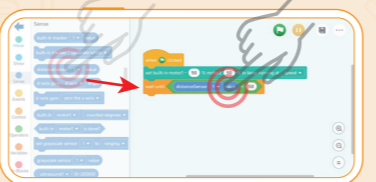
Long-press the '<50' module, drag it into the program editing area.

7 Drag In Module



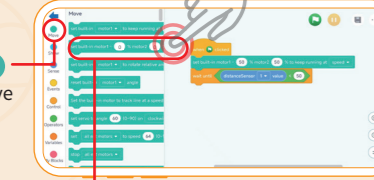
The car needs to sense obstacles, so it needs to find the 'Sense' module from the module area and select the 'Distance Sensor' operation module.

8 Select Module



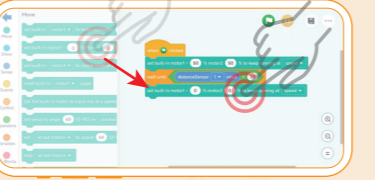
Long-press the 'Distance Sensor' module, drag it into the '<50' module editing area.

9 Drag In Module



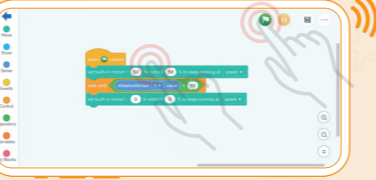
The car needs to stop when encountering obstacles. From the module area, find the 'Motor' module, and set the power value to 0.


10 Select Module



Long-press the 'Motor' module, drag it into the program editing area.

11 Drag In Module



Click on . The car will automatically stop when encountering obstacles.

12 Launch Program

Intelligent Car - Line Following

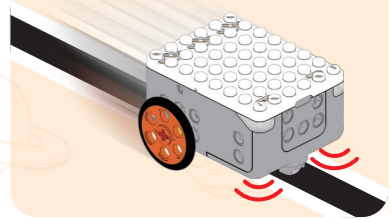
Scenario:

Hey guys, have you ever seen an automatic car?

An intelligent car can follow the line automatically with computer, AI and Automatic Control technology.



Would you like to build your own intelligent car?
Let's do it together!

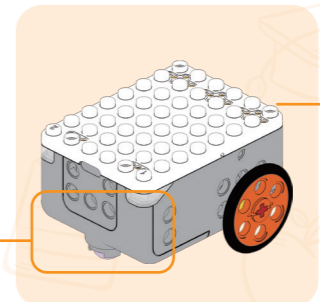
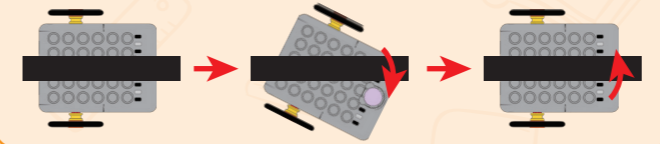


Knowledge Window:

Three-Point Support Structure and Line Following Principle

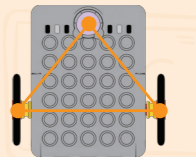
Line Following Principle

The car is equipped with line-following sensors on its bottom. When the car travels along a black line, the sensors move as the car deviates from the line. When the sensors detect the black line, they adjust the direction of the car.



Three-Point Support Structure

The car utilizes the stability of a triangular structure.



Intelligent Car - Line Following

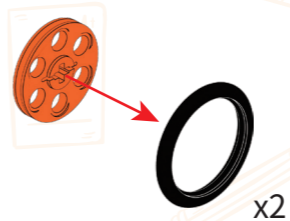
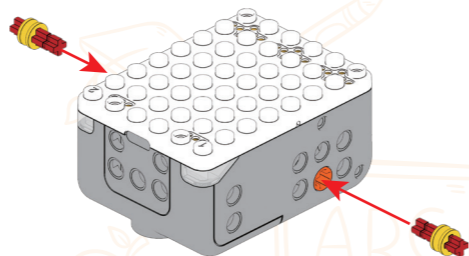
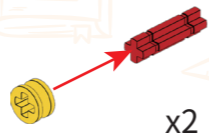
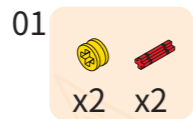
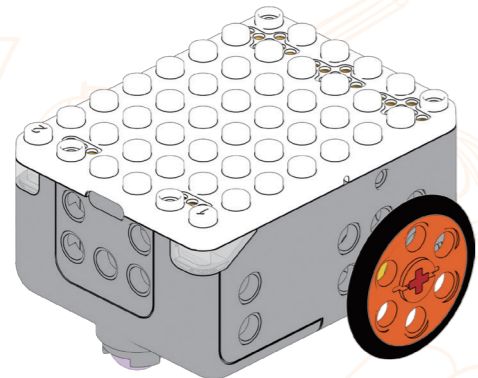
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Build:

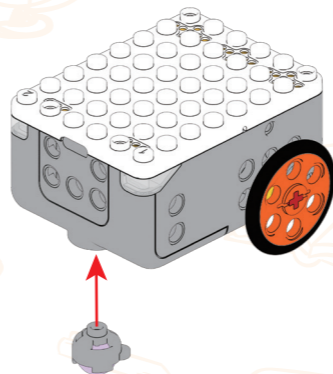
Hey guys, please follow the steps to build the intelligent car with your fastest speed, You will find something interesting and useful!

Target:

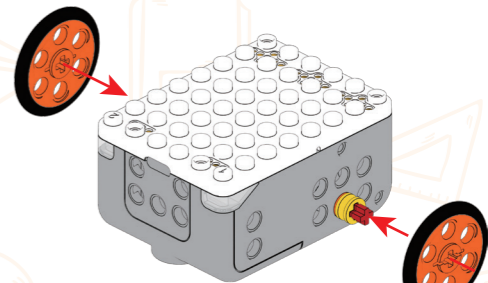
1. Understand the principles of omnidirectional wheels through building the car.
2. Through programming, enable the car to drive autonomously and follow a black line.
3. Understand how the car's program works.



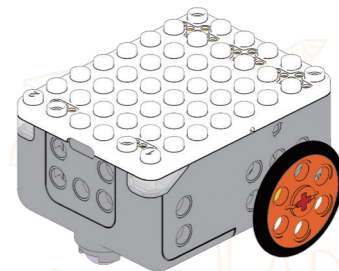
05



04

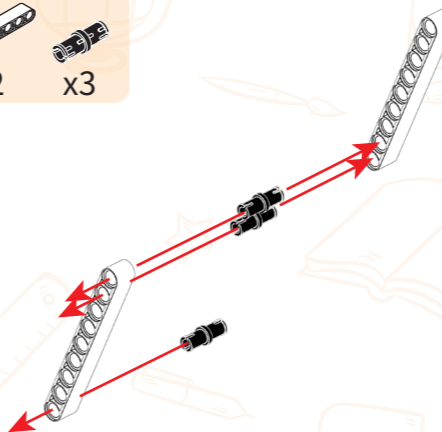
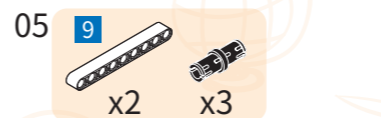
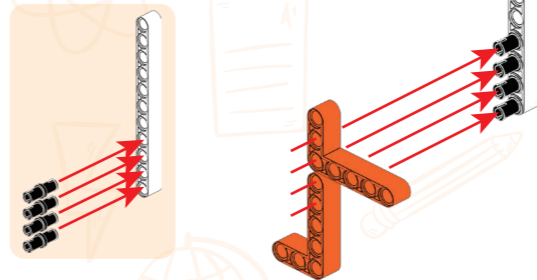
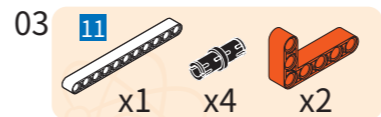
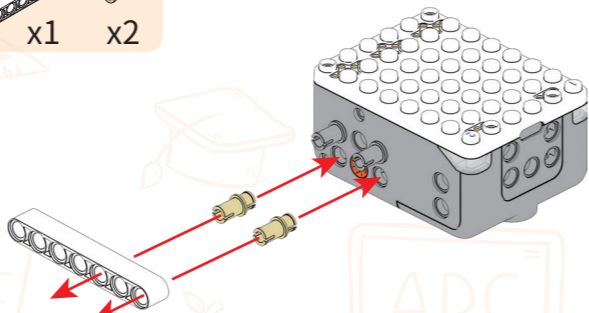
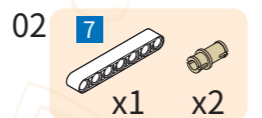
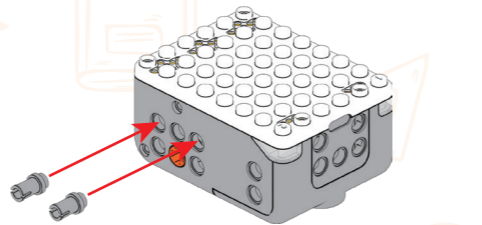
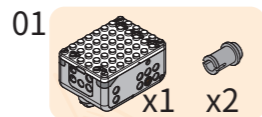
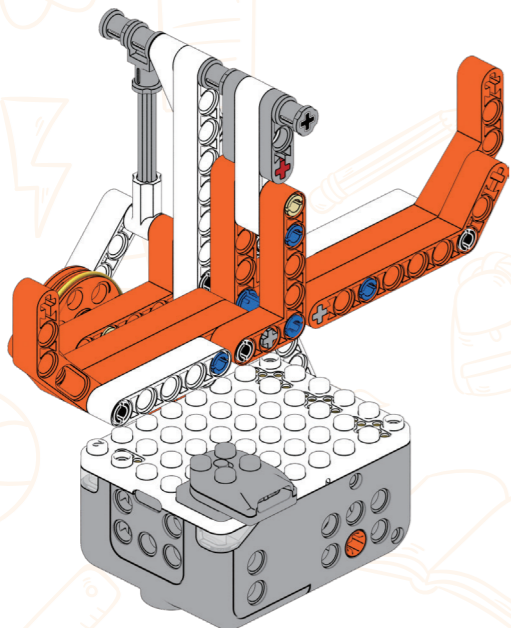


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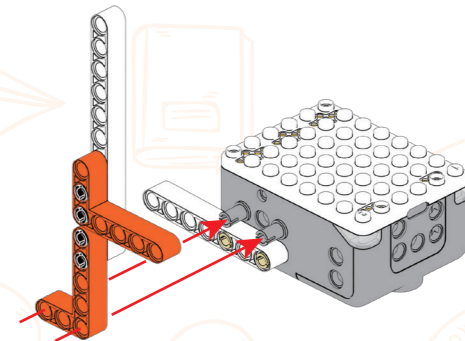


Corsair

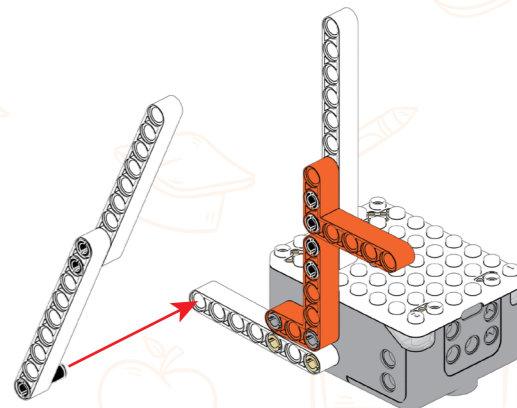
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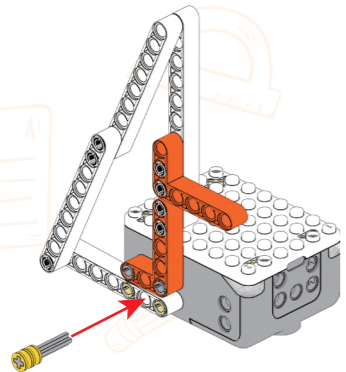
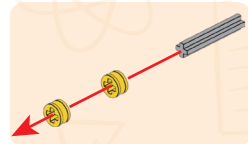
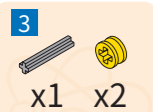
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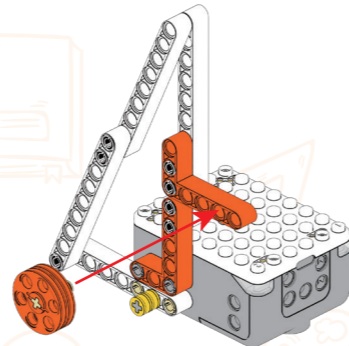
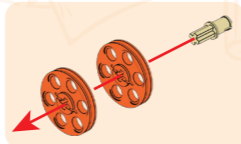
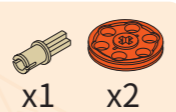


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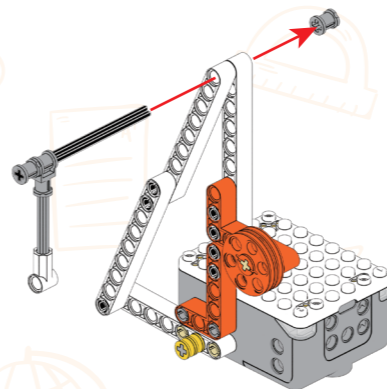


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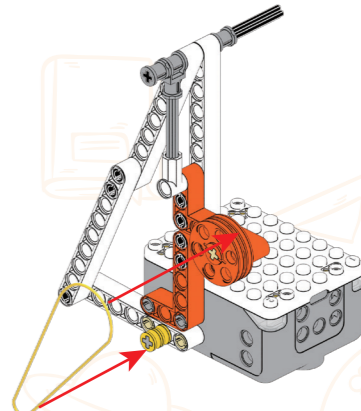
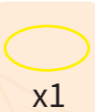
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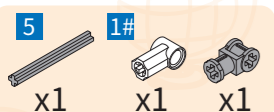
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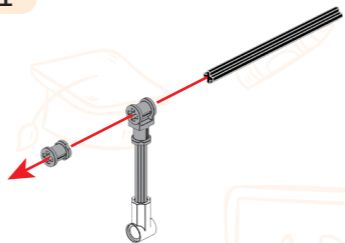
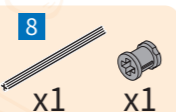


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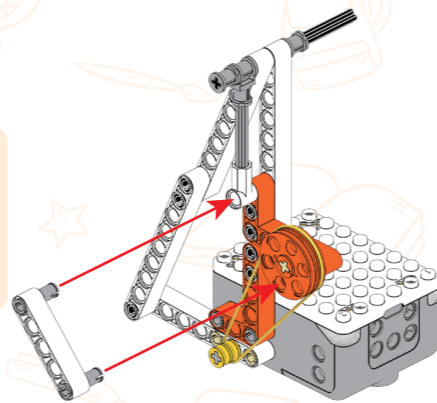
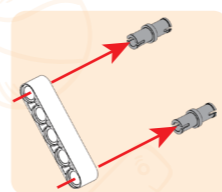
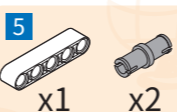
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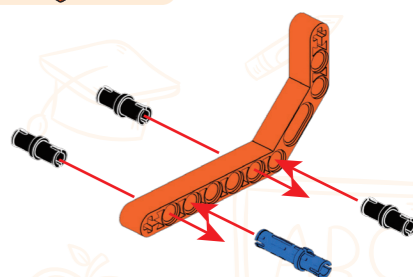


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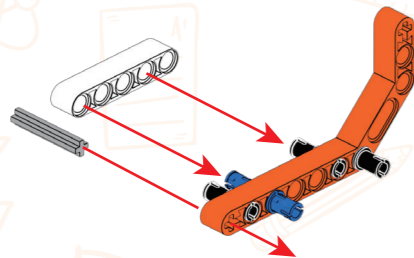
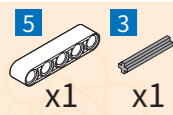
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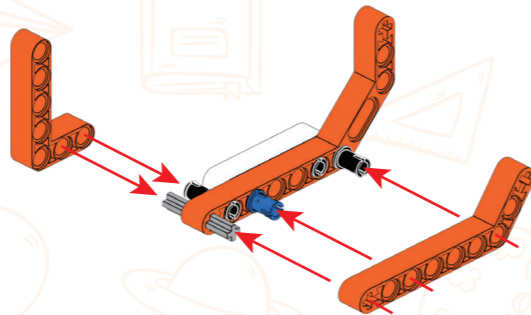
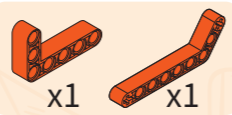
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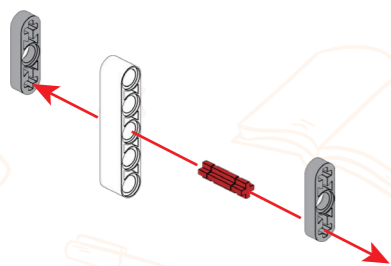
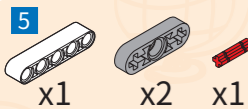
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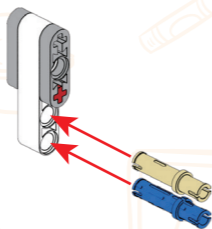
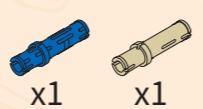
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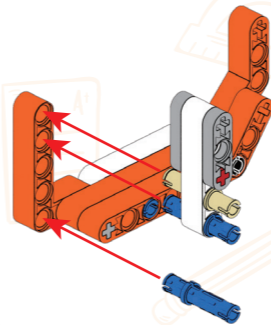
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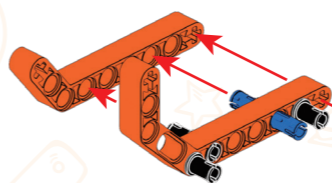
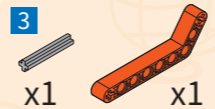
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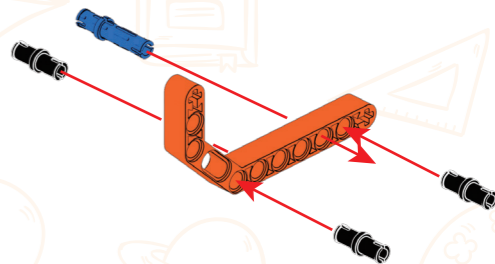
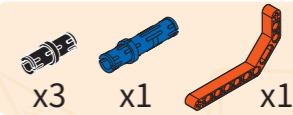
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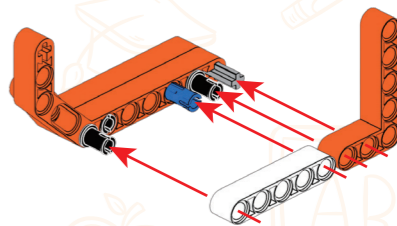
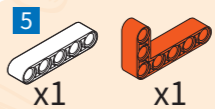
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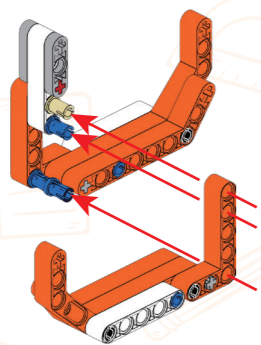
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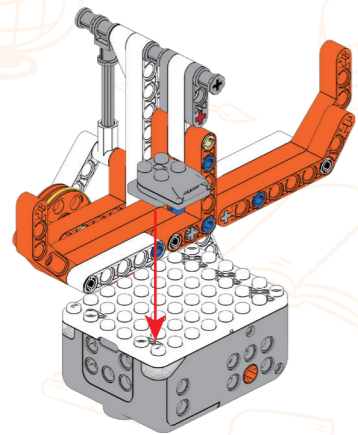
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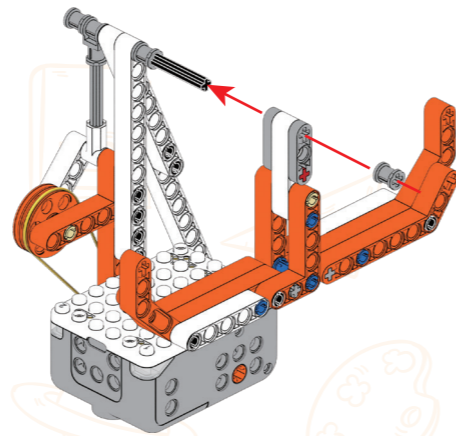
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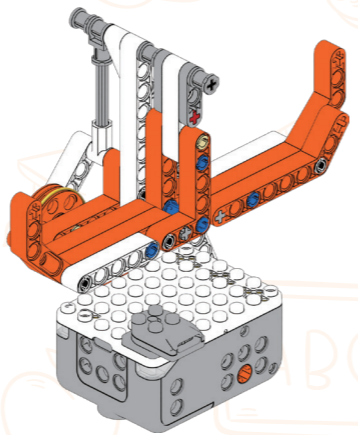
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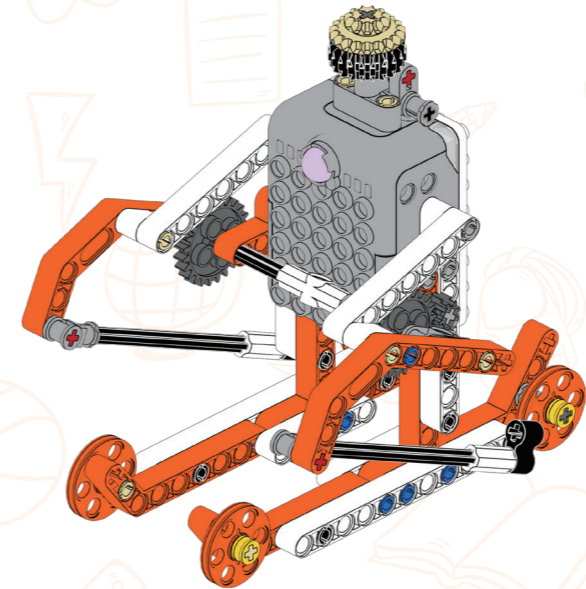


26



Skiing Robot

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01



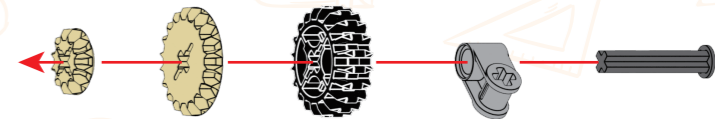
x1

x1

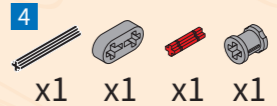
x1

x1

x1



02

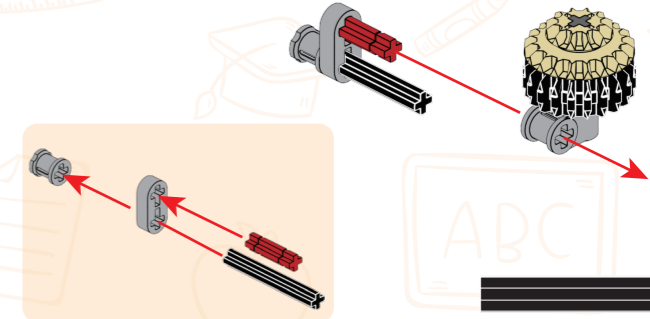


x1

x1

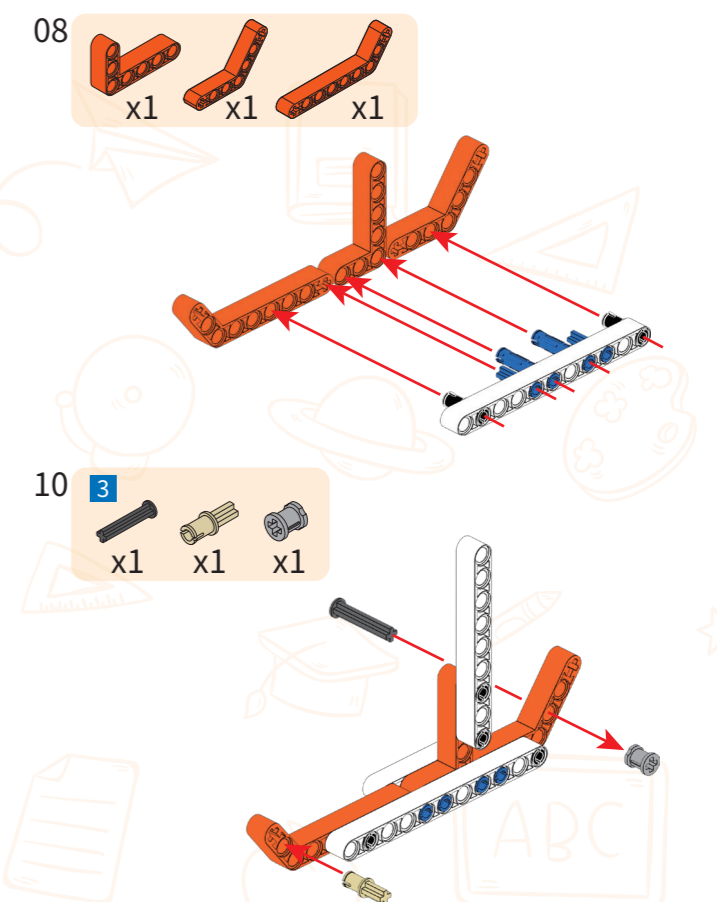
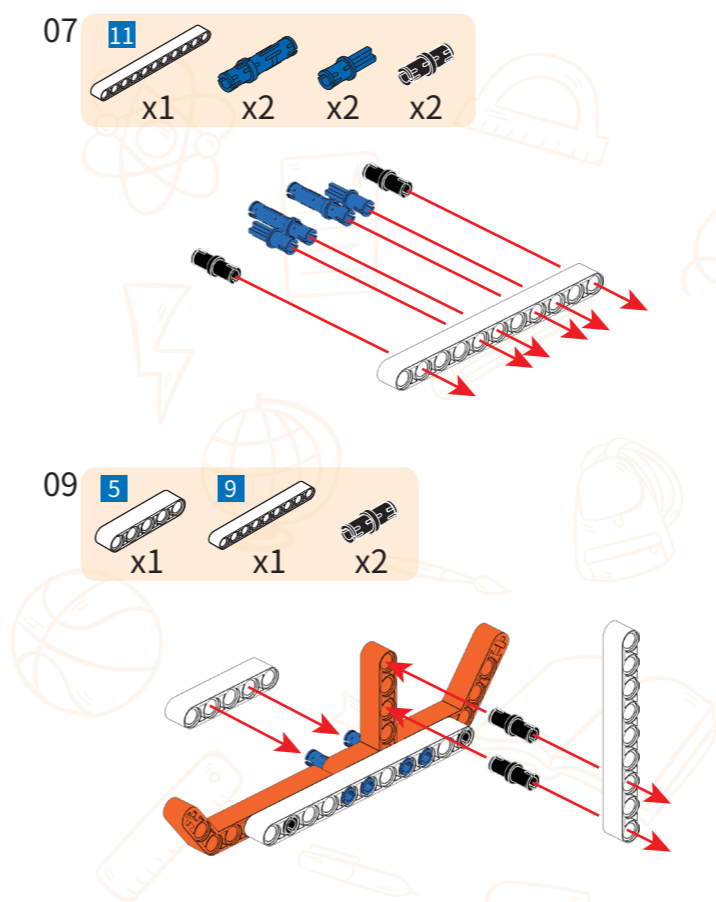
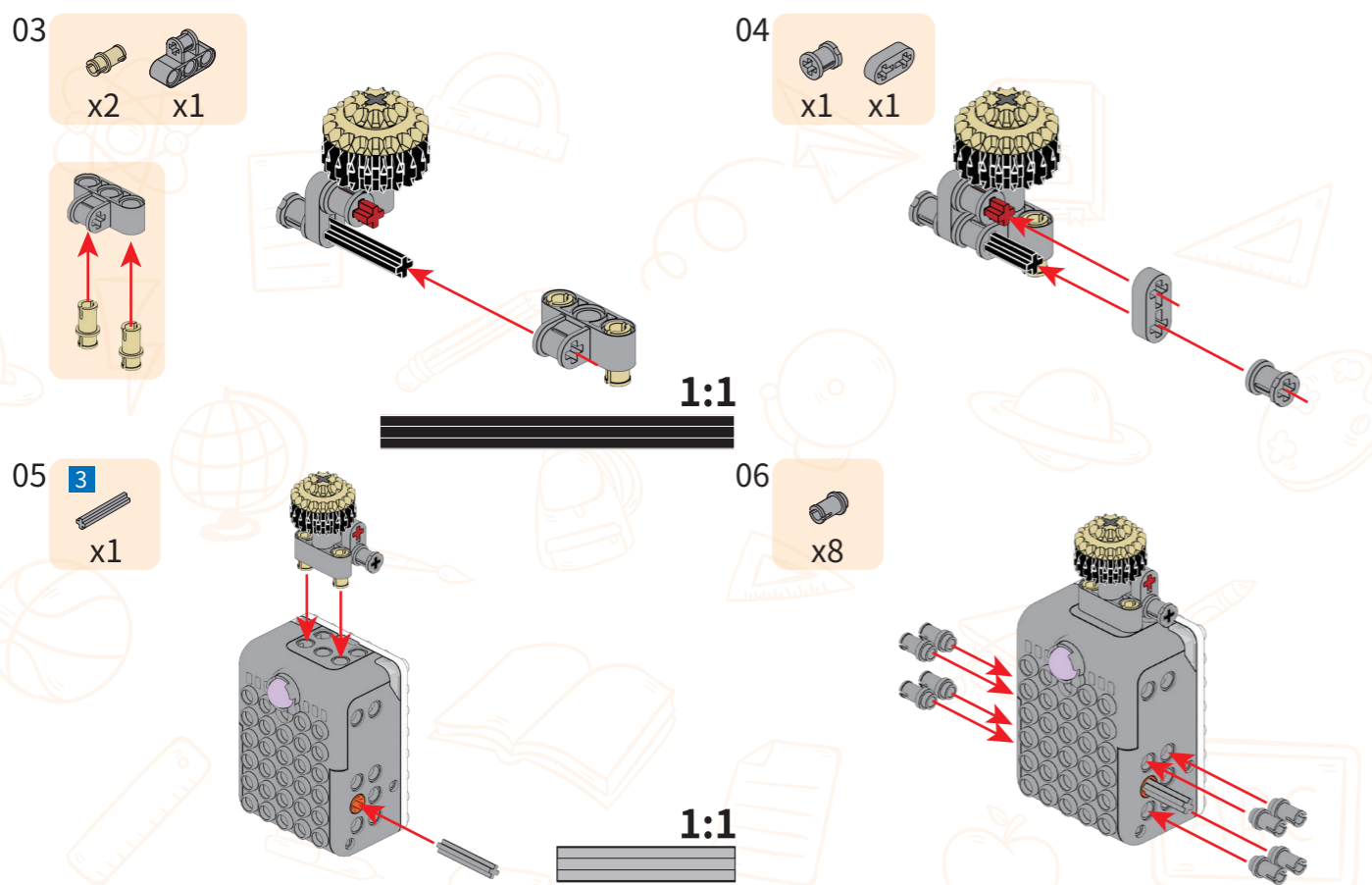
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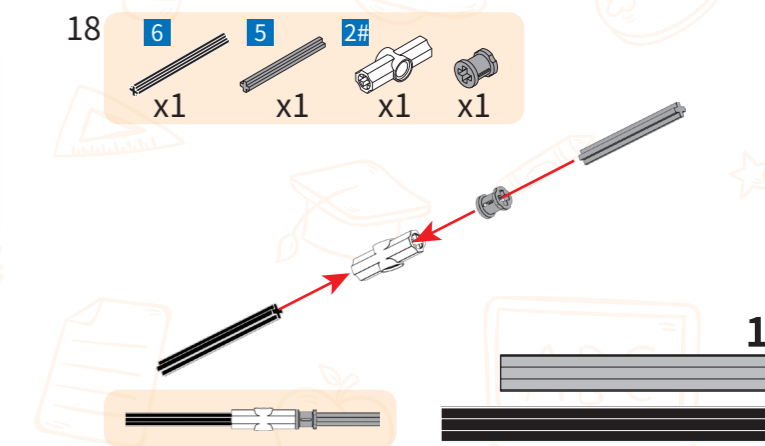
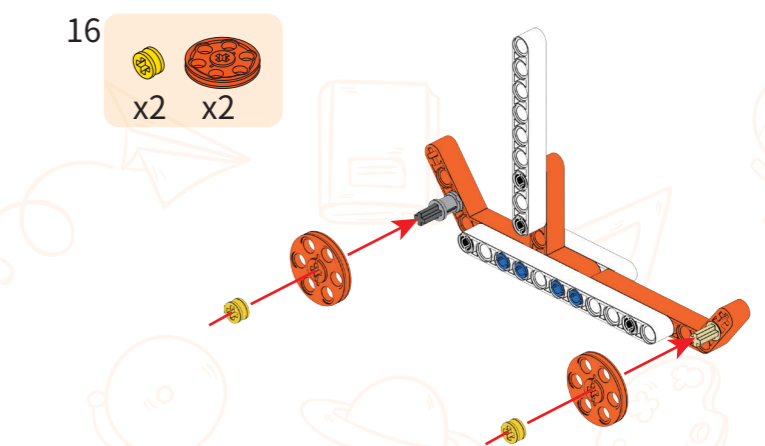
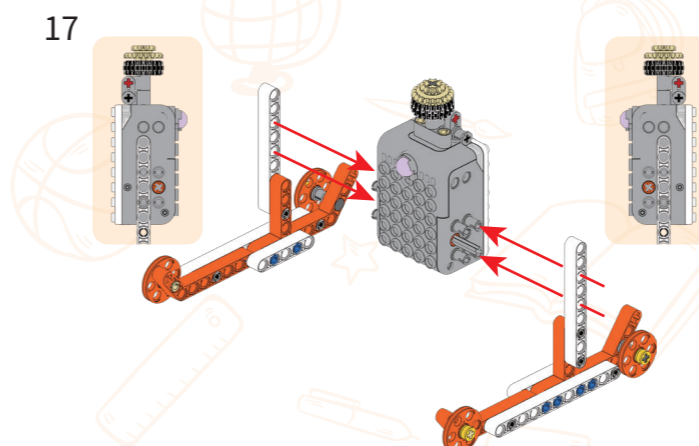
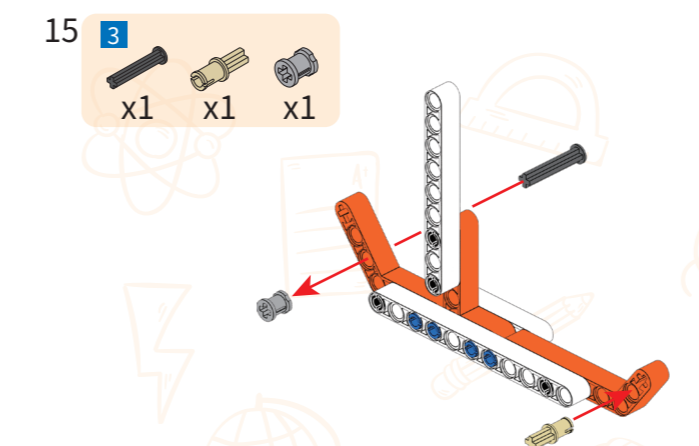
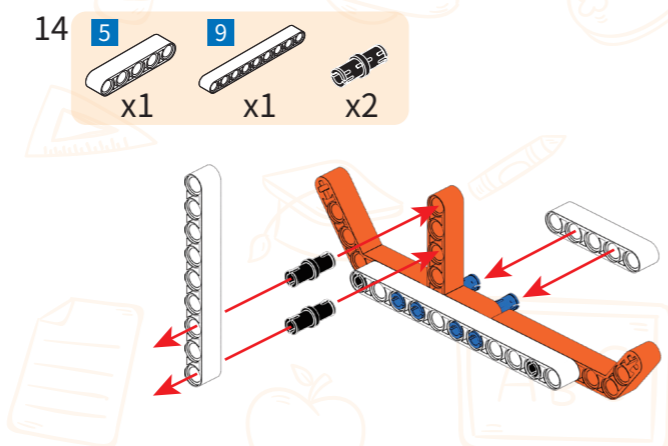
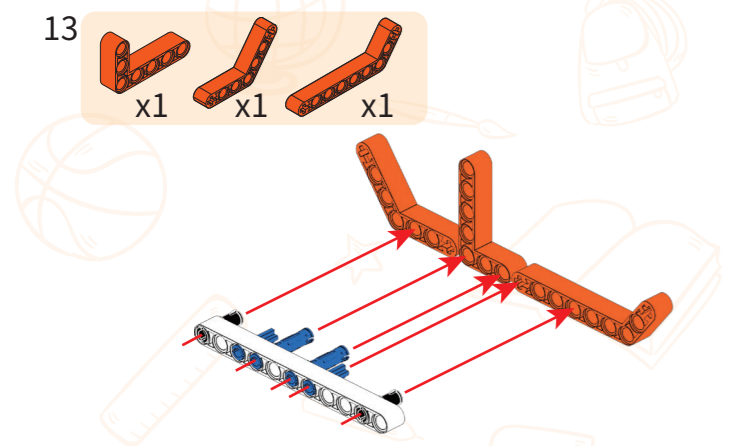
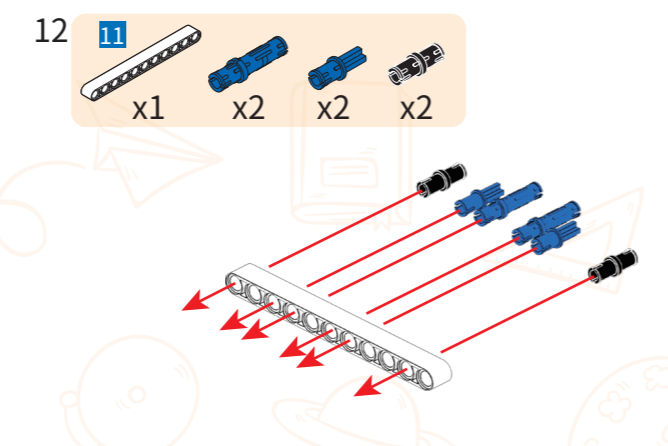
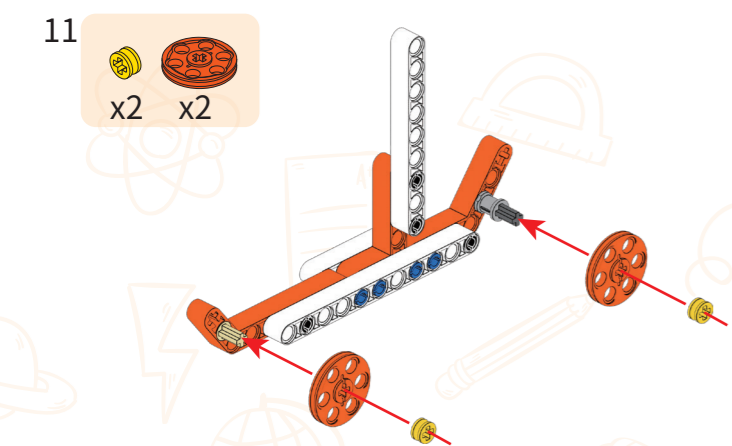
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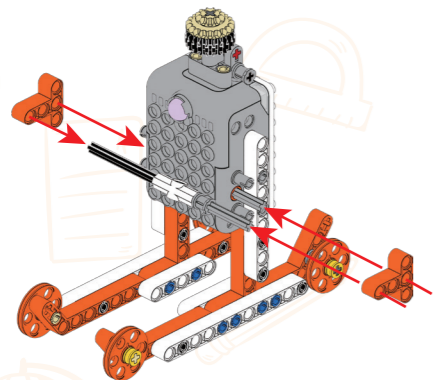
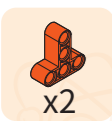
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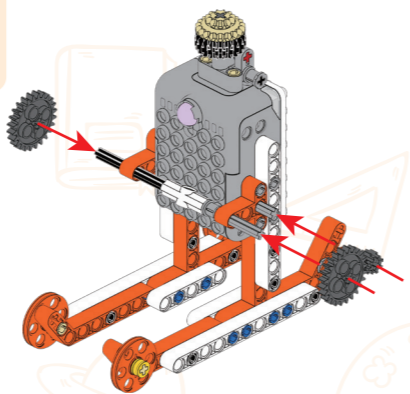
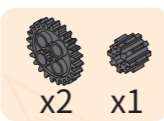




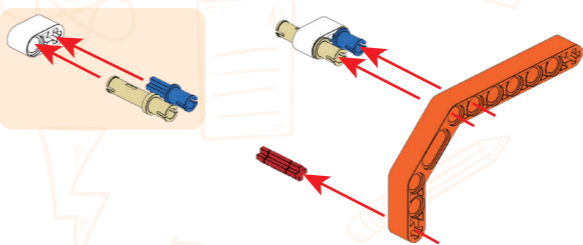
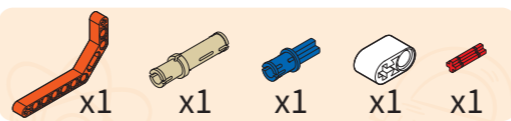
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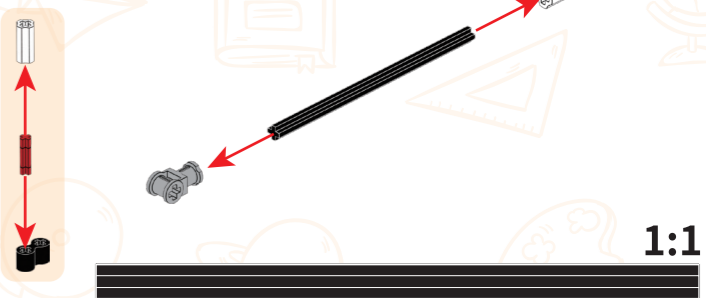
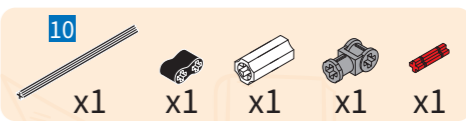
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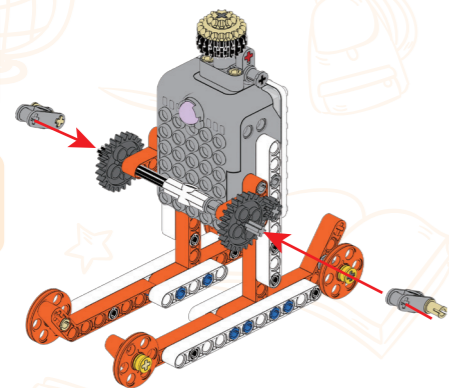
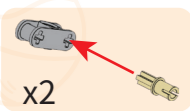
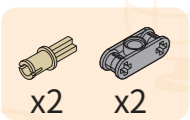
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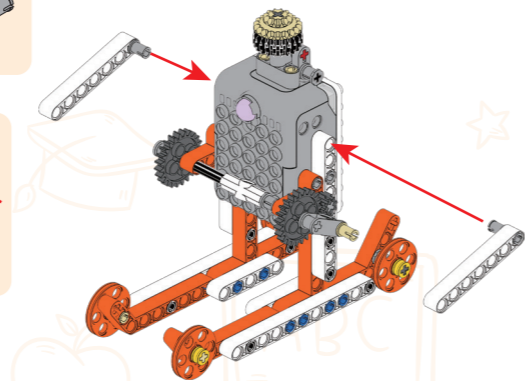
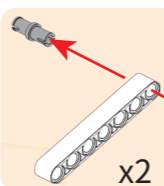
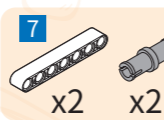
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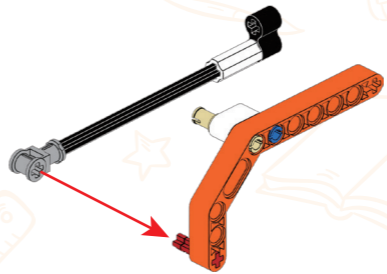
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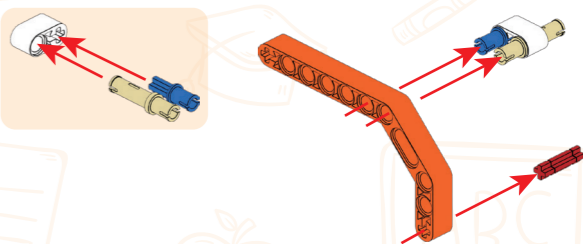
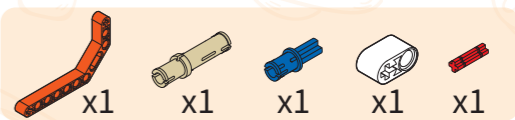
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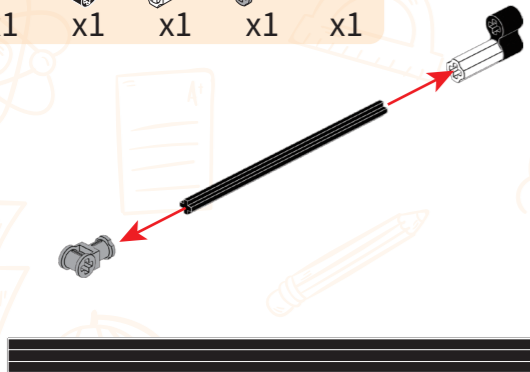
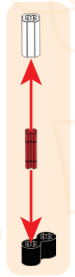
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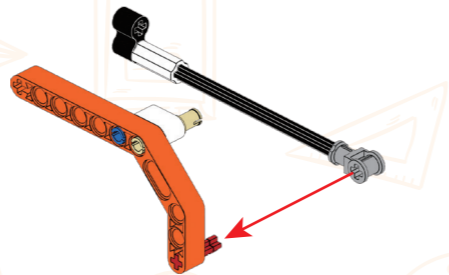
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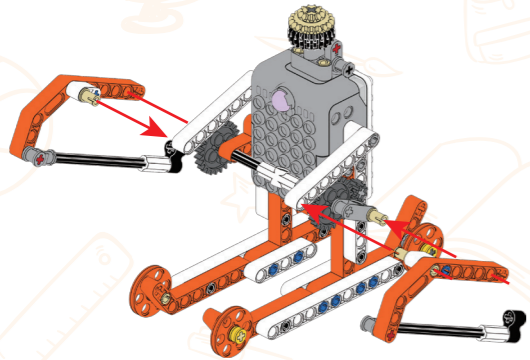
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 - x1
 - x1
 - x1
 - x1



28

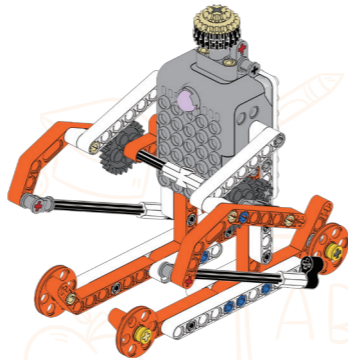


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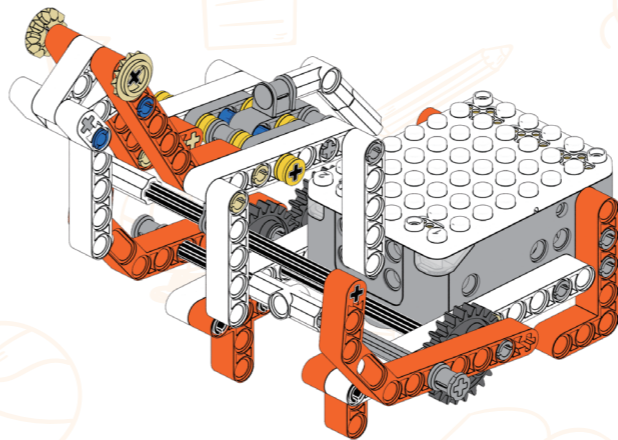
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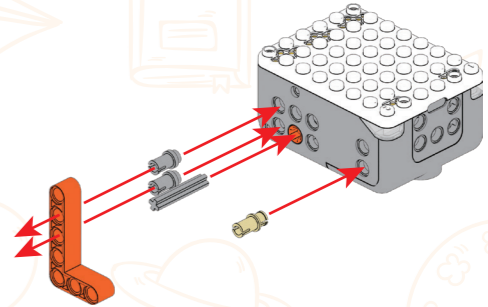


Rocking Horse

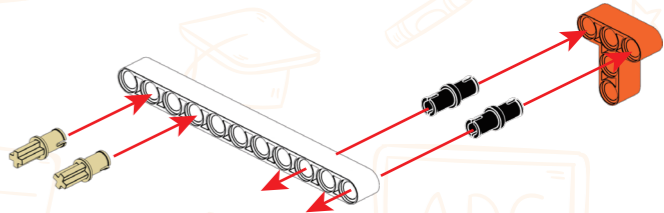
★ ★ ★ ★ ☆



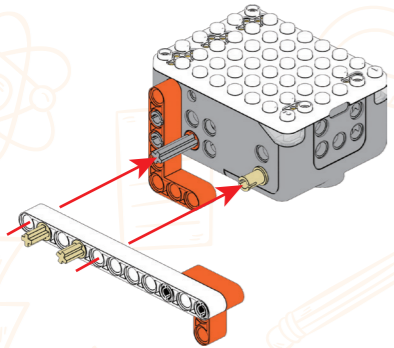
- 01
- x1
 - 3 x1
 - x2
 - x1



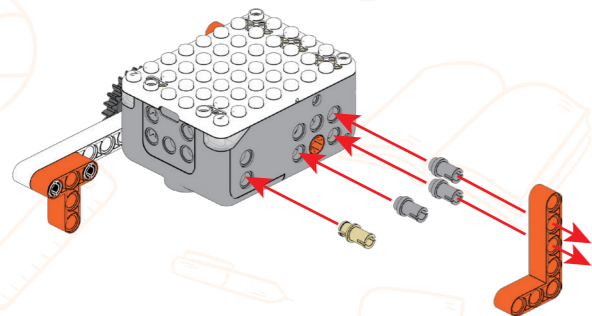
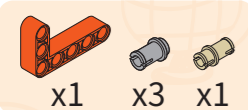
- 02
- 11 x1
 - x1
 - x2
 - x2



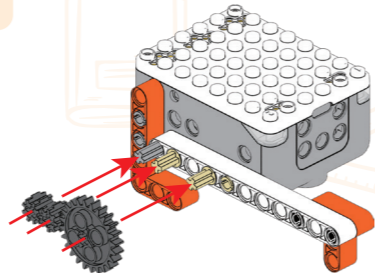
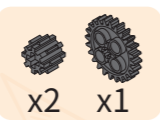
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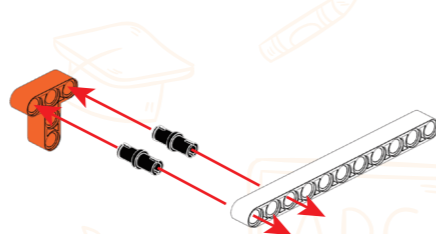
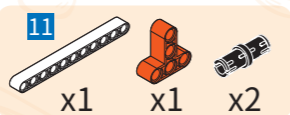
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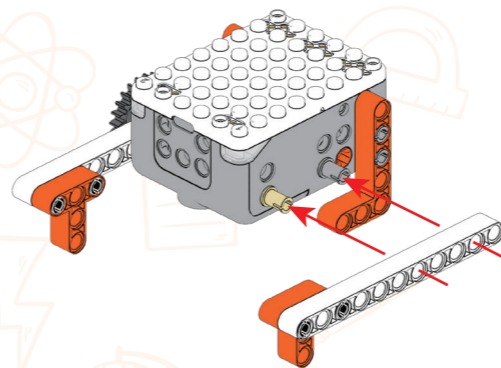
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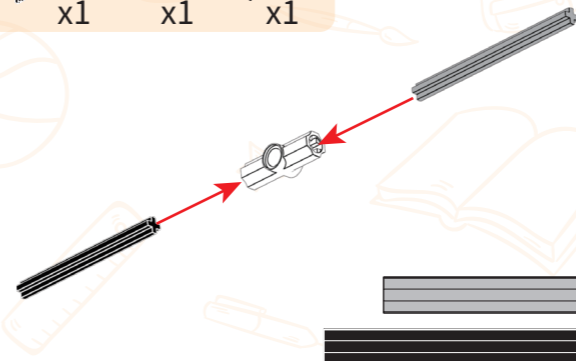
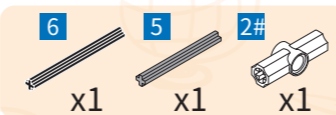
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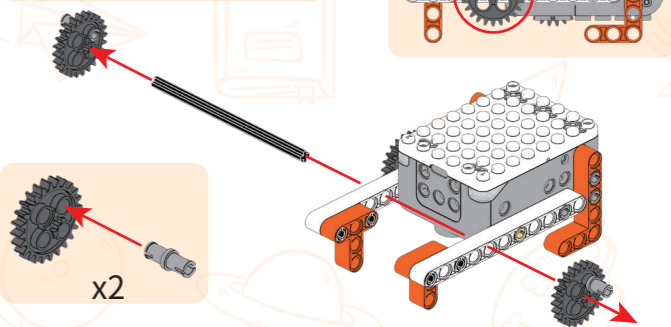
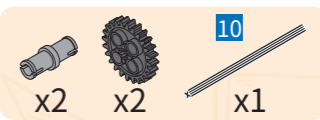
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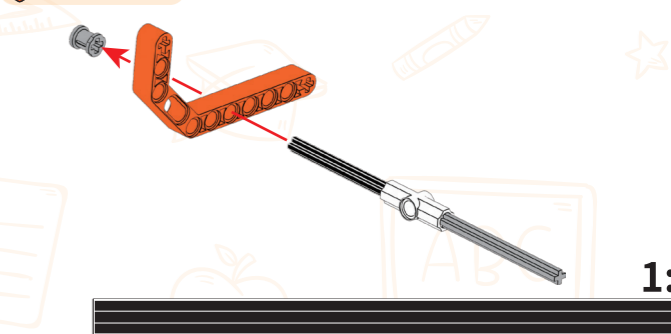
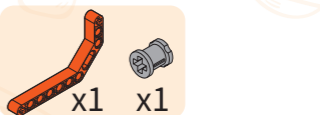
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08



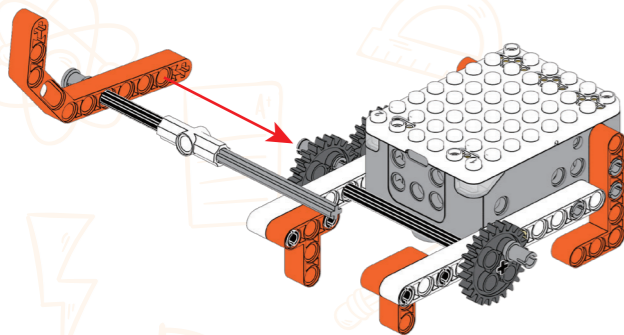
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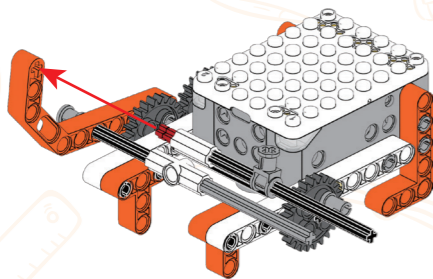
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1:1

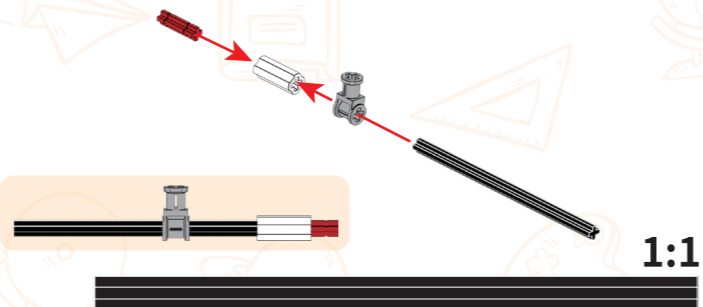
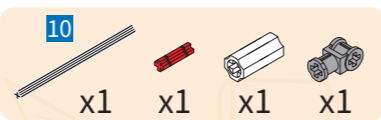
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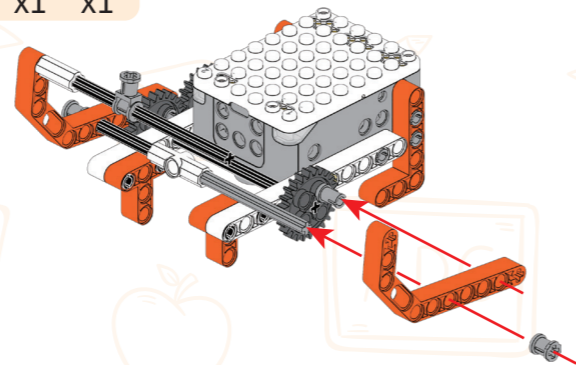
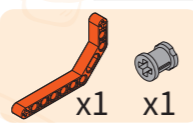
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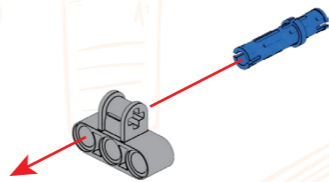
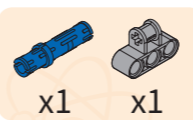
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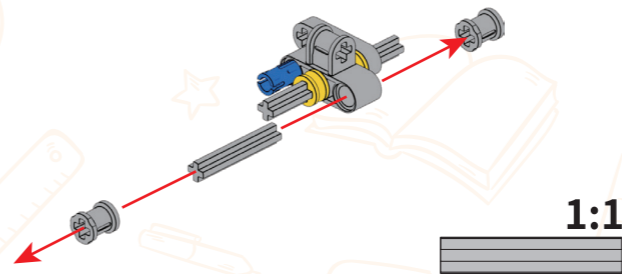
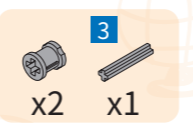
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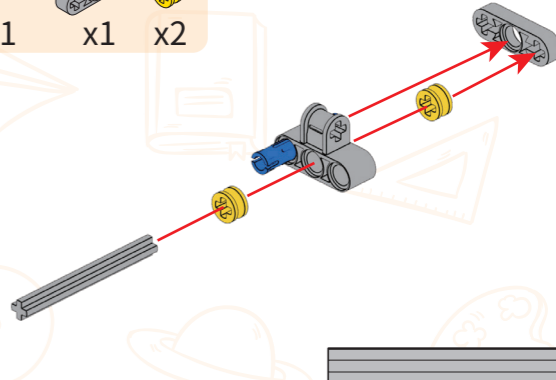
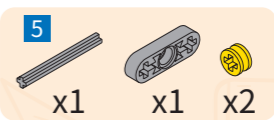
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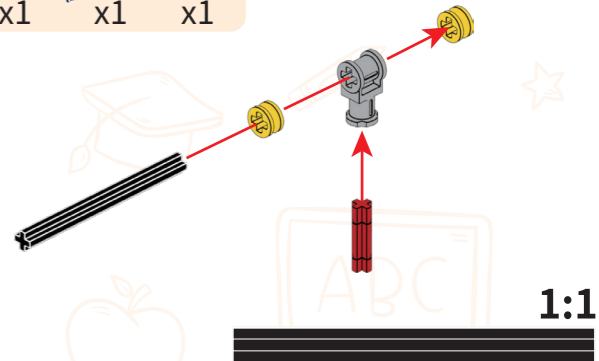
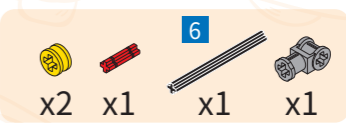
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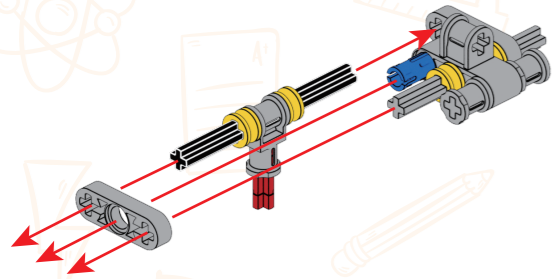
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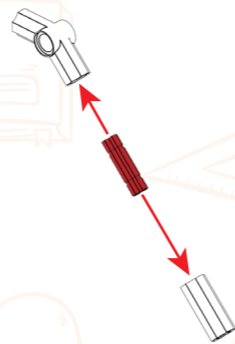
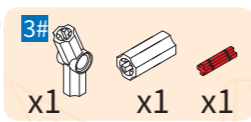
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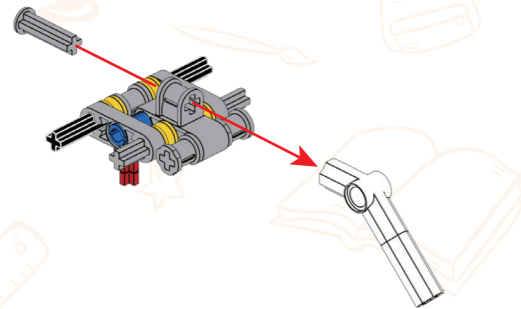
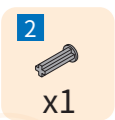
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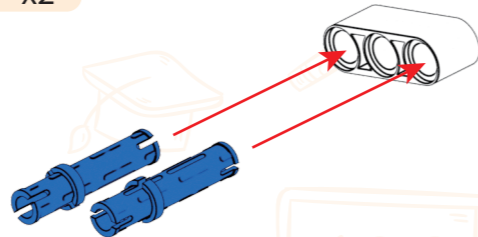
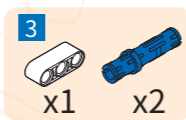
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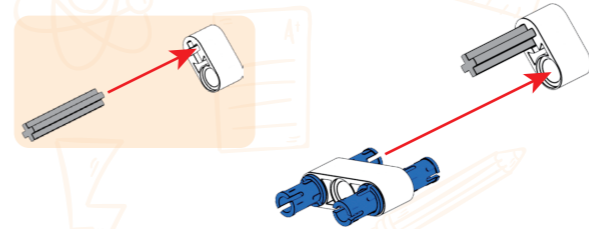
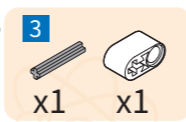
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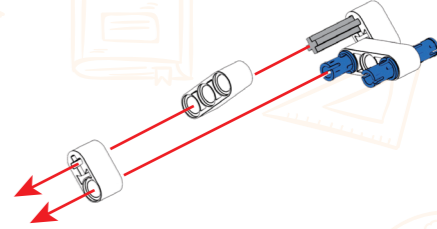
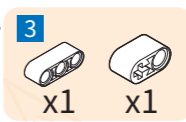
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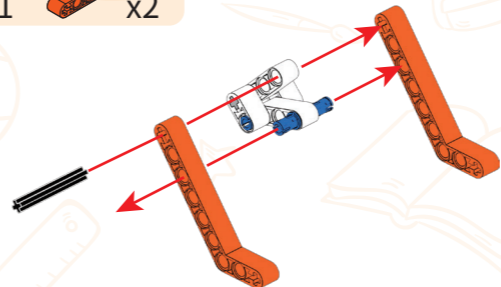
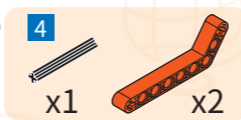
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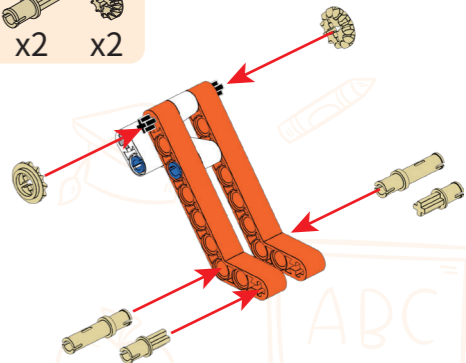
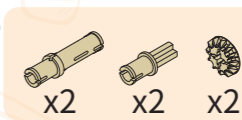
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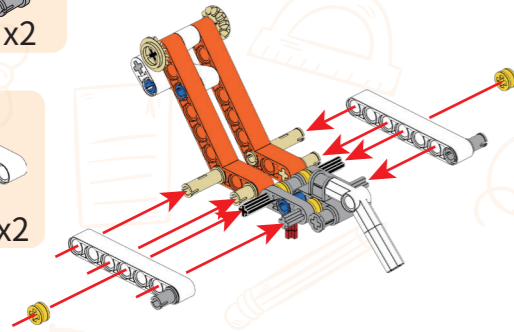
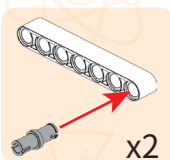
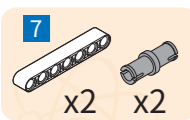
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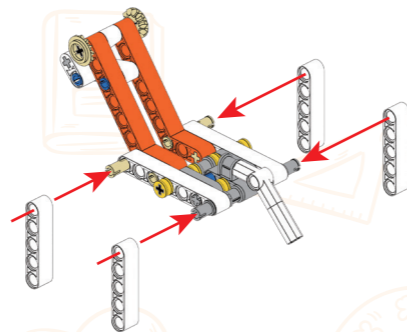
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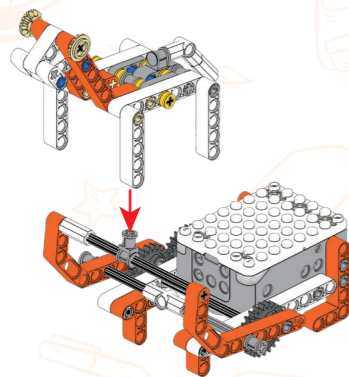
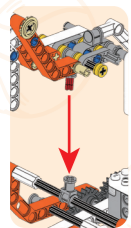
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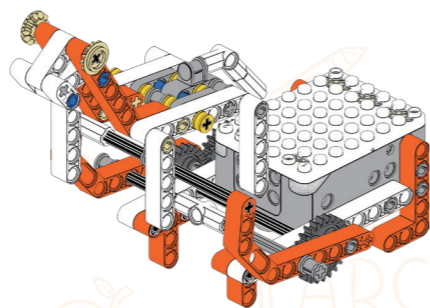
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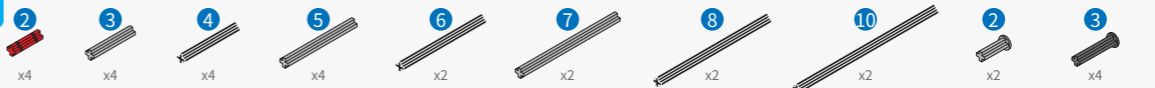


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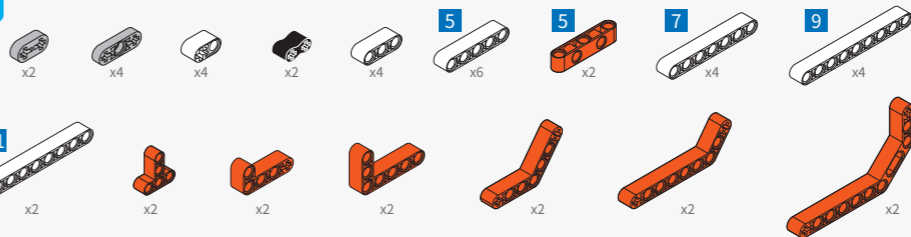


PARTS LIST

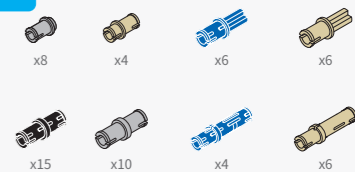
Shafts



Arms



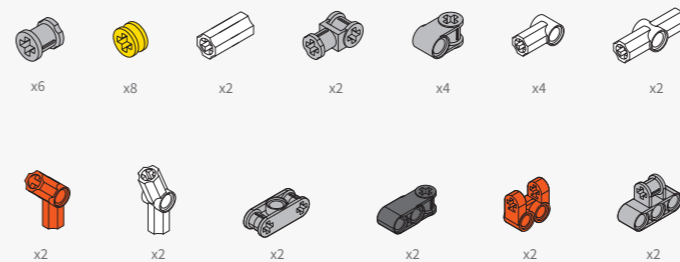
Pins



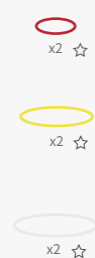
Gears



Connectors



Other accessories



Wheel



Product Information

Product Name: Superbot Master

Product No.: MKZ-SPB-MS

Suitable Age: 6+

Made In China

Transformer:

- 1.Regularly inspect the transformer's wires, plugs, casing, and other components for any damage. If damage is found, usage should be stopped until it is repaired.
- 2.Toys should not be connected to more than one power source (5V).
- 3.The toy is not intended for use by children under 3 years old.
- 4.Only use the recommended transformer (Recommended specifications: DC5V500mA).
- 5.The transformer is not a toy.
- 6.Before cleaning, disconnect the toy from the transformer. The toy can be cleaned with a liquid cleaning agent.

Warning! Do not aim at the eyes or face.

Warning! Do not use projectiles not provided by the manufacturer.

Warning! This product contains small accessories, it is not for children under 3 years old.

Warning! This product contains small balls, which may cause a choking hazard and is not suitable for children under three years of age.

- The user manual contains important information, please keep it for future use.
- Rechargeable batteries should be charged under the supervision of an adult.
- Maintenance: This product shall not be used in water or a humid environment.
- Remove surface strains with a dry cloth before use.
- Do not mix old and new batteries.
- Do not mix alkaline batteries, standard(carbon-zinc) or rechargeable batteries.