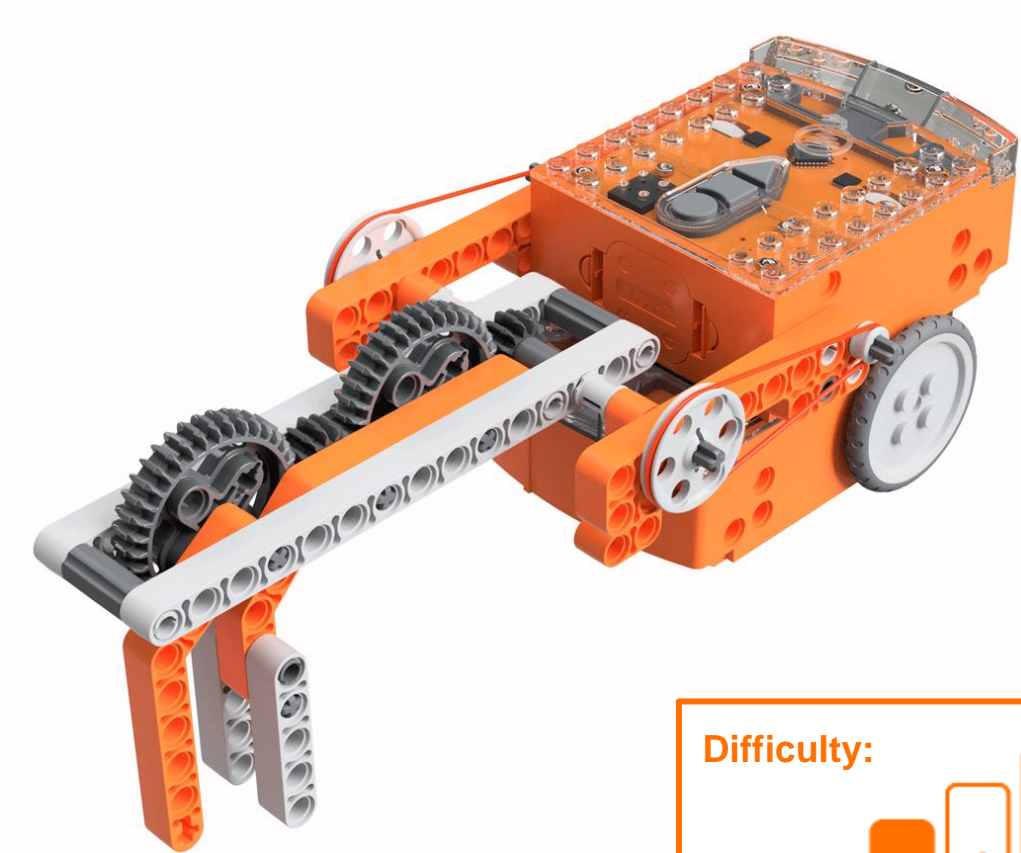




# EdBuild

## Let's build the EdRoboClaw



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## U1-1.2g Challenge up: Build and control the EdRoboClaw

The TV remote control barcodes let you control your Edison robot to move in different ways. The remote-control barcodes that control Edison's movement are actually controlling the robot's motors. What happens if the motors don't have wheels attached, but something else?

NASA has built and designed over 20 robots that they have sent to both the moon and Mars. These robots collect valuable samples that are then either sent back to earth or analyzed and the data is sent back to earth. Now you need to design another device to collect samples on the planet Mars. You can use the EdRoboClaw instructions or design your own.

### What to do

In this activity, you will build and control the EdRoboClaw.

The EdRoboClaw is a remote-controlled robotic arm with a moving base that you can drive around. The robotic arm of the EdRoboClaw can open and close to pick up and carry objects.



### Use this link

Go to [meetedison.com/content/EdCreate/EdBuild-EdRoboClaw-instructions.pdf](https://meetedison.com/content/EdCreate/EdBuild-EdRoboClaw-instructions.pdf)

This link will take you to the step-by-step instructions for building and programming the EdRoboClaw.

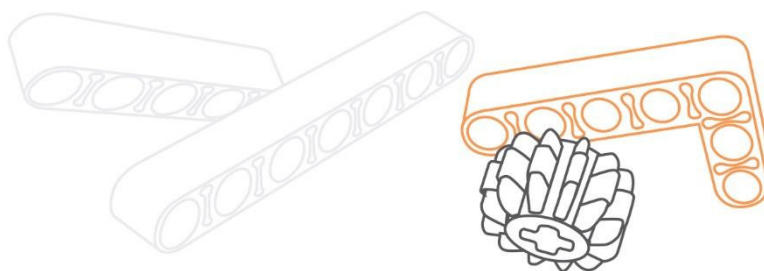
### Try it out!

Once you have built and programmed the EdRoboClaw, try driving it around! Make sure you try to pick up and carry some objects too!

1. Experiment with different objects using the EdRoboClaw. What types of objects can you carry? What types of objects didn't work? Think about what the objects that worked well have in common with each other. What makes a good object for the EdRoboClaw?

*I couldn't carry my pen, but I could carry my granola bar and some of the EdCreate parts. I think*

*that the best objects are flat in some places so they don't slip out of the claw.*



## Step 1: Program Edison

Before you begin building with the EdCreate parts, you will need to program the remote-control codes into both Edison robots. The bottom Edison is the driving Edison.

### Program the driving Edison

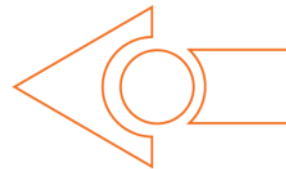
The driving Edison will control the movement of the EdRoboClaw (forwards, backwards, spin left and spin right). Drive this Edison over the following barcodes, programming each to a button that corresponds well with the driving manoeuvre on the remote control. Don't use buttons that you want to use to control the robotic claw.

#### Reading the barcode

1. Place Edison facing the barcode on the right side
2. Press the record (round) button 3 times
3. Edison will drive forward and scan the barcode
4. Press a button on your TV/DVD remote that you want to activate that function



Barcode – IR learn drive forward



Barcode – IR learn drive backward



Barcode – IR learn spin right



Barcode – IR learn spin left



## Top Edison – barcodes

The top Edison controls the robotic claw arm.

You may want to mark the Edison robots so you don't confuse which one is programmed to be the bottom robot and which one is programmed to be the top one while you are building. You can mark one of the Edison's as the 'top' robot by using a spare brick or a piece of tape to indicate it is the top Edison. You can also take the wheels off the top robot as soon as you finish programming this Edison so you won't get confused!

### Program the claw arm Edison

The claw arm Edison will control the articulated robotic arm. Drive this Edison over the following barcodes, programming each to a button that corresponds well with the open or close manoeuvre on the remote control. Don't use buttons that you used to control how the EdRoboClaw drives.

#### Reading the barcode

1. Place Edison facing the barcode on the right side
2. Press the record (round) button 3 times
3. Edison will drive forward and scan the barcode
4. Press a button on your TV/DVD remote that you want to activate that function

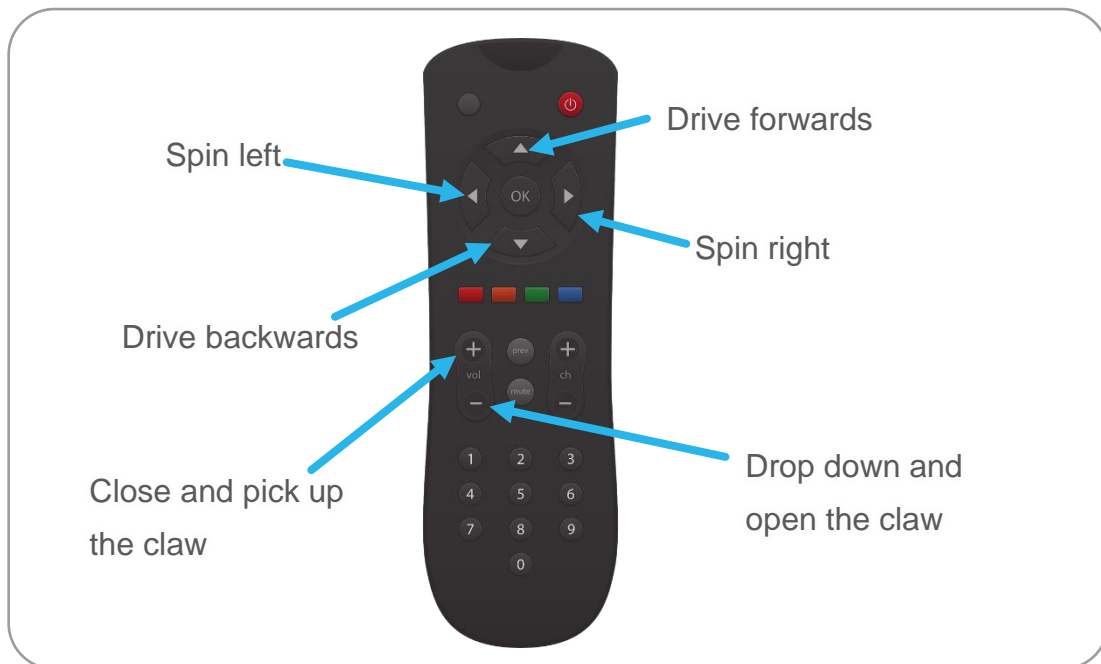


Barcode – IR learn Claw Arm close claw and pick up



Barcode – IR learn Claw Arm drop down and open claw

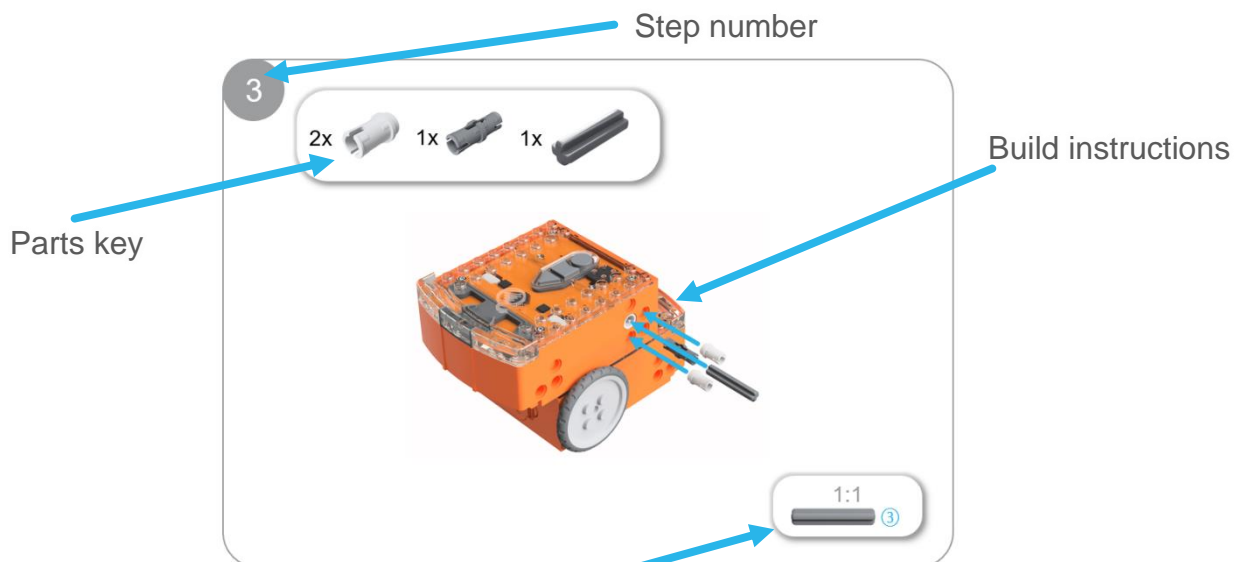
## Suggested remote control button setup for the EdRoboClaw



## Step 2: Assemble the EdRoboClaw

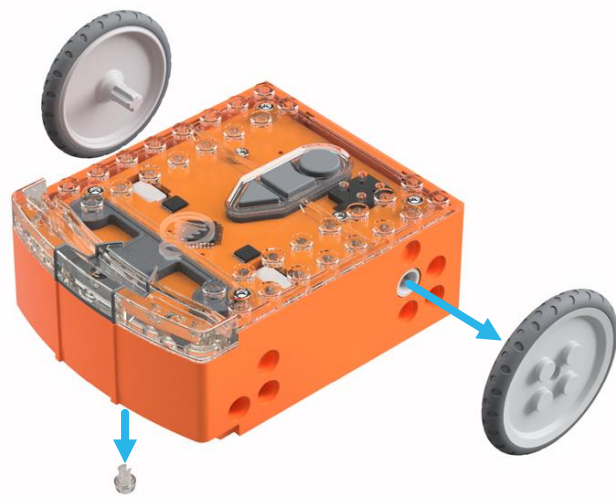
Follow the illustrations step by step to build the EdRoboClaw.

### Reading the instructions:

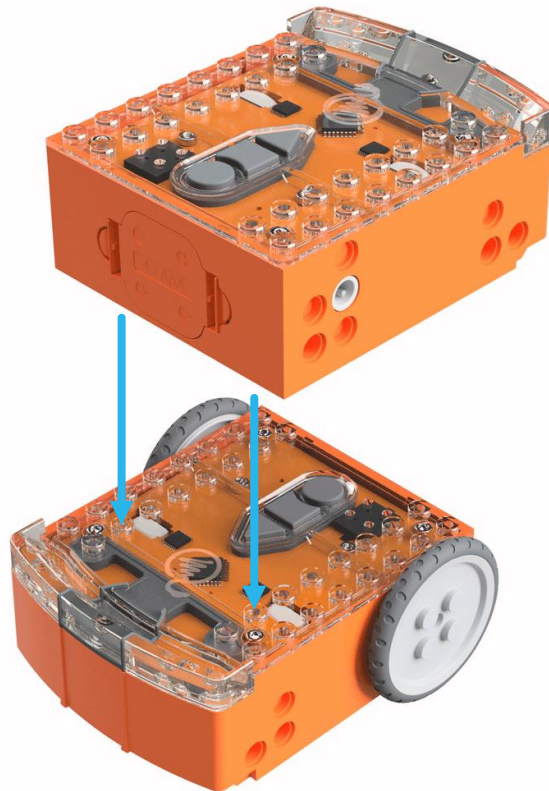


One-to-one piece measurement (when printed at 100% on A4 page). The number in the circle indicates the part's length in number of studs.

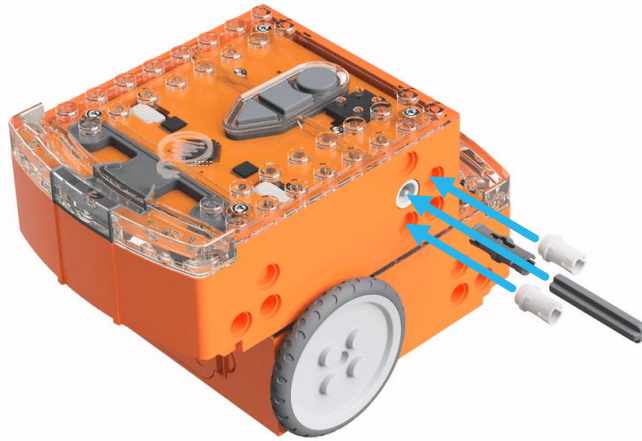
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2



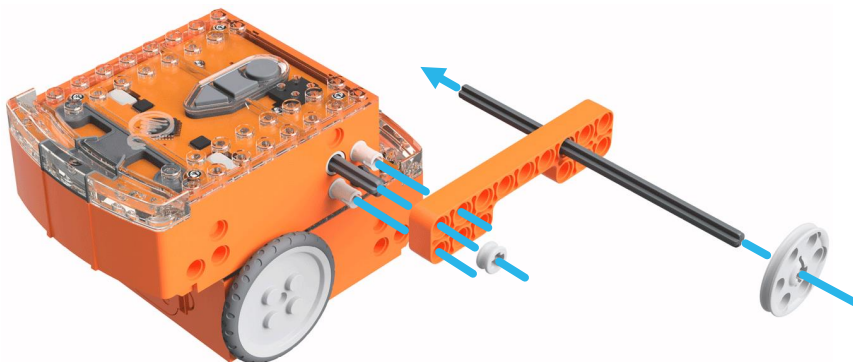
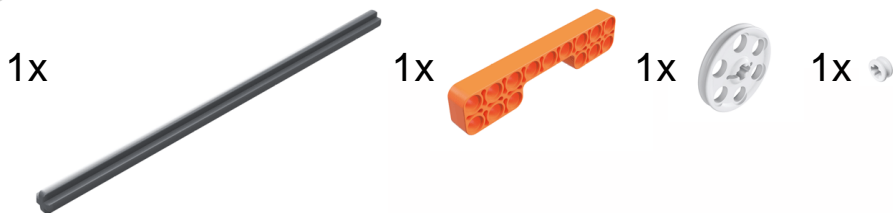
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1:1



4

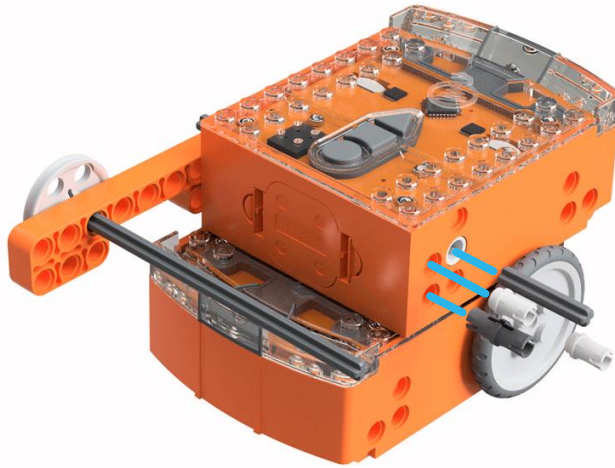


1:1



5

2x  x1  x1 



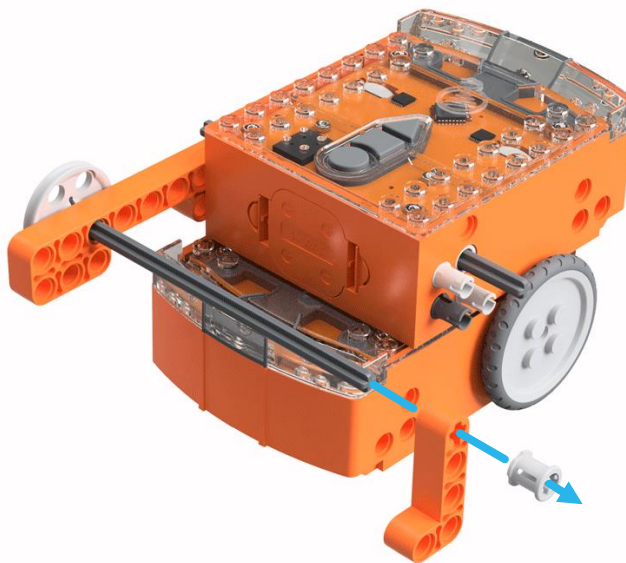
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3

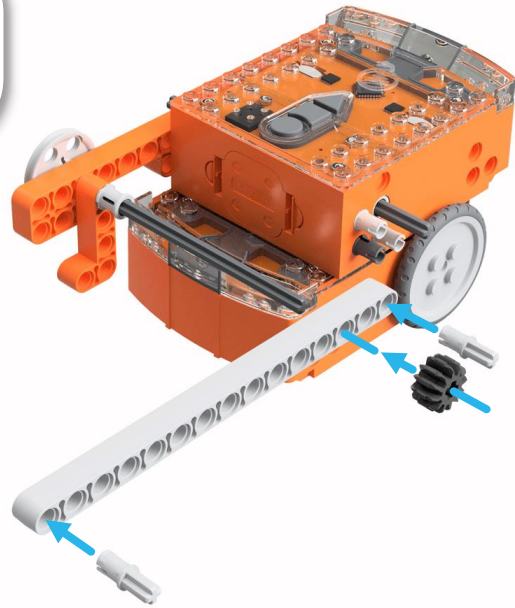
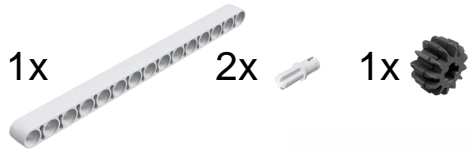
6

1x  1x 





7

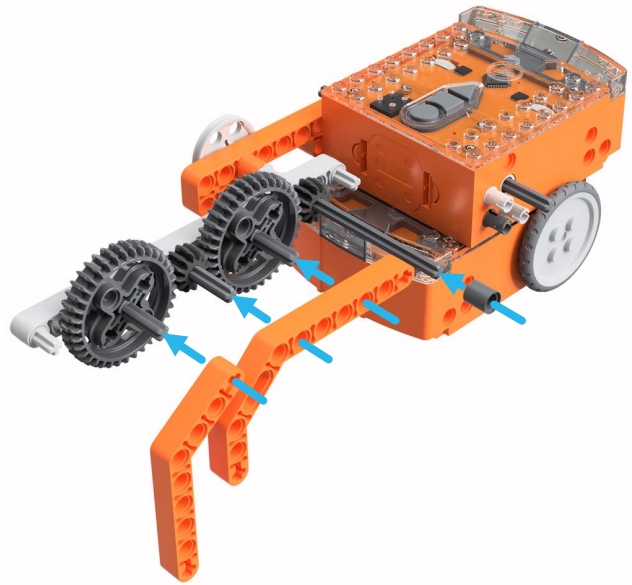


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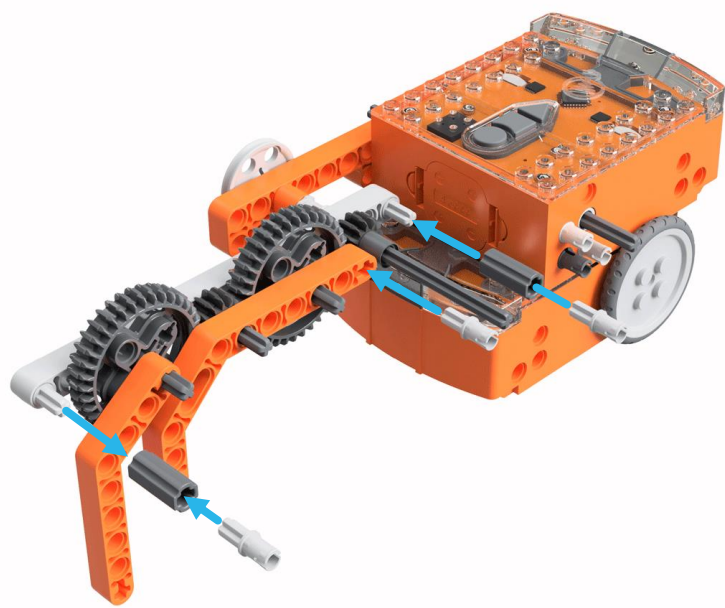
9

- 1x 
- 1x 
- 1x 

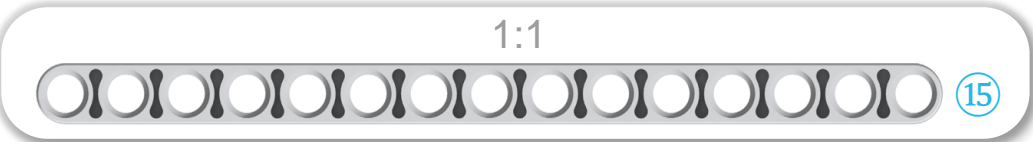
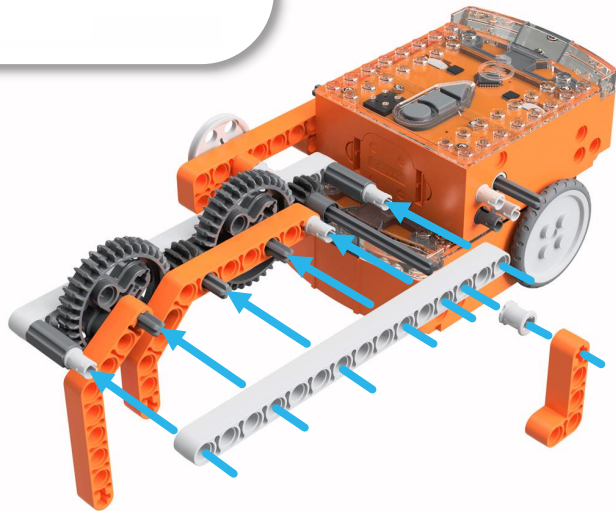
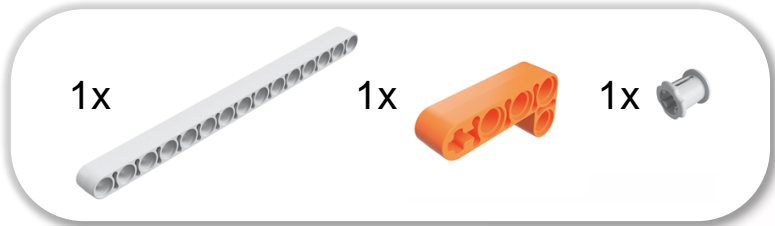


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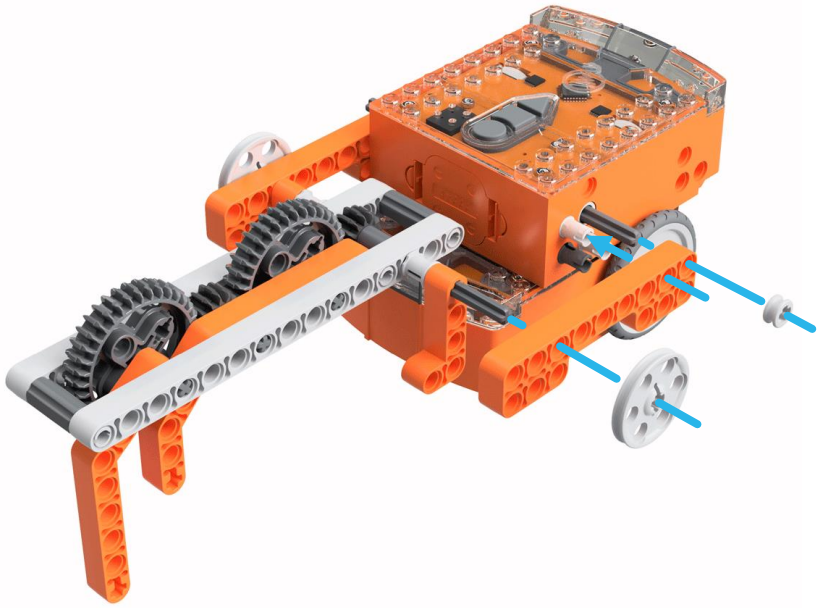
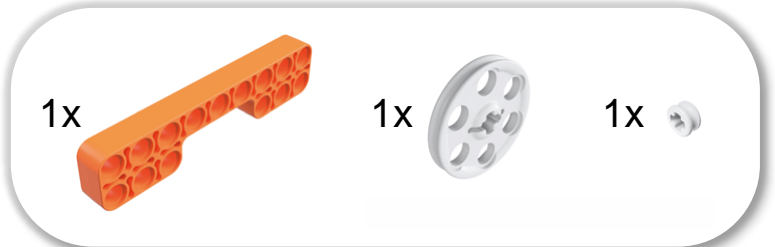
- 3x 
- 2x 



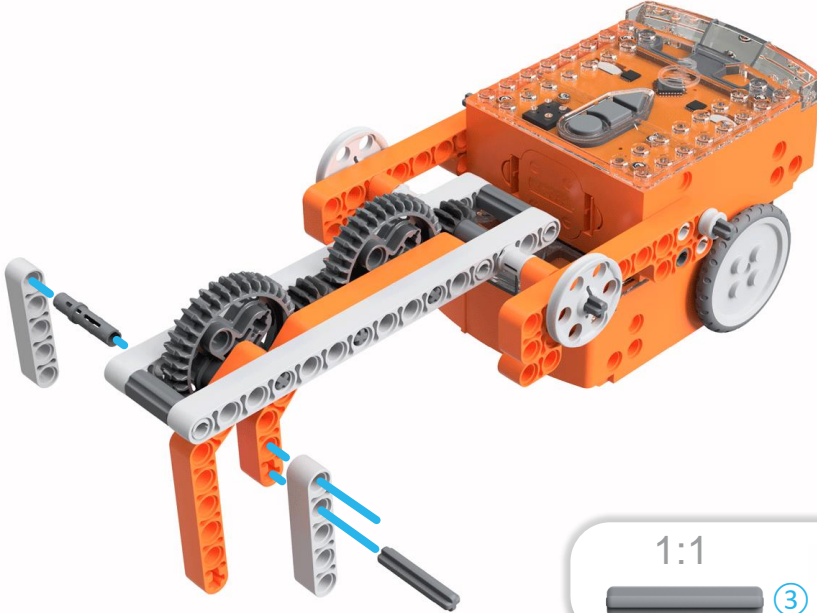
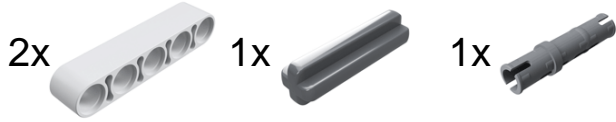
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12



13



1:1



14

