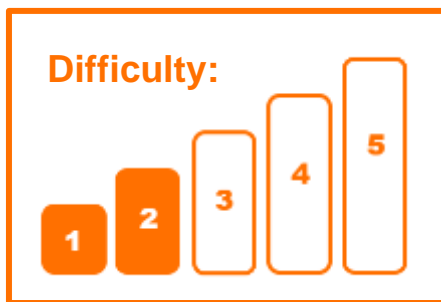


# EdBuild

## Let's build the EdTank



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# EdBuild – the EdTank

The EdTank is actually two builds in one.

First, build the basic EdTank, which can be programmed using the barcodes in this guide and controlled with a standard TV or DVD remote control. You will be able to drive the basic EdTank forwards, backwards and turn it right or left.

Second, try building the complete EdTank with a rubber band cannon. The complete EdTank is an expansion of the basic EdTank. The complete EdTank with cannon can be programmed using the barcodes in this guide and controlled with a standard TV or DVD remote control. You will be able to drive the EdTank forwards, backwards and turn it right or left. You will also be able to control when you fire the rubber band out of the cannon.

## Build difficulty rating

The basic EdTank is rated a level 1 build.

The complete EdTank with cannon is rated a level 2 build.

Difficulty rating	Recommended age	Programming skills needed
1	8+	- Barcodes and remote control
2	8+	- Barcodes and remote control
3	8+	- Barcodes and remote control
4	10+	- Barcodes and remote control <b>AND</b> - EdScratch <b>OR</b> - EdPy
5	12+	- EdPy

To successfully complete and operate a build, you will need an understanding of the programming skills listed.

Learn more about programming with Edison at:

- **Barcodes:** Appropriate for ages 4+. No prior experience with programming or robotics is assumed or required.  
[www.meetedison.com/robot-activities/youre-a-controller/](http://www.meetedison.com/robot-activities/youre-a-controller/)
- **EdScratch:** Best suited to students aged 10 and up, ideal for students 10 to 13. A basic understanding of programming fundamentals may be helpful.  
[www.meetedison.com/robot-programming-software/edscratch/](http://www.meetedison.com/robot-programming-software/edscratch/)
- **EdPy:** Best suited to students aged 13 to 16 years old. A basic understanding of programming fundamentals may be helpful.  
[www.meetedison.com/robot-programming-software/edpy/](http://www.meetedison.com/robot-programming-software/edpy/)

## Get set up

Before you begin this build, check that you have everything you need and that you can do the programming required. It's also a good idea to get familiar with how to build with your Edison robot.

### What you need

To make the basic EdTank, you will need:

- 1 Edison robot
- 1 EdCreate – Edison robot creator's kit
- 1 TV or DVD remote
- 1 print-out of the 'bottom Edison' barcodes (from in this guide)

To make the complete EdTank with cannon, you will need:

- 2 Edison robots
- 1 EdCreate – Edison robot creator's kit
- 1 TV or DVD remote
- 1 print-out of the 'Bottom Edison' barcodes sheet (from in this guide)
- 1 print-out of the 'Top Edison' barcodes sheet (from in this guide)

**Note:** The complete EdTank with cannon is an extension of the basic EdTank – only one pack of EdCreate is required for either build.

### Programming required in this build

To program the basic EdTank, you will need to program a remote control with four different commands using the barcodes in this guide.

To program the complete EdTank with cannon you will need to program a remote control with five different commands using the barcodes in this guide.

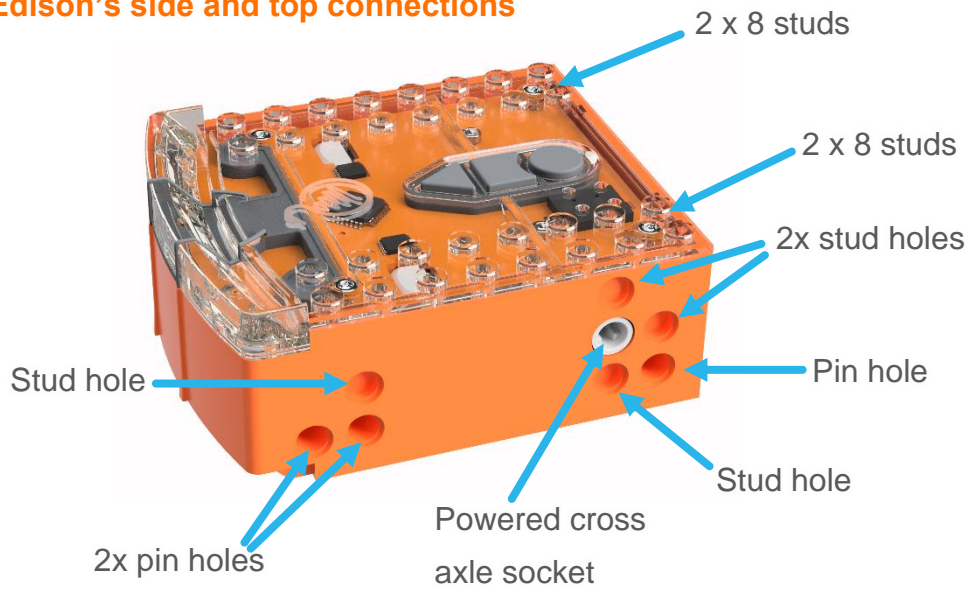
### Building with Edison




You can build with Edison using an EdCreate creator's kit or any other LEGO brick compatible building system.

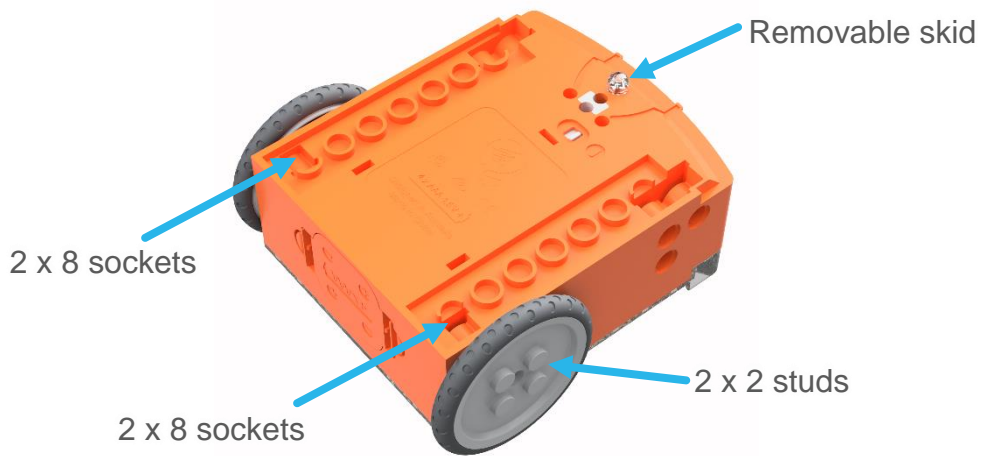
Bricks can be attached to the top and bottom of your Edison robot. Pegs can be attached on the sides of Edison. When Edison's wheels are removed, cross axles can be used in the powered sockets.

There are three types of holes on the side of Edison: pin holes, stud holes, and cross axle sockets. Look at the following images to learn more about how to connect and build with Edison.

### Edison's side and top connections



Hole type	Description	Connects to
Pin hole	A full-depth hole for connecting pegs.	
Stud hole	A hole of normal stud-depth which works with half pegs.	
Cross axle socket	A powered socket which rotates.	



### Edison's bottom and wheel connections

## Let's build the EdTank!

The EdTank is a remote-controlled tank that you can drive around. The complete EdTank also has a cannon which you can use to fire a rubber band.

This is what the finished basic EdTank looks like:



This is what the finished complete EdTank with cannon looks like:



### Step 1: Program Edison

Before you begin building with the EdCreate parts, you will need to program the remote-control codes.

The next two pages have the remote-control barcodes for the bottom and top Edison robots. Print out the pages you need (just the bottom Edison for the basic EdTank or both pages for the complete EdTank) so you can drive your Edison robots over the barcodes.

## Bottom Edison – barcodes

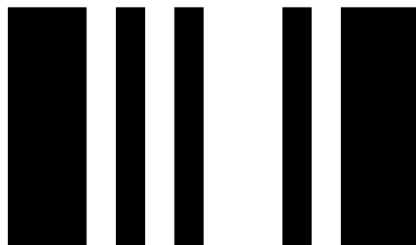
The bottom Edison is the driving Edison.

### Program the driving Edison

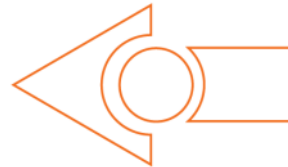
The driving Edison will control the movement of the EdTank (forwards, backwards, turn left and turn right). Drive this Edison over the following barcodes, programming each to a button that corresponds well with the driving manoeuvre on the remote control. Don't use buttons that you want to use to control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

#### 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 turn right



Barcode – IR learn turn left



## Top Edison – barcodes

The top Edison controls the rubber band cannon.

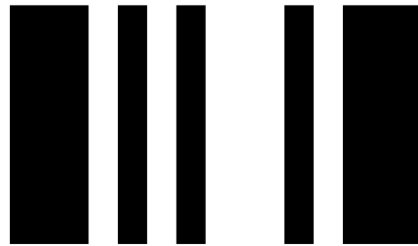
You may want to mark the Edison robots so you don't confuse which one is programmed to be the bottom robot and which one is programmed to be the top one while you are building. You can mark one of the Edison's as the 'top' robot by using a spare brick or a piece of tape to indicate it is the top Edison. You can also leave the wheels on that Edison right up until you need it so you won't get confused!

### Program the cannon Edison

The cannon Edison will control when the rubber band cannon fires. Drive this Edison over the following barcode, programming a button that corresponds well with the cannon fire manoeuvre on the remote control. Don't use buttons that you used to control how the tank drives.

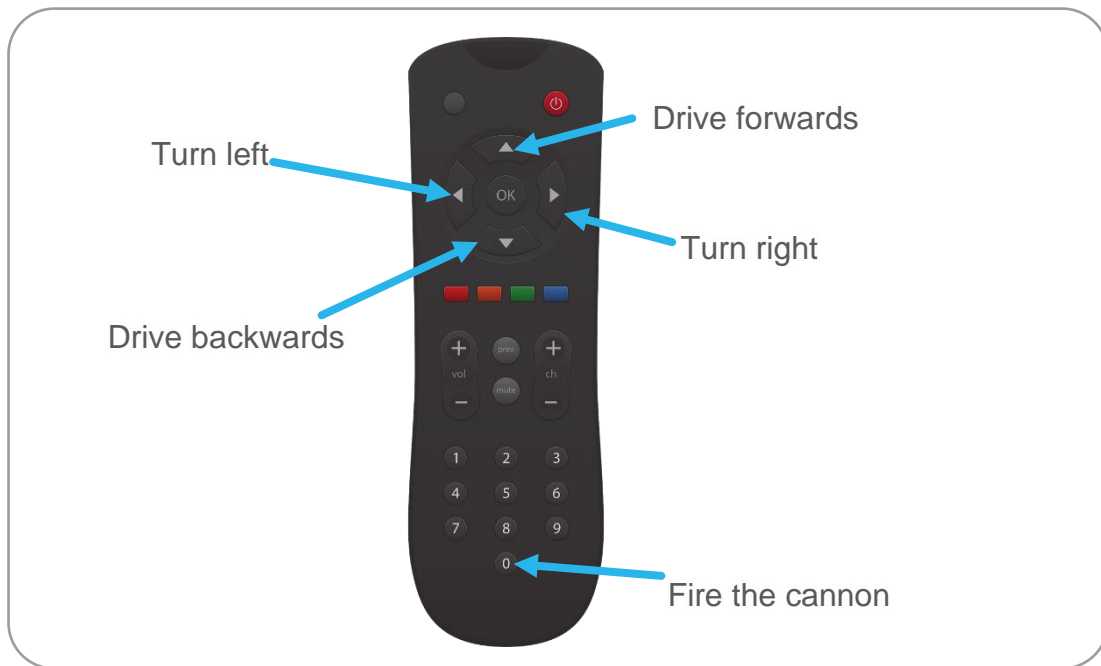
#### Reading the barcode

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 cannon fire

## Suggested remote control button setup for the EdTank

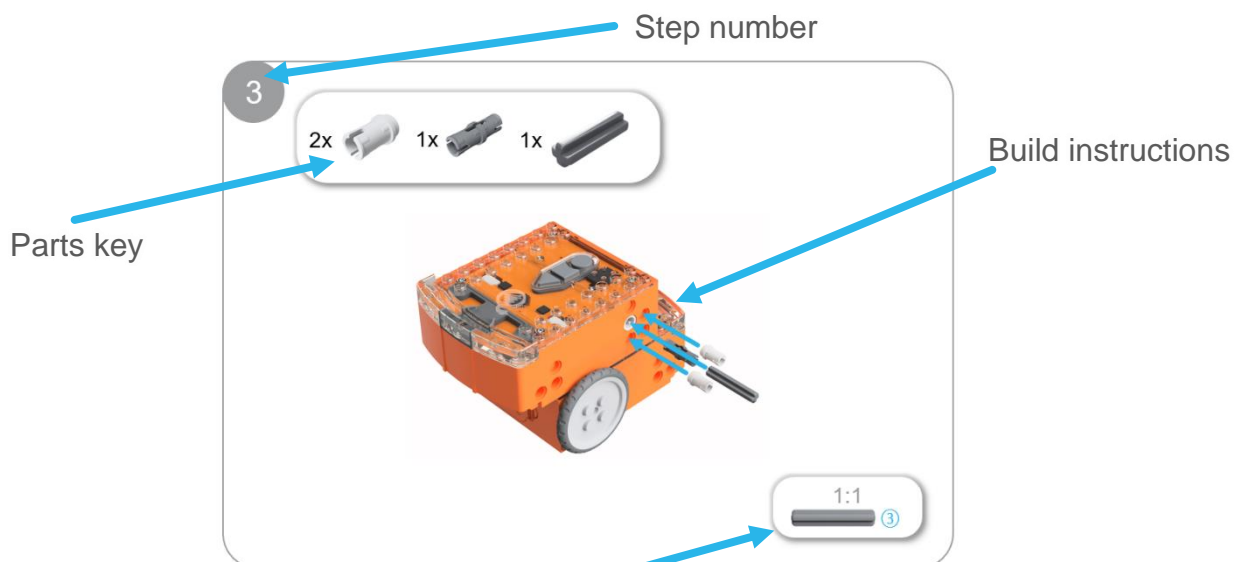


## Step 2: Assemble the EdTank

Follow the illustrations step by step to build the EdTank.

The basic EdTank is fully assembled by step 12. If you are building the complete EdTank with cannon, continue to step 13.

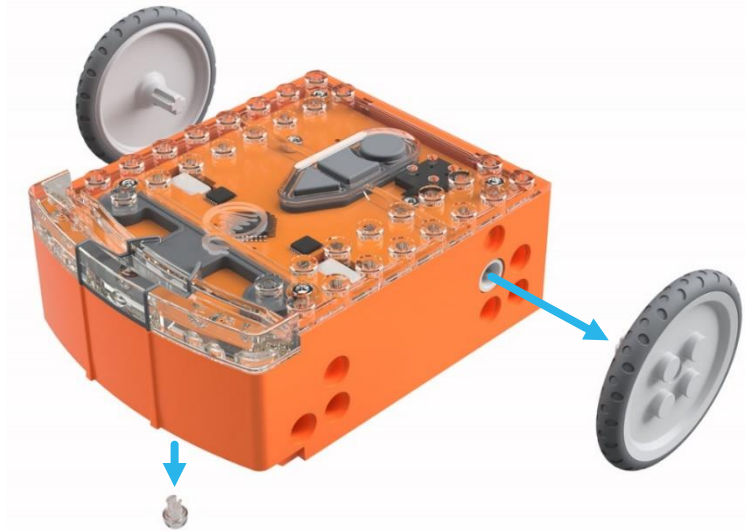
### Reading the instructions:



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.

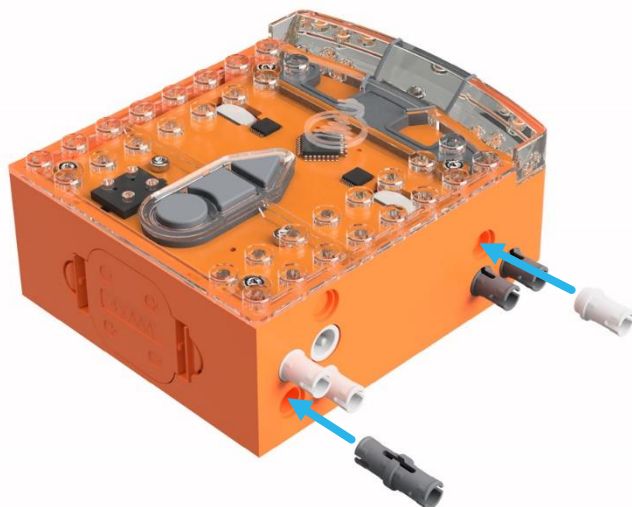


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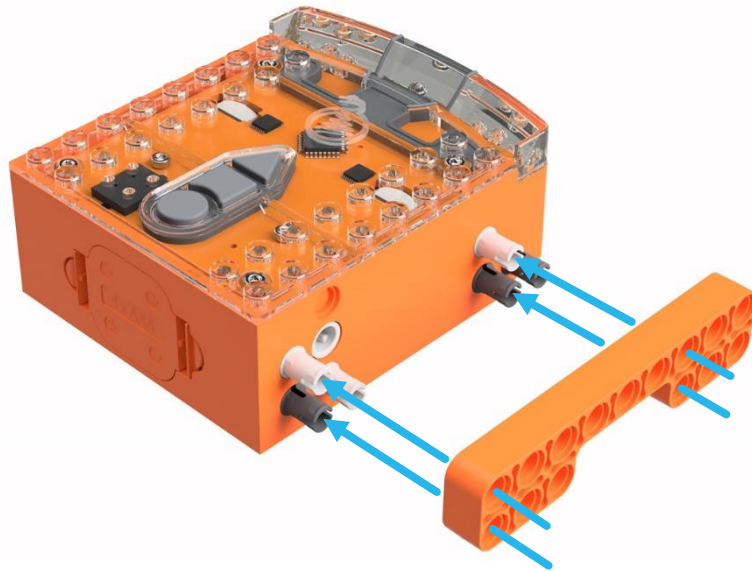
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3x  3x 



3

1x



4

3x

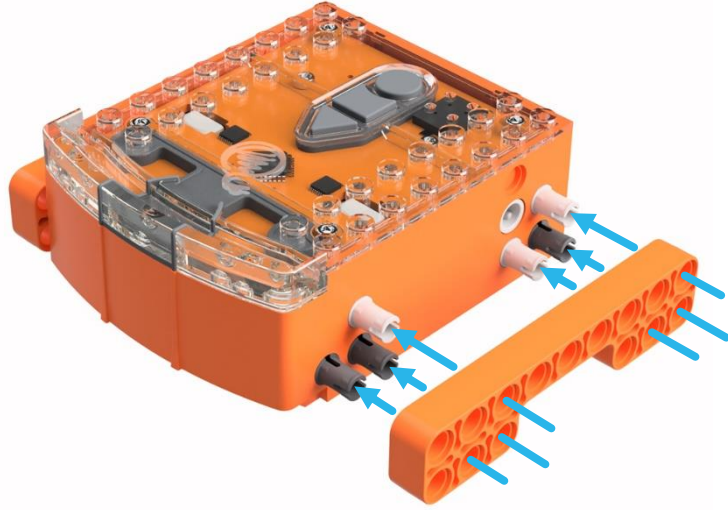


3x



5

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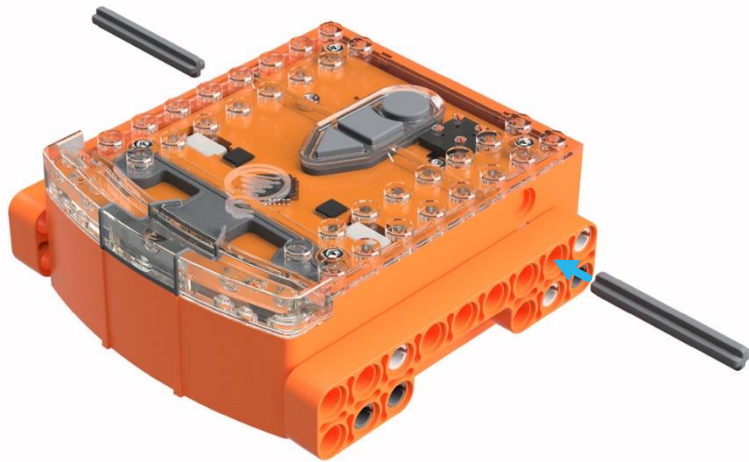


6

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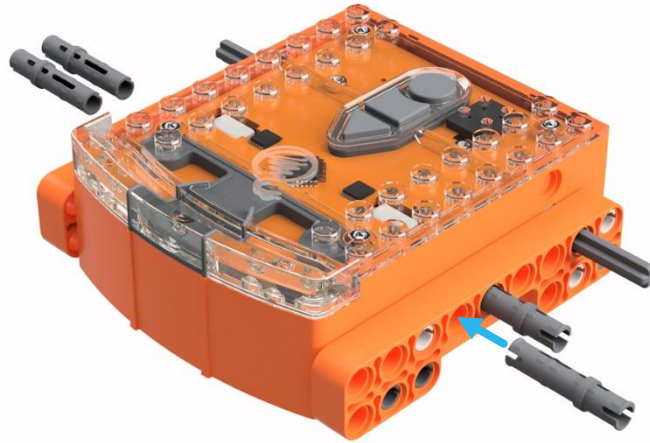


1:1



7

4x



8

2x



1:1

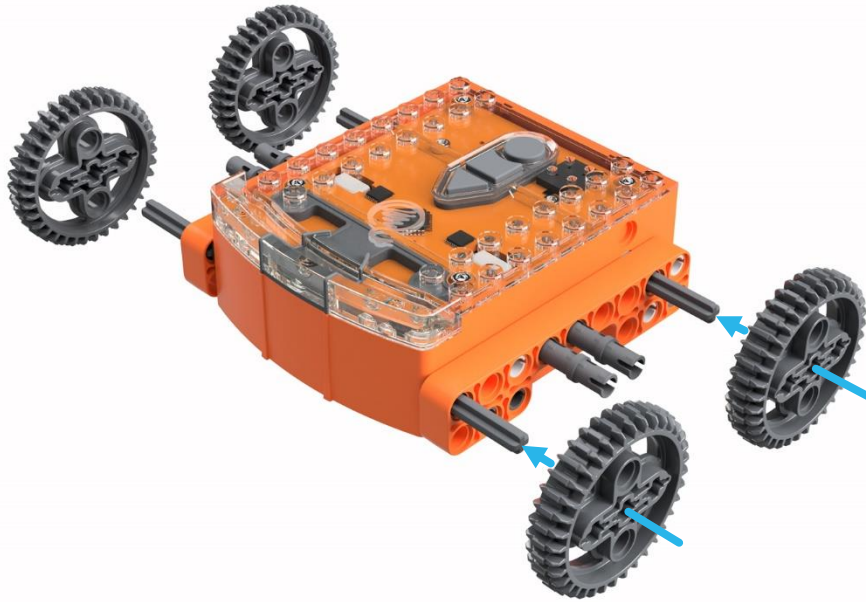


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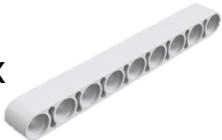
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4x



10

2x

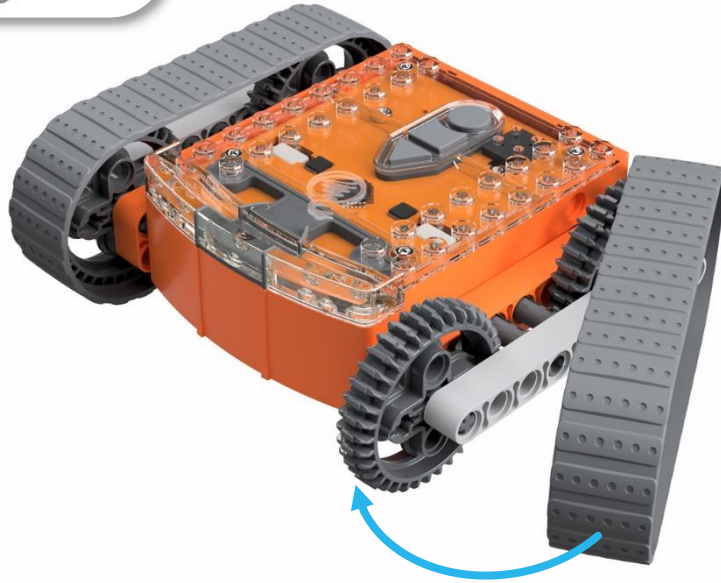


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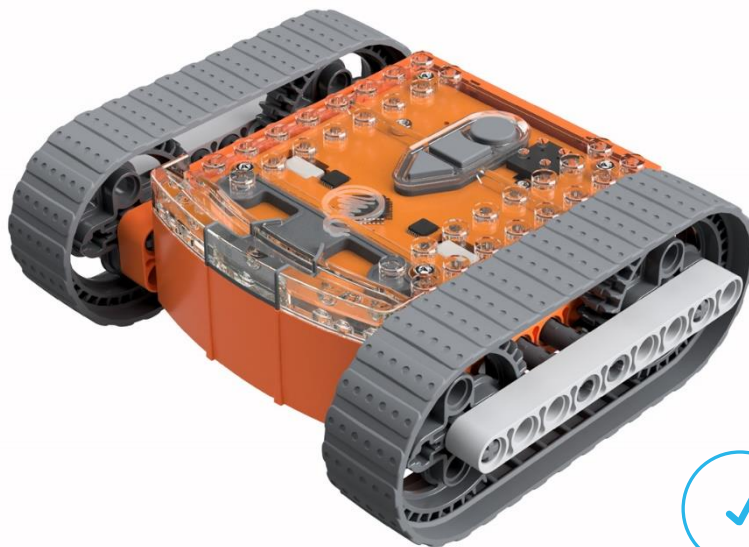


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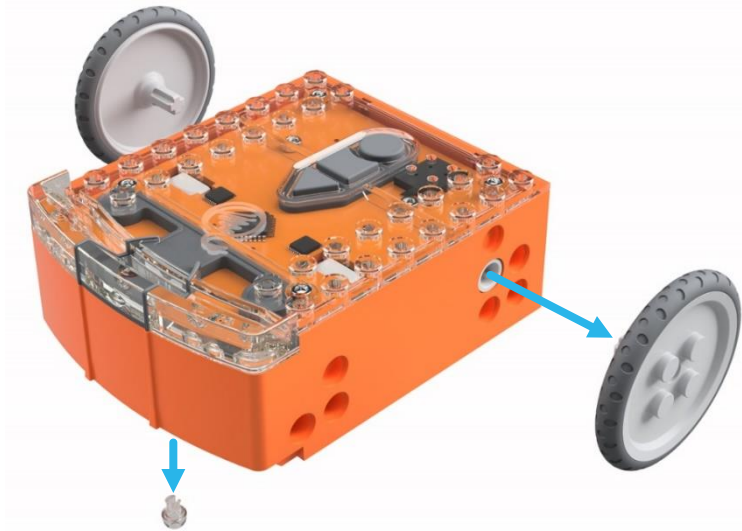
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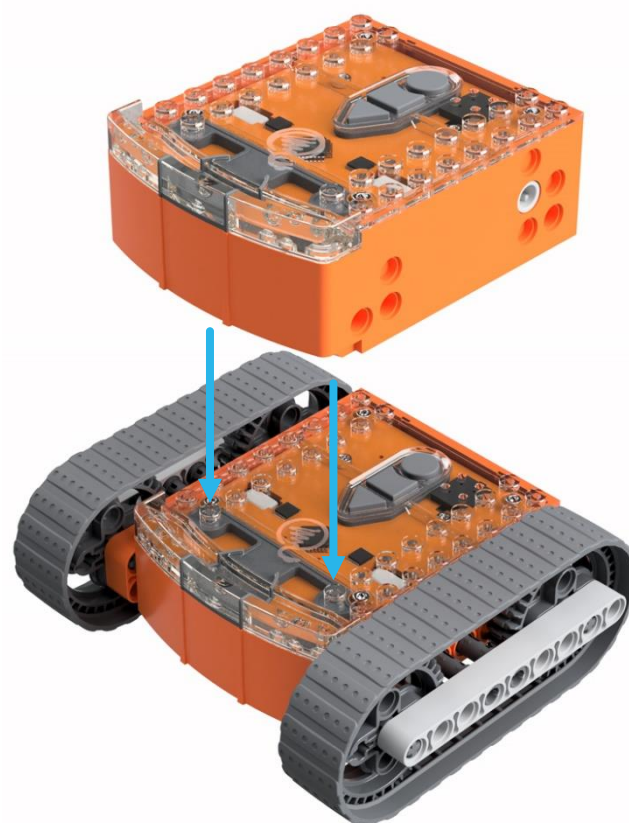
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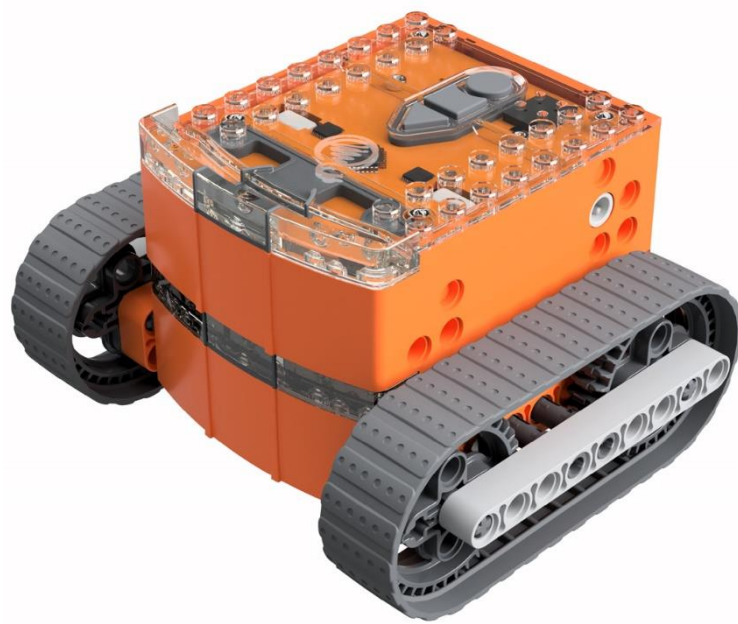
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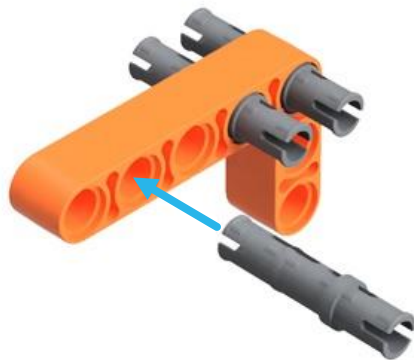
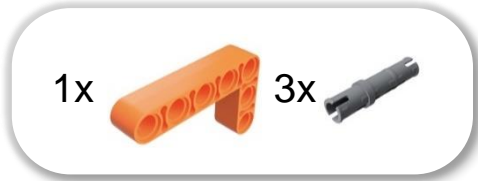
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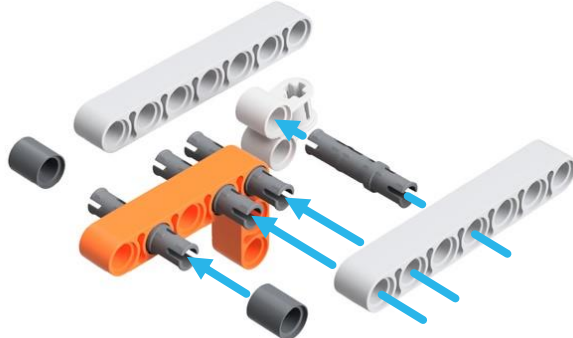
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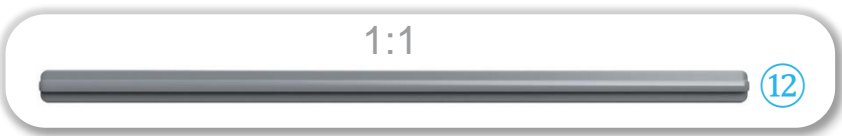
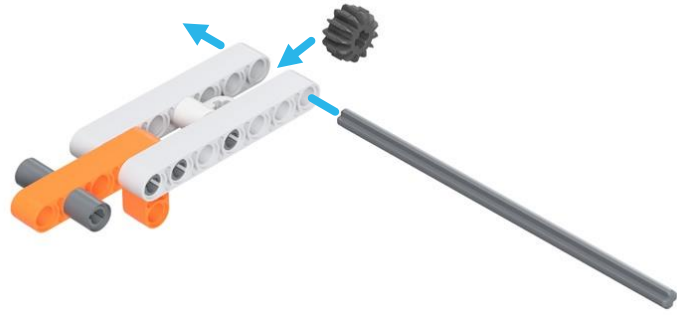
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2x  2x  1x  1x 

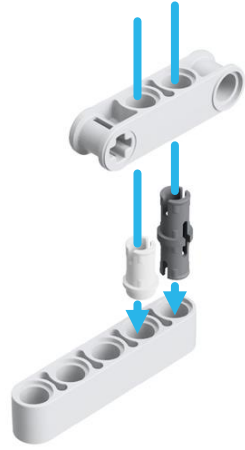
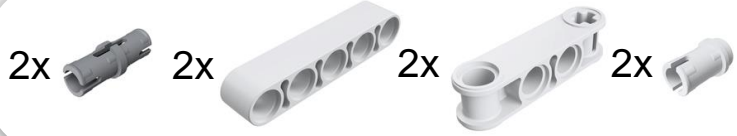


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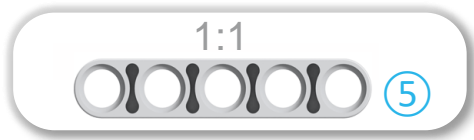
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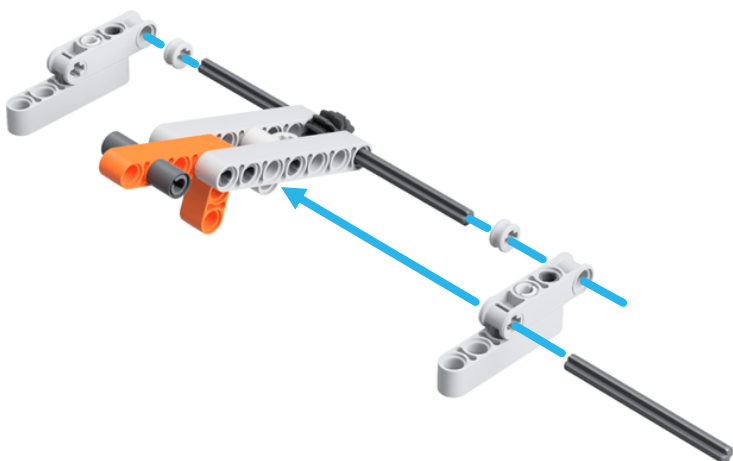
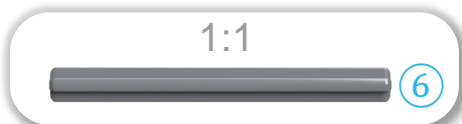
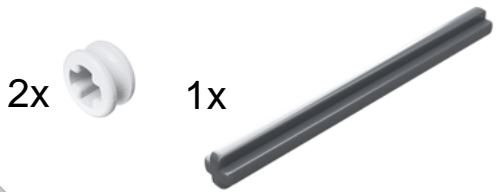
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2x



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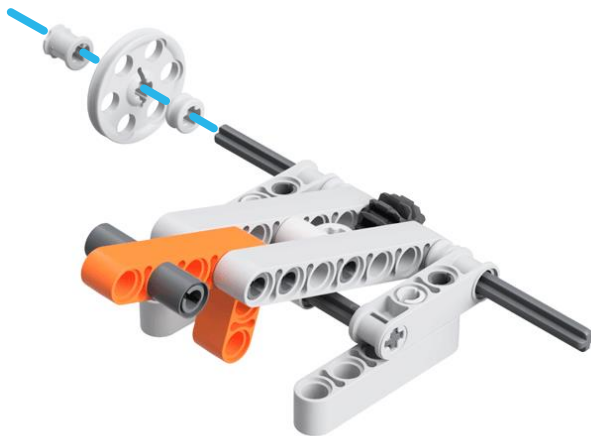


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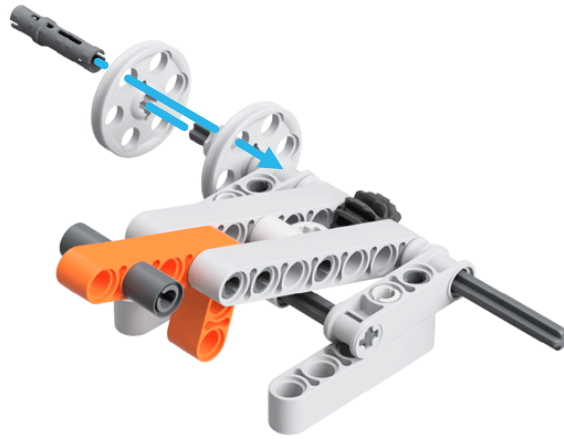
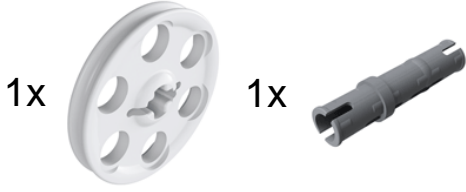


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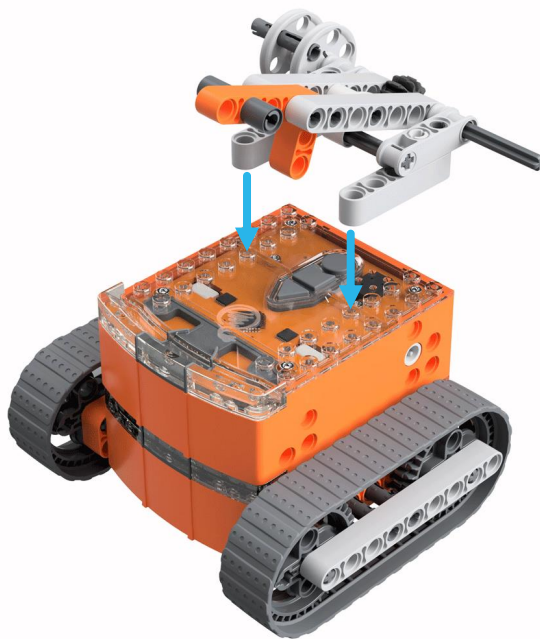
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23



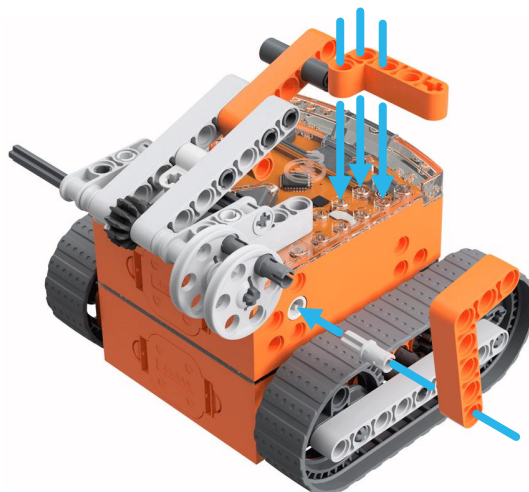
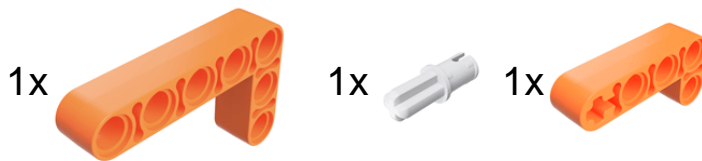
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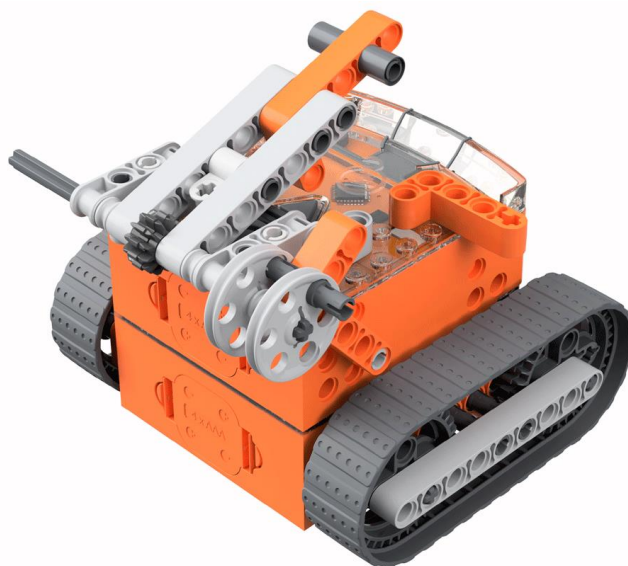
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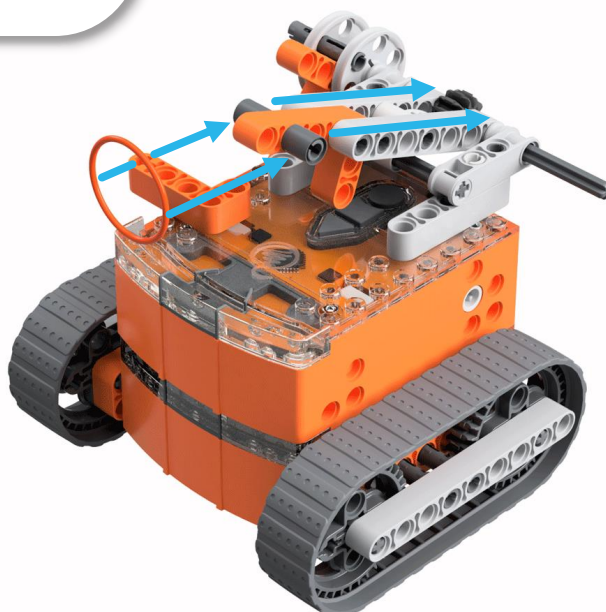


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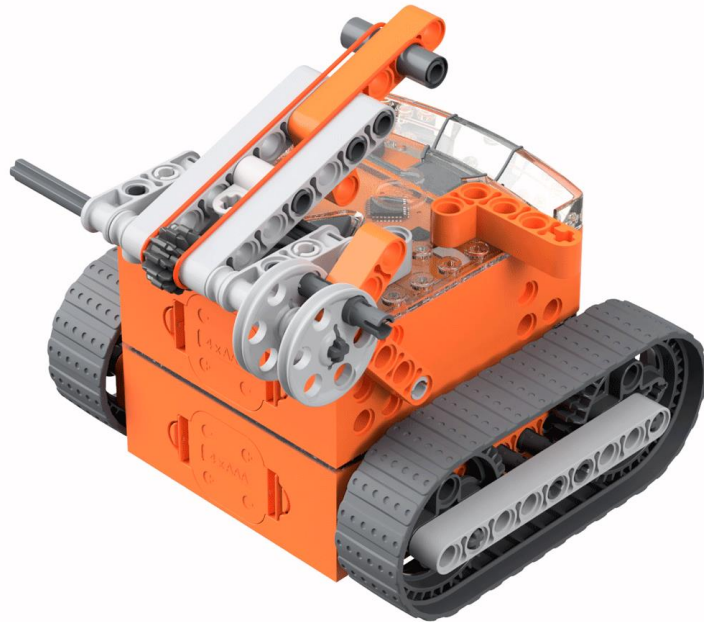


28

1x



29



30

