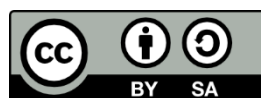
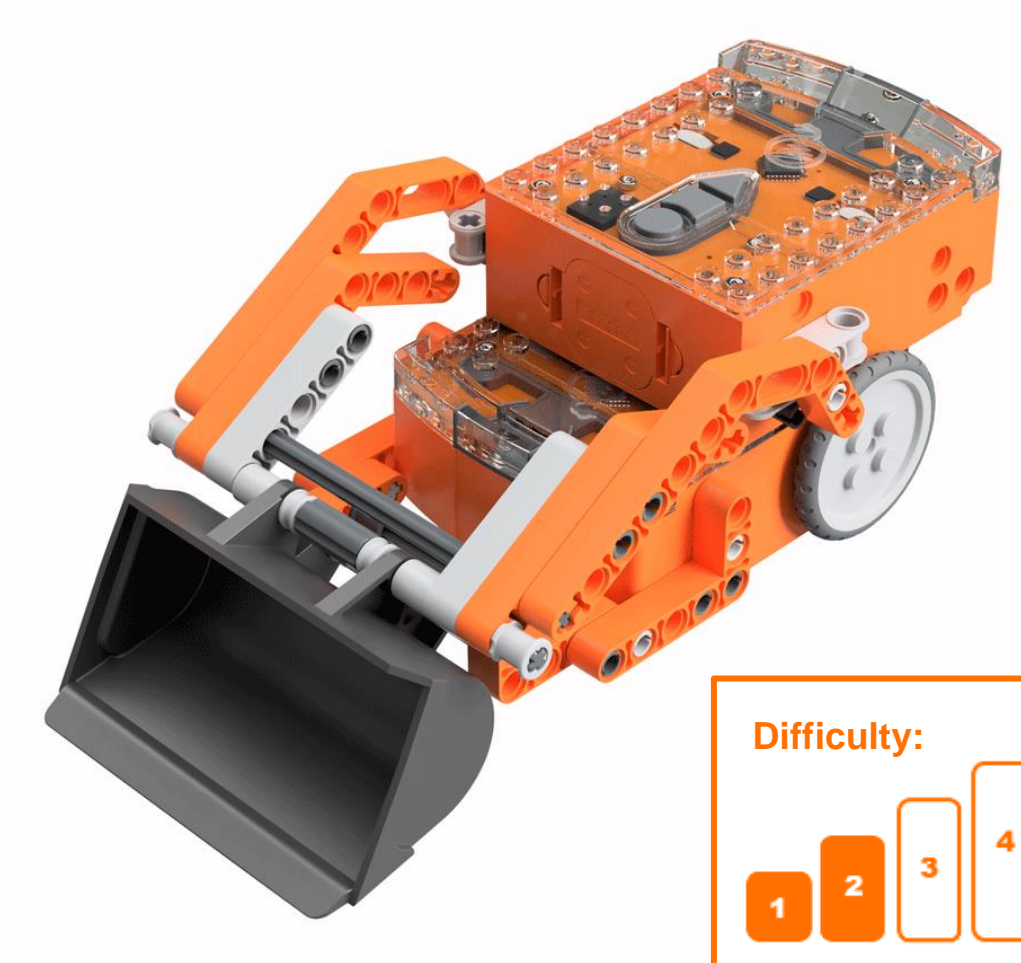




# EdBuild

Let's build the EdDigger



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## U1-1.2f Challenge up: Build and control the EdDigger

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?

Now that your robot can drive on the planet Mars, your robot needs to be able to collect samples from the planets surface. Build the EdDigger or your own invention to accomplish this and try collecting samples with your robot.

### What to do

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

The EdDigger is a remote-controlled excavator, or digger, with a scoop that you can drive around. The digger scoop of the EdDigger can lift and lower, plus it can carry small objects.



### Use this link

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

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

### Try it out!

Once you have built and programmed the EdDigger, try driving it around! Be sure to try to scoop up some objects too!

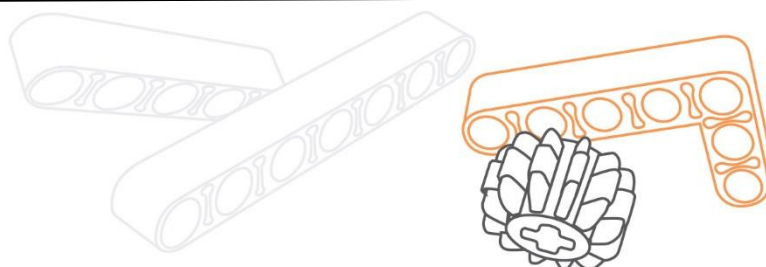
1. Can you operate the digger scoop smoothly? What do you need to do to get the EdDigger to scoop up objects? What do you need to do to get the EdDigger to drop off objects it was carrying?

To scoop up objects I needed to have the EdDigger push the objects into something, like a

wall, so that the objects would be pushed up into the bucket. Then I could raise the scoop. To

drop objects out of the bucket, I first lowered the bucket with Edison stopped, then drove

backwards, so the objects fell out.



## Step 1 : Program Edison

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

### Program the driving Edison

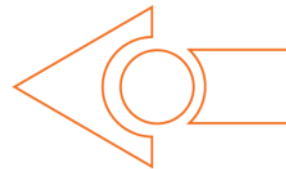
The driving Edison will control the movement of the EdDigger (forwards, backwards, spin left and spin right). Drive this Edison over the following barcodes, programming each to a button that corresponds well with the driving manoeuvre on the remote control. Don't use buttons that you want to use to control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

#### 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 scoop bucket.

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 scoop bucket Edison

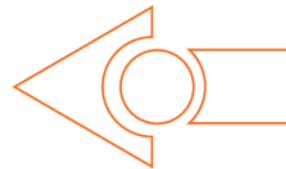
The scoop bucket Edison will control lifting and lowering the bucket. Drive this Edison over the following barcodes, programming each to a button that corresponds well with the lifting or lowering the scoop bucket on the remote control. Don't use buttons that you used to control how the EdDigger drives.

#### 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



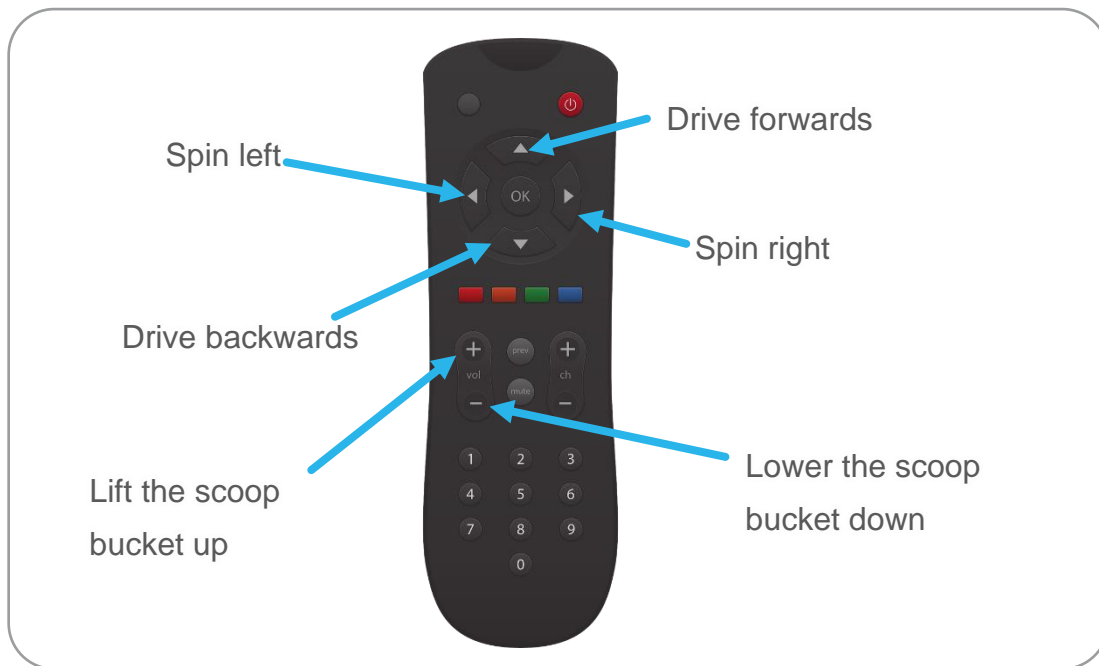
Barcode – IR learn bucket lift up



Barcode – IR learn bucket lower down



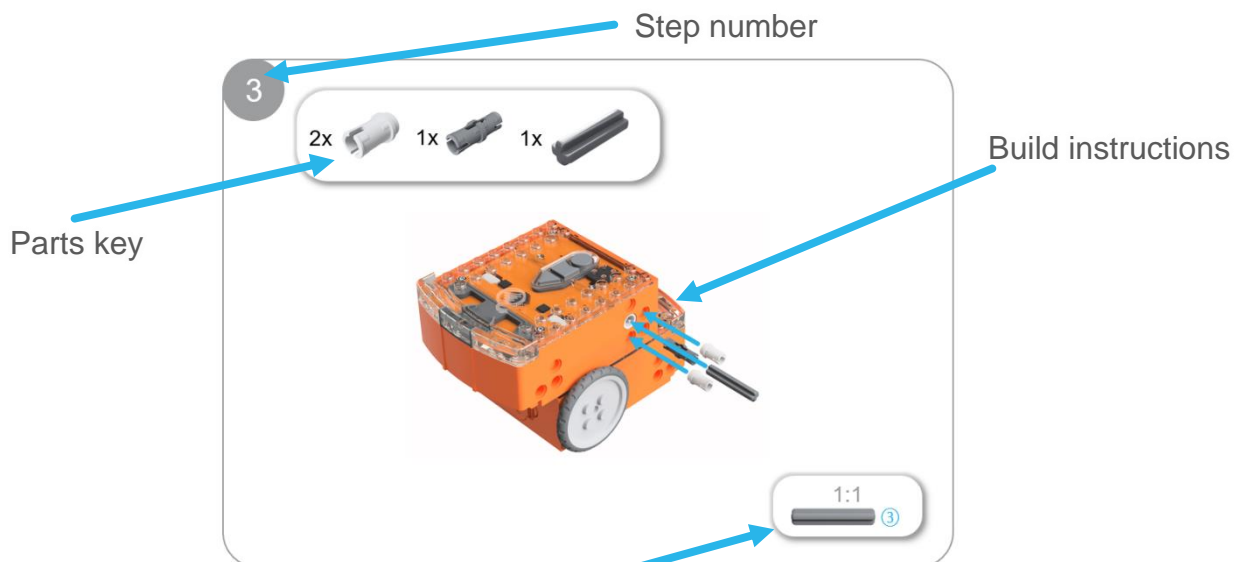
## Suggested remote control button setup for the EdDigger



## Step 2: Assemble the EdDigger

Follow the illustrations step by step to build the EdDigger.

### Reading the instructions:



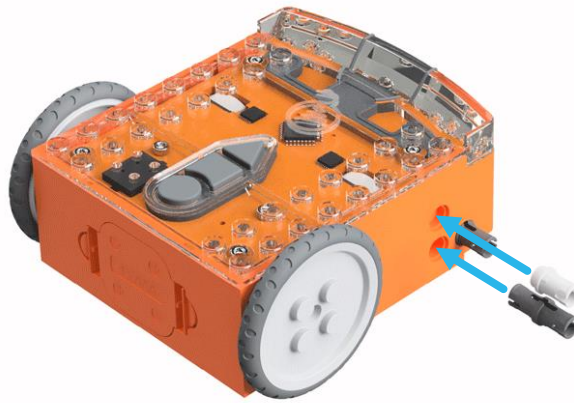
One-to-one piece measurement (when printed at 100% on A4 page). The number in the circle indicates the part's length in number of studs.

1

1x



2x

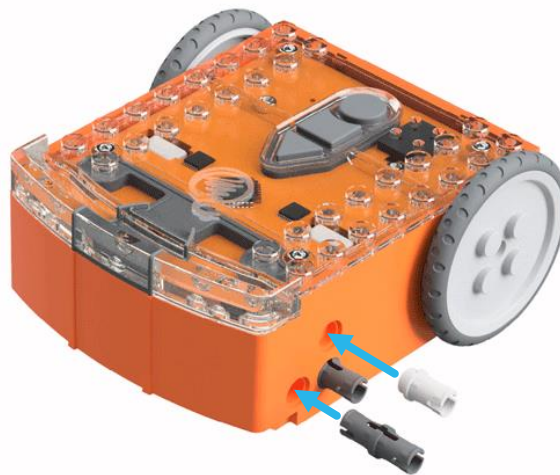


2

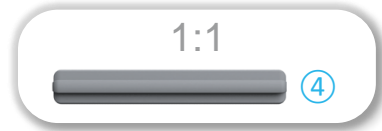
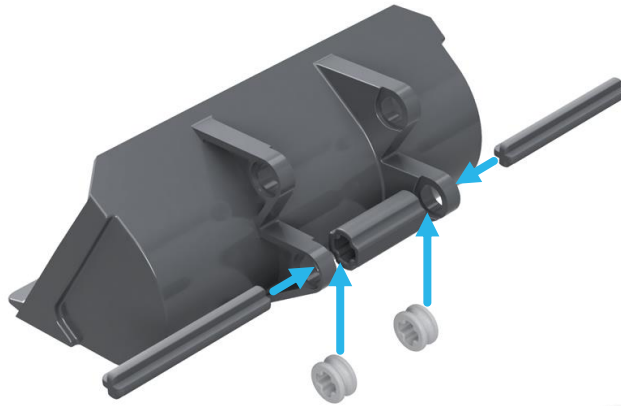
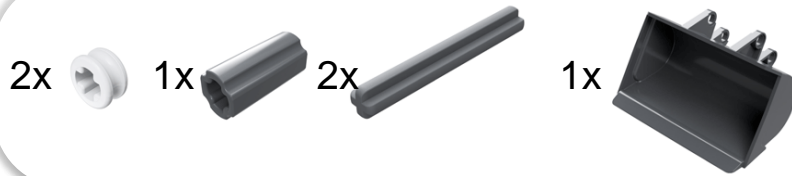
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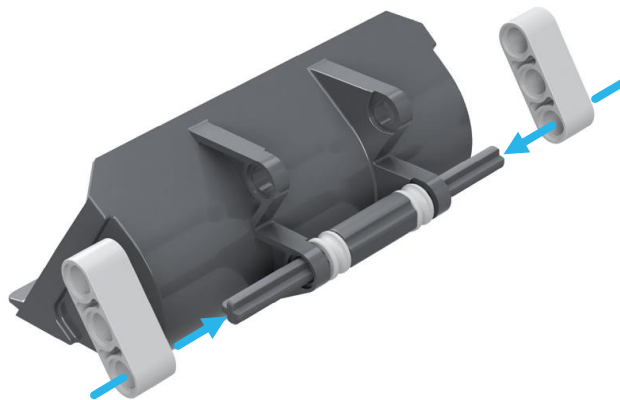
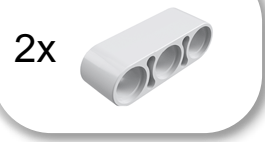
2x



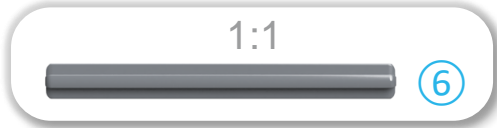
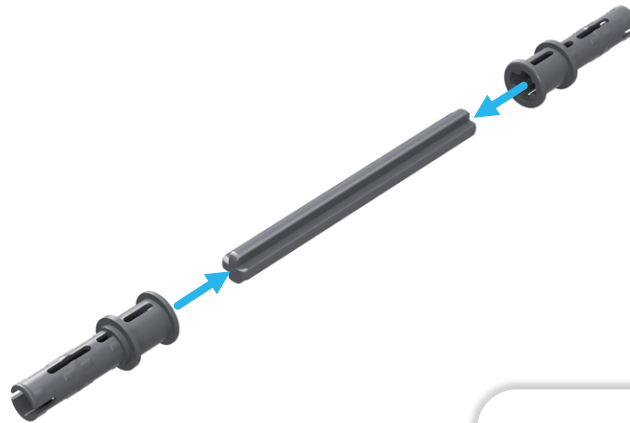
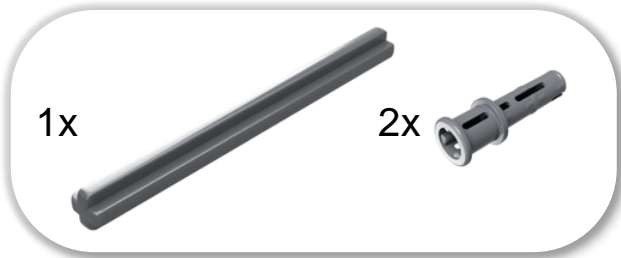
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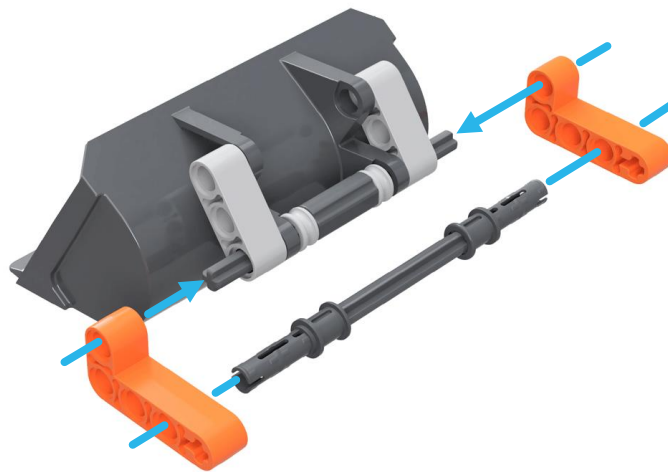
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5

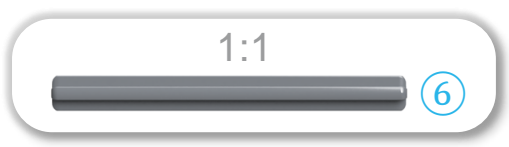
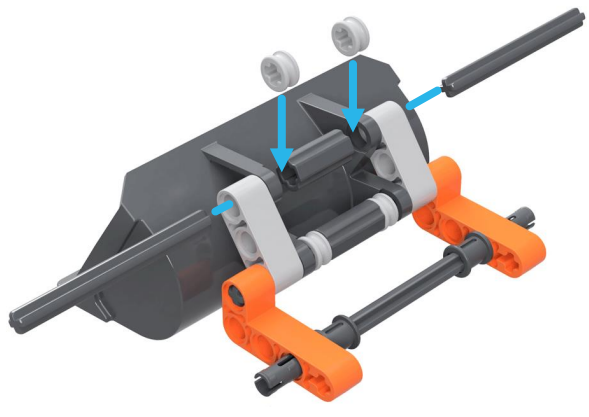
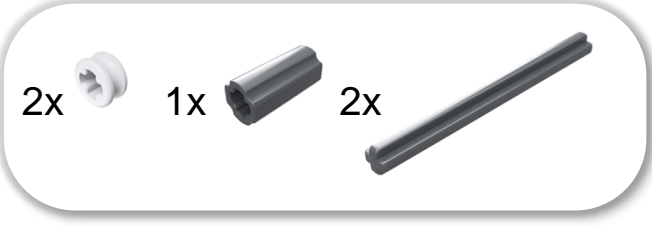


6





7

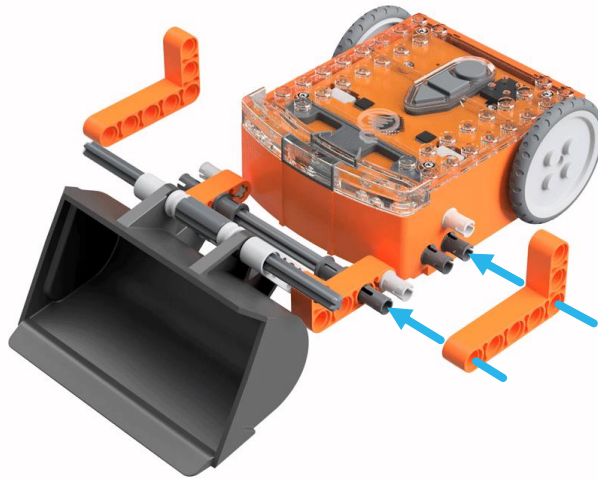
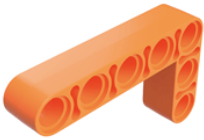


8



9

2x

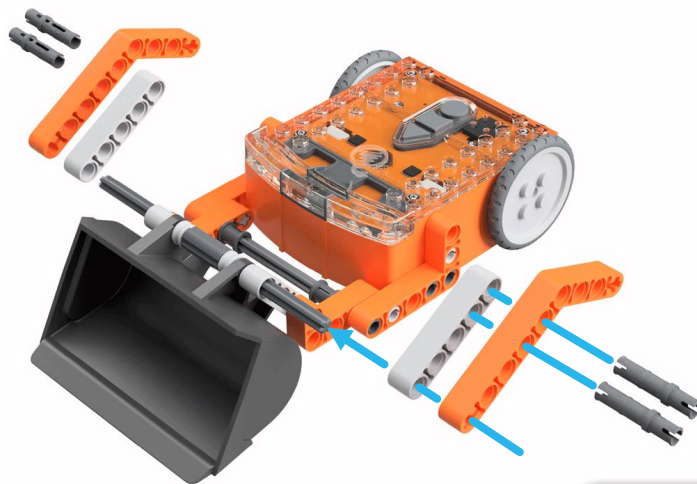


10

4x

2x

2x

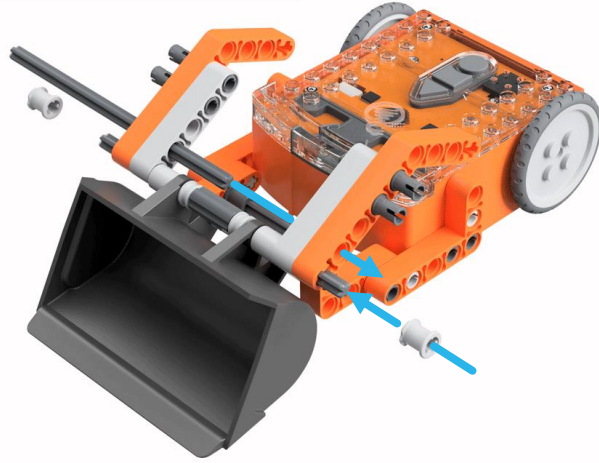


1:1



11

2x 1x

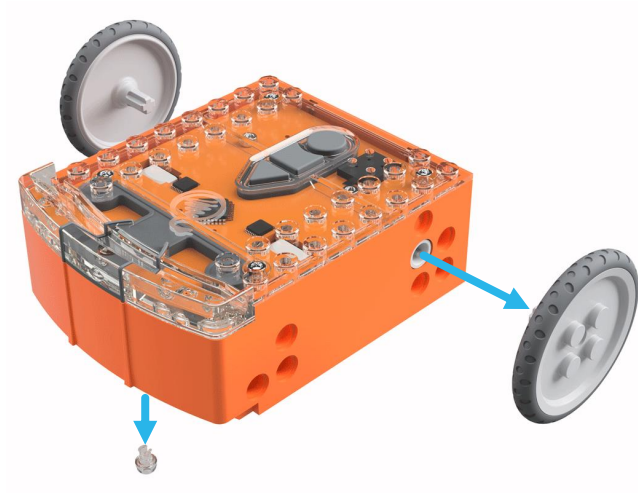


1:1

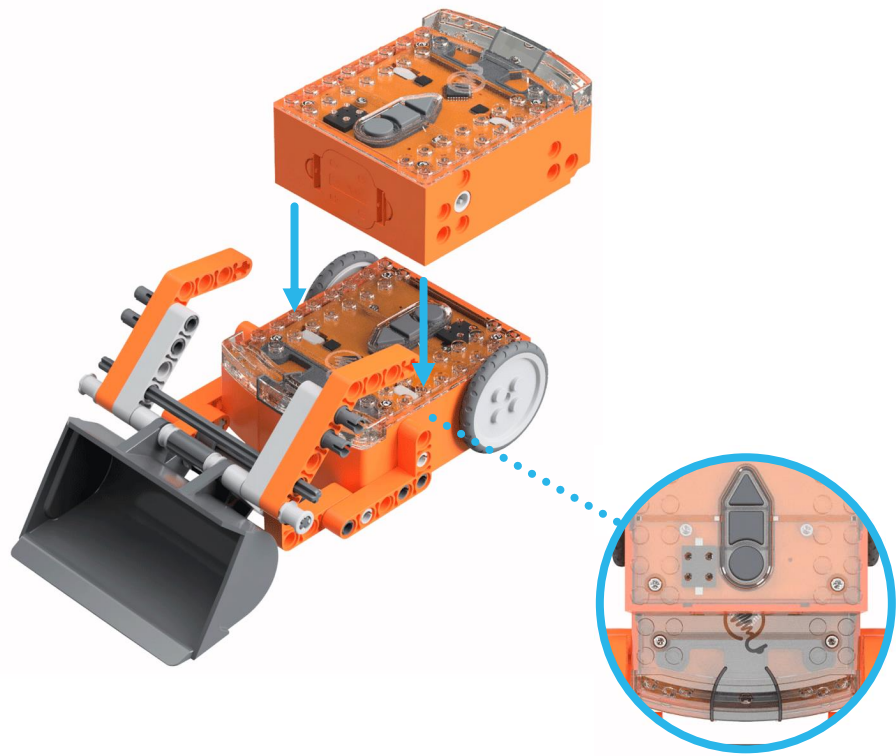


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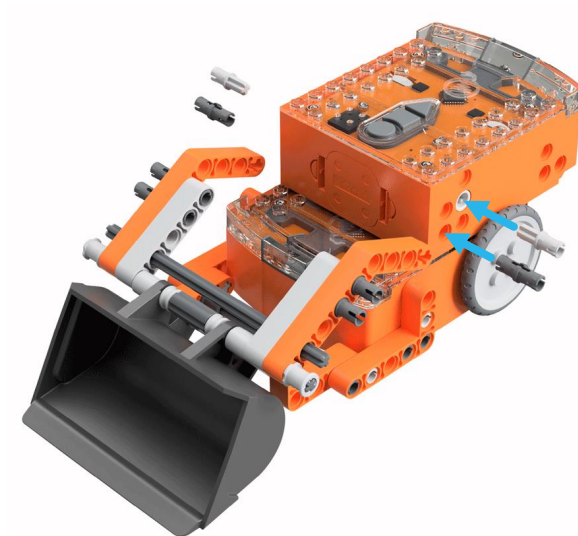
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13

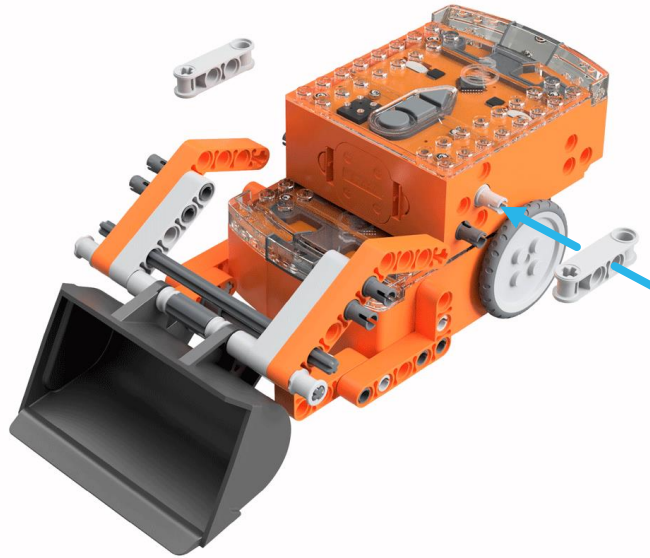


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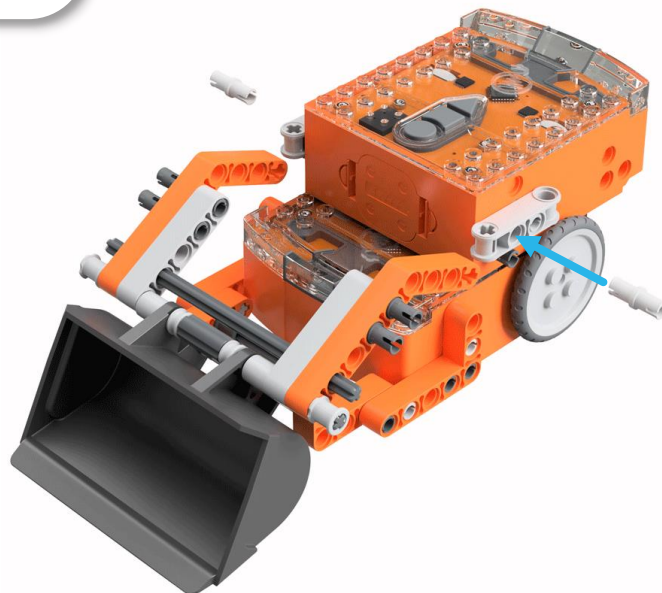
15

2x



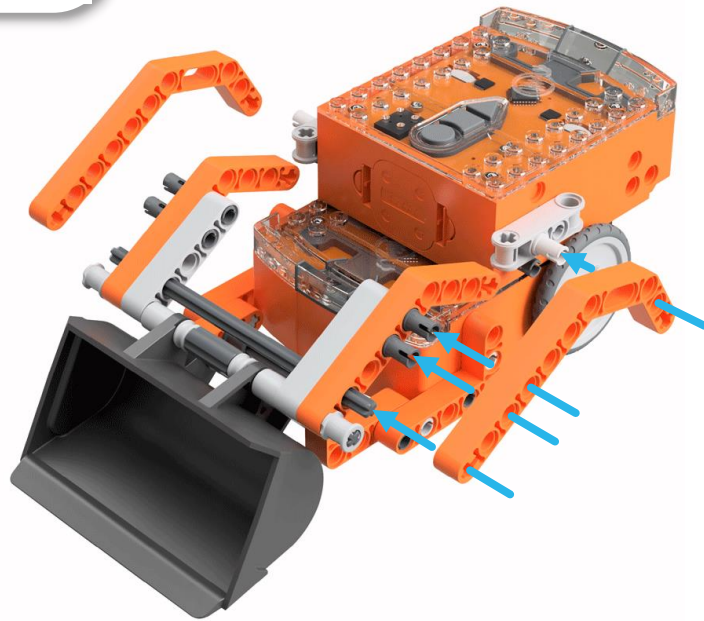
16

2x



17

2x



18

