

avishkar

# MEX

## Robotics Explorer Kit

User Manual



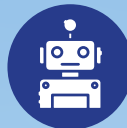
PROBLEM  
SOLVING



MECHANICAL  
DESIGN



CREATIVITY



ROBOTICS





**"I don't dream  
of success, I work  
towards it!"**

# Sneak peak

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# Make the Most Out of Your Kit

## Innovate



### Take the Innovator's Oath

Take the innovator's oath mentioned on page 5 and understand what it means to be an innovator.



### Learn using Manual/Videos

Follow detailed instructions in the manual and learn how to build exciting robots with your kit.



### Build, Code & Control

Build innovative projects using your kit, and control the Robots using Avishkaar Remote and Code using Avishkaar Maker Studio.

## Share

## Win



### Join Let's Avishkaar

Join our FB community - connect with innovators and get latest updates on webinars.



### Upload Projects

Upload projects on [www.avishkaar.cc](http://www.avishkaar.cc) and share them with innovators globally.



### International Competitions

Participate in weekly, monthly and annual competitions and win glory globally.



# Innovator's Oath

Take the Innovator's Oath below to pledge yourself to lifelong commitment towards Innovation and Problem Solving. Share a photo on the Let's Avishkaar FB Community.

*I* (write your name)

*solemnly swear that, since I am  
now on the path of innovation,  
I will not give up until my  
innovation, my project is ready.  
I will hone my skills and tools  
and use them well. Innovation  
and I will be inseparable.  
I will always share my  
innovations with other  
innovators and learn with them.*

*Your Signature*





**Explore  
your Kit**

# Welcome to Avishkaar

## Download the Avishkaar App

Download the Avishkaar App by scanning the QR codes below:



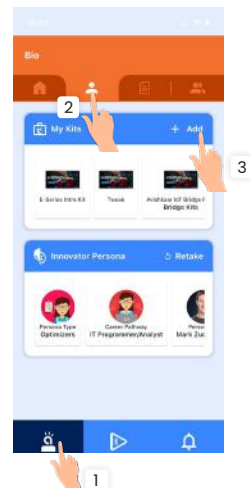
### ① Create an Account

Open the app and follow the on-screen steps to make an account.



### ② Register your Kit

Go to the 'Profile' section in the app and click on '+ Add More' in the 'My Kits' section to register your kit. This step is important to control your robot later.



Product Registration  
Sticker

# Armour Check

## Box 1 (Construction parts )

### BEAM



9H Beam  
x 2



7H Beam  
x 2



5H Beam  
x 4



3H Beam  
x 2

**Note:** 'H' stands for holes. Eg. 15H beam means beam with 15 holes.



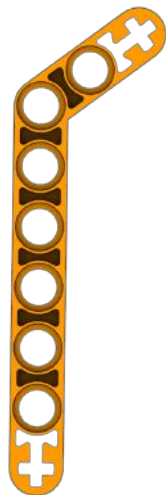
2Cx1H  
Thin-Beam  
x 4



1Cx1H Beam  
x 2

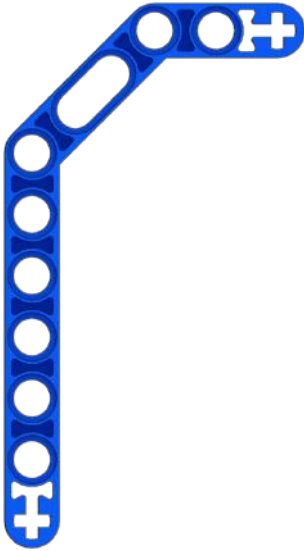


3Cx2H Thin-D  
x 2



2C x7H Single Bend  
x 2





2Cx10H Double  
Bend Beam  
x 4

## FILLERS



Axle Filler- Big  
x 4



Axle Filler- Small  
x 6

## WINGS



Wing x 3

## GEAR



Spur Gear-24T  
x 2



20T Double  
Bevel gear  
x 2

## WHEEL



Small Wheel  
x 4

## PINS



Long Pin-Blue  
x 2

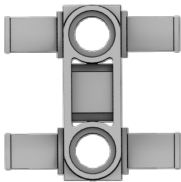


Medium Pin-Black  
x15



Medium Axle Pin-Blue  
x 6

## CONNECTORS



3Hx4 Pin Connector  
x 2



Triple Axle Connector  
x 1



Axle Triple Pin  
Perpendicular Connector  
x 2



1C x 1H Perpendicular  
Connector x 1

## Rubber Band



Rubber band  
x 3

# All About Axles

NOTE : The axles are in 1:1 with the imprinted slots ( **XH Axle** ) in manual.

1:1



2H  
Axle  
(4)



3H  
Axle  
(1)



4H  
Axle  
(2)



6H  
Axle  
(1)



8H  
Axle  
(2)



9H  
Axle  
(1)



10H  
Axle  
(1)

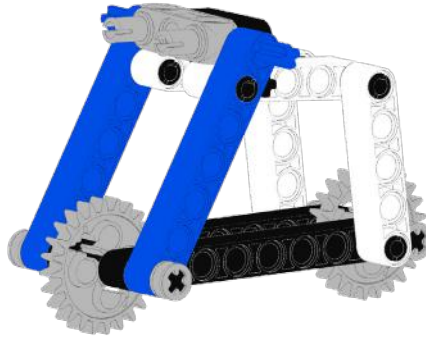


13H  
Beam

13<sup>th</sup> Hole  
12<sup>th</sup> Hole  
11<sup>th</sup> Hole  
10<sup>th</sup> Hole  
9<sup>th</sup> Hole  
8<sup>th</sup> Hole  
7<sup>th</sup> Hole  
6<sup>th</sup> Hole  
5<sup>th</sup> Hole  
4<sup>th</sup> Hole  
3<sup>rd</sup> Hole  
2<sup>nd</sup> Hole  
1<sup>st</sup> Hole

# Project 1: MEX Mountain Bike(MTB)

## Let's Build!



## Things we need



9H Beam  
x 2



5H Beam  
x 4



3H Beam  
x 1



4H Axle  
x 2



6H Axle  
x 1



Medium  
Pin-Black  
x 4



Medium Axle  
Pin-Blue  
x 2



3Hx4Pin  
Connector  
x 1



Spur Gear24T  
x 2



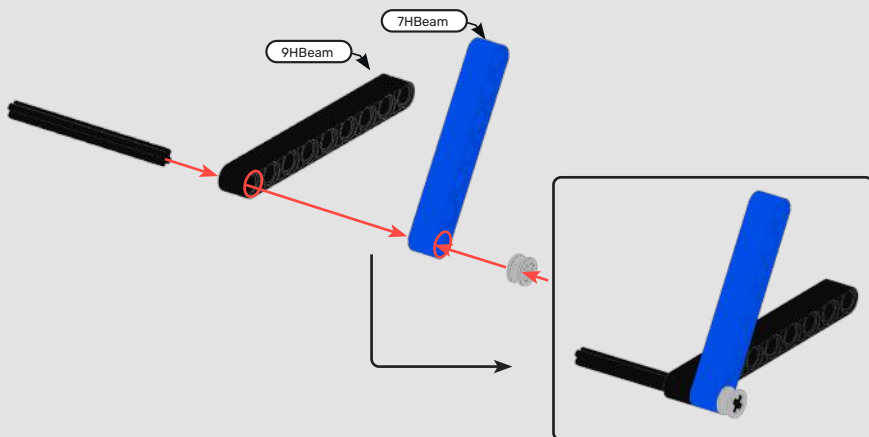
Axle  
Filler-Small  
x 5

## Steps

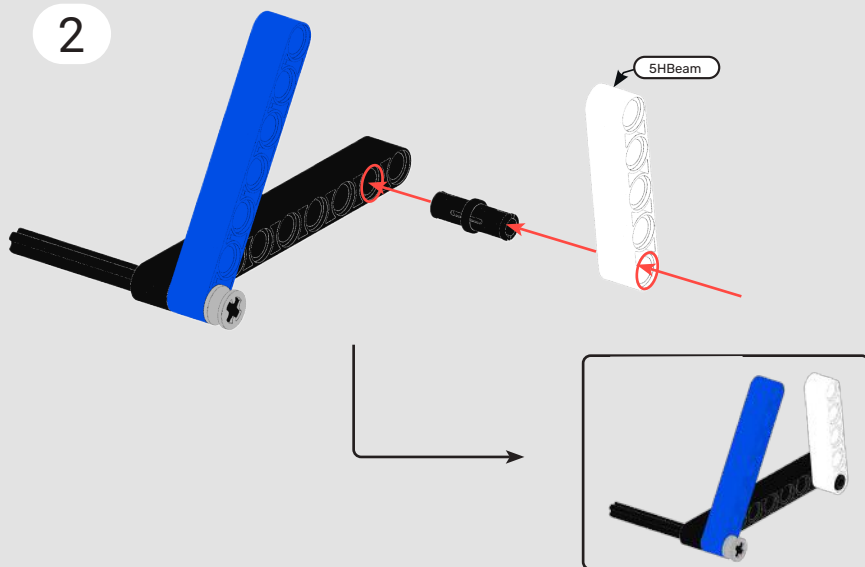
1:1

6H Axle

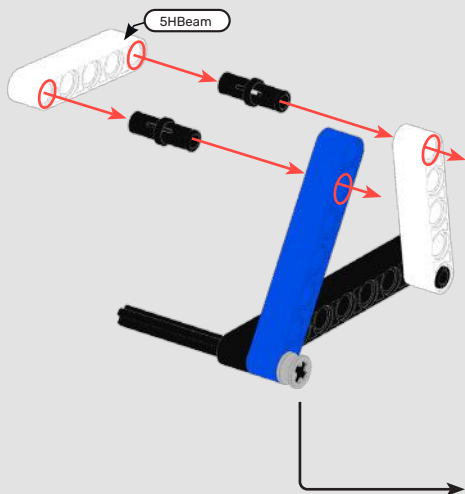
1



2



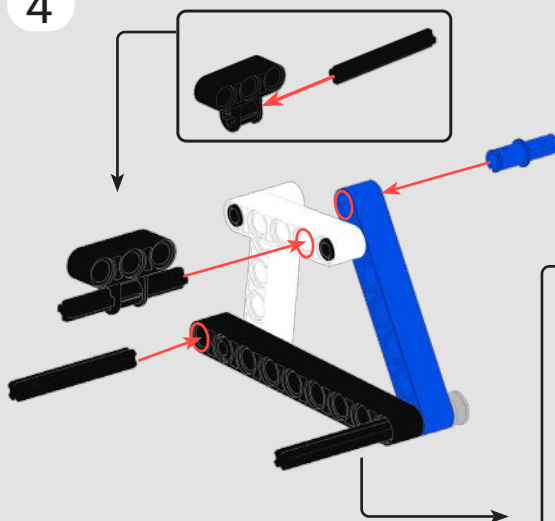
3



1:1

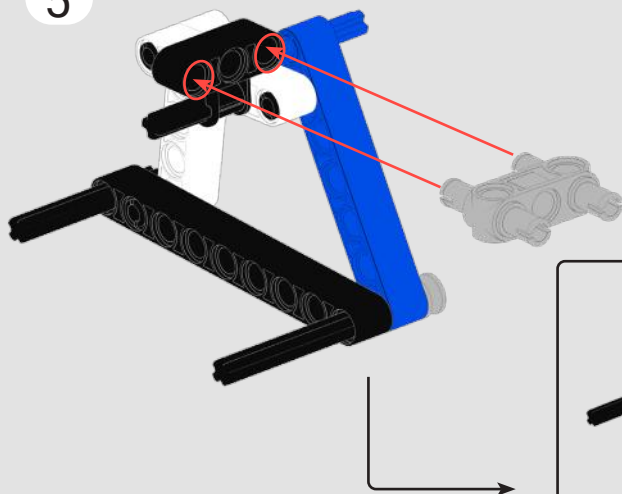
4H Axle

4

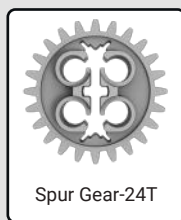
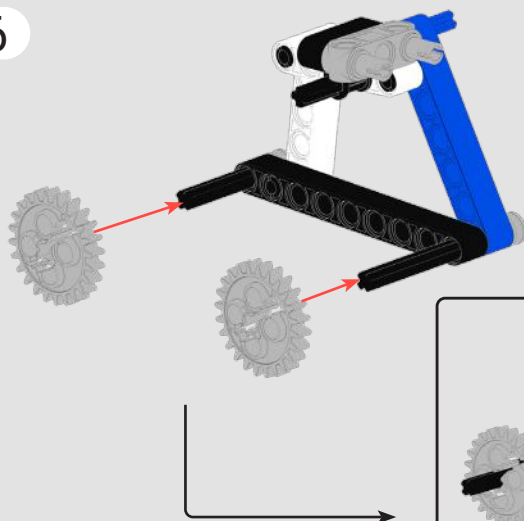




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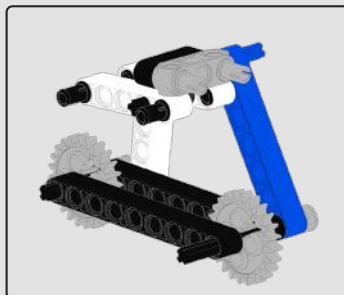
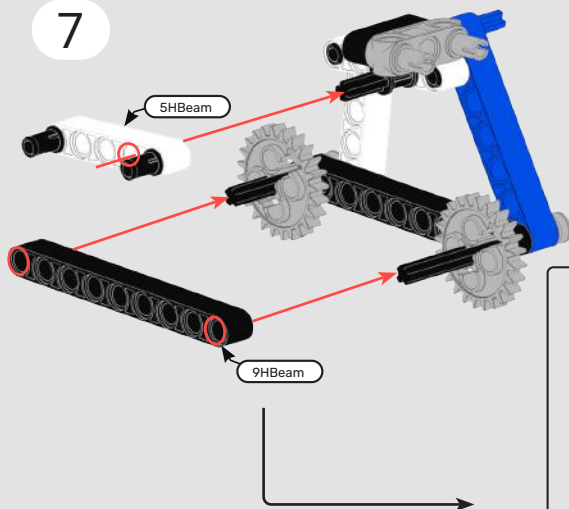


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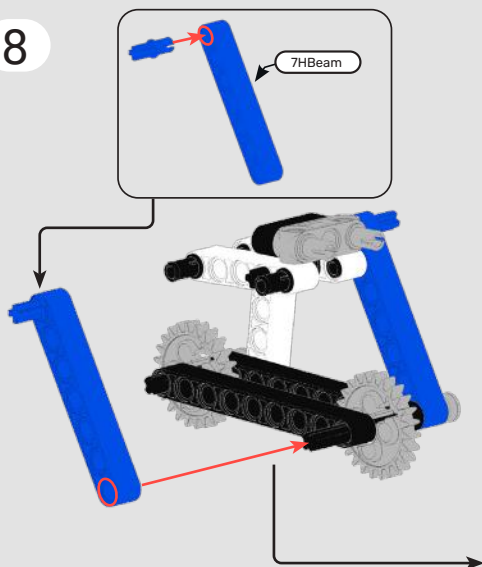


Spur Gear-24T

7



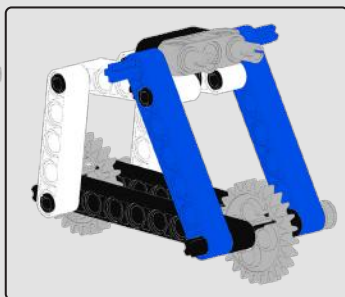
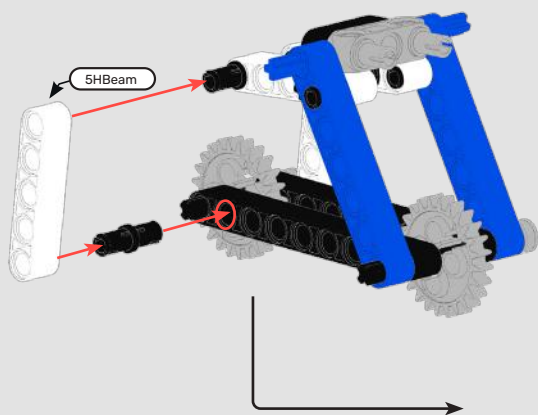
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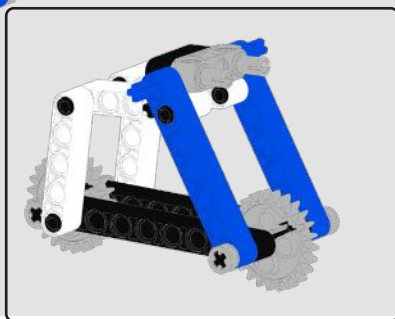
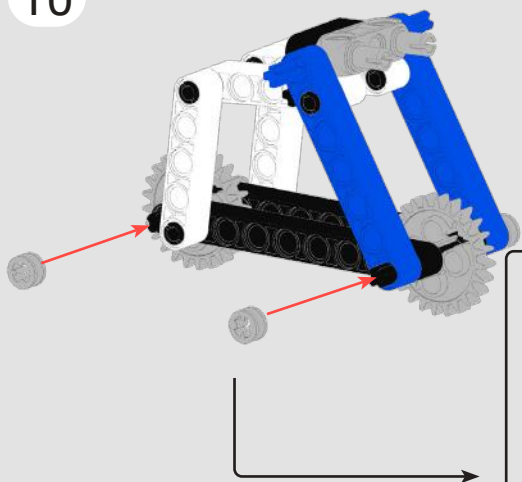
1:1 Medium Axle Pin Blue



9



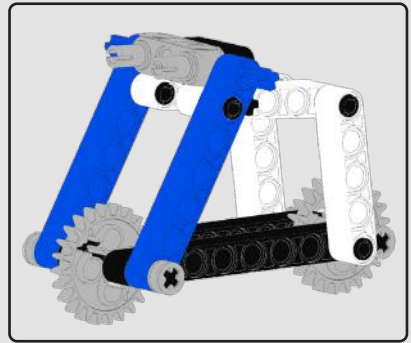
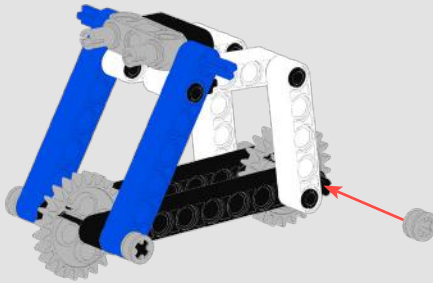
10



11



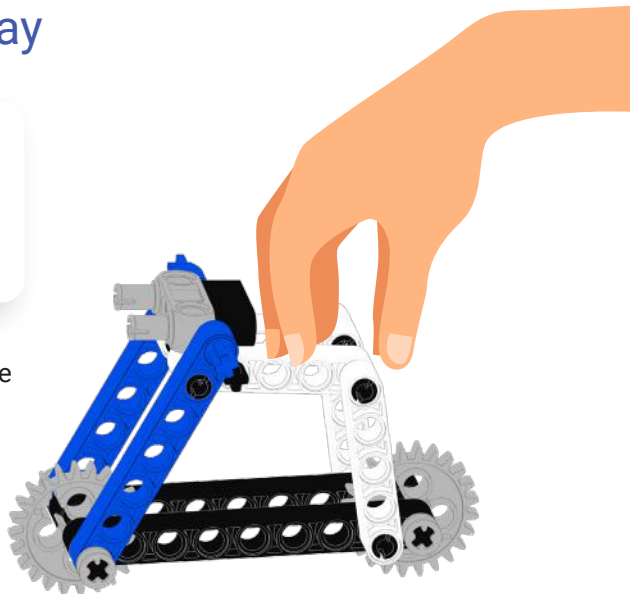
Axle Filler- Small



## How to play

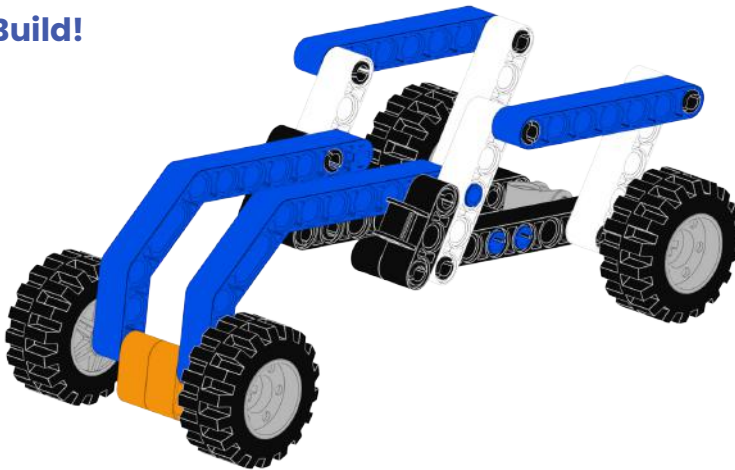


Scan QR  
and upload the  
Project!



# Project 2: MEX Retro Car

## Let's Build!



## Things we need



9H Beam  
x 2



7H Beam  
x 2



5H Beam  
x 4



3H Beam  
x 2



2Cx10H  
Double Bend  
Beam  
x 2



1Cx1H Beam  
x 2



Medium Axle  
Pin-Blue  
x 2



Medium  
Pin-Black  
x 13



Long  
Pin-Blue  
x 2



3Hx4Pin  
Connector  
x 2



1Cx1H  
Perpendicular  
Connector  
x 1



Axle Triple Pin  
Perpendicular  
Connector  
x 1



6H Axle  
x 1



10H Axle  
x 1



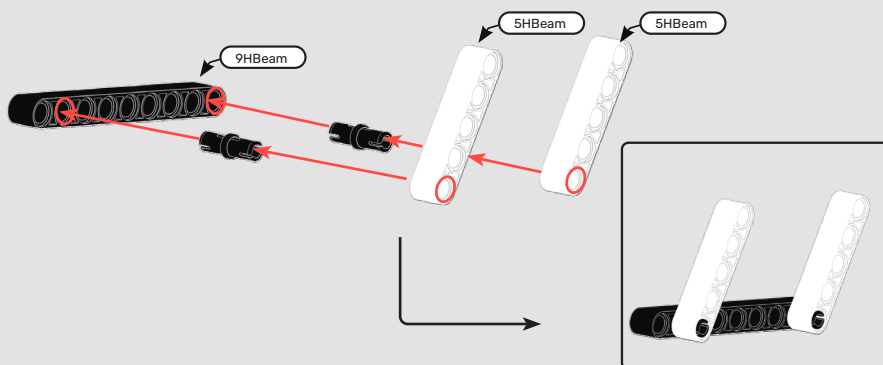
Wheel  
x 4



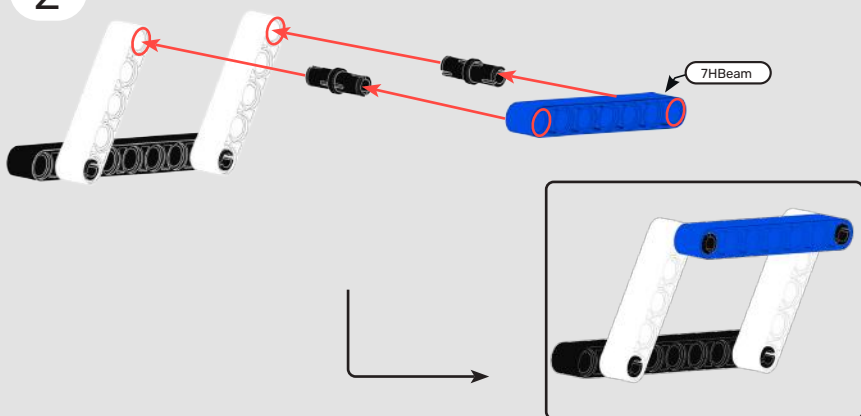
Rubber band  
x 1

## Steps

1



2



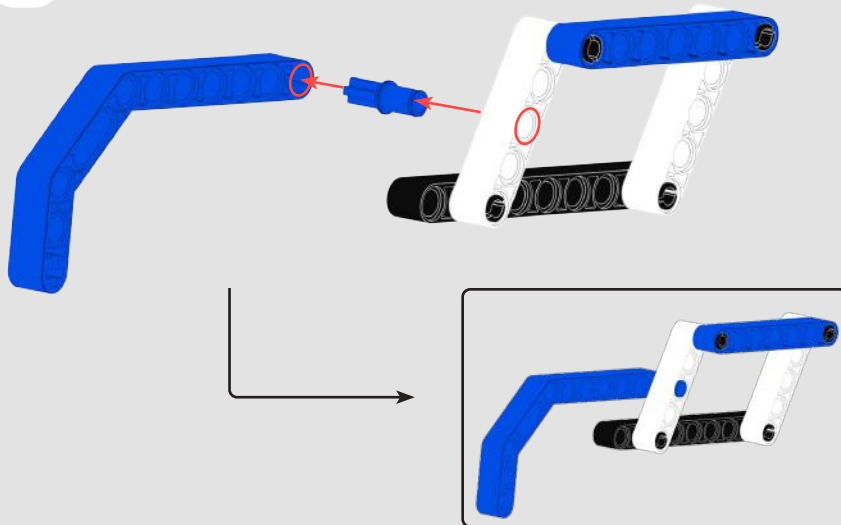


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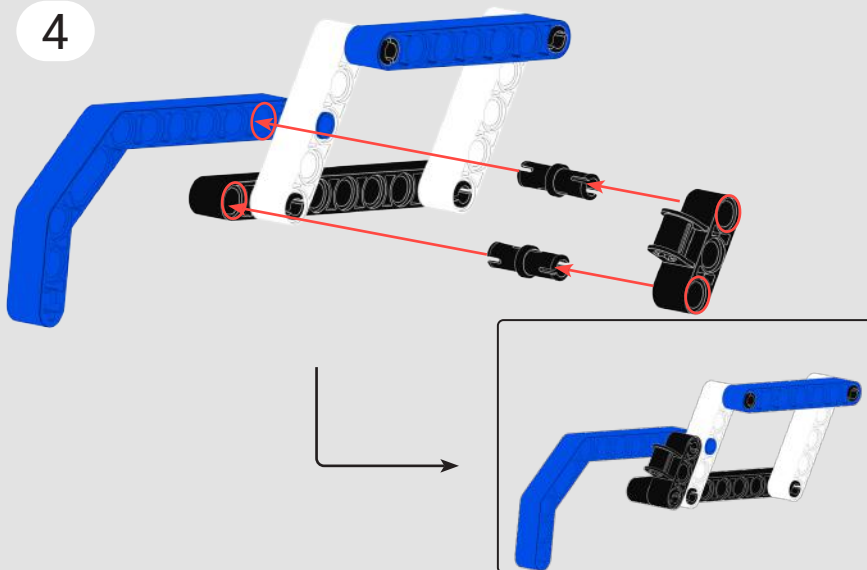
1:1



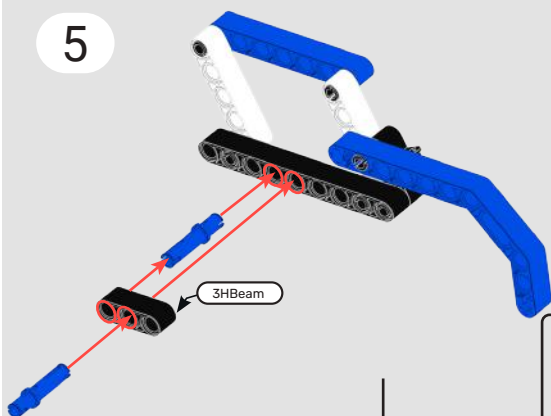
Medium Axle Pin Blue



4



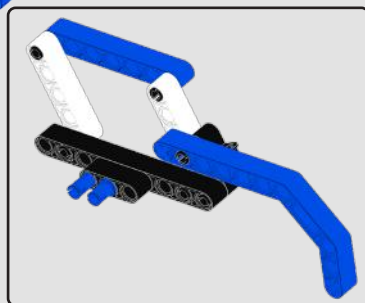
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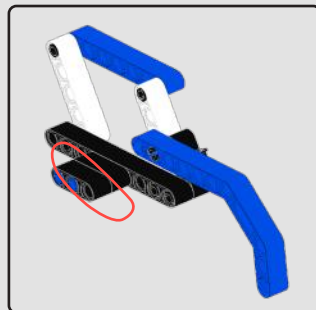
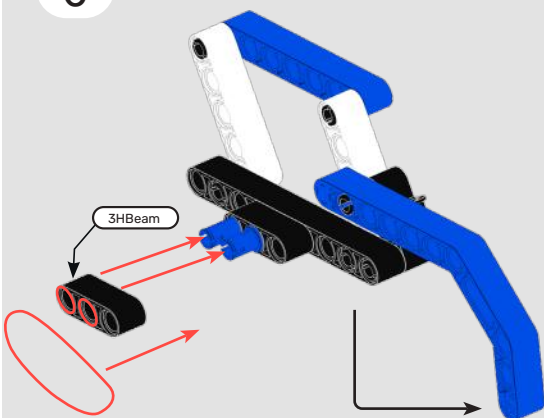
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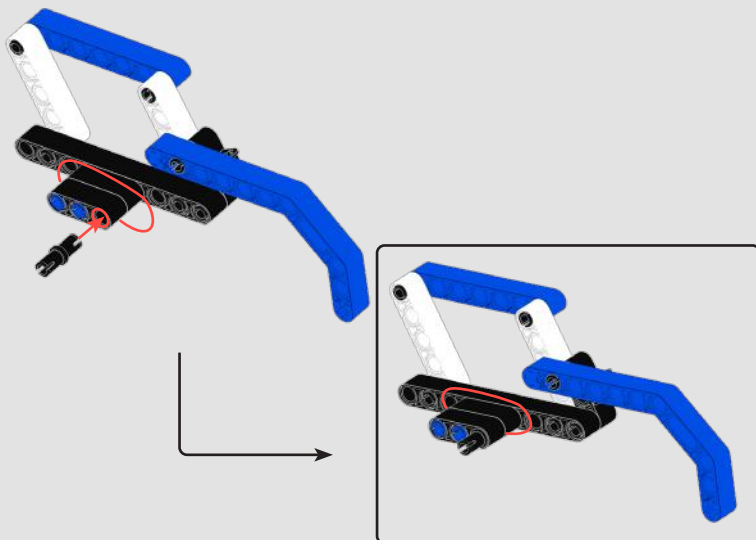
Long Pin Blue



6

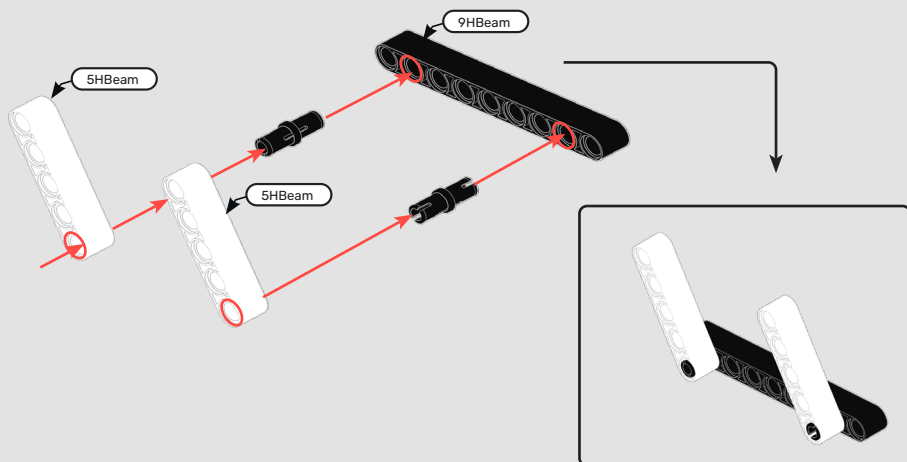


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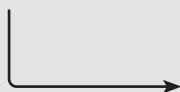
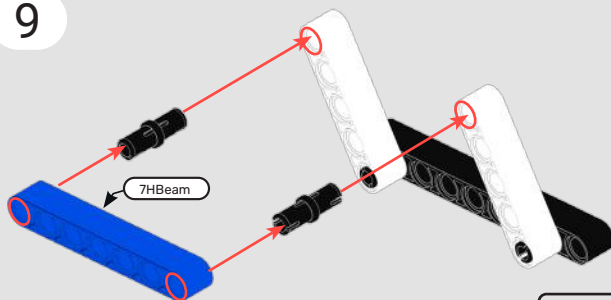


Let's make the another side.

8



9

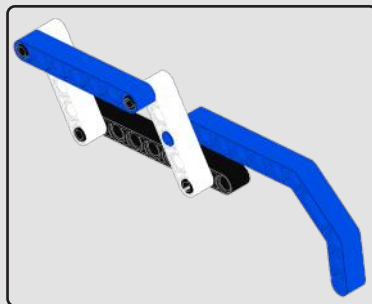
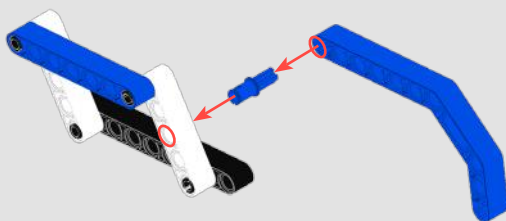


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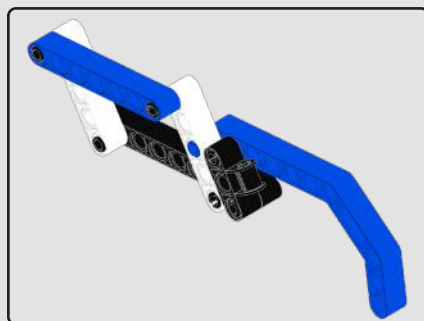
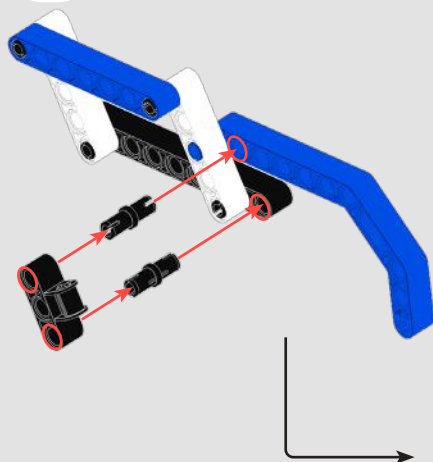
1:1



Medium Axle Pin Blue



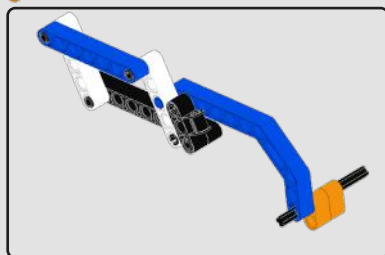
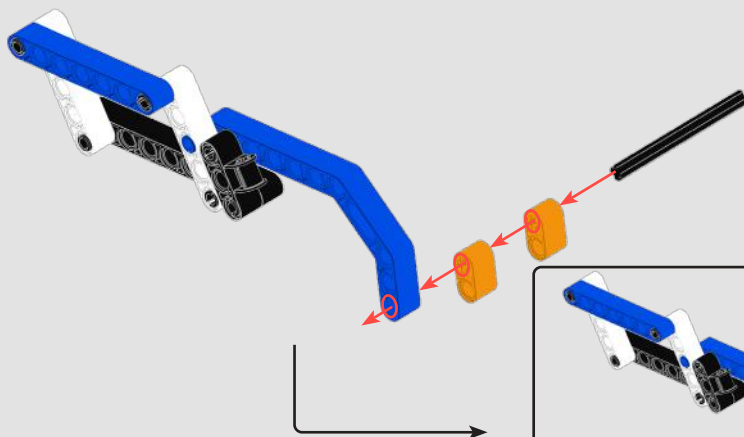
11



1:1

6H Axle

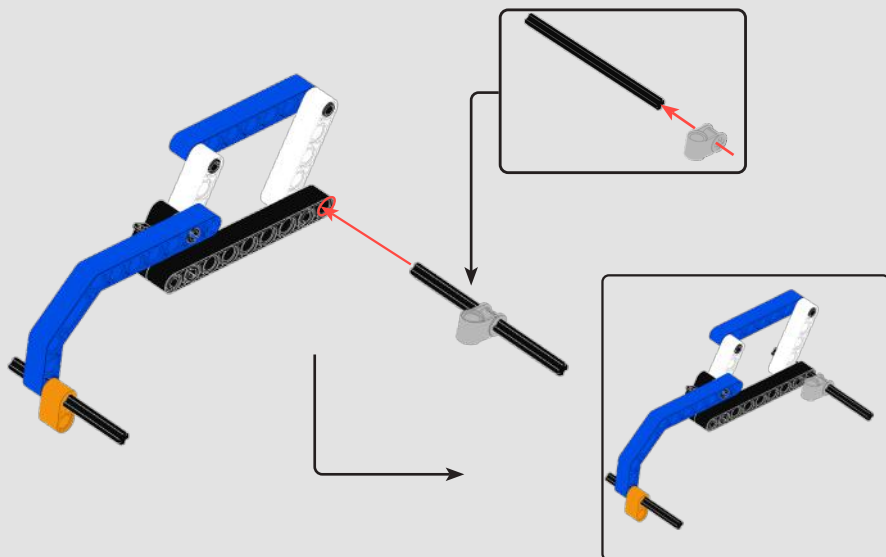
12



13

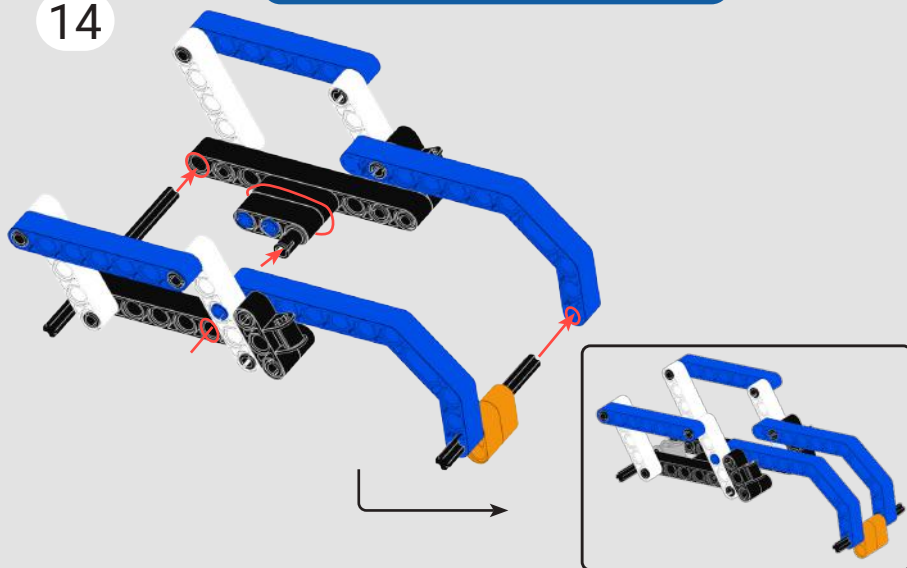
1:1

8H Axle



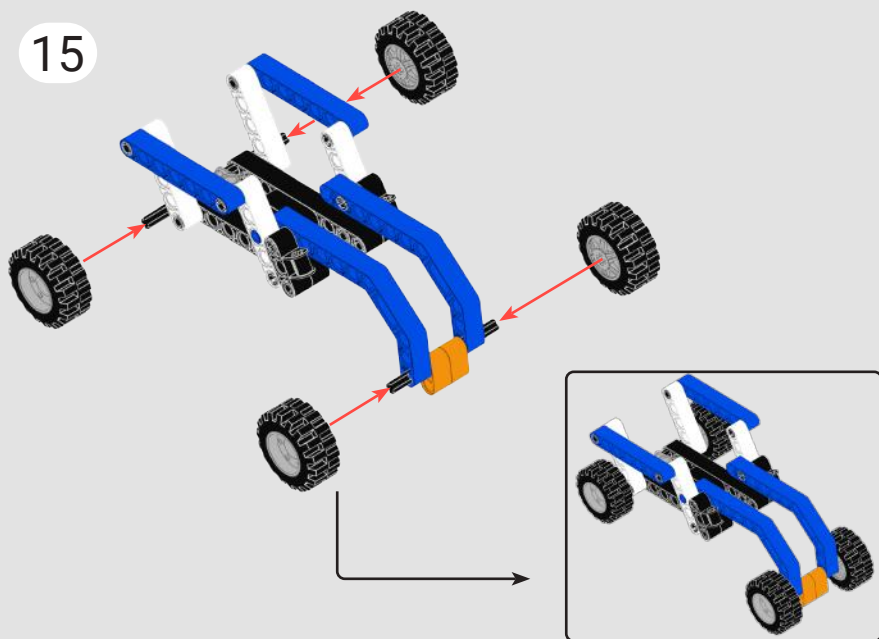
14

Let's Assemble both the sides.





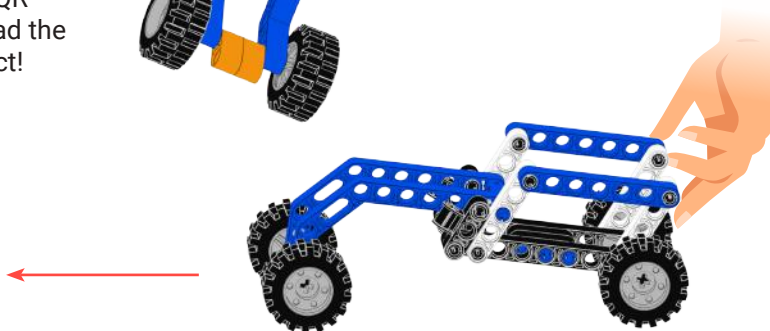
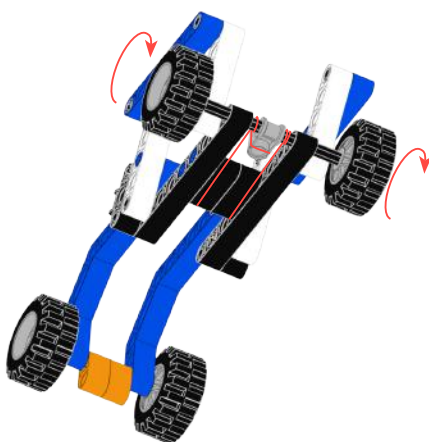
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## How to play

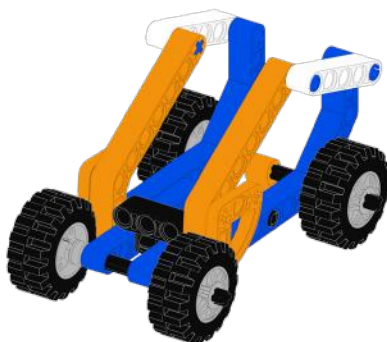


Scan QR  
and upload the  
Project!



# Project 3: MEX Buggy

## Let's Build!



## Things we need



7H Beam  
x 2



5H Beam  
x 2



2Cx10H  
Double Bend  
Beam  
x 2



2Cx7H Single  
Bend Beam  
x 2



3Cx2H Thin-D  
x 2



1Cx1H Beam  
x 2



Medium Axle  
Pin-Blue  
x 4



Medium  
Pin-Black  
x 4



6H Axle  
x 1



8H Axle  
x 1



10H Axle  
x 1



Axle Filler-Big  
x 4



Axle Filler-  
Small  
x 2



Axle Triple Pin  
Perpendicular  
Connector  
x 1

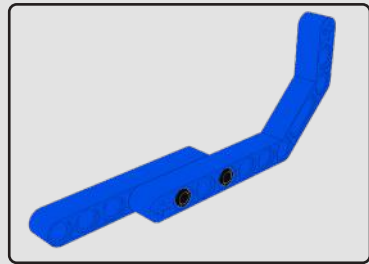
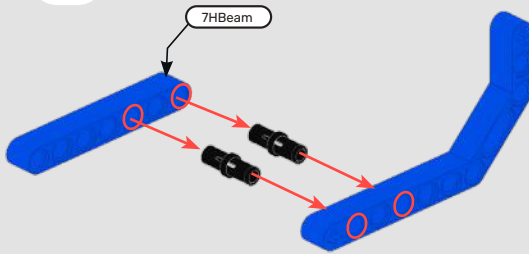


Wheel  
x 4



Rubber band  
x 1

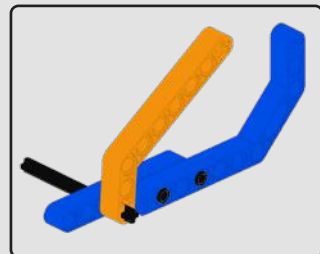
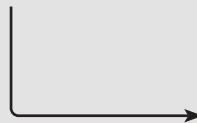
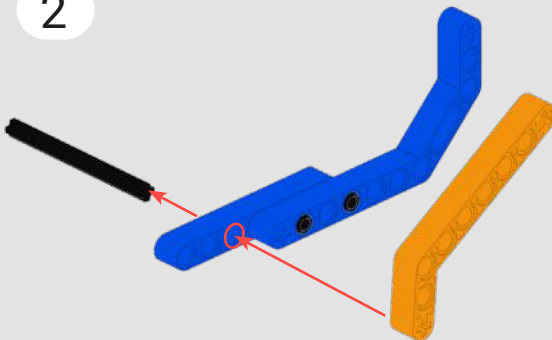
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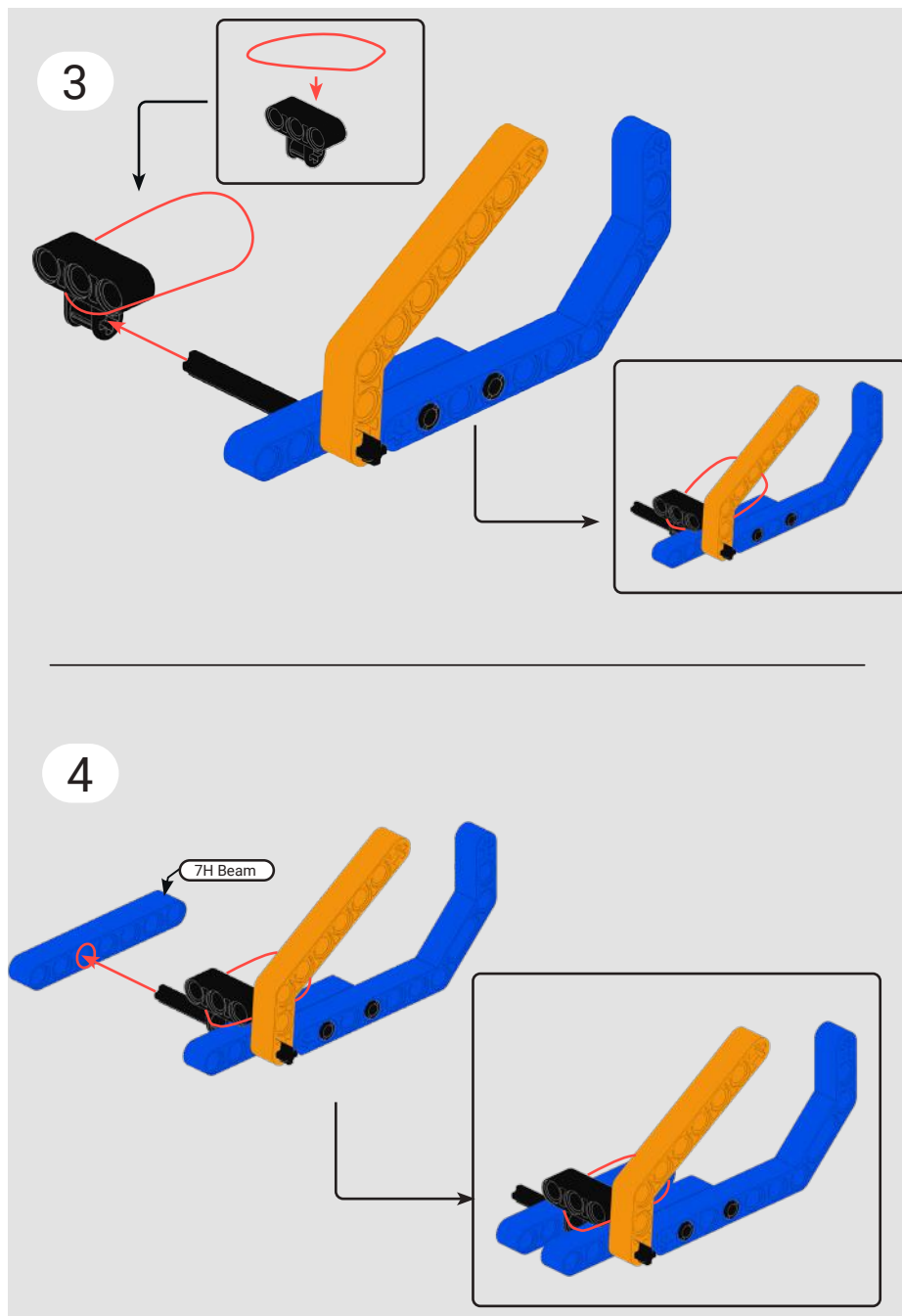


2

1:1

6H Axle

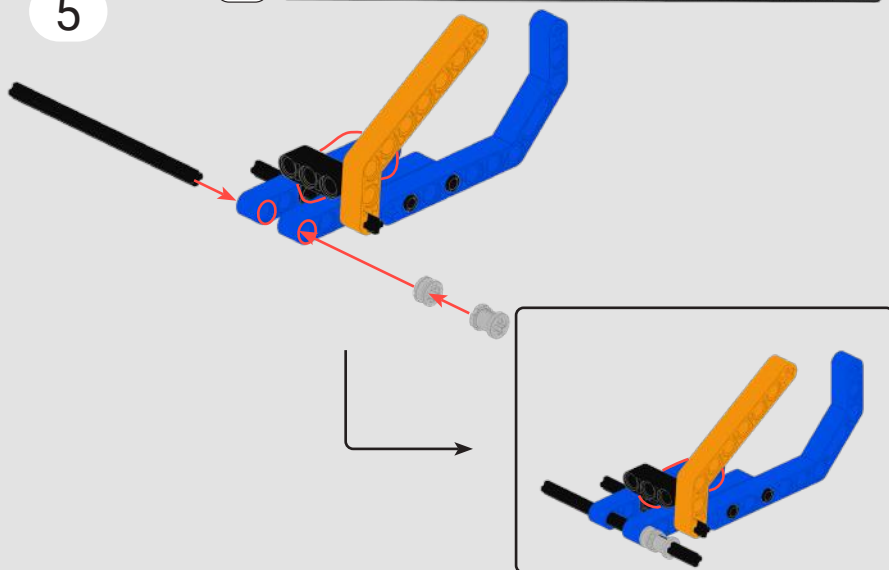




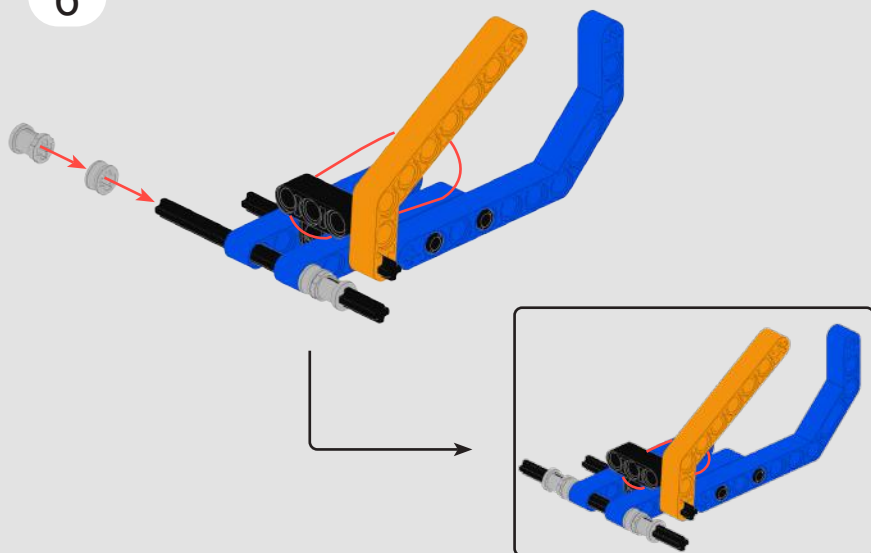
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1:1

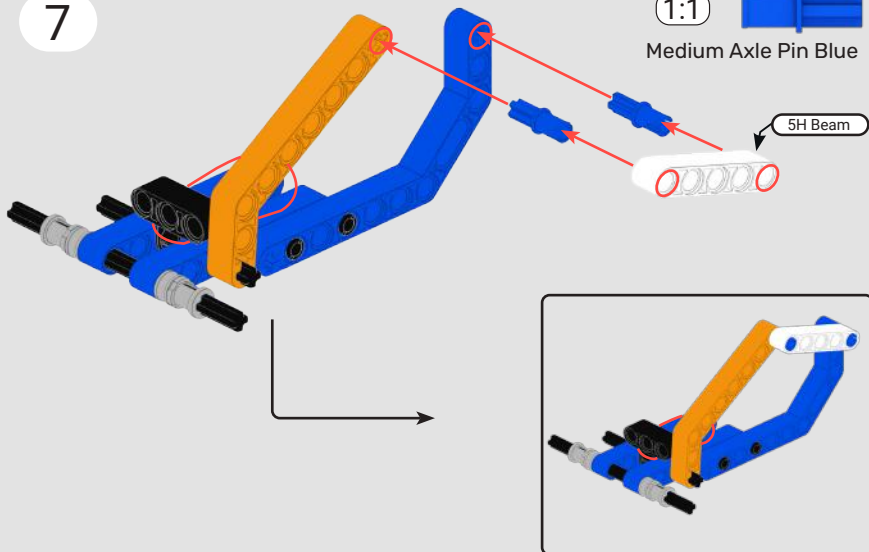
10H Axle



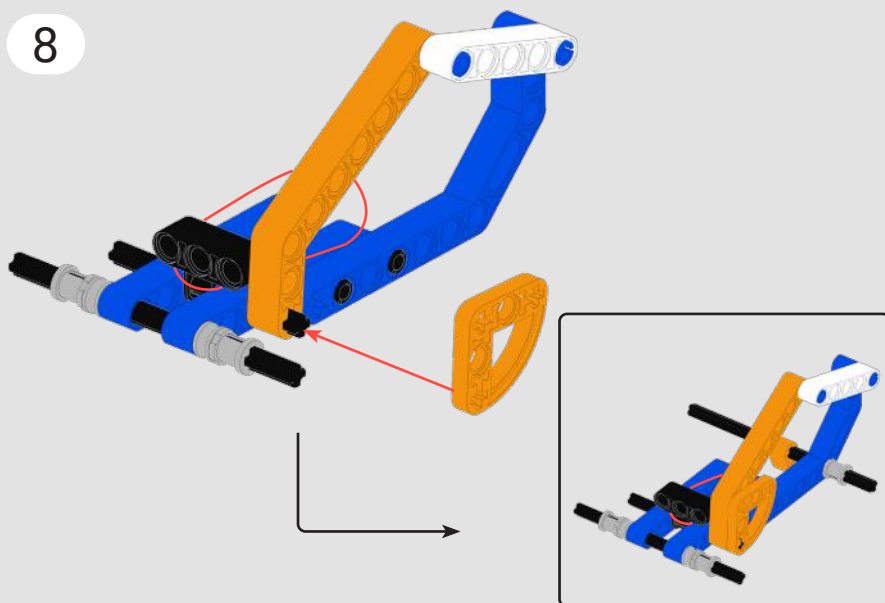
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7



8

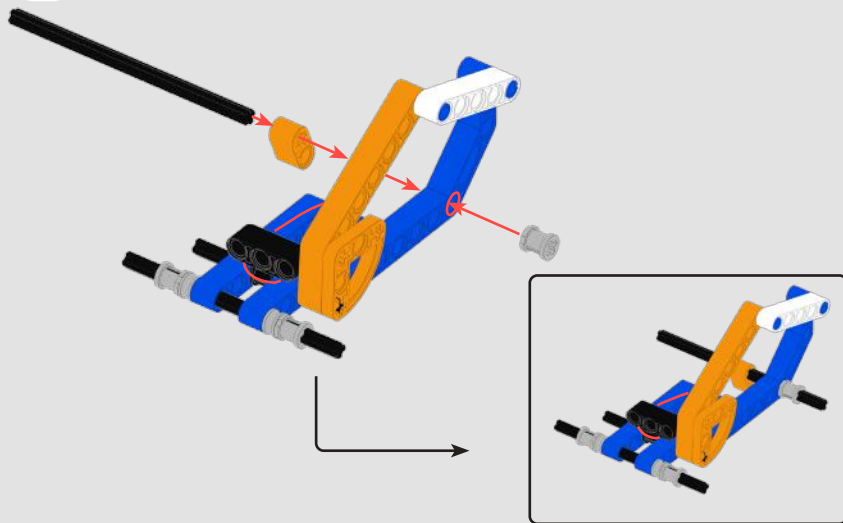




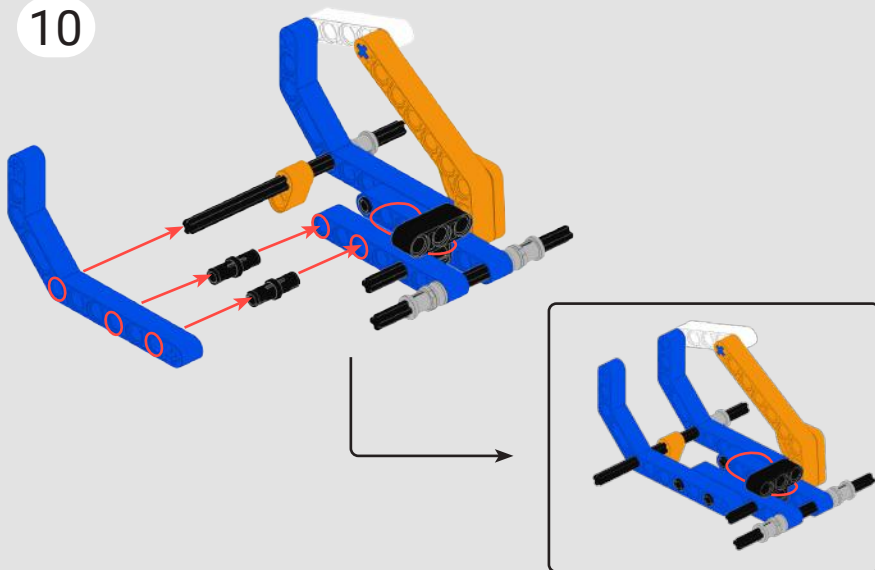
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8H Axle

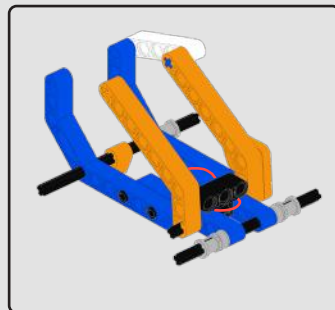
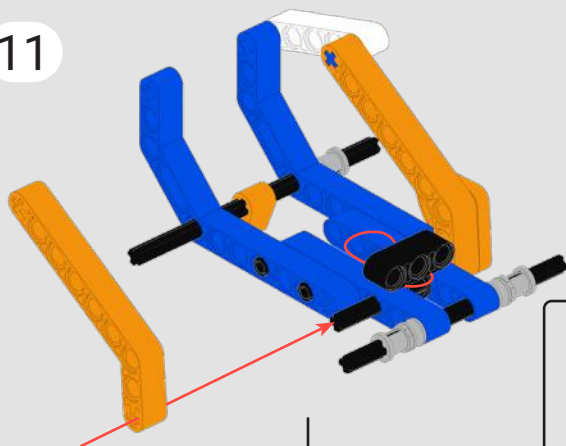
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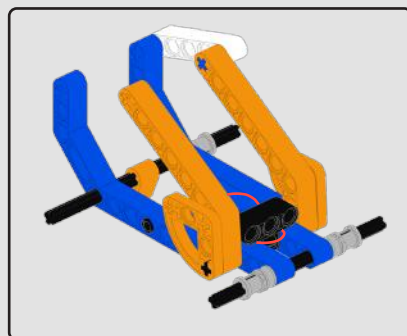
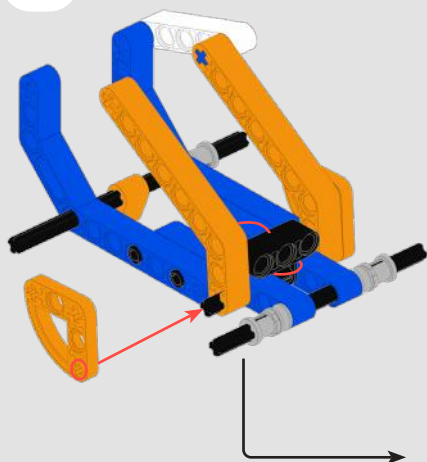
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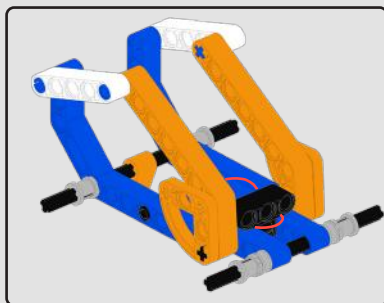
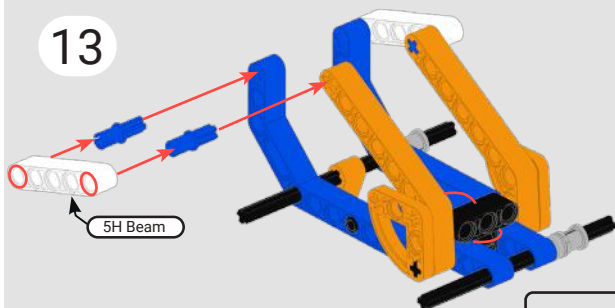
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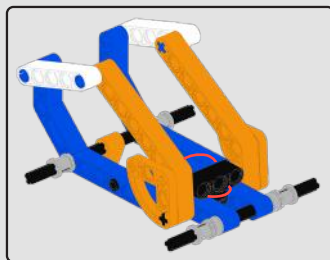
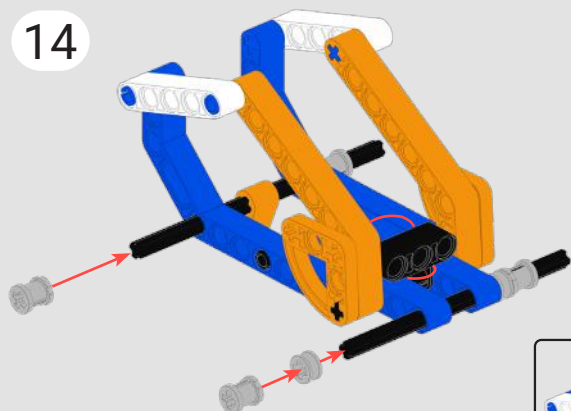
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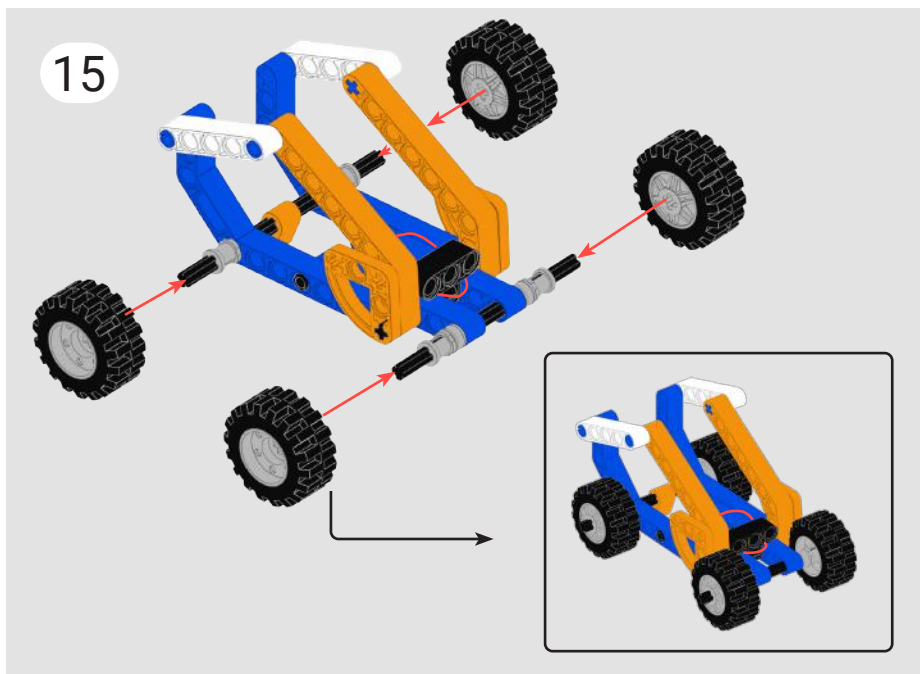


13



14

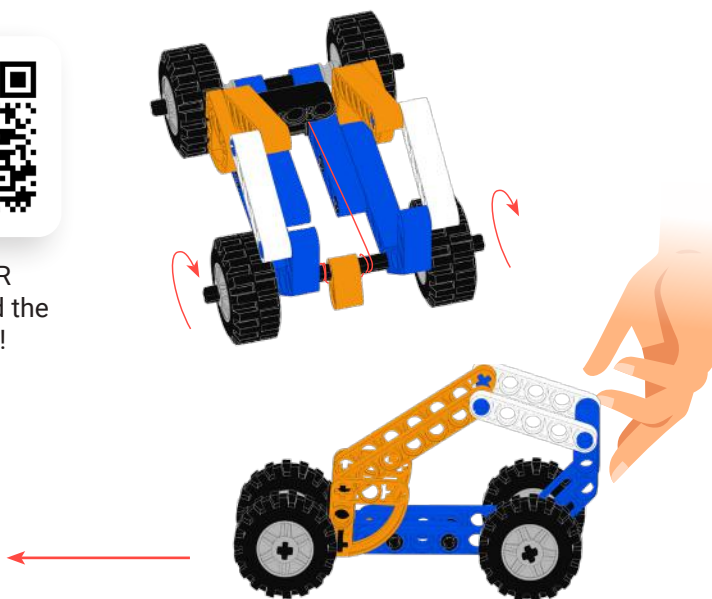




## How to play

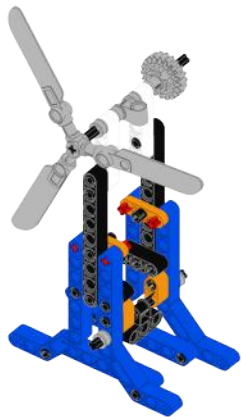


Scan QR  
and upload the  
Project!



# Project 4: MEX Windmil

## Let's Build!



## Things we need



9H Beam  
x 2



5H Beam  
x 2



3H Beam  
x 2



2Cx10H  
Double Bend  
Beam  
x 4



2Cx1H  
Thin-Beam  
x 2



1Cx1H Beam  
x 2



2H Axle  
x 4



8H Axle  
x 1



10H Axle  
x 1



Wing  
x3



Triple Axle  
connector  
x1



Axle Filler-  
Small  
x 5



Medium  
PinBlack  
x 14



20T Double  
Bevel gear  
x 1



Axle Filler-Big  
x 4



Axle Triple Pin  
Perpendicular  
Connector  
x 1

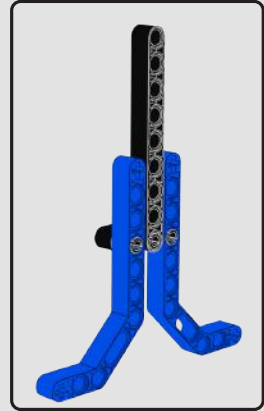
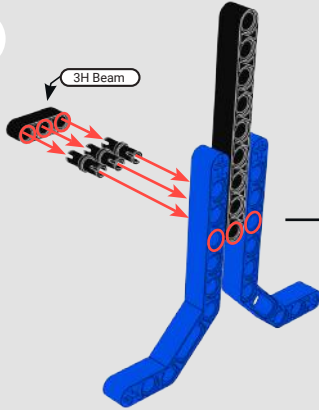


1Cx1H  
Perpendicular  
Connector  
x 1

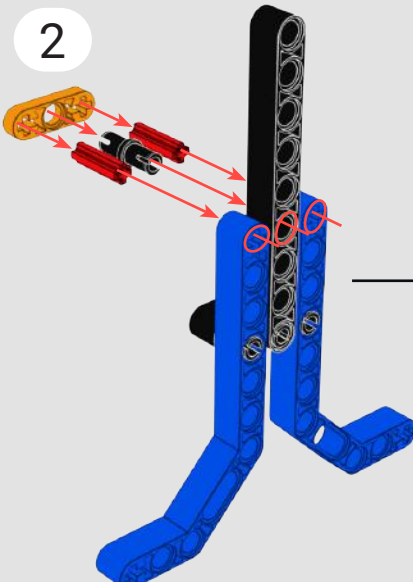


Rubber band  
x 1

1

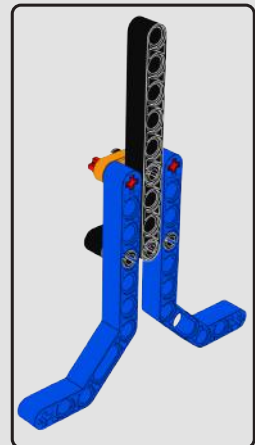


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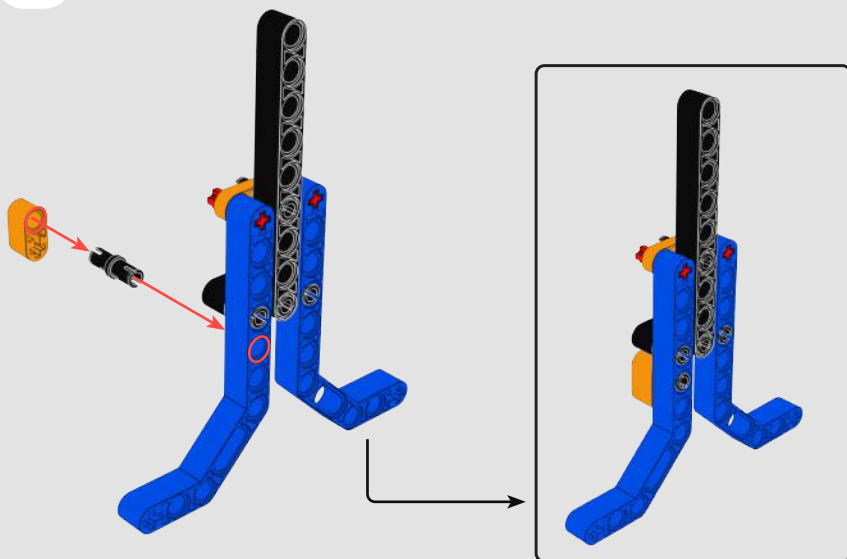


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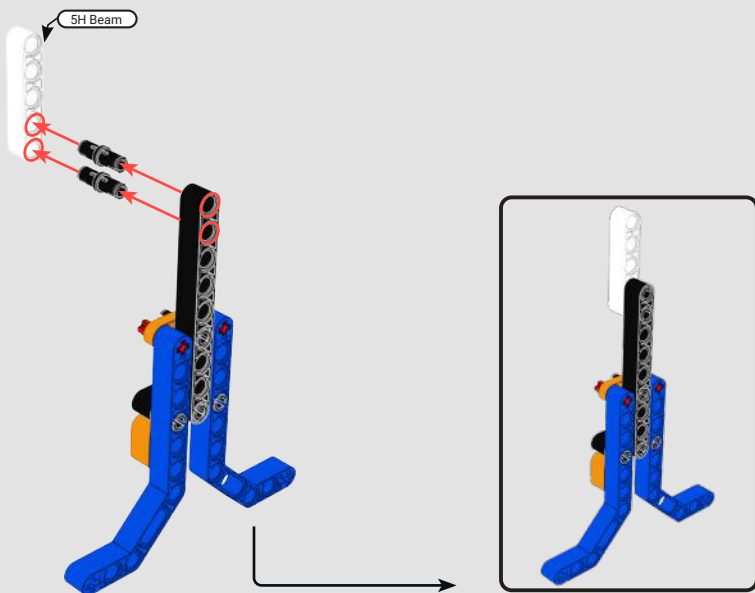
2H Axle



3

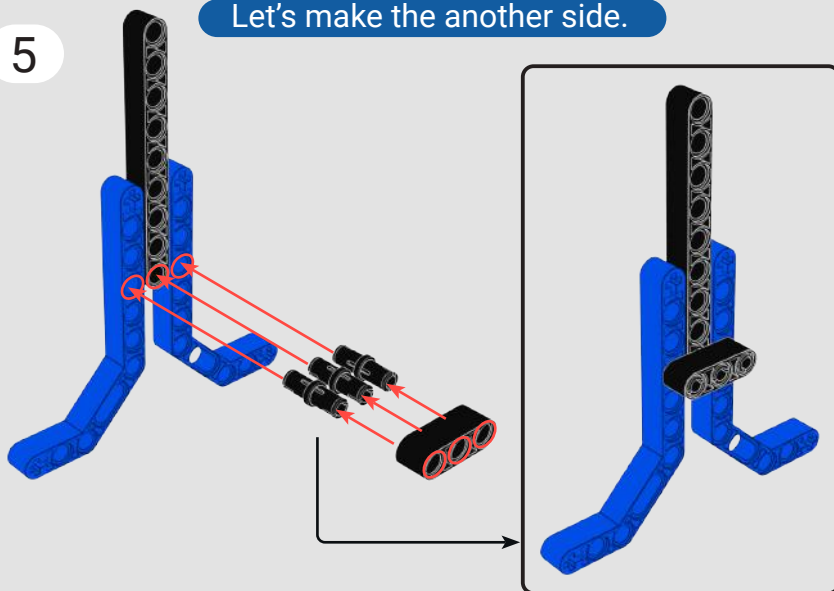


4



5

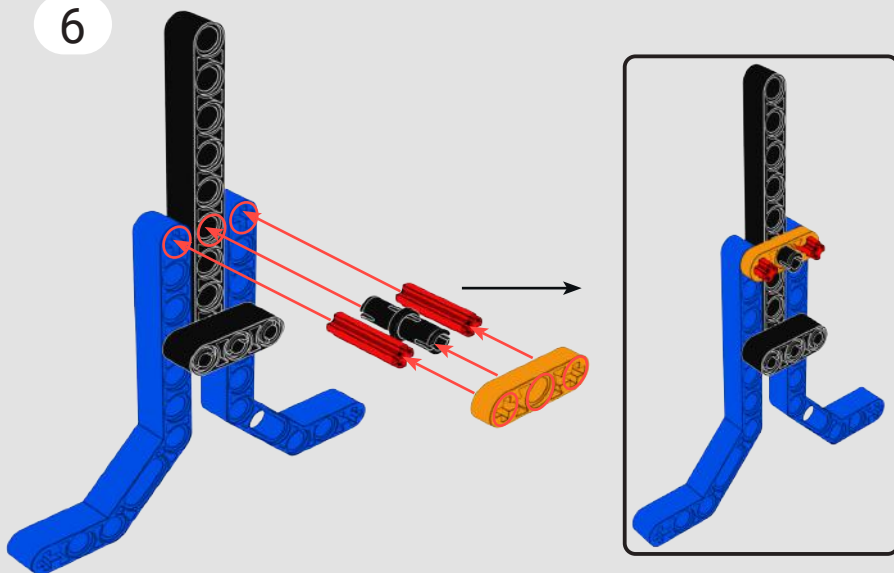
Let's make the another side.



6

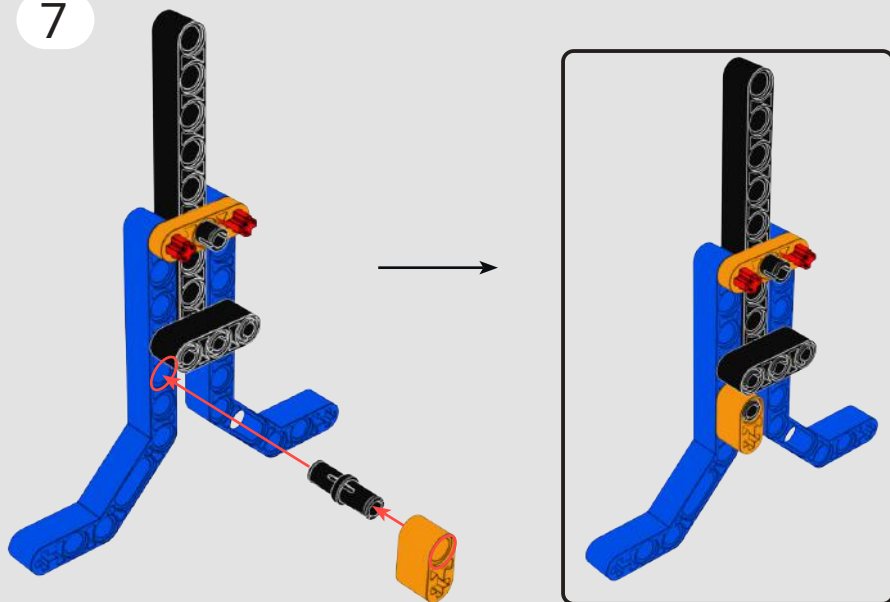
1:1

2H Axle

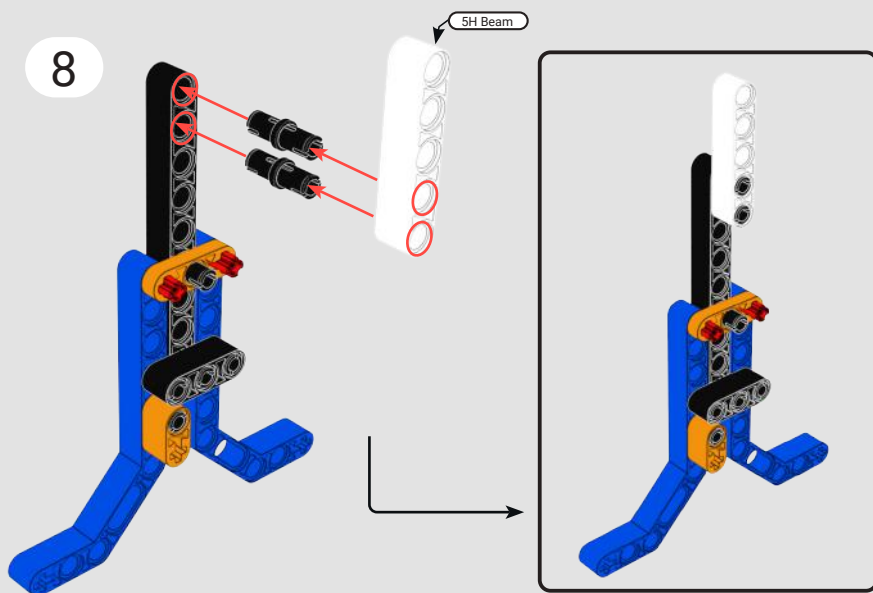




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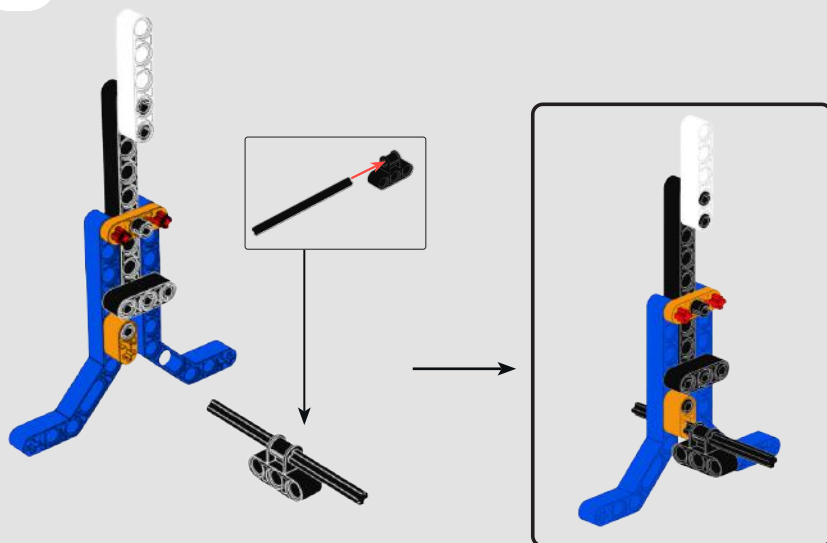
8



9

1:1

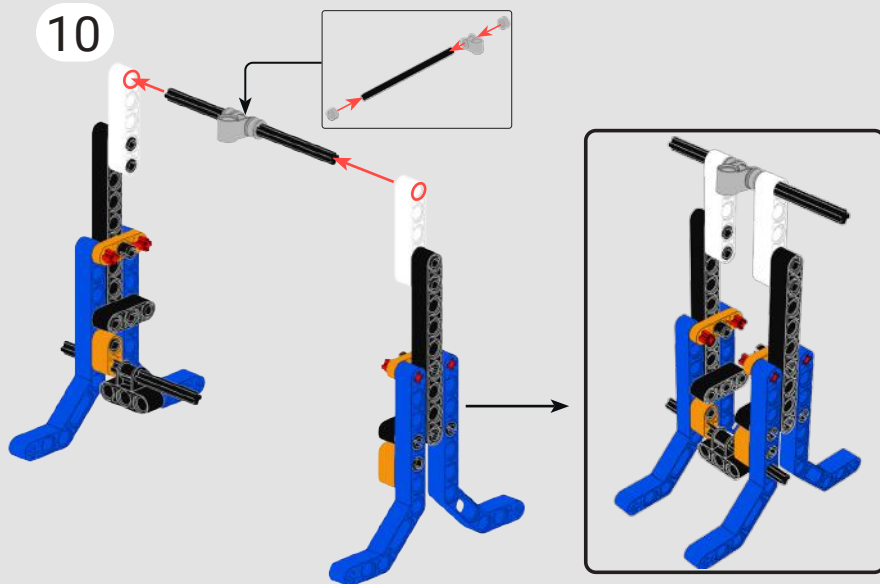
8H Axle



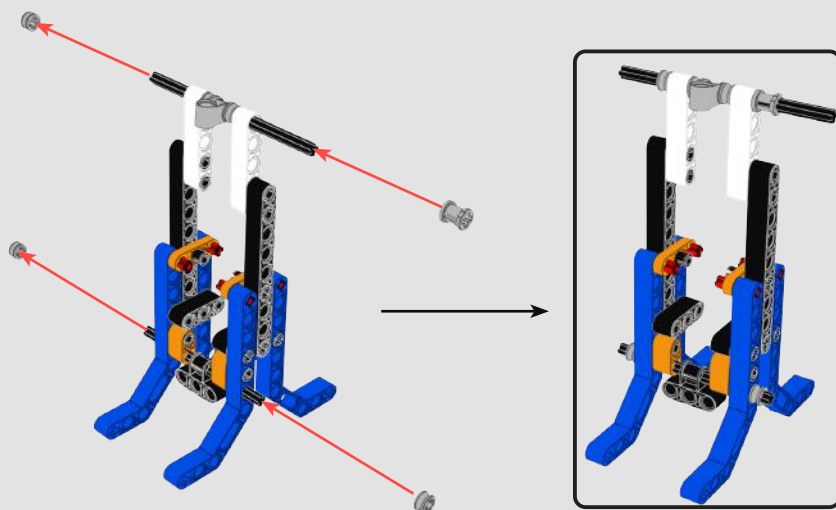
1:1

10H Axle

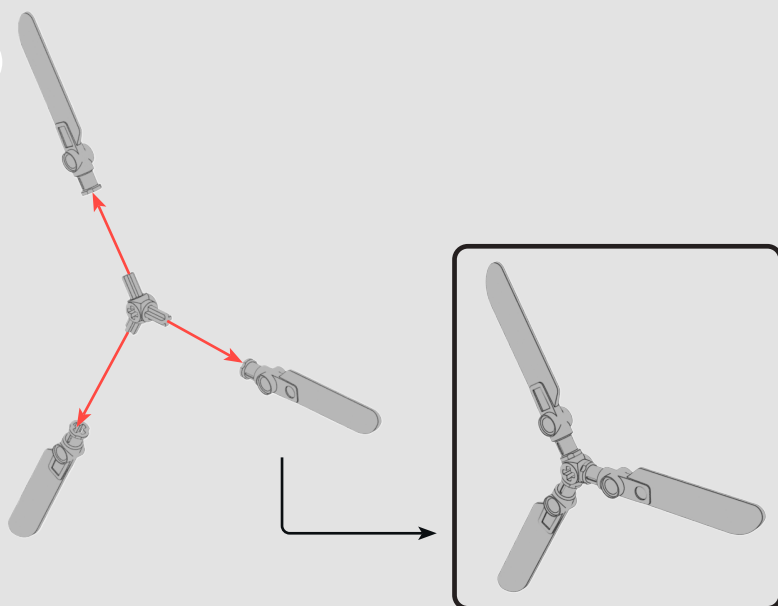
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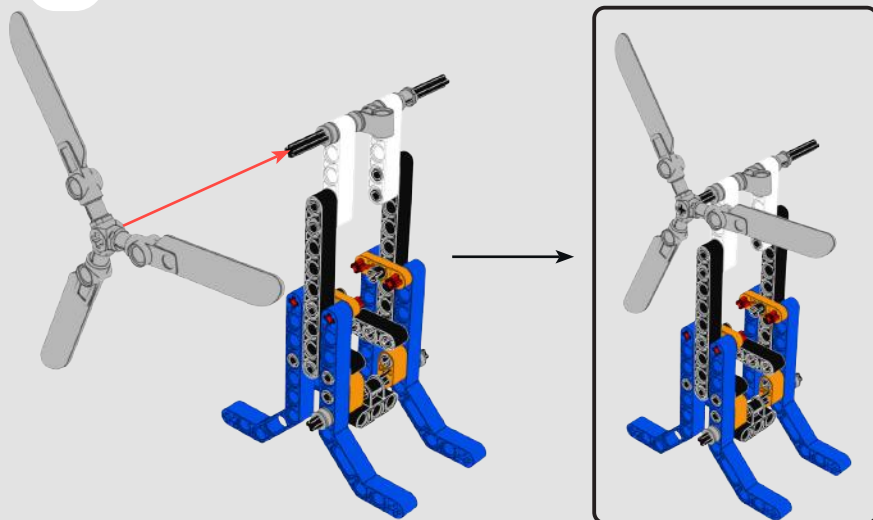
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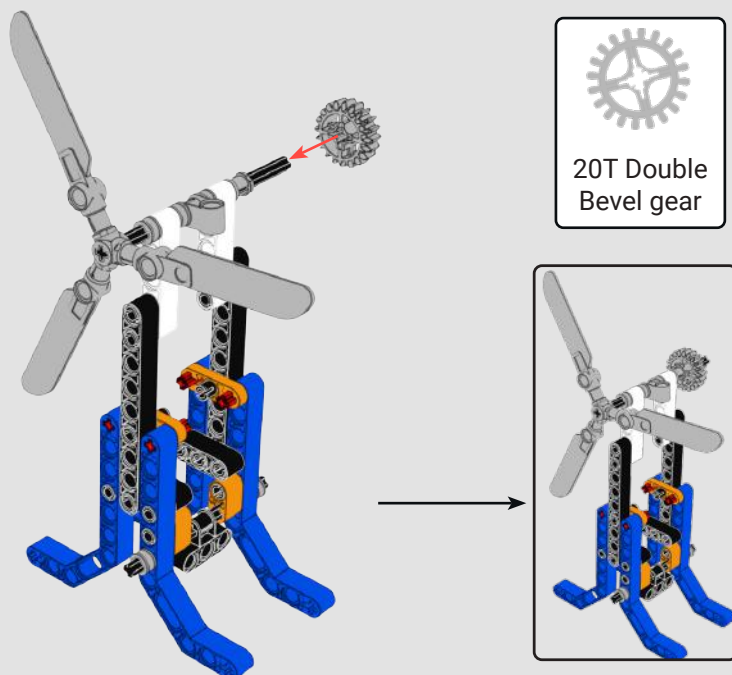
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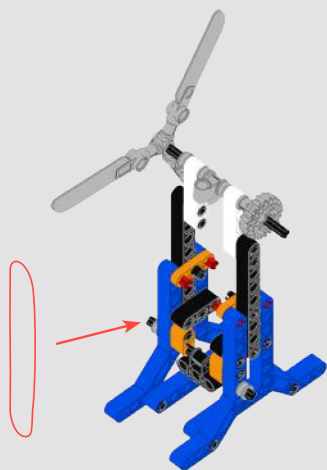
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14



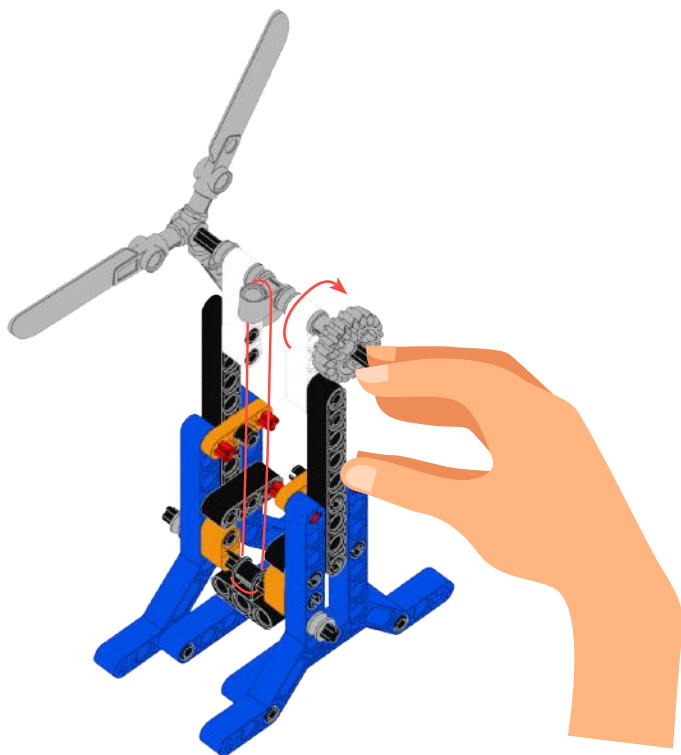
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## How to play

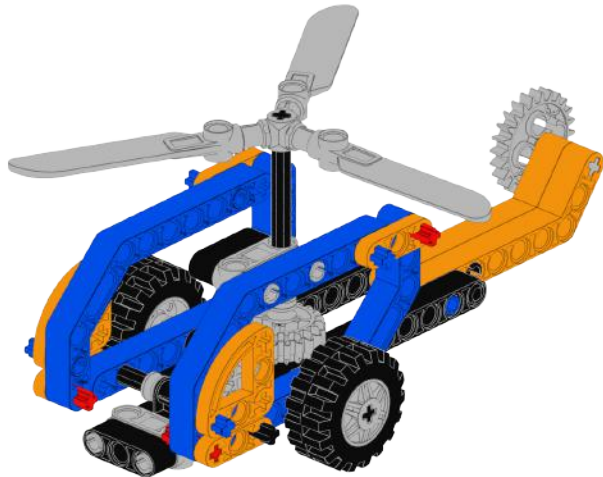


Scan QR  
and upload the  
Project!



# Project 5 : MEX Copter

Let's Build!



## Things we need



9H Beam  
x 2



3H Beam  
x 2



2Cx10H  
Double Bend  
Beam  
x 4



2Cx7H Single  
Bend Beam  
x 2



3Cx2H Thin-D  
x 2



2Cx1H  
Thin-Beam  
x 2



2H Axle  
x 4



8H Axle  
x 1



3H Axle  
x 1



10H Axle  
x 1



Medium  
Pin-Black  
x 5



Medium Axle  
Pin-Blue  
x 4



3Hx4Pin  
Connector  
x 2



Axle  
Filler- Small  
x 5



Axle Filler-Big  
x 4



Wing  
x3



Triple Axle  
connector  
x1



Axle Triple Pin  
Perpendicular  
Connector  
x 1



20T Double  
Bevel gear  
x 2



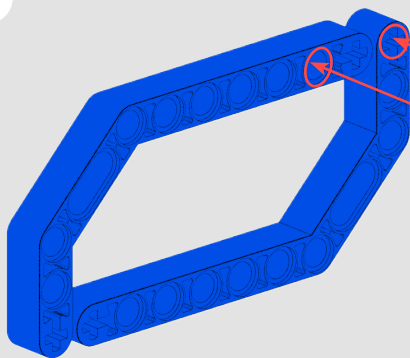
Spur Gear24T  
x 1



Wheel  
x 4

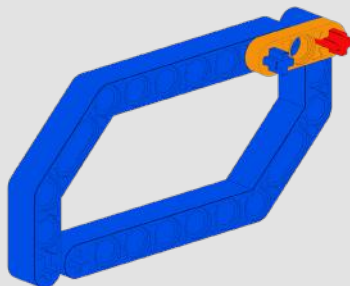
## Steps

1



1:1 2H Axle

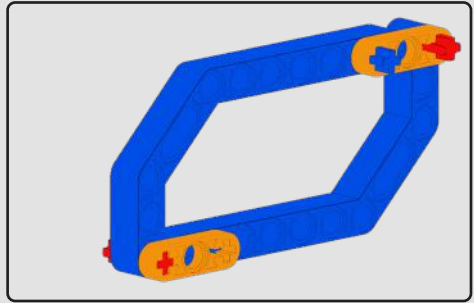
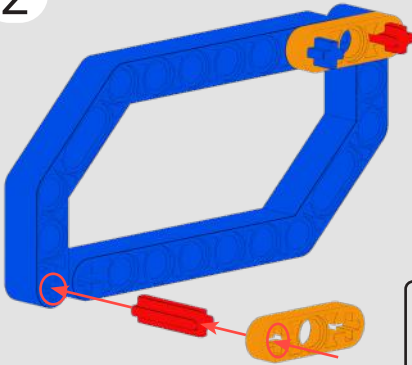
1:1 Medium Axle Pin Blue



2

1:1

2H Axle

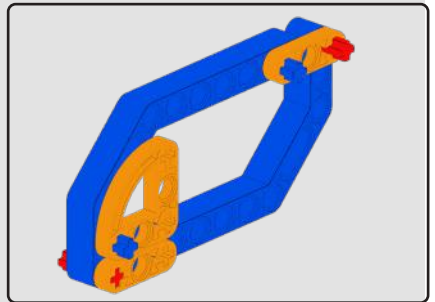
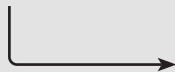
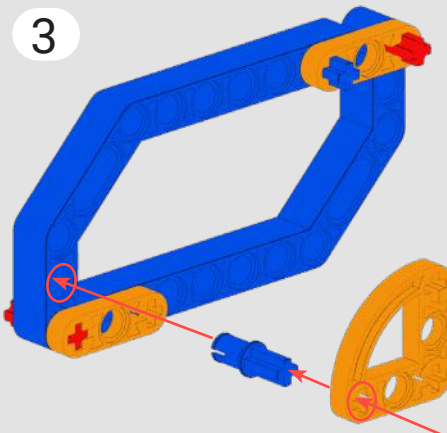


3

1:1



Medium Axle Pin Blue

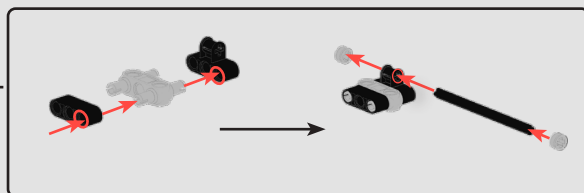




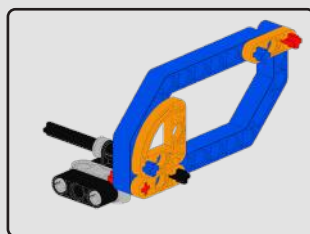
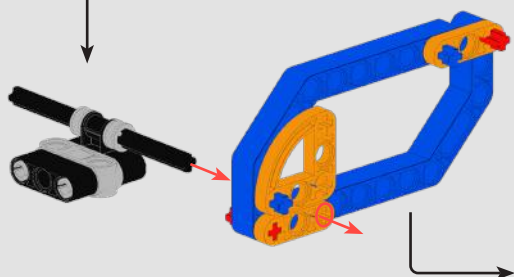
4

1:1

8H Axle

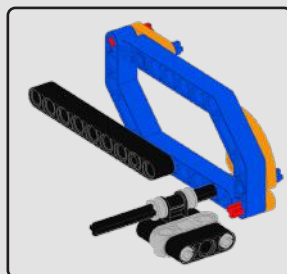
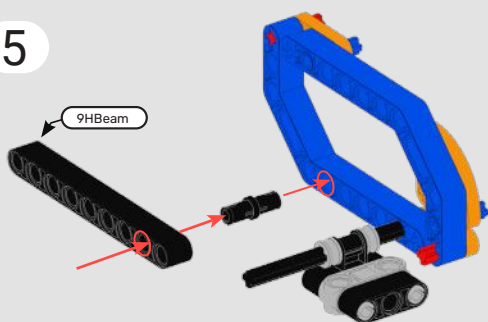


Axle Filler- Small



5

9H Beam



### Build Tip



**Black Medium Pins can be a little tough to insert!**  
But don't worry. Push it through and make sure the joint is firm. They can take a little force. :)

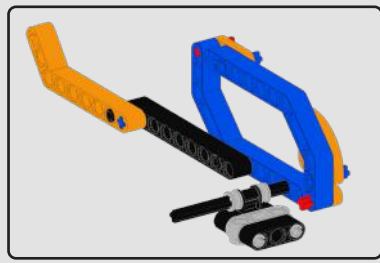
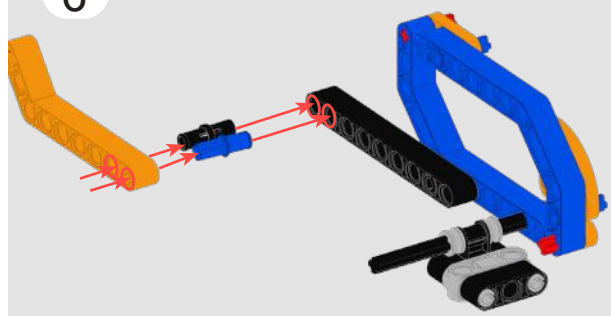


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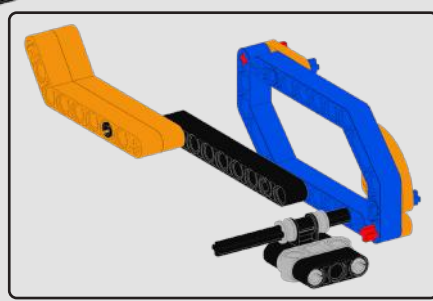
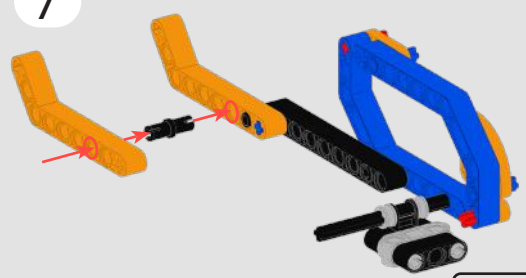
1:1



Medium Axle Pin Blue



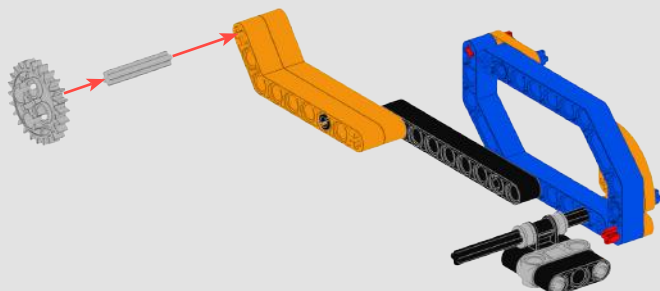
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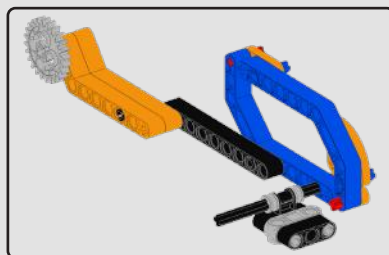
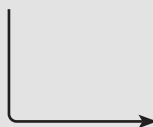
8

1:1

3H Axle



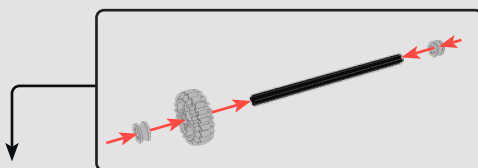
Spur Gear-24T



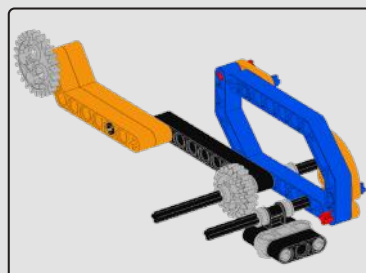
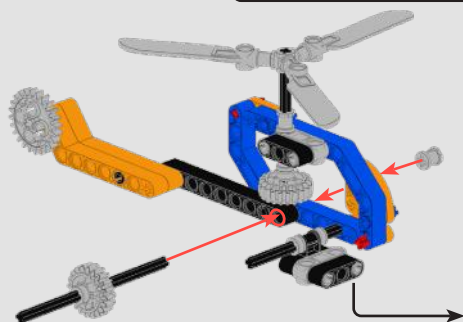
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1:1

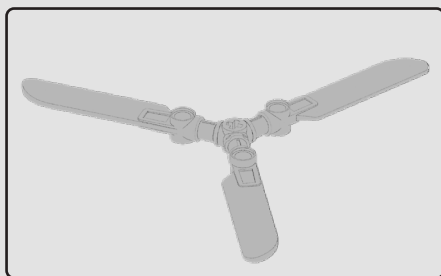
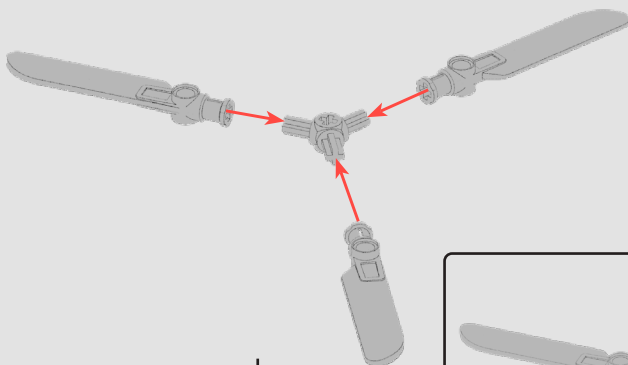
10H Axle



20T Double Bevel  
gear



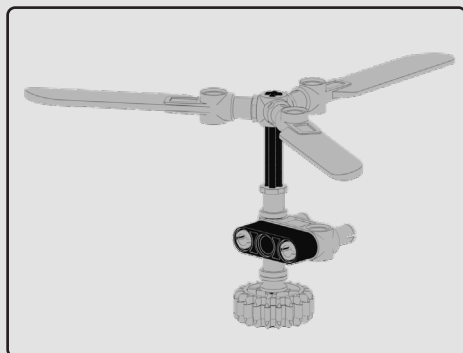
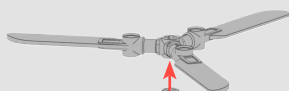
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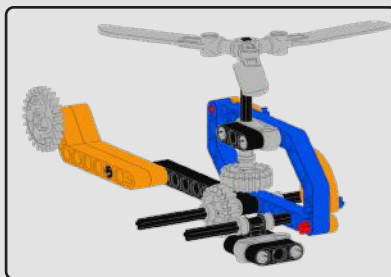
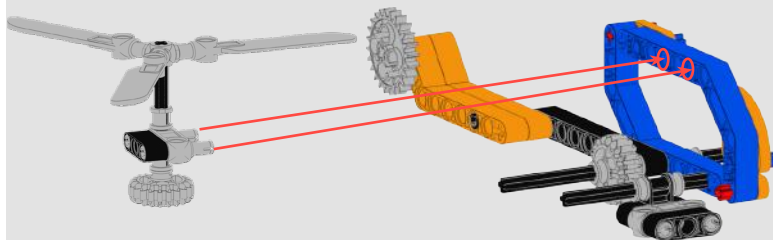
11

1:1

8H Axle

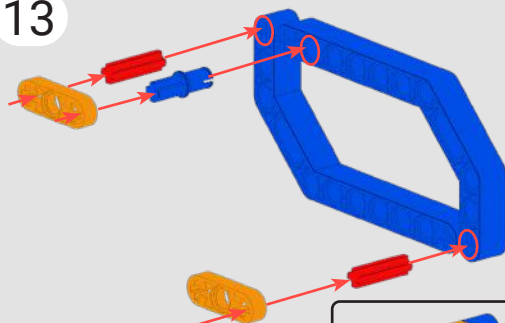


12



Let's make the other side.

13



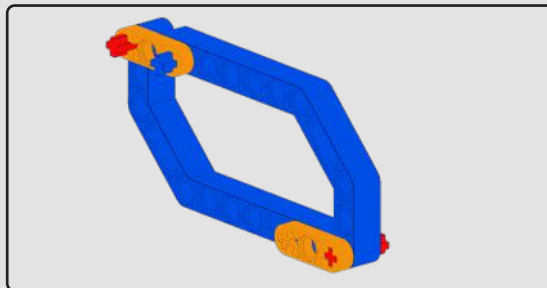
1:1

2H Axle

1:1



Medium Axle Pin Blue

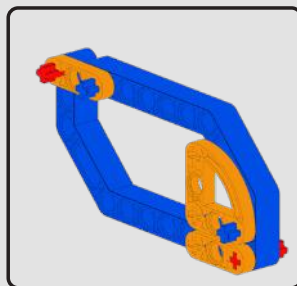
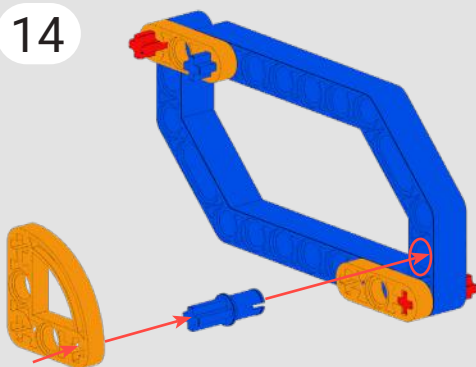


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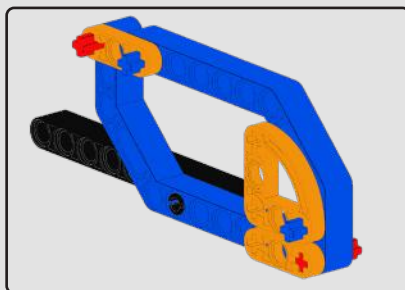
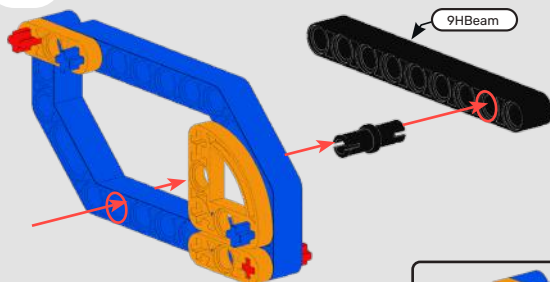


Medium Axle Pin Blue

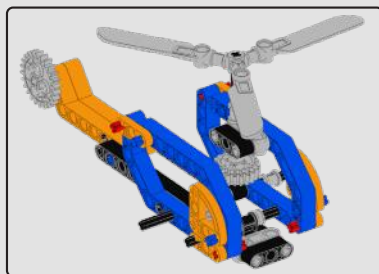
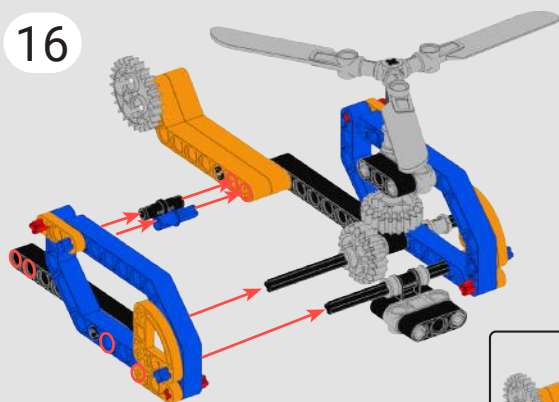


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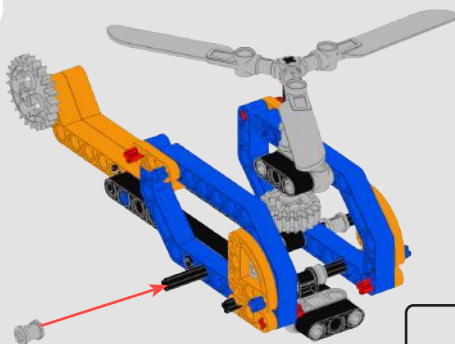
9HBeam

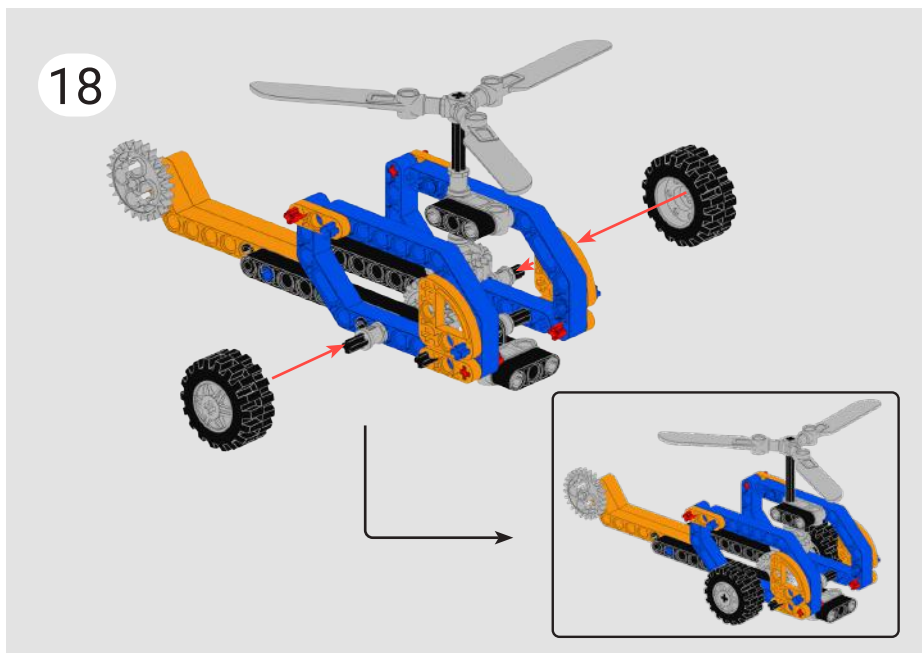


16



17

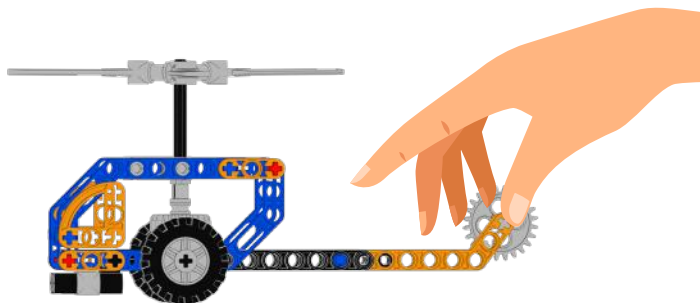




## How to play



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Project!





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69/2A, Najafgarh Road, Industrial  
Area, New Delhi 110015

 +91 - 8506931515  support@avishkaar.cc  www.avishkaar.cc



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