

Catalogue
Building Instructions

9+ Age

TIPS N TRICKS

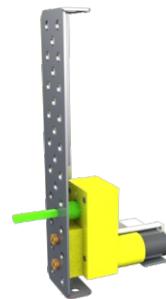


Motor Fixing With Metal Strip

Step 1



Step 2



Motor Cable Fixing With Motor & Control Card

Step 1

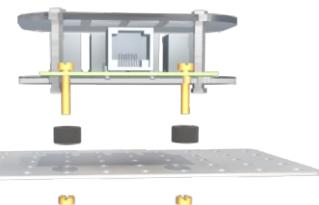


Step 2

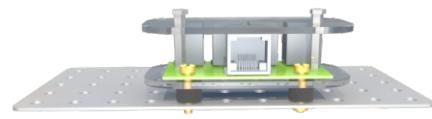


Control Card Fixing With Metal Strip

Step 1



Step 2

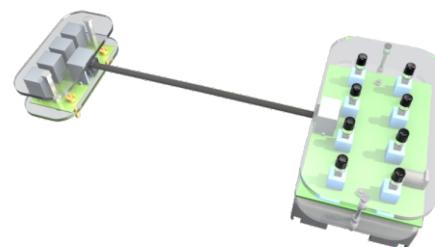


Remote Cable Fixing With Remote & Control Card

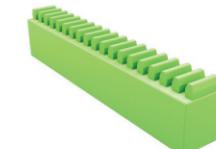
Step 1



Step 2



All Parts



1x Remote

1x Control Card

4x Motor

4x Wheel

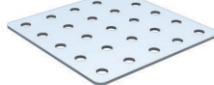
4x 60T Gear

4x 36T Gear

4x 12T Gear

2x Rack Gear

2x Big Plate



2x Med. Plate

2x Small Plate

2x C Big Bar

2x L Big Bar

4x C Small Bar

4x L Small Bar

6x Small Bar

2x Slider

6x Tiny L



6x Shaft Locker

1x Hook

6x Shaft 3"

4x Motor Cable

1x Remote Cable

20x Axle Lock

30x Spacer

30x Bolt 0.5"

10x Bolt 1.5"



40x Nut

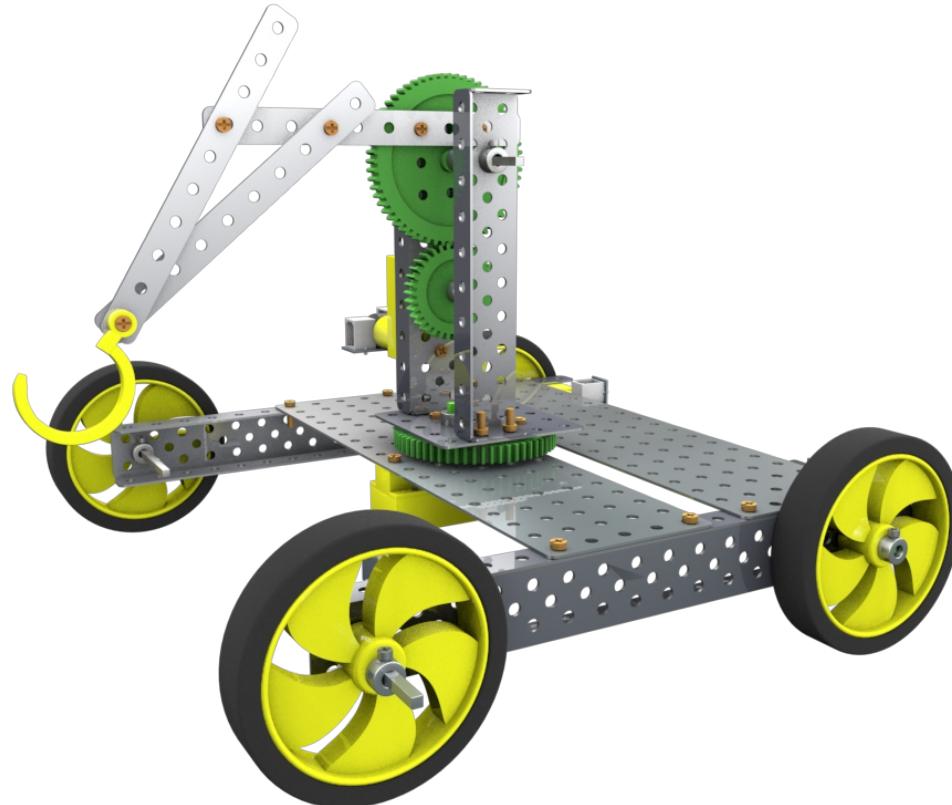
1x Screw Driver

1x Spanner

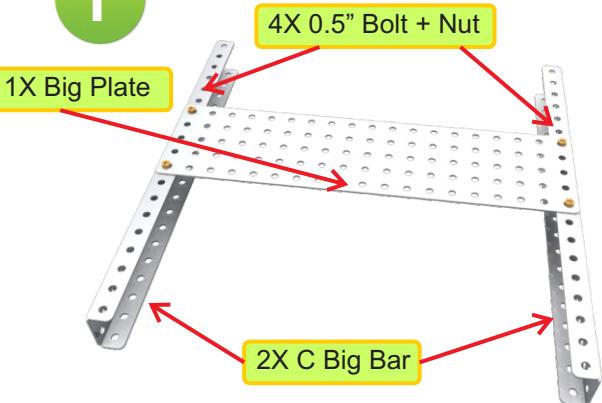
1x Manual

* The color of the parts in the kit may be different from that given in this book.

#1 Crane



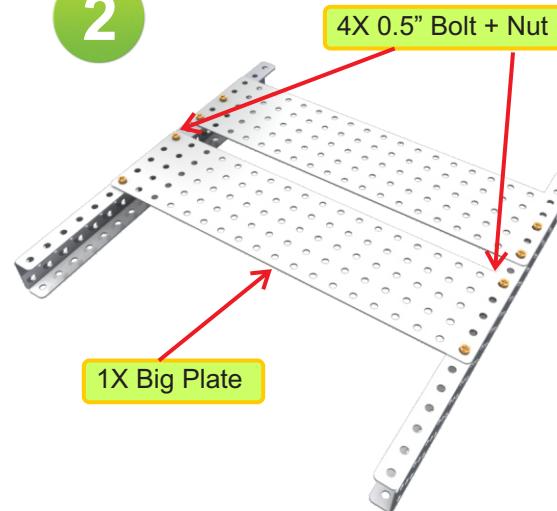
1



C Big Bar

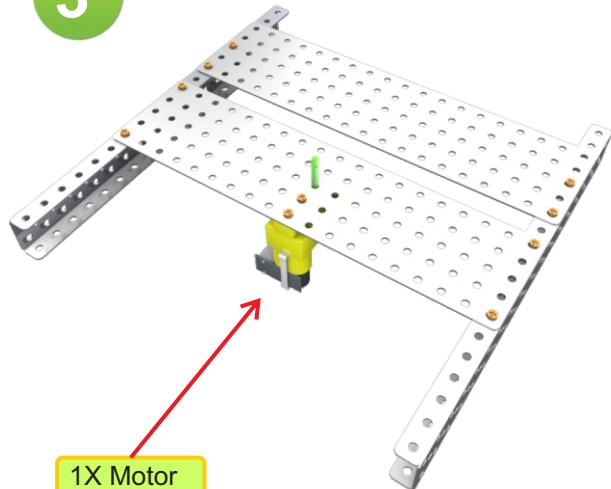
1 .This C- bar appears as an H-section, when two C bars are joined through a big plate, as did in the kit.

2

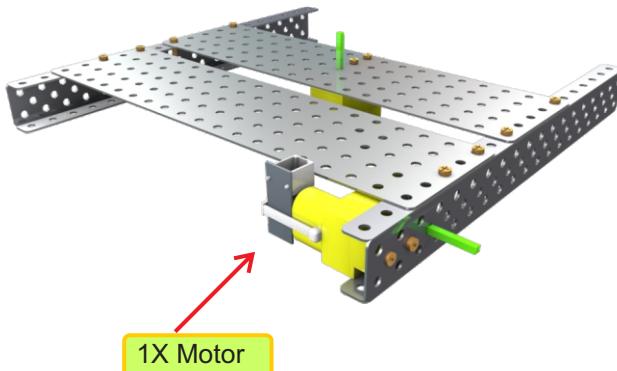


Big Plate

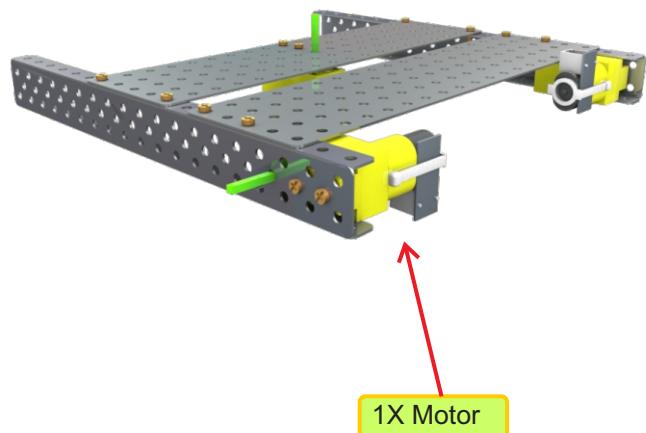
1. It is a smooth, flat, thin and rigid body of uniform thickness..

3**Motor**

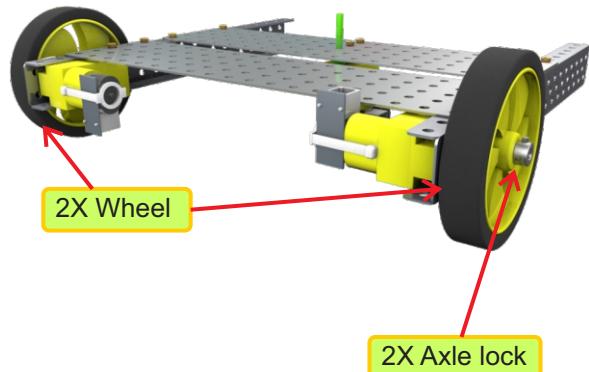
1. In case of DC motor, electric energy is converted into mechanical energy i.e. one form of energy to another.

4**Motor**

1. In an electric motor the moving part is called the rotor and the stationary part is called the stator.

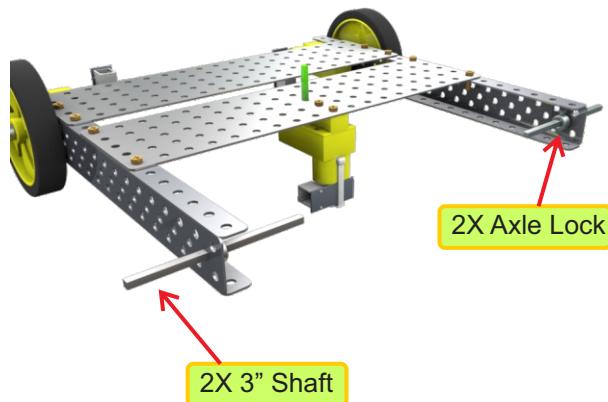
5**Motor**

1. It is a device which produces or causes motion.
2. A motor is one of the simplest rotating machines.

6**Wheel**

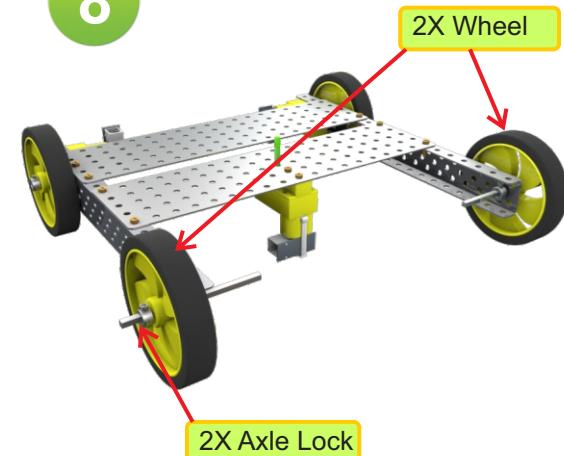
1. Flywheel is a type of wheel which is used in steam engine, internal combustion engine and pumps.

7

**Axle Lock**

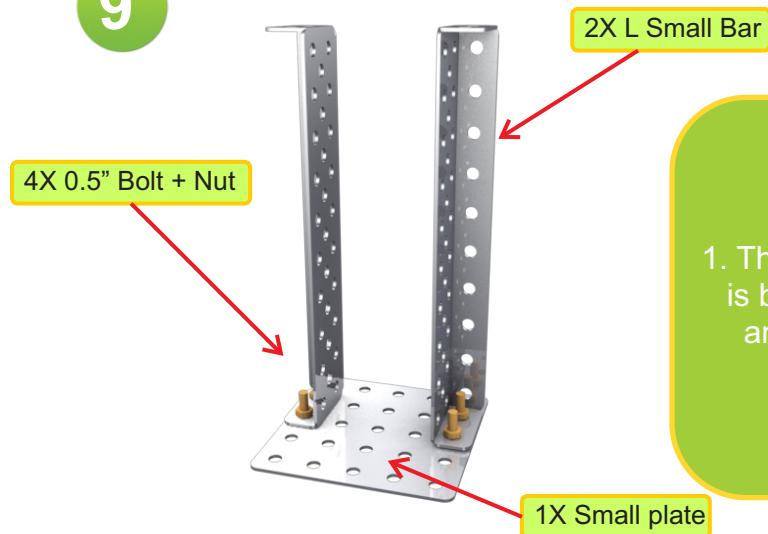
1. To prevent from fatigue, all the axle lock, shaft, wheel, etc. has to be properly lubricated (i.e. oiled).

8

**Wheel**

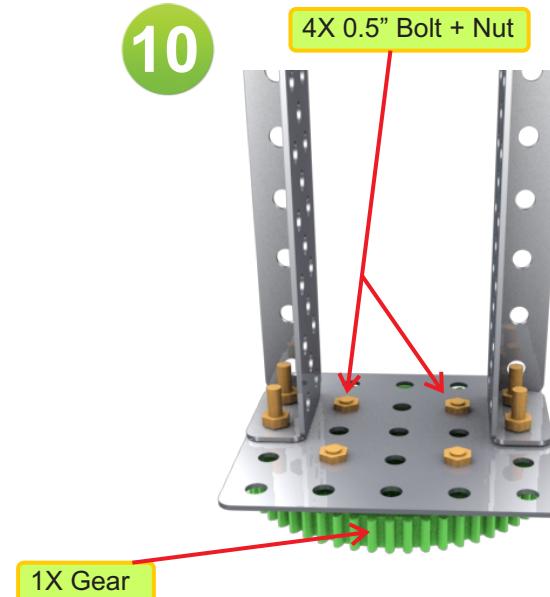
1. Flywheel is a type of wheel which is used in steam engine, internal combustion engine and pumps.

9

**L Small Bar**

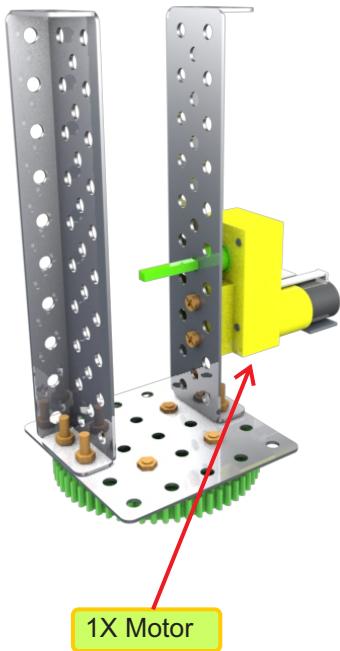
1. The corner of the bar is bent at 90 degree angle, giving it an L-shape.

10

**Gear**

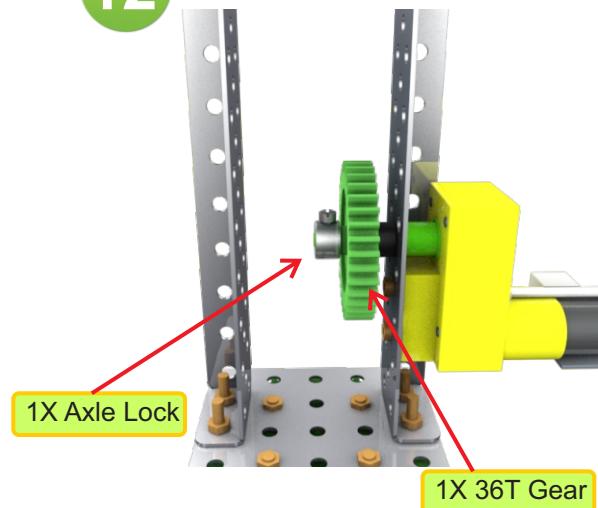
1. A gear is a rotating machine part having cut teeth, in order to transmit torque.

11

**Motor**

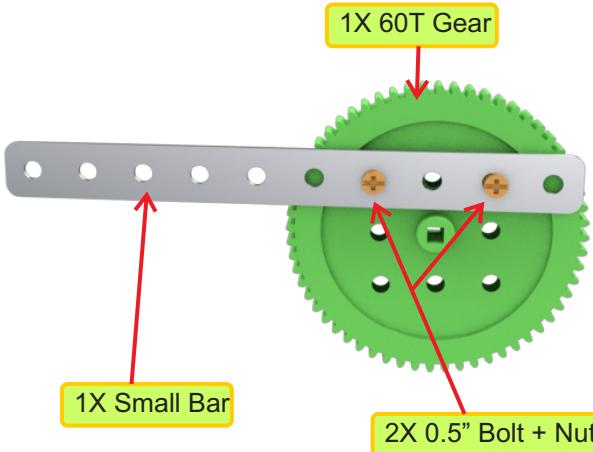
1. In an electric motor the moving part is called the rotor and the stationary part is called the stator.

12

**Axle Lock**

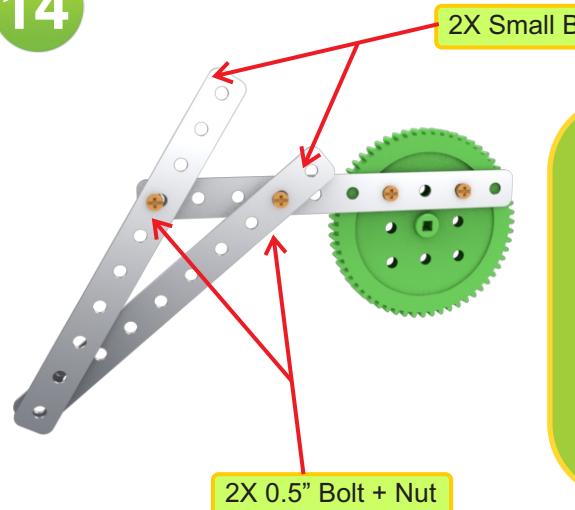
1. Even airplanes use wheels and axles on their landing gear.

13

**Nut & Bolt**

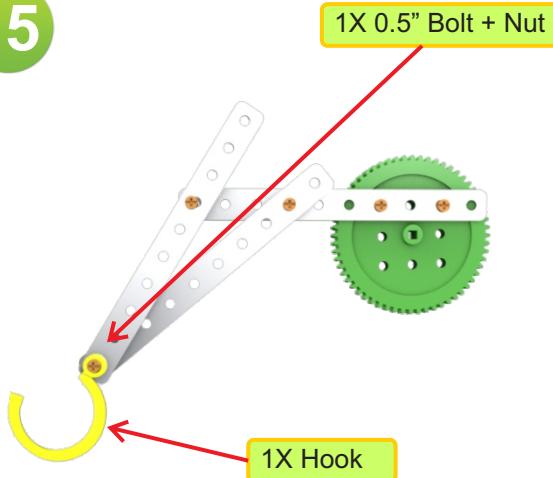
1. Nut Bolt reduces the vibration in robot body when it runs.

14

**Small Bar**

1. It can be used to make three dimensional arm as well.

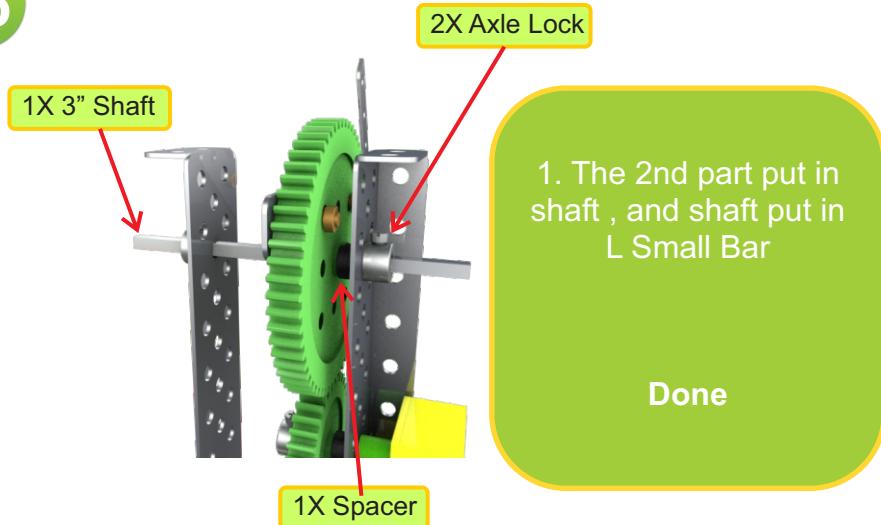
15



Nut & Bolt

1. Some bolts are threaded along their full length, while others have only a short threaded area at the end.

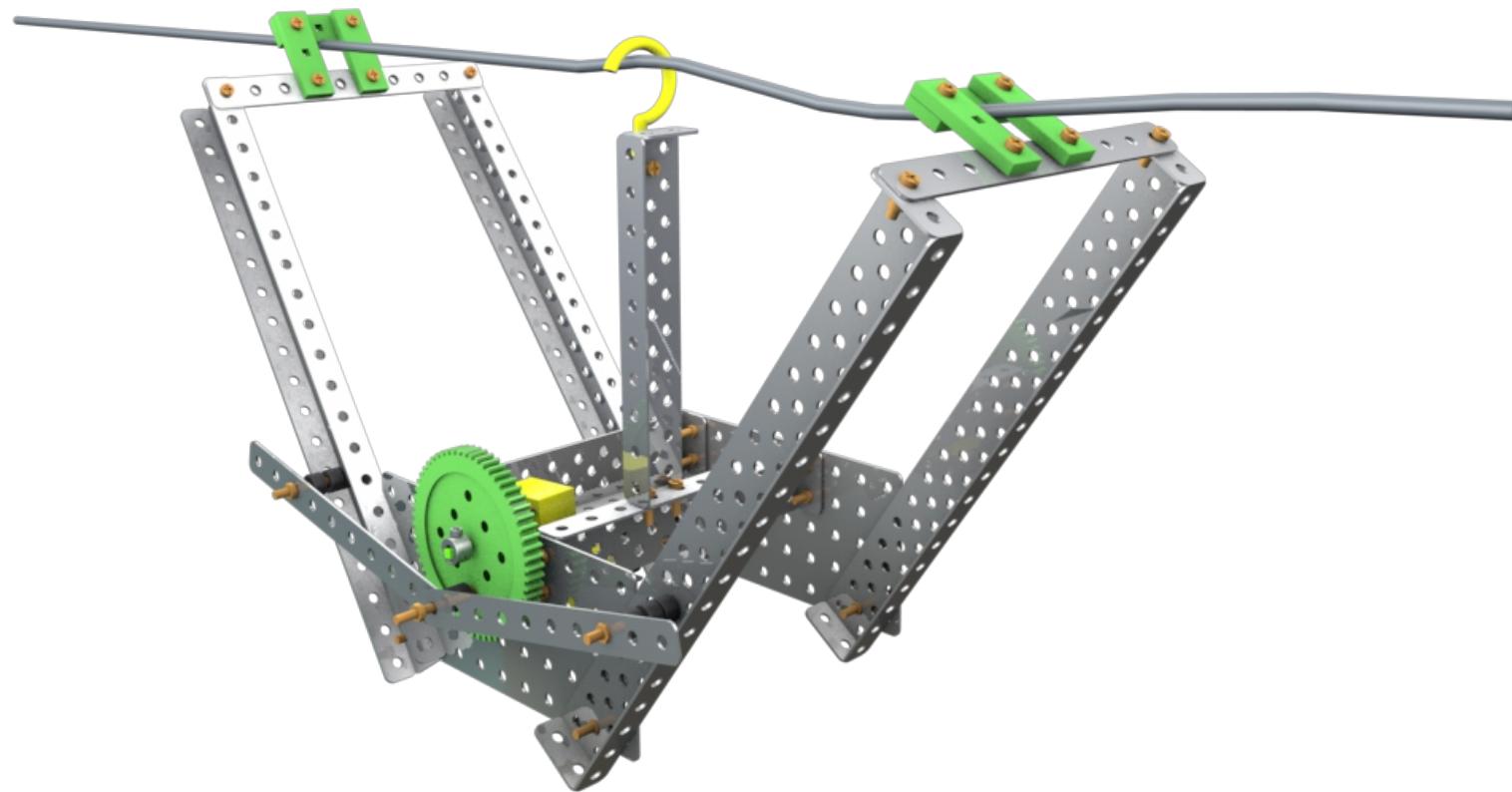
16



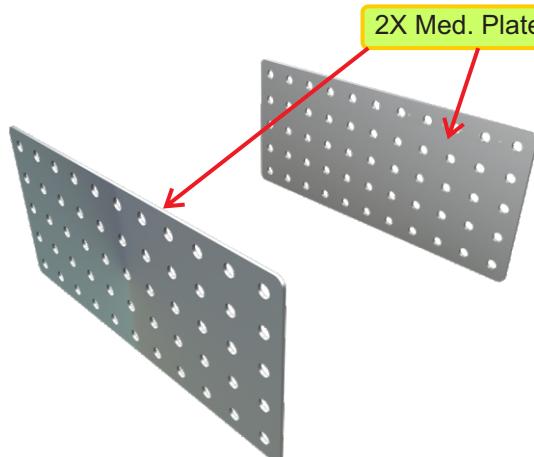
What did you learn?



#2 Monkey Bot



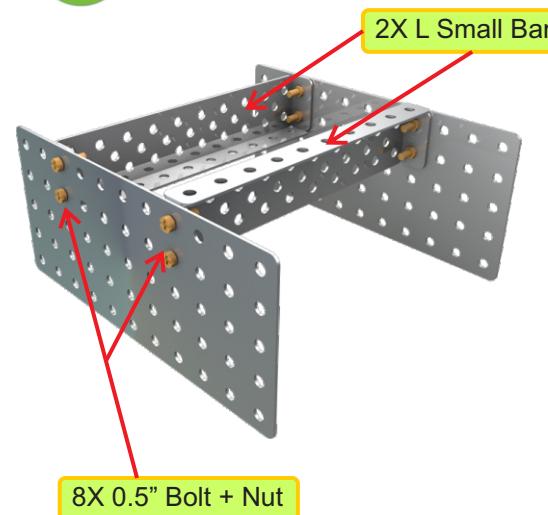
1



Medium Plate

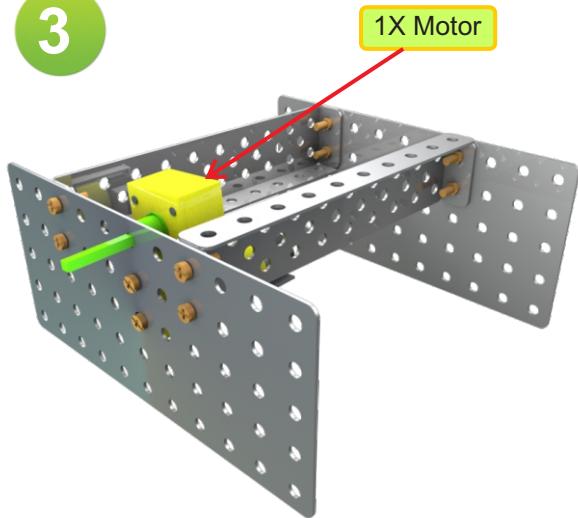
1. It is a metal piece which is non-intersecting.
2. It is the characteristics of parallel lines, that they do not intersect or cross each other.

2

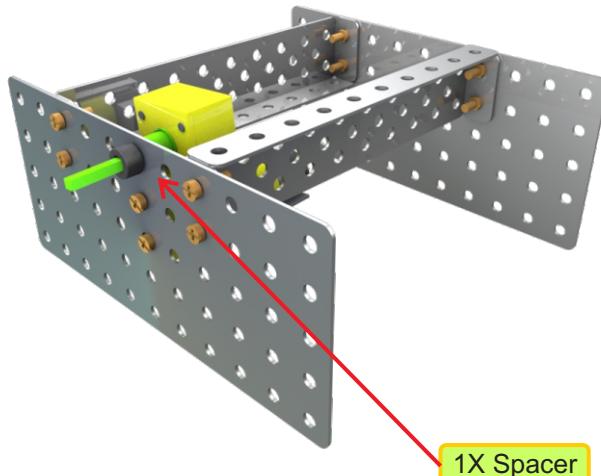


Small L

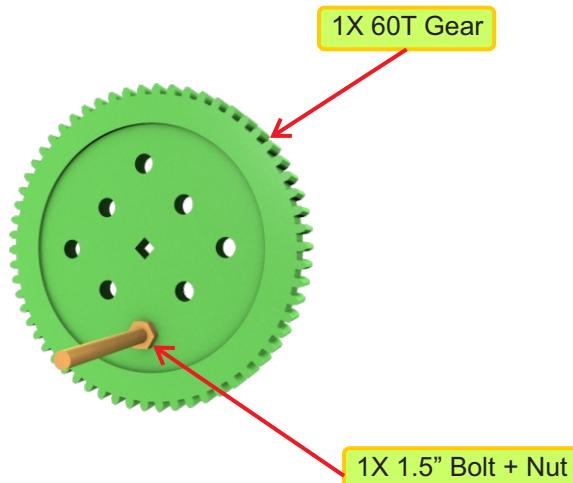
1. The corner of the bar is bent at 90 degree angle, giving it an L-shape.

3**Motor**

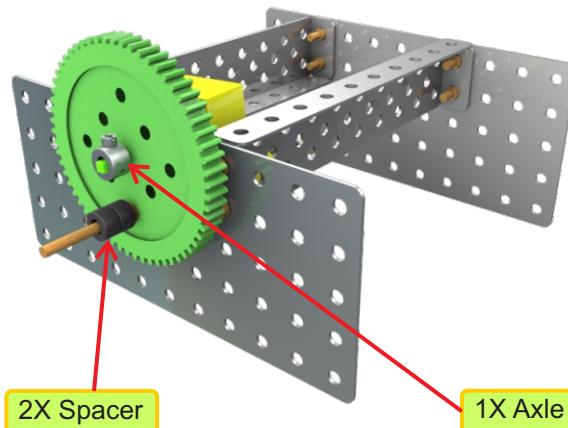
1. It is a device which produces or causes motion.
2. A motor is one of the simplest rotating machines.

4**Spacer**

1. It is used to create a gap between the plate and the shaft rod.

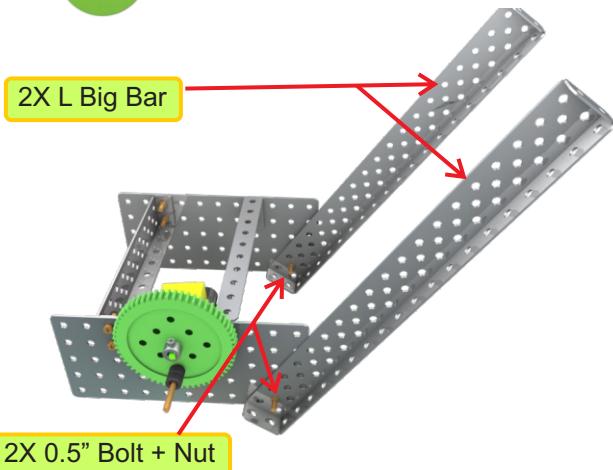
5**Gear**

1. A gear is a toothed machine part, such as a wheel or a cylinder which meshes with other parts.

6**Axle Lock**

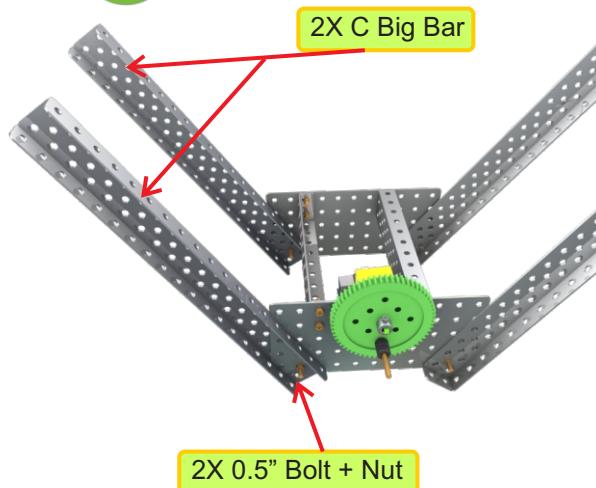
1. It is a locking device which can be used to lock both sides of a drive axle together.

7

**Nut & Bolt**

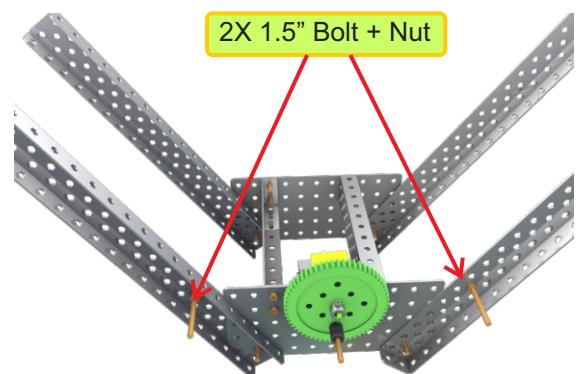
1. In normal use, a nut and bolt joint holds together because the bolt is under a constant tensile stress called the preload.

8

**Nut & Bolt**

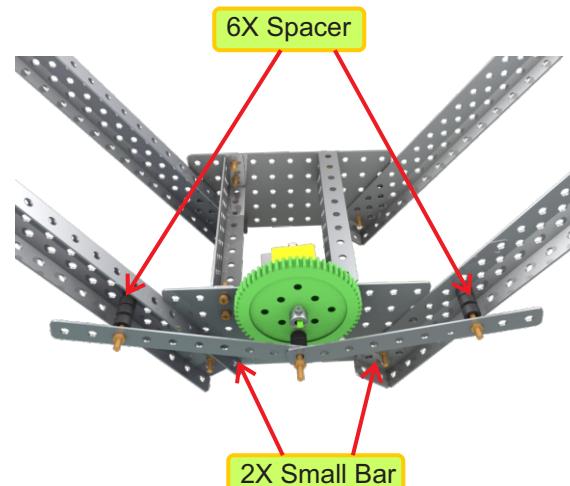
1. Nuts are almost always used opposite a mating bolt to fasten a stack of parts together.

9

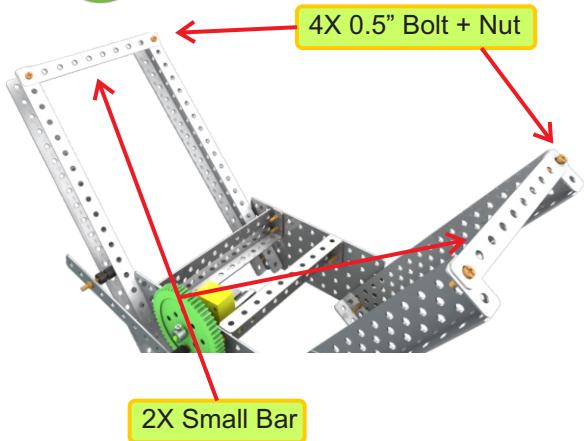
**Nut & Bolt**

1. Bolts are the most important part of a threaded connection. They have a round stem, known as the body.

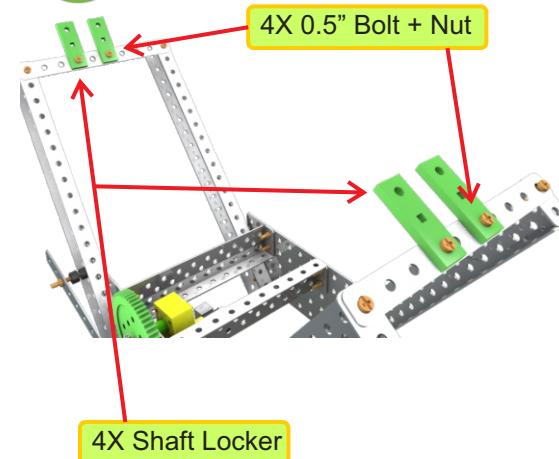
10

**Spacer**

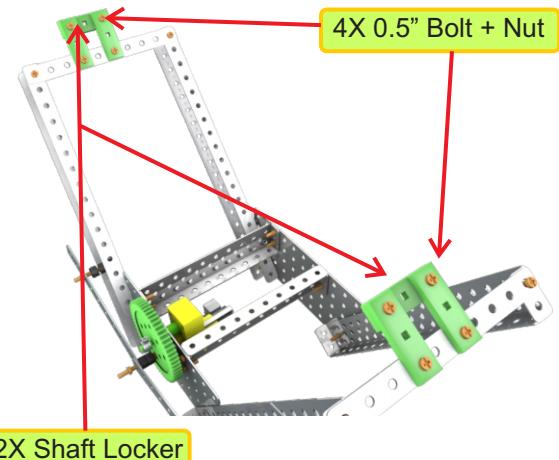
1. The spacer is made of plastic and rubber, which is soft and flexible.

11**Nut & Bolt**

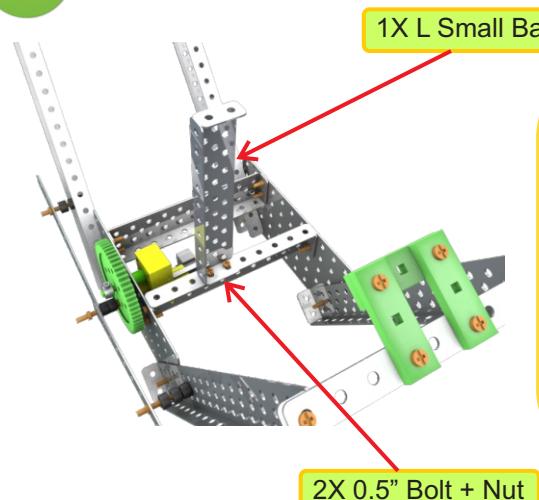
1. In applications where vibration or rotation may work a nut loose.

12**Shaft Locker**

1. Using the pattern rope can be used to hang the robot.

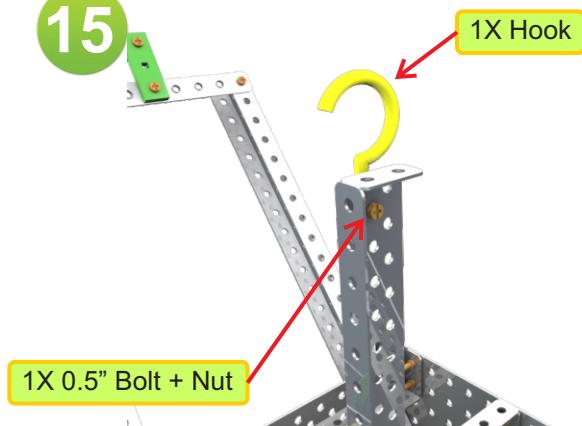
13**Nut & Bolt**

1. A nut is a type of hardware fastener with a threaded hole.

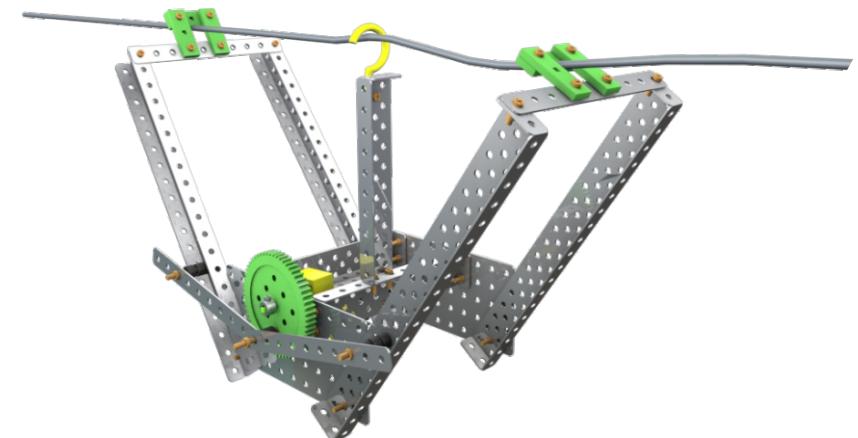
14**L Small Bar**

1. when the end points of the L-shaped bar are joined they form a triangle.

15



16



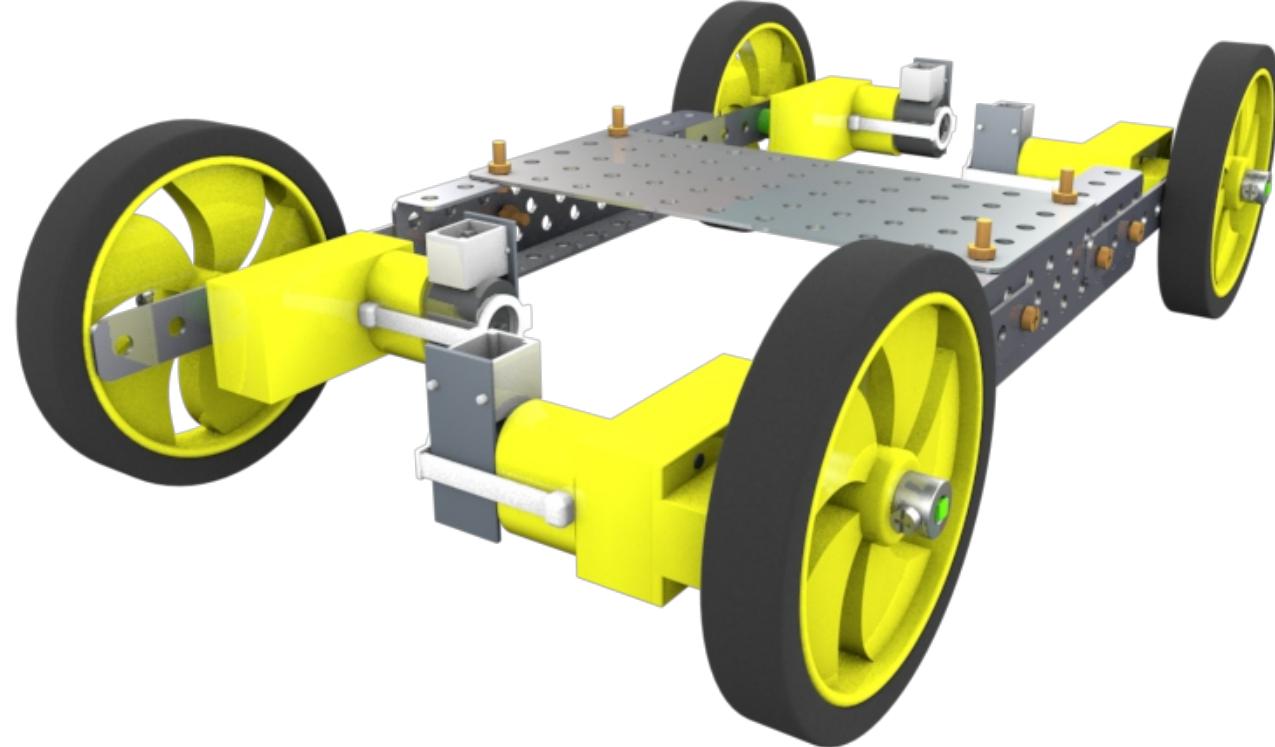
Hook

1. The hook is used to carry load. In this kit the hook is made of plastic but we can also use a helical spring.

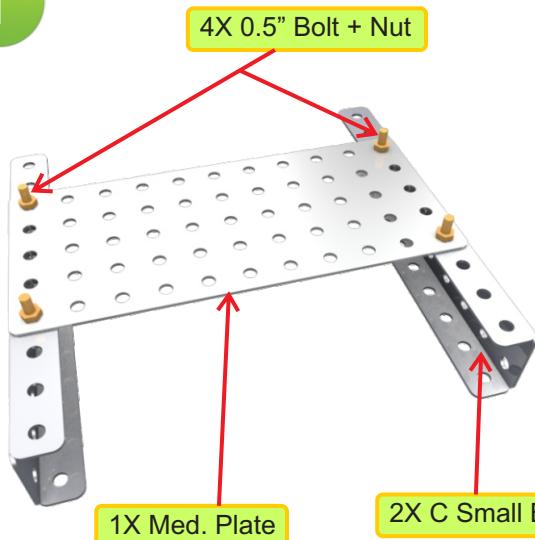
What did you learn?



#3 4 Wheel Drive



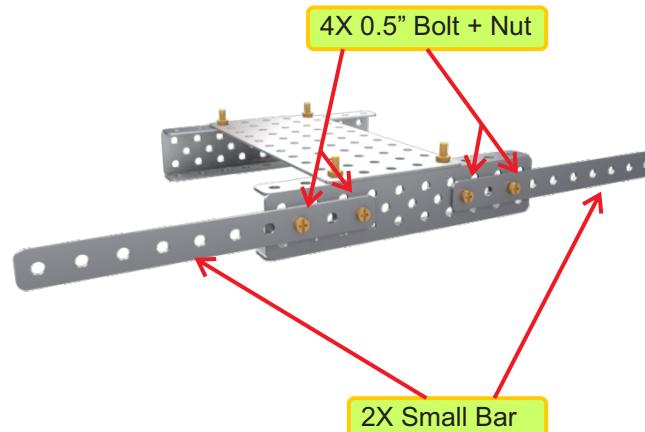
1



C Small Bar

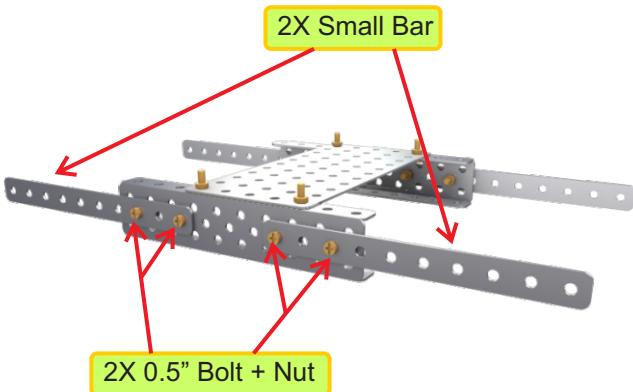
1. This kind of arrangement of C-small bars helps to insert circular rod such as shaft and screw.

2



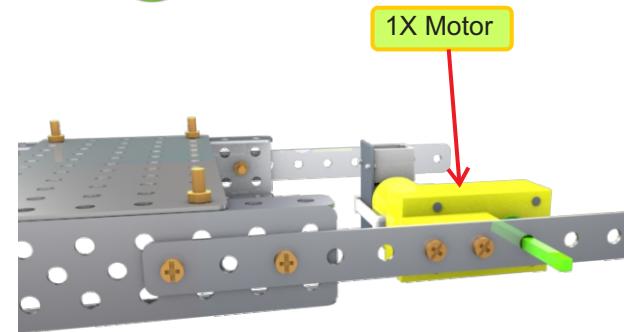
Nut & Bolt

1. In applications where vibration or rotation may work a nut loose.

3

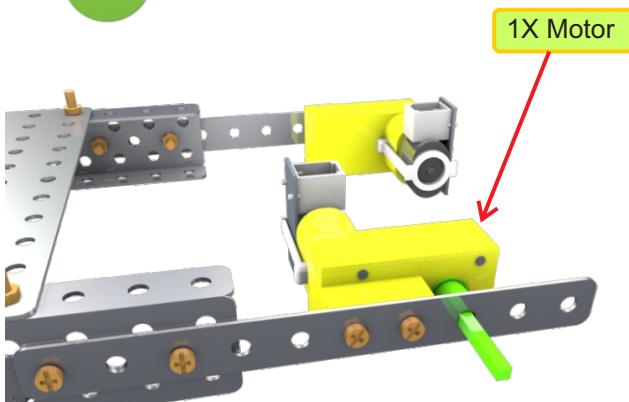
Nut & Bolt

1. Unlike nuts, bolts come in different lengths and are selected by the thickness of the material between the nut and head of the bolt.

4

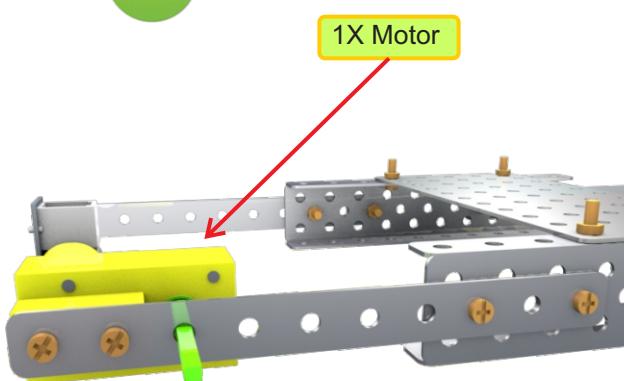
Motor

1. Motor are used magnet. Magnet has magnetic poles as North and South pole.

5

Motor

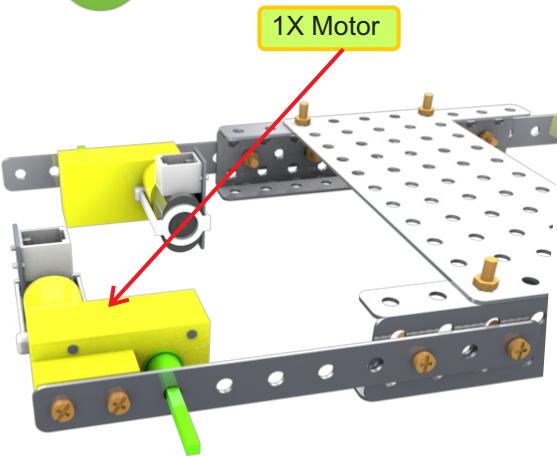
1. In an electric motor the moving part is called the rotor and the stationary part is called the stator.

6

Motor

1. this law states that energy can neither be created nor destroyed, but can be transferred from one form to another.

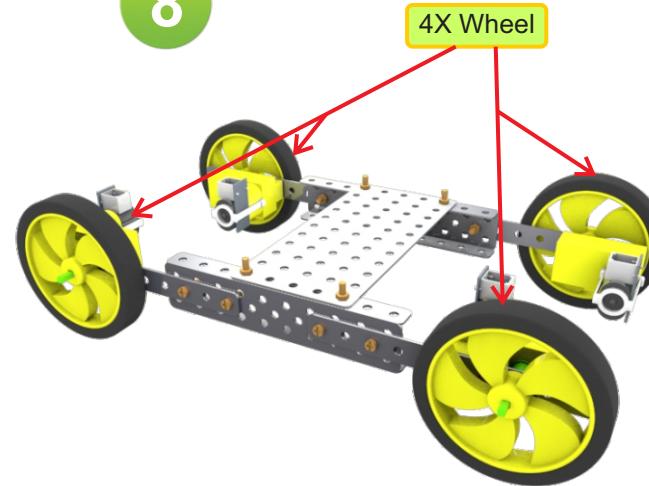
7



Motor

1. In an electric motor the moving part is called the rotor and the stationary part is called the stator.

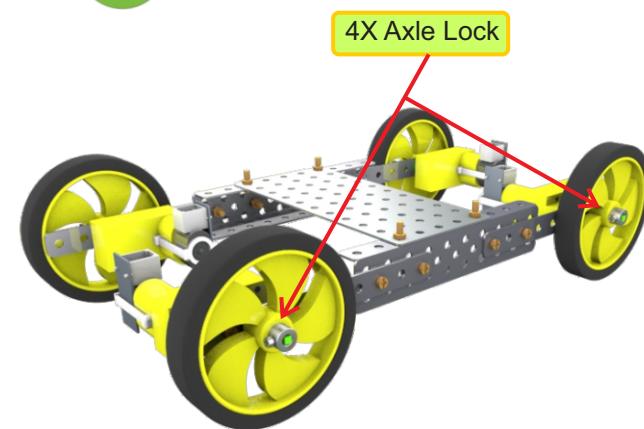
8



Wheel

1. It stores energy when the supply is in excess and releases energy when supply is in deficit.

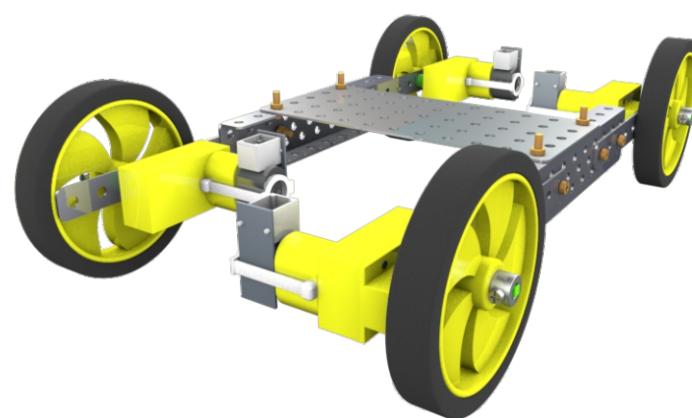
9



Axle Lock

1. Examples of axle lock are: steering wheel of an automobile, door knob and windlass.

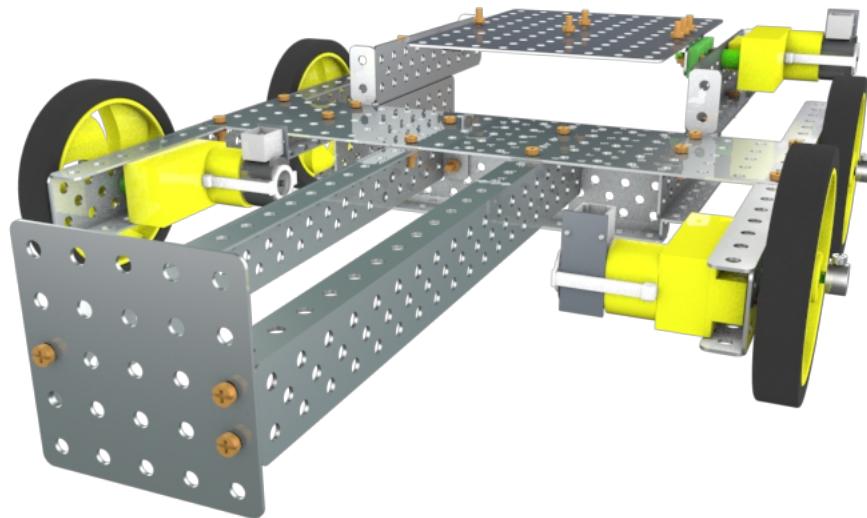
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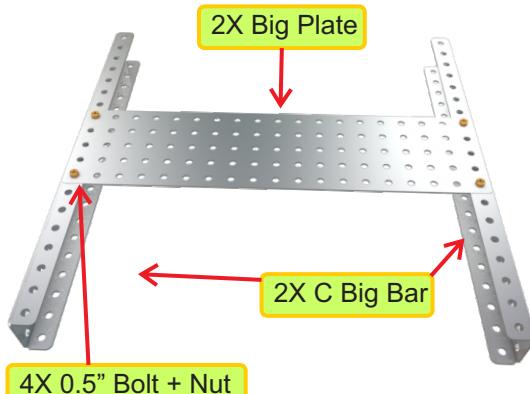
What did you learn?



#4 Garbage Collector



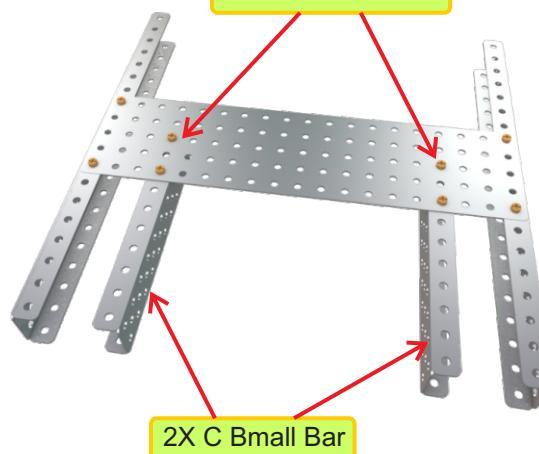
1



C Big Bar

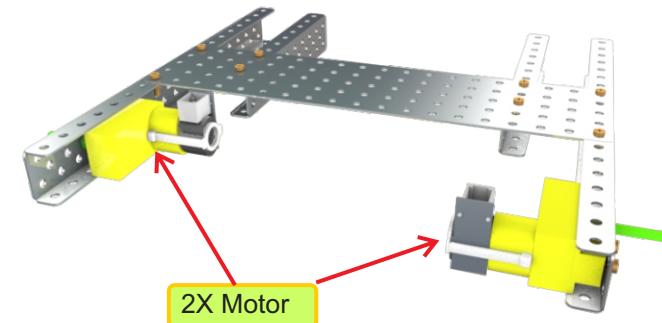
1 .This C-bar appears as an H-section, when two C bars are joined through a big plate, as did in the kit.

2

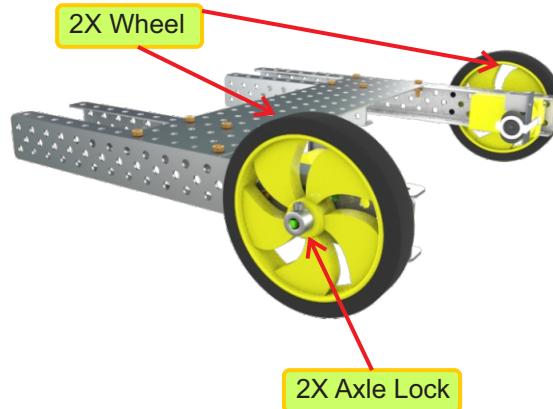


C Small Bar

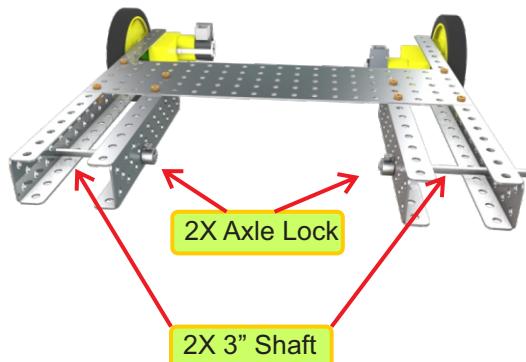
1. It is the characteristics of parallel lines, that they do not intersect or cross each other.

3**Motor**

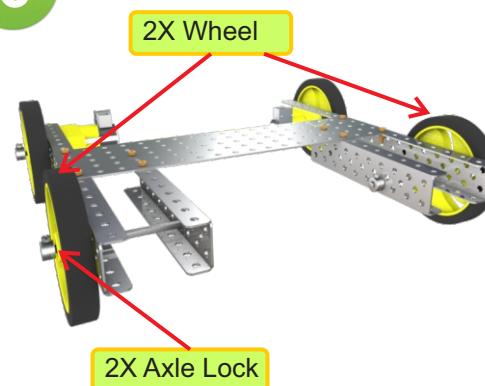
1. In case of DC motor, electrical energy is converted into mechanical energy i.e. one form of energy to another.

4**Axle Lock**

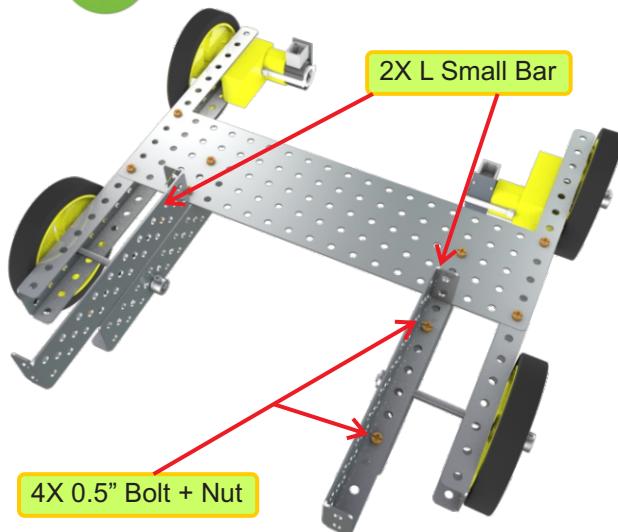
1. It ties both the left and right axles together permanently.

5**Shaft**

1. It is a long vertical rod made of metal which has a revolving action.

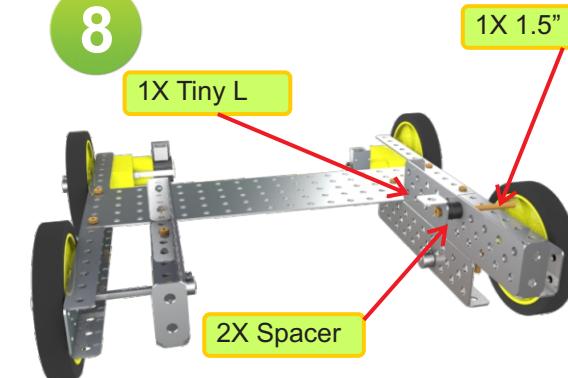
6**Wheel**

1. A wheel is a device that allows heavy objects to be moved easily through rotating on an axle through its centre.

7

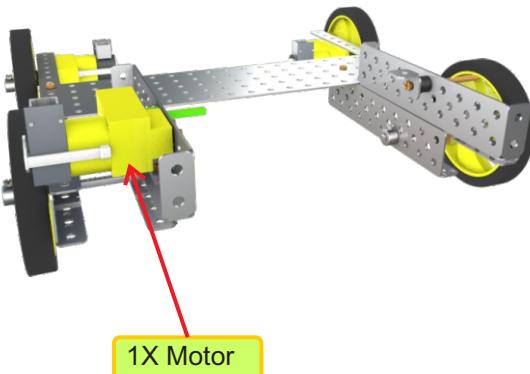
L Small Bar

1. In a triangle the longest side is called hypotenuse and can be calculated by Pythagoras theorem.

8

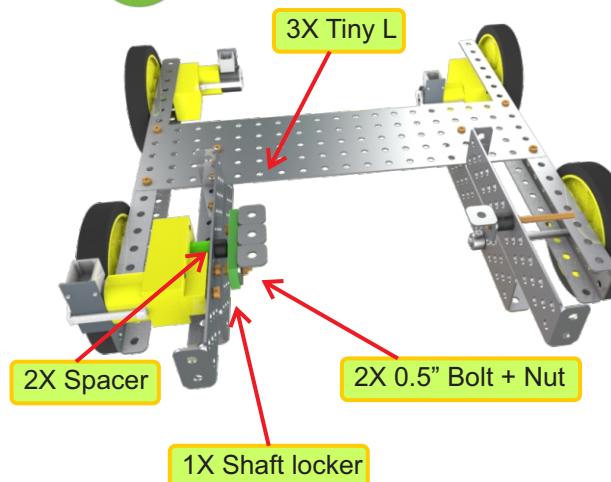
Nut & Bolt

1. Nut Bolt generally made of metals like: alloy, steel,etc

9

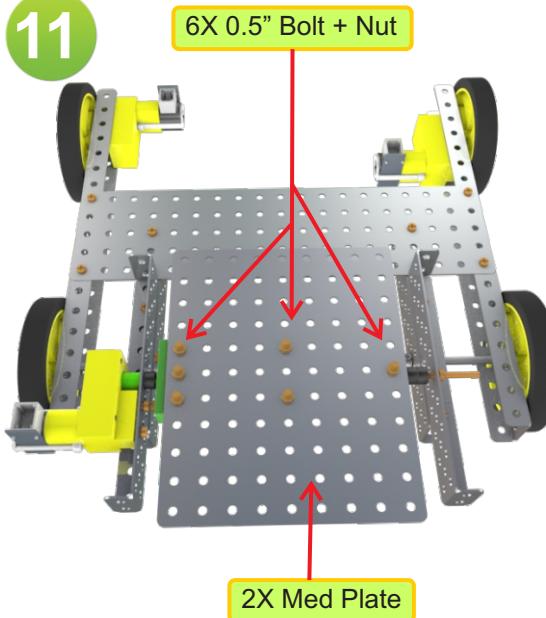
Motor

1. In case of DC motor, electrical energy is converted into mechanical energy i.e. one form of energy to another.

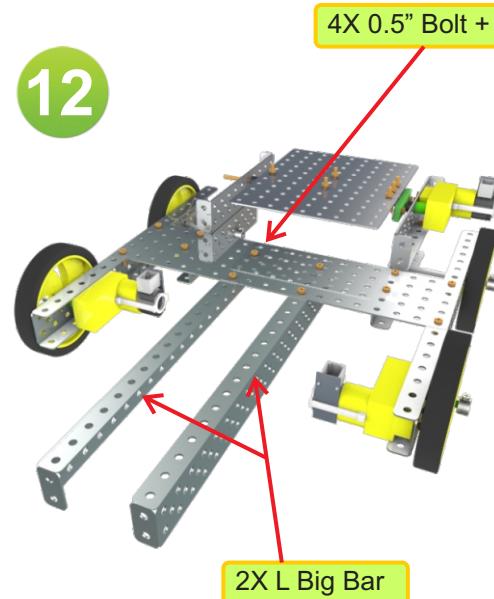
10

Spacer

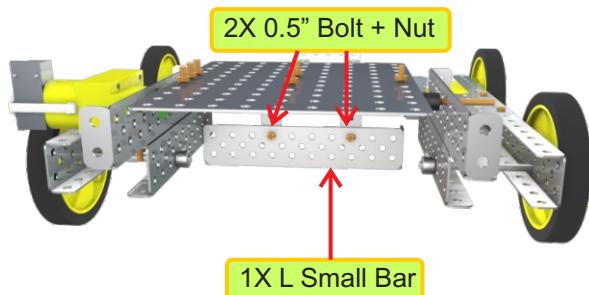
1. Washers are usually metal or plastic.

11**Medium Plate**

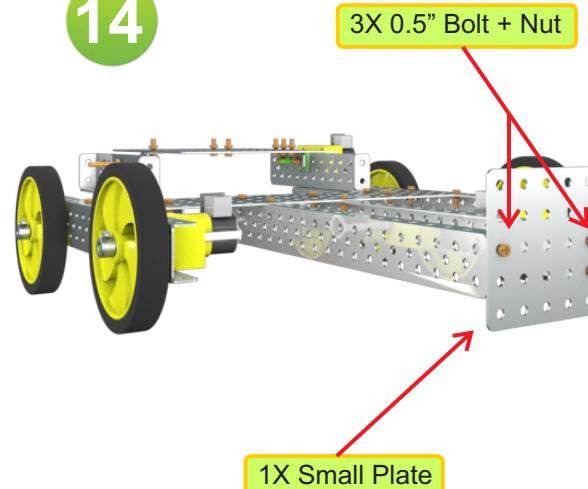
1. It is used to connect all small and big C bars into one component.

12**L Big Bar**

1. It is a metal bar used as a support to other parts of a machine.

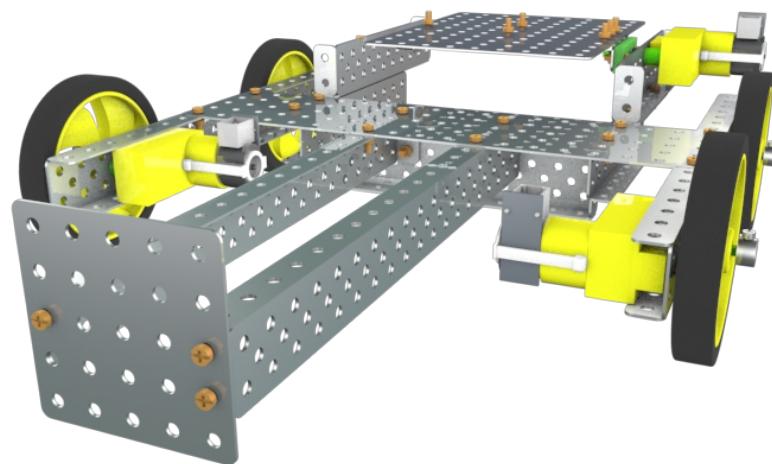
13**L Small Bar**

1. When the end points of the L-shaped bar are joined they form a triangle.

14**Nut & Bolt**

1. In applications where vibration or rotation may work a nut loose.

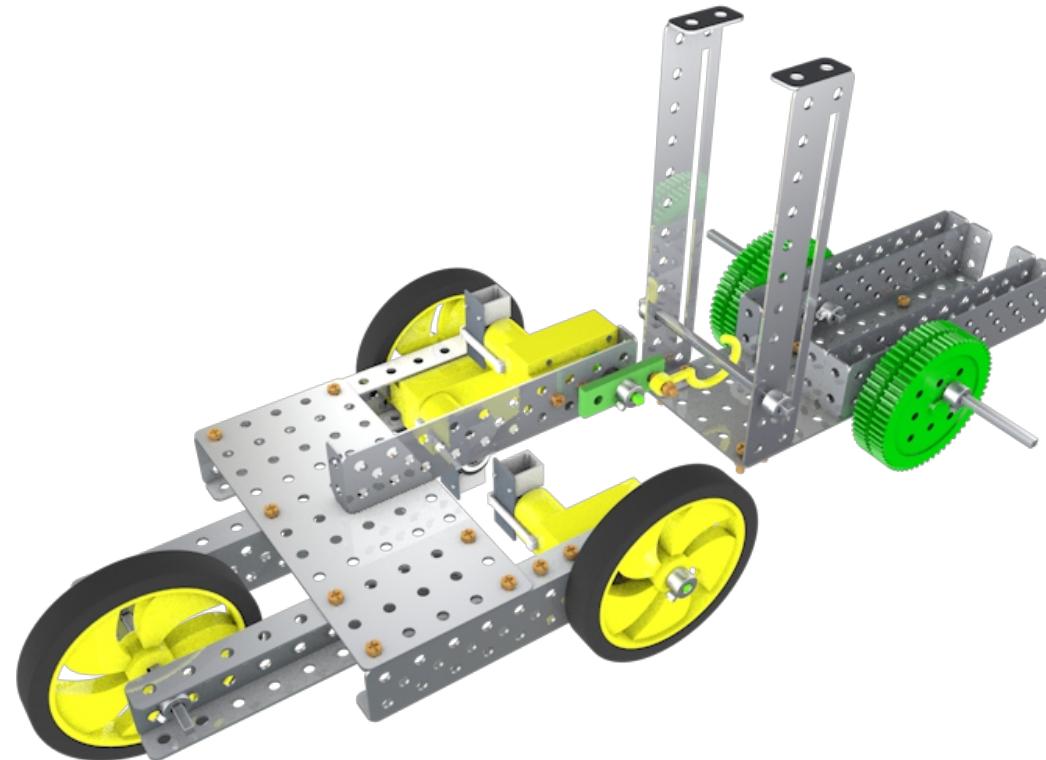
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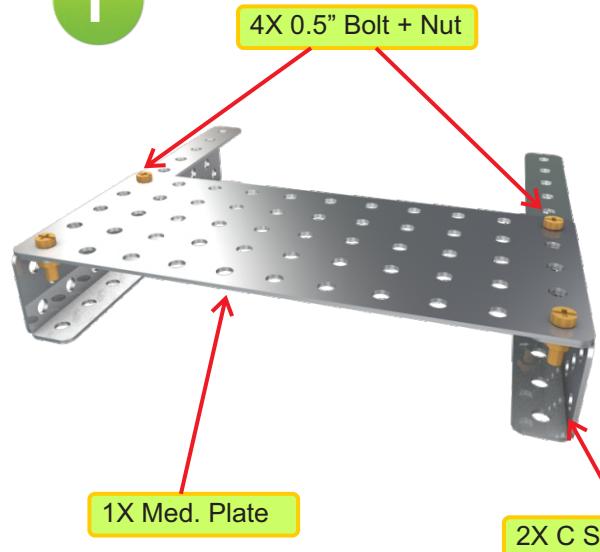
What did you learn?



#5 Transporter



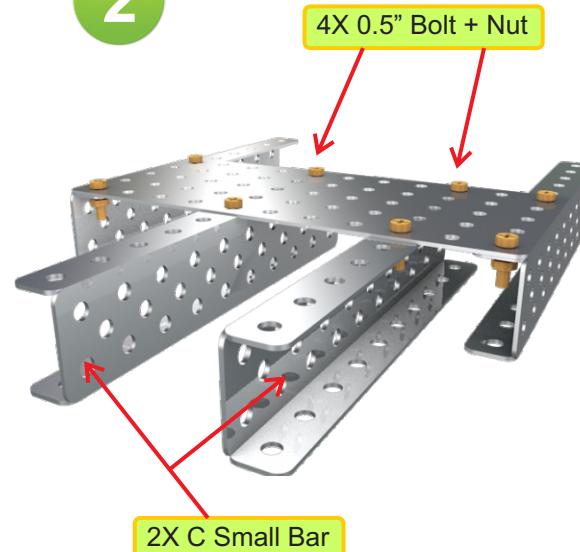
1



C Small Bar

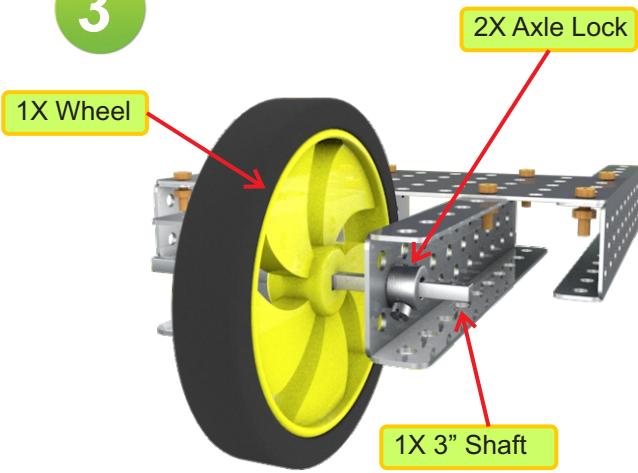
1. The small hole on the bars prevents heating effects , which can be due to operation of motors.

2

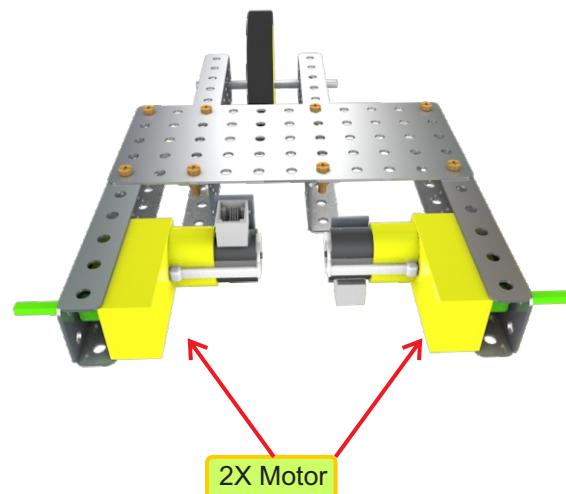


Nut & Bolt

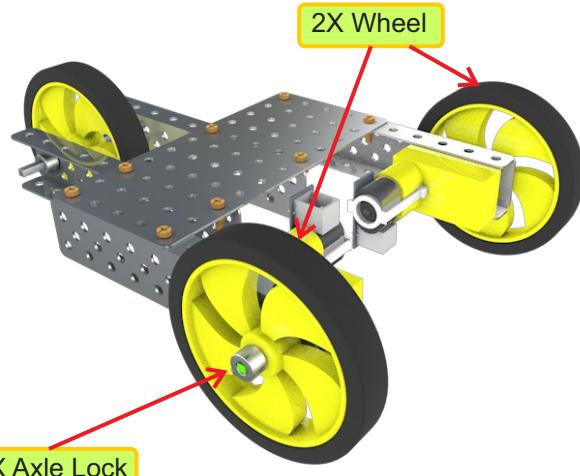
1. In applications where vibration or rotation may work a nut loose.

3**Wheel**

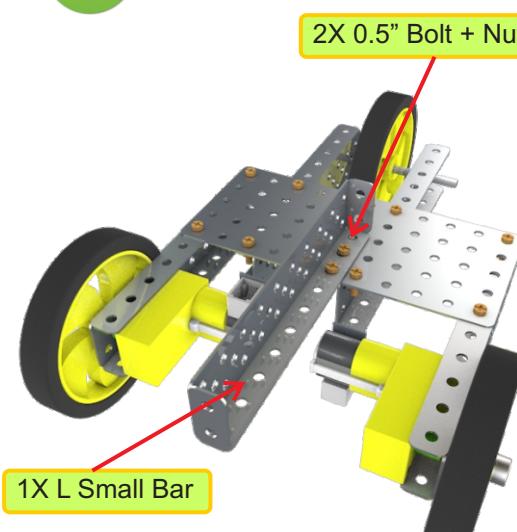
1. Flywheel is a type of wheel which is used in steam engine, internal combustion engine and pumps.

4**Motor**

1. In case of DC motor, electrical energy is converted into mechanical energy i.e. one form of energy to another.

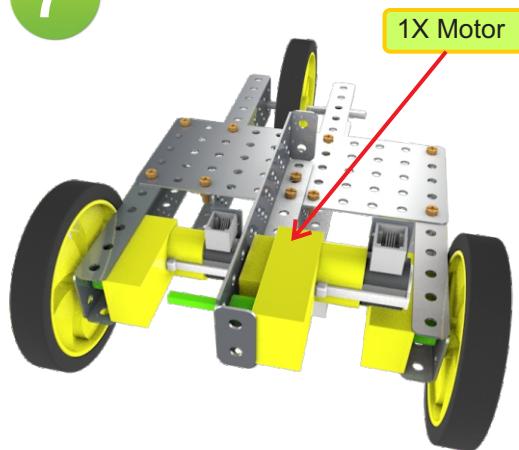
5**Wheel**

1. A wheel is a device that allows heavy objects to be moved easily through rotating on an axle through its centre.

6**L Small Bar**

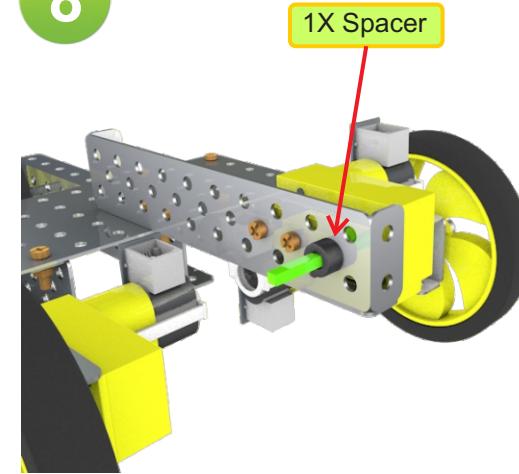
1. When the end points of the L-shaped bar are joined they form a triangle.

7

**Motor**

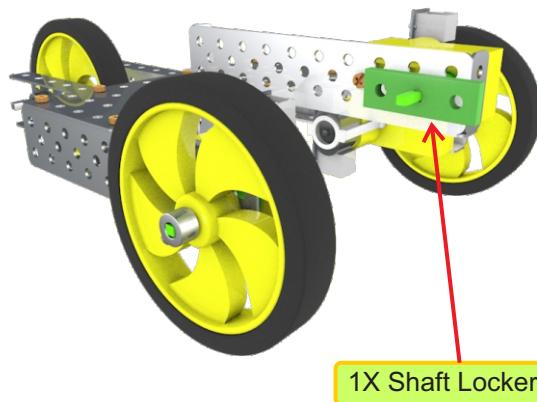
1. In an electric motor the moving part is called the rotor and the stationary part is called the stator.

8

**Spacer**

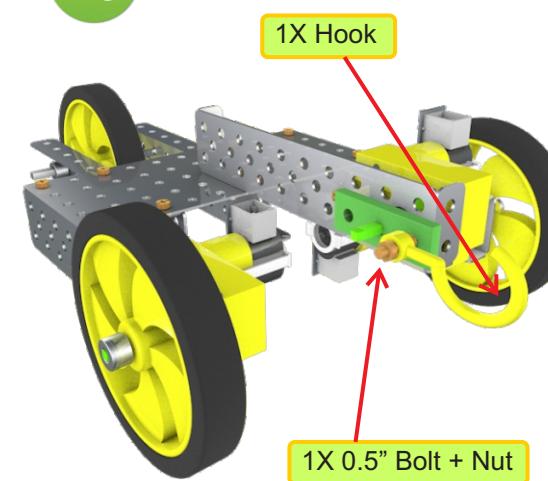
1. high quality bolted joints require hardened steel washers to prevent the loss of pre-load due to brinelling after the torque is applied.

9

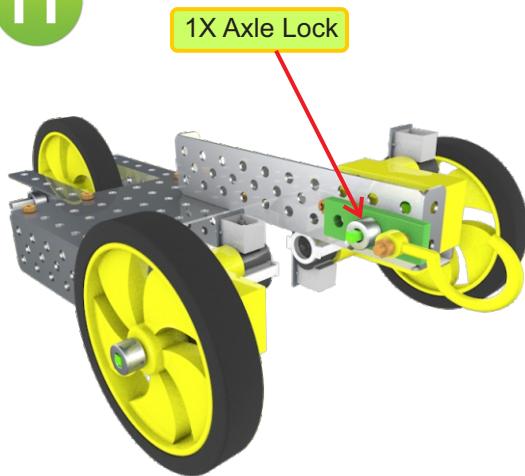
**Shaft Locker**

1. This part has a square shaped hole in the centre to lock the cylindrical shaft.

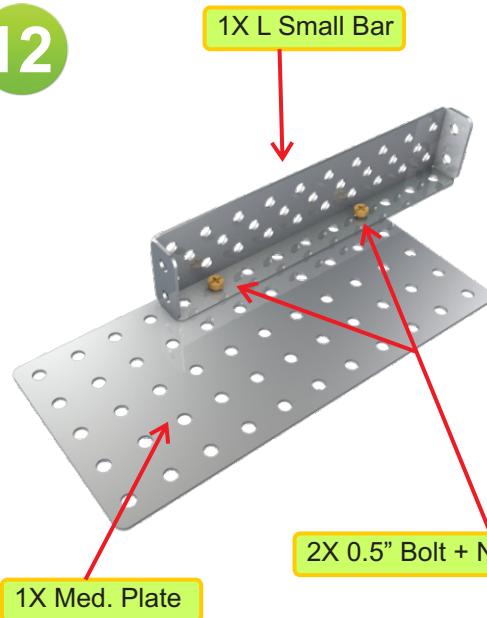
10

**Nut & Bolt**

1. In applications where vibration or rotation may work a nut loose.

11**Axle Lock**

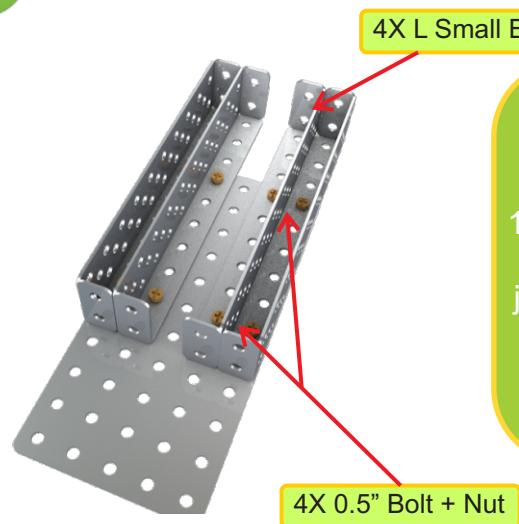
1. It ties both the left and right axles together permanently.

12**Nut & Bolt**

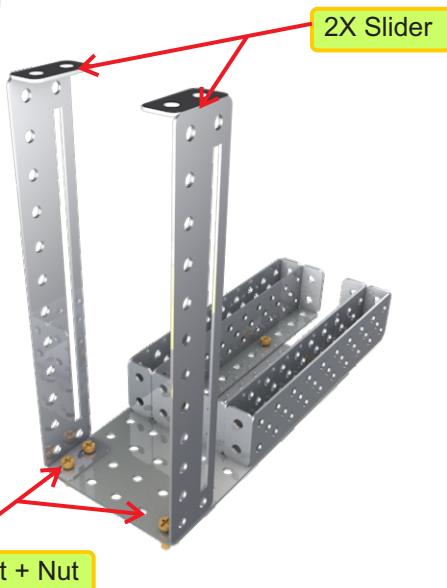
1. In applications where vibration or rotation may work a nut loose.

13**L Small Bar**

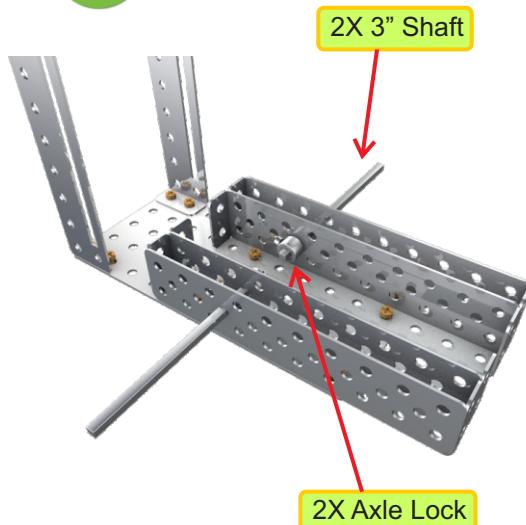
1. In a triangle the longest side is called hypotenuse and can be calculated by Pythagoras theorem.

14**L Small Bar**

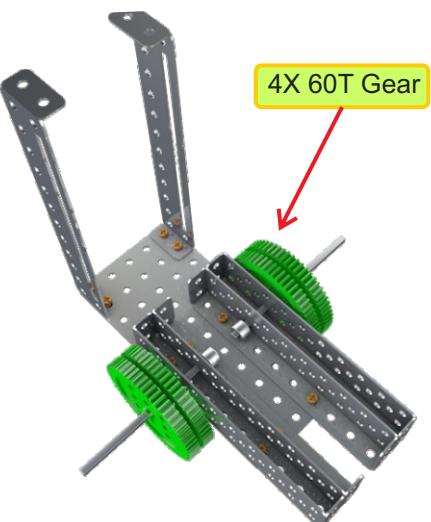
1. When the end points of the L-shaped bar are joined the form a triangle.

15**Nut & Bolt**

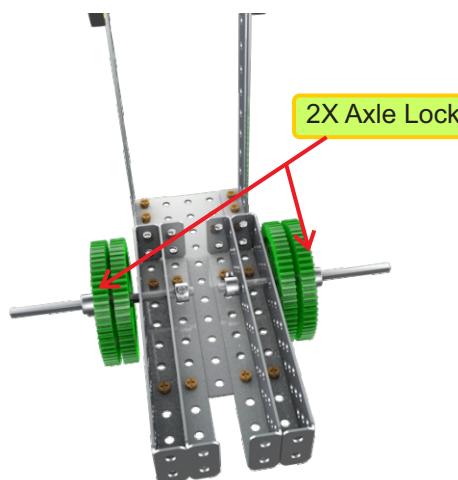
1. In applications where vibration or rotation may work a nut loose.

16**Shaft**

1. The rotating action in any electrical or mechanical equipment is due to the presence of the shaft.

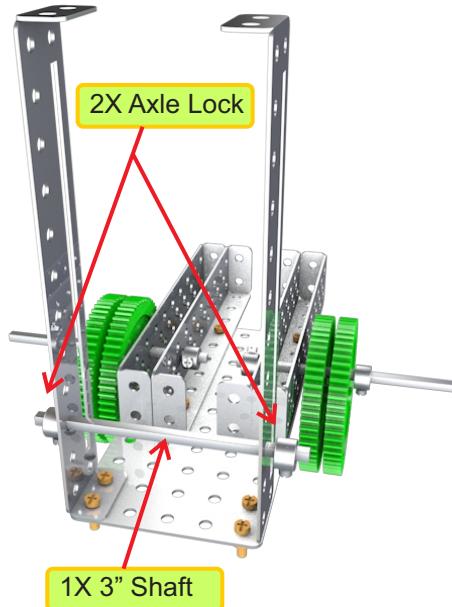
17**Gear**

1. In the kit, we are using the spur gear, which has teeth parallel to the axis of the wheel.

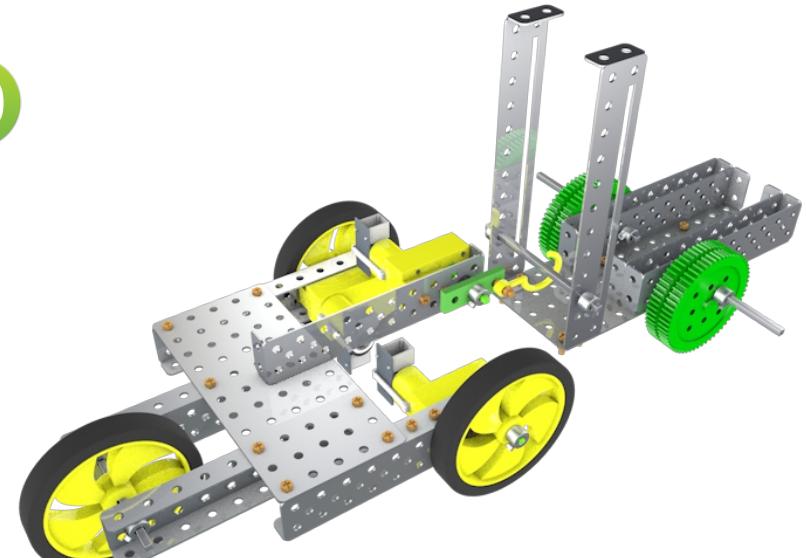
18**Axle Lock**

1. The axle lock distributes the power equally to drive the device in a straight line.

19



20



Shaft

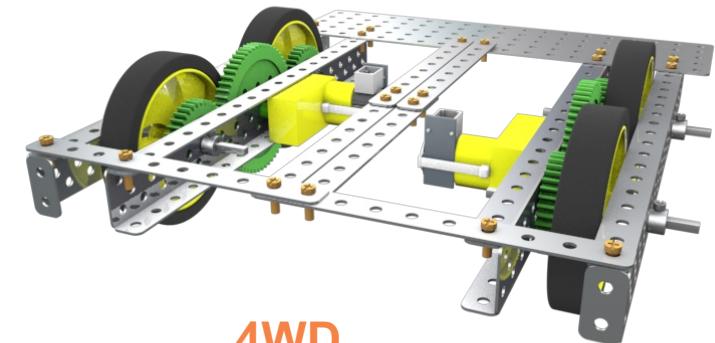
1. It is a straight bar for transmitting motion and torque (i.e twisting force).

What did you learn?

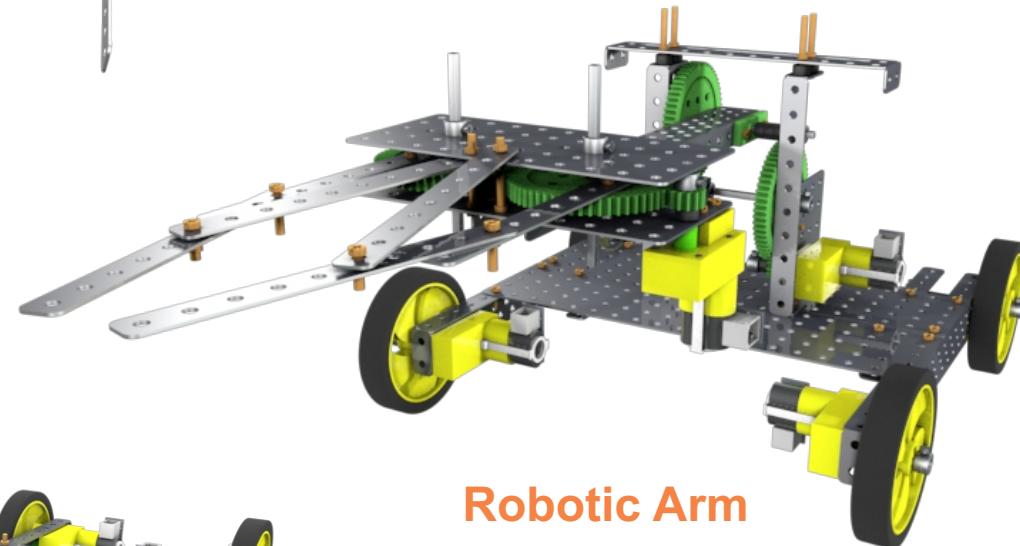




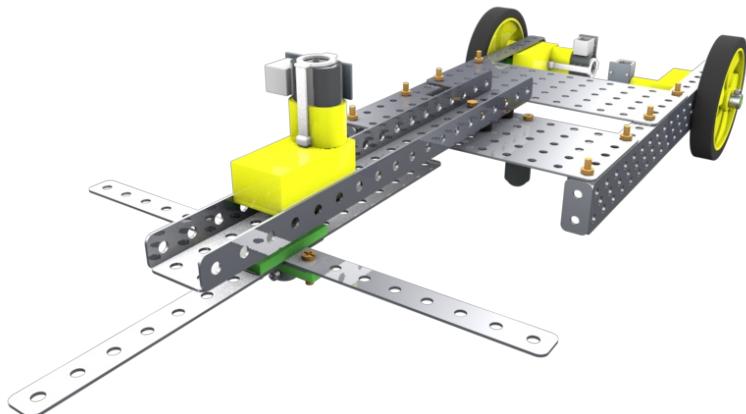
Tumbler



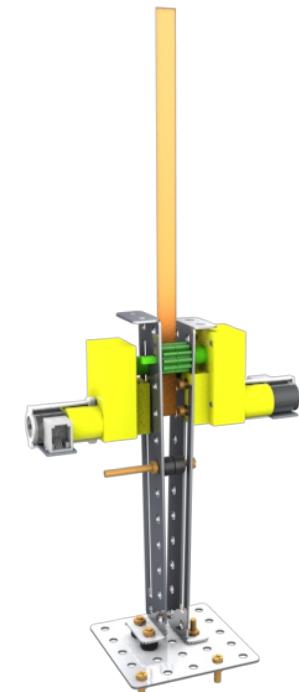
4WD



Robotic Arm



Destruction Bot



Rope Climber



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