Part One

HAPPY FARM Fresh Fields MANUAL

makerzoid

APP Introduction

APP Download APP icon

① Scan the QR Code

②APP store-search "makerzoid" IOS

②APP store-search "makerzoid" Android

1 APP Download

The APP includes different robot kits, you can choose the kit you have purchased

2 Choose the kit

It teaches you how to build a robot

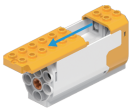
3 Build a robot

Please scan the QR code to enter our website: www.makerzoid.com

Battery Installation Instructions

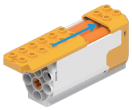
- Non-rechargeable batteries cannot be charged.
- Rechargeable batteries should be charged under adult supervision.
- Used batteries should be removed from the product.
- The power terminals should not be short-circuited.
- Batteries of different sizes or old/new batteries cannot be used together.
- The toy cannot be connected to over one power source.
- Batteries should be inserted with the correct polarity.

How to insert the batteries



① Remove the cover on the motor.

② Insert 2 AAA batteries,(NOT included).



③ Push back the cover.

Product Details

Product Name:Happy Farm - Fresh Fields
Product Model: MKZ-HF-01
Power Supply: 2×AAA batteries(not included)
Rated Power: 5W
Suitable for: 6+
Made in China

Warning! Do not aim at the eyes or face.
Warning! Do not use projectiles not provided by the manufacturer.
Warning! This product contains small accessories, it is not for children under 3 years old.
Warning! This product contains small balls, which may cause a choking hazard and is not suitable for children under three years of age.

- The user manual contains important information, please keep it for future use.
- Rechargeable batteries should be charged under the supervision of an adult.
- Maintenance: This product shall not be used in water or a humid environment.
- Remove surface strains with a dry cloth before use.
- Do not mix old and new batteries.
- Do not mix alkaline batteries,standard(carbon-zinc) or rechargeable batteries.

Catalog

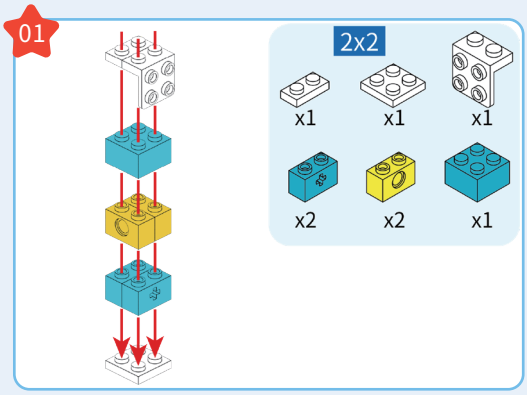
1. Farmer

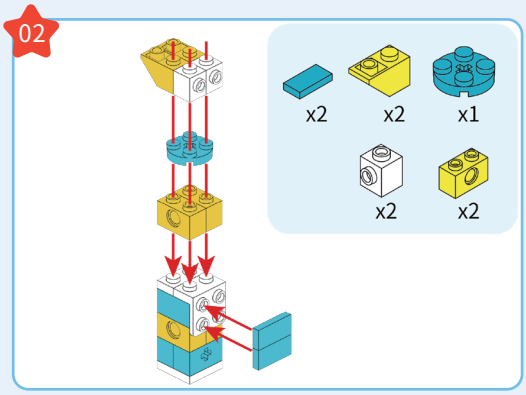
Thinking

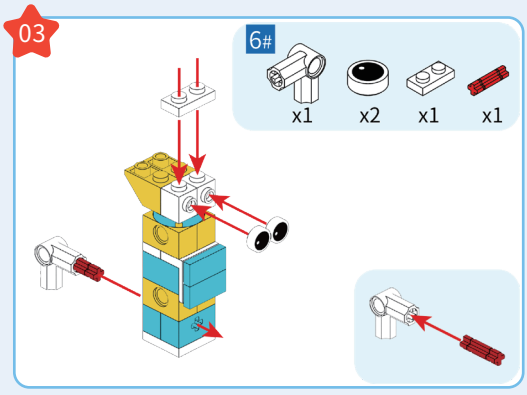
1. What mechanism does the farmer use to achieve its pioneering function?
2. How can the efficiency of the farmer be improved?

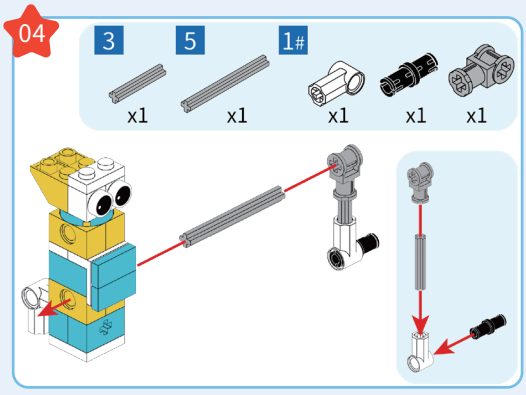
Build:

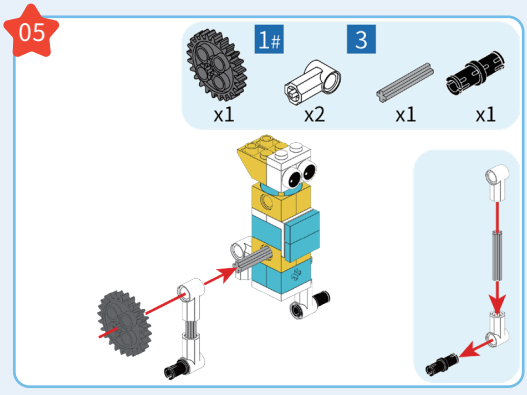
Hey guys, please follow the steps to build the blocks with your fastest speed.
You will find something interesting and useful!

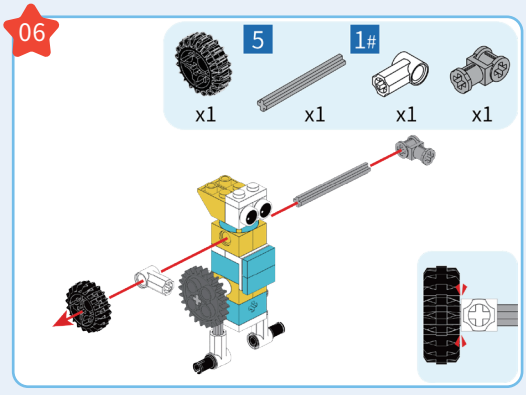


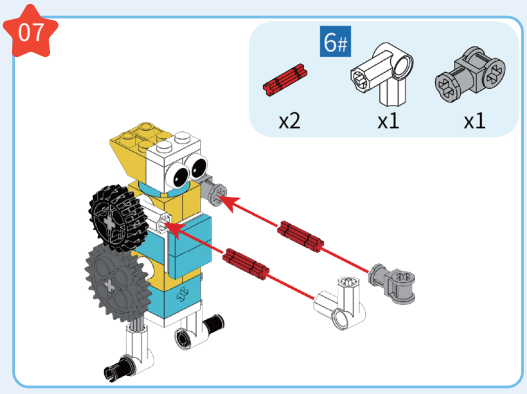


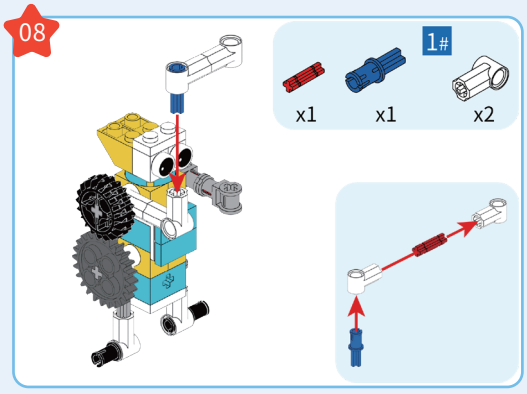


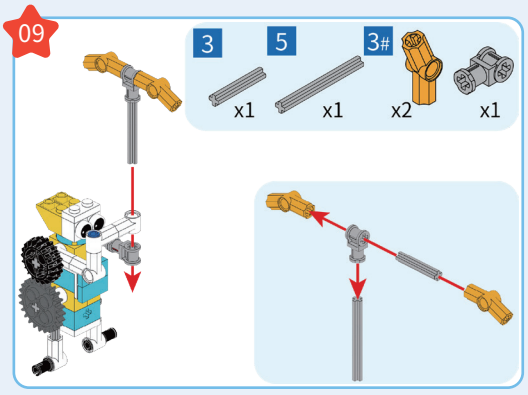


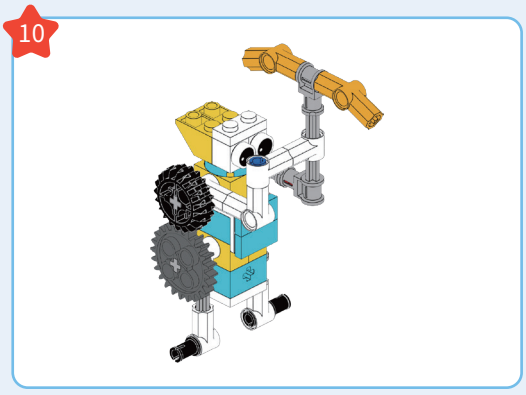








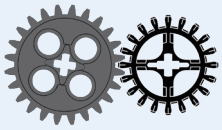


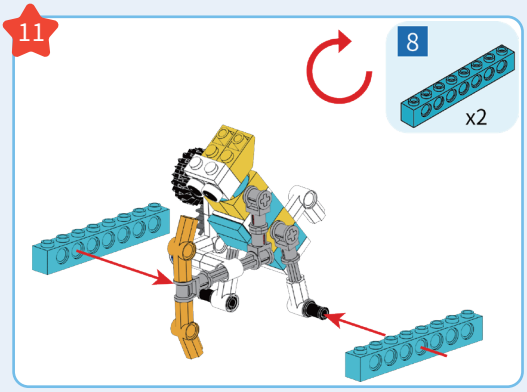


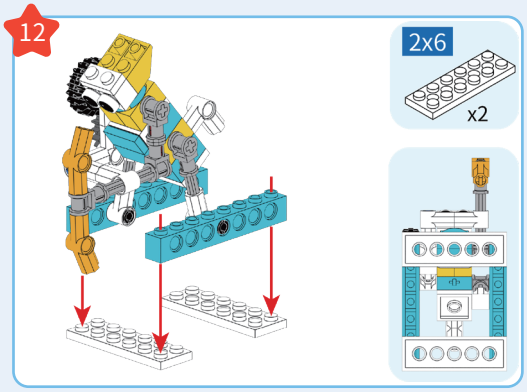
Knowledge

Gear

A gear is a mechanical part with teeth on its rim that can continuously mesh to transmit motion and power. Gears transmit power through the engagement of their teeth. Each protruding part of a gear that is used for meshing is called a tooth, and the total number of teeth around the entire circumference is called the number of teeth.







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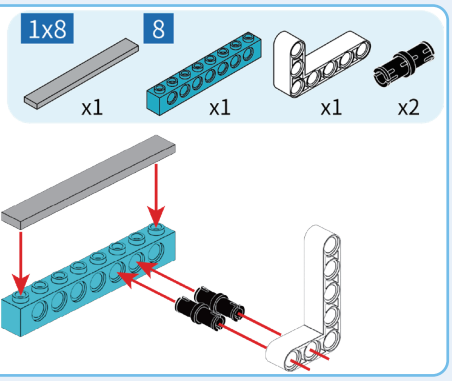

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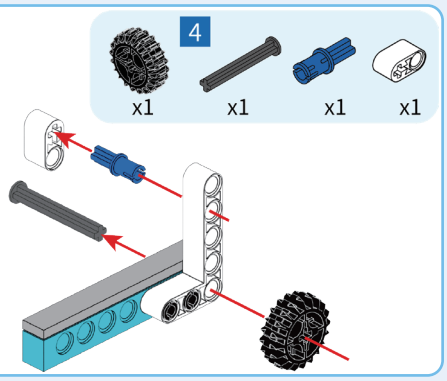

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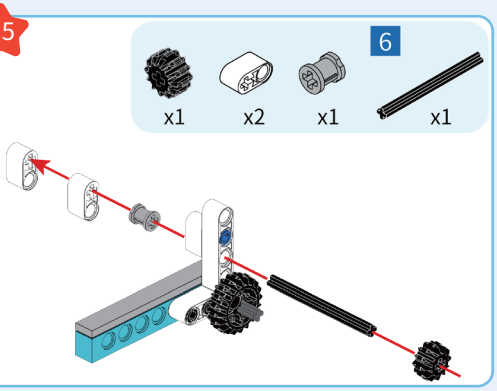

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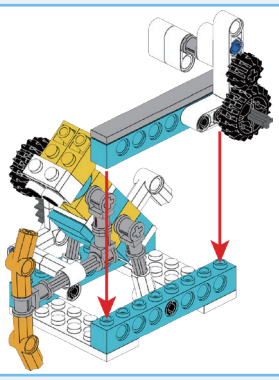
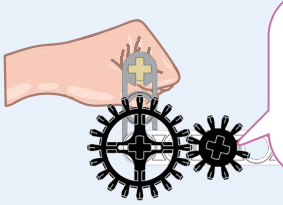


Knowledge



A driven wheel refers to the component in a transmission system that passively receives power from the driving wheel and converts it into motion.

A driving wheel is the component in a transmission system that actively receives input power and transmits it to the driven wheel.

Gear acceleration transmission

The large gear (driving wheel) drives the small gear (driven wheel) to rotate. The small gear rotates faster than the large gear. This type of transmission is called gear acceleration transmission.

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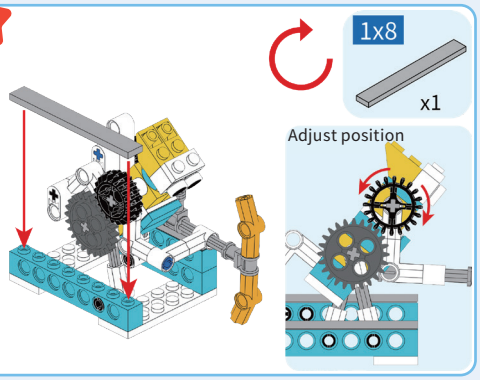

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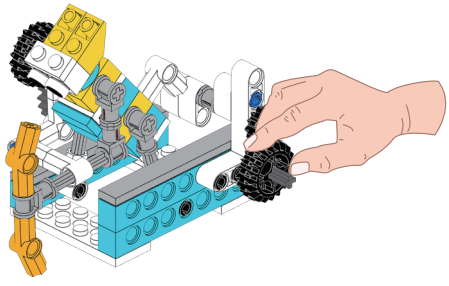

Turn the gears to get the farmer moving!

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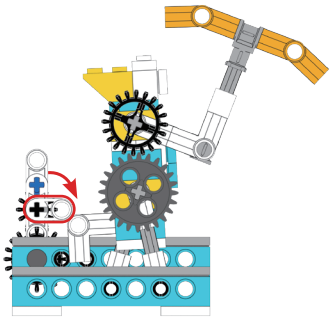

The cam can only rotate in the direction of the arrow.

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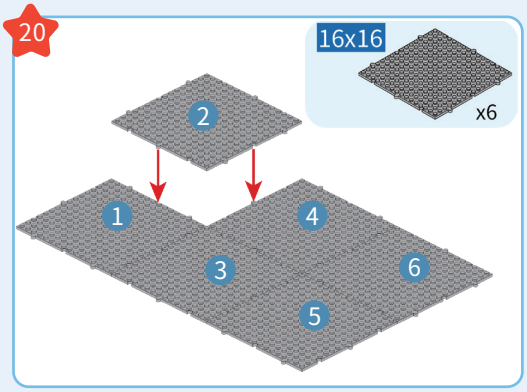

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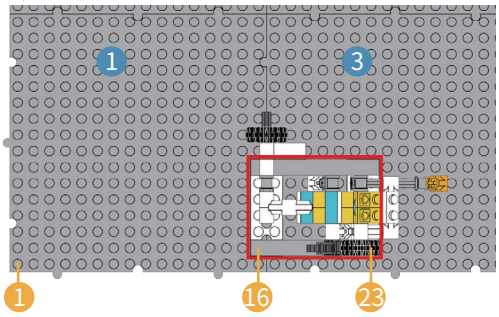

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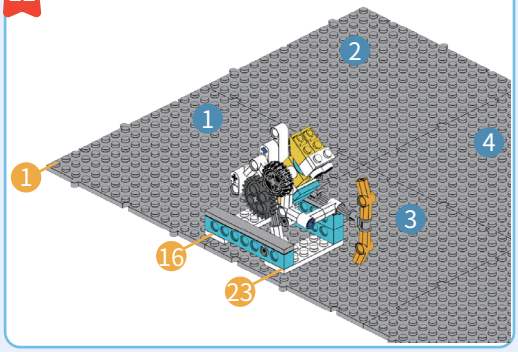
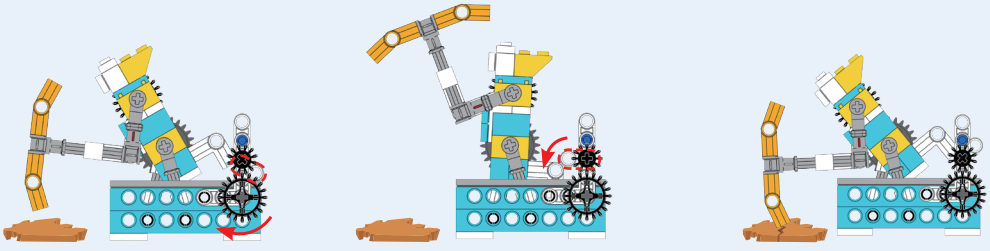


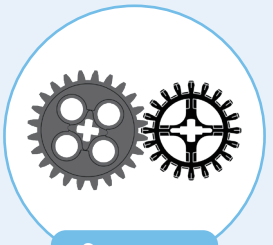
Knowledge

An intermittent motion mechanism refers to a mechanism that can convert the continuous rotation of the driving component into the periodic motion and stop-and-go movement of the driven component.

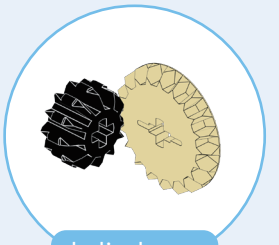


When the large gear rotates once, the pioneer plows the field once; this is an intermittent mechanism.

Knowledge



Spur gear transmission



helical gear transmission

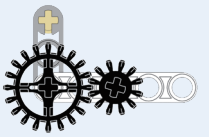
gear system

In some basic gear transmission systems, such as spur gear and helical gear transmissions, the gears indeed need to operate within the same plane to ensure proper meshing. However, in many more complex gear systems, gears can transmit power across different planes.

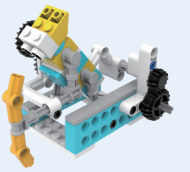
Share

Kids, review and share the knowledge about the mechanism principles of the pioneer with your parents.

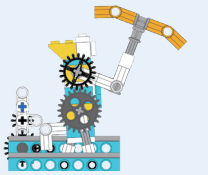
learned about the working characteristics of the automatic pioneer



become familiar with gears



mastered gear acceleration transmission



studied intermittent motion mechanisms

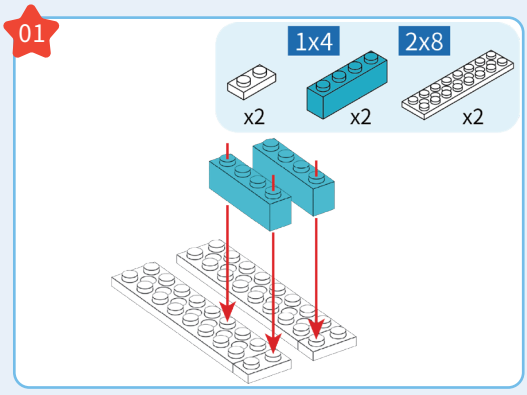
2. Sawing

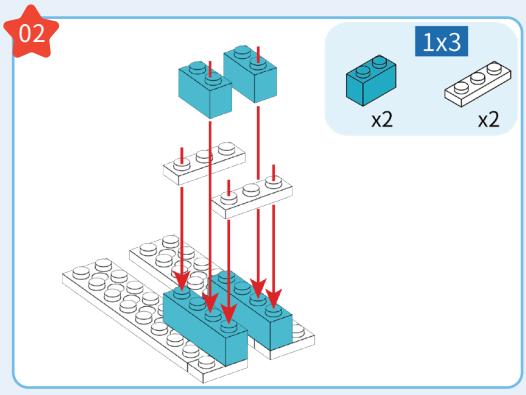
Thinking

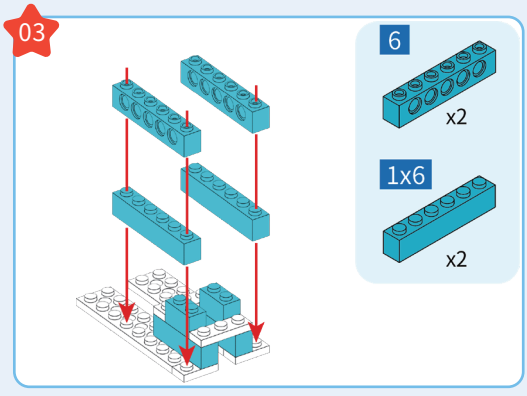
1. How can the sawing craftsman perform the action of sawing wood?
2. How can the sawing craftsman work continuously?

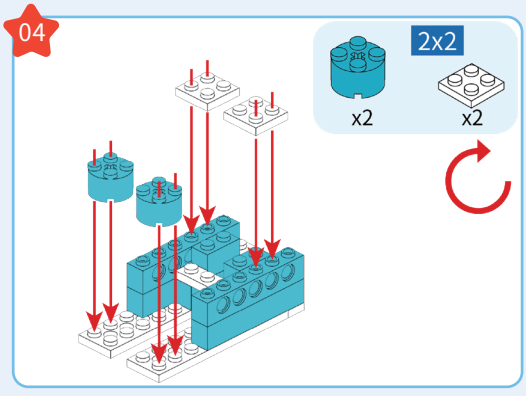
Build:

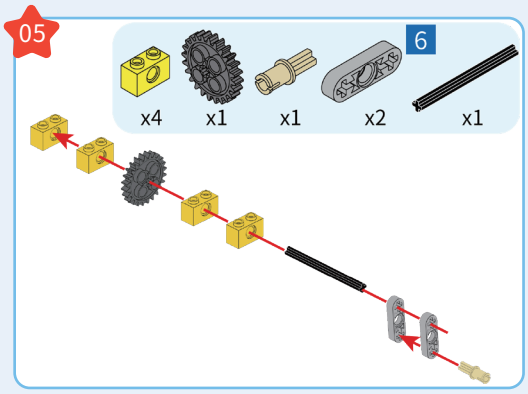
Hey guys, please follow the steps to build the sawing craftsman with your fastest speed. You will find something interesting and useful!

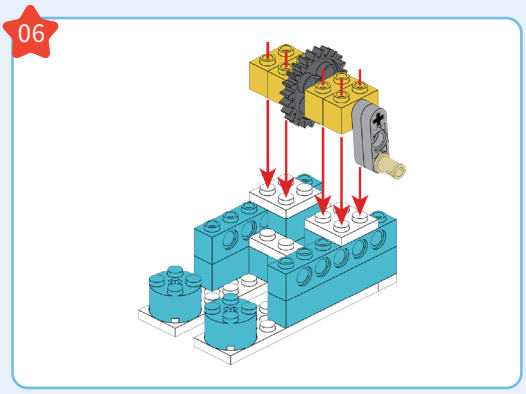


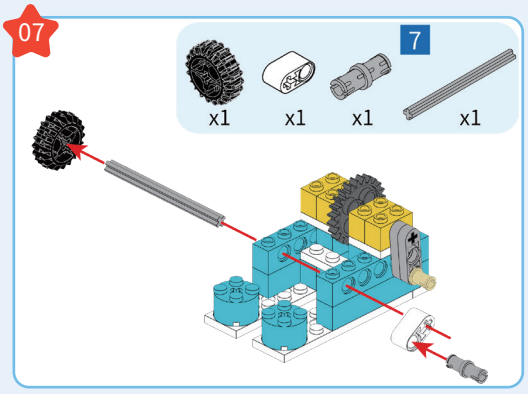


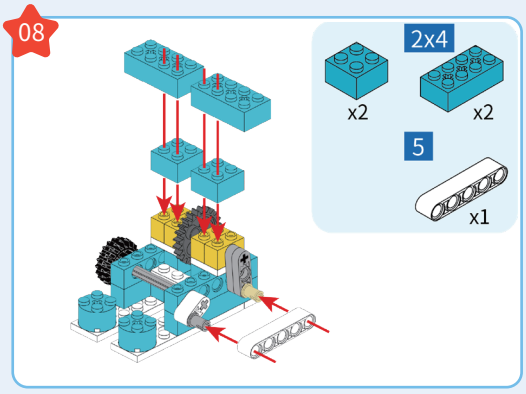








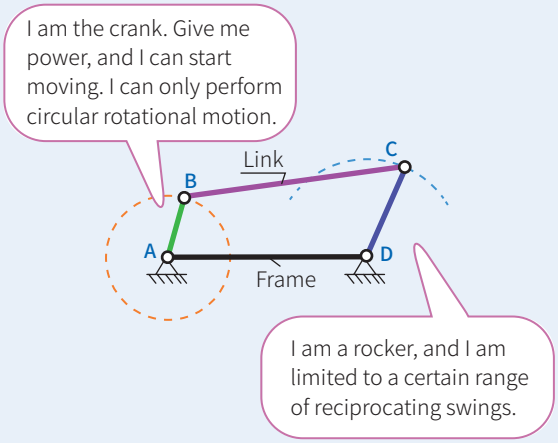


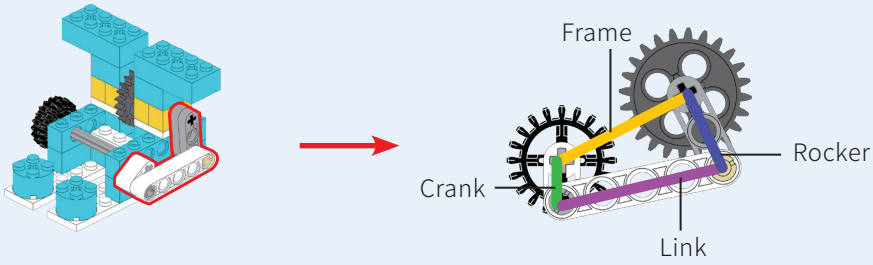


Knowledge

The Crank-rocker Mechanism

The crank-rocker mechanism is a four-bar linkage with one crank and one rocker. The crank performs uniform circular motion, while the rocker reciprocates. When the crank acts as the driving member, the rocker serves as the driven member, executing reciprocating swinging motion.





The sawing craftsman uses a crank-rocker mechanism to drive a coaxial gear, which causes the rack to perform reciprocating linear motion.

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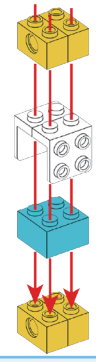

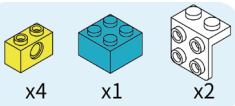

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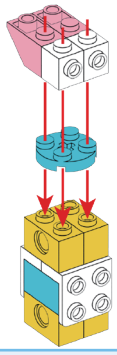

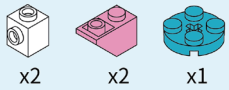

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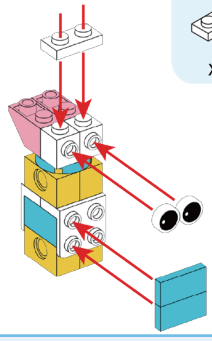

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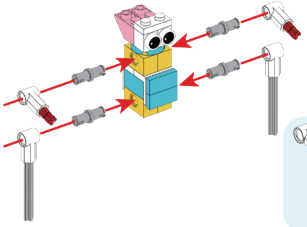

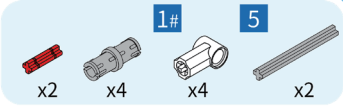

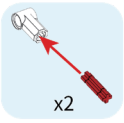

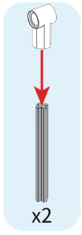

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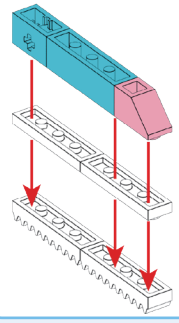

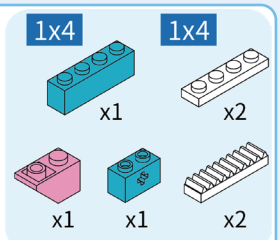

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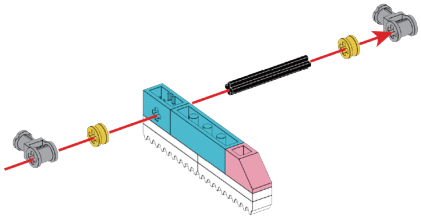

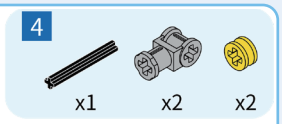

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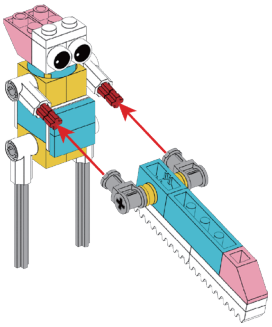

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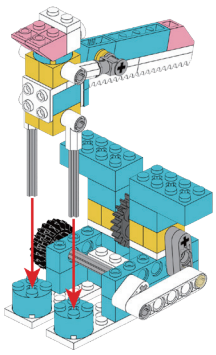

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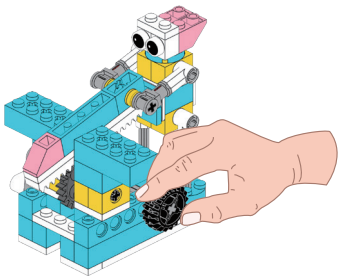
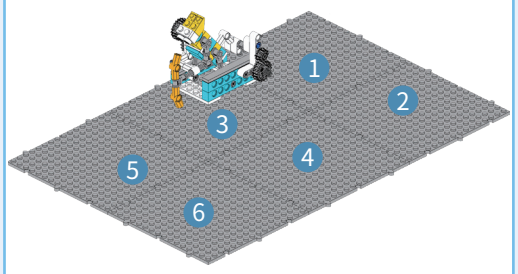


Turn the gears to get the sawing craftsman moving!

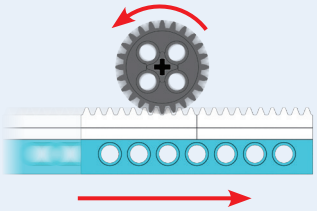
18



Knowledge

Rack and Pinion Transmission

Rack and pinion transmission is a common mechanical transmission method consisting of a gear (pinion) and a rack. It converts linear reciprocating motion into reciprocating rotary motion through the interaction of the gear and the rack.



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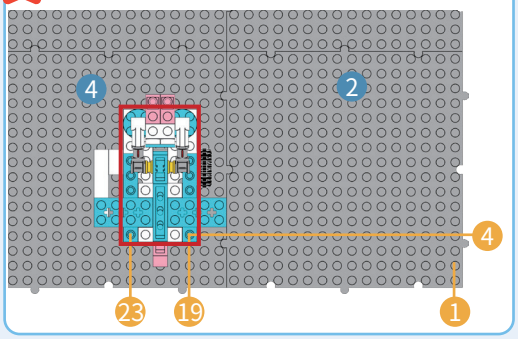

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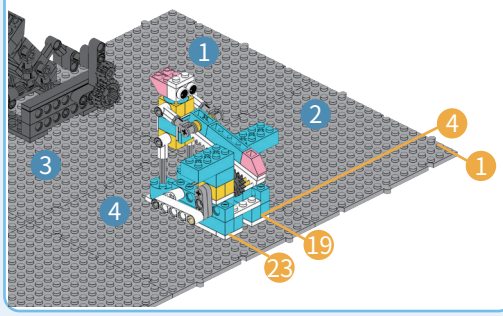
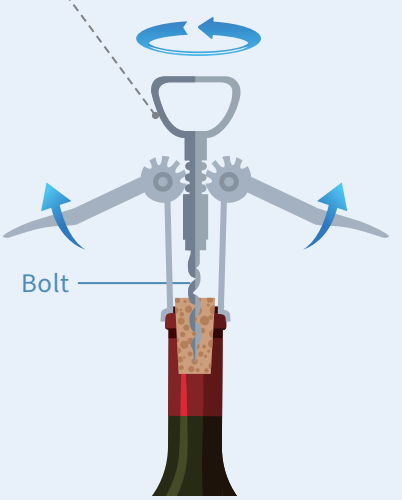


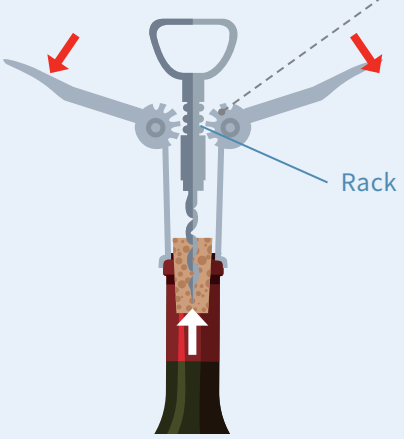
Knowledge

Do you know there are also gears inside of the opener of the red wine?

Slowly screw the bolt into the cork, and the long handle will lift up.

Once the bolt is fully inserted into the cork, push the handle downward. The small gear drives the rack upward, pulling the cork out.

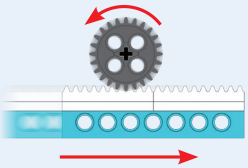




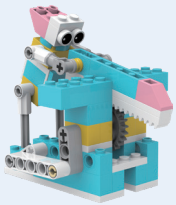
Share

Kids, review and share the knowledge about the mechanism principles of the sawing craftsman with your parents.

Understood the function of the saw tool



Learned the principles of rack and pinion transmission

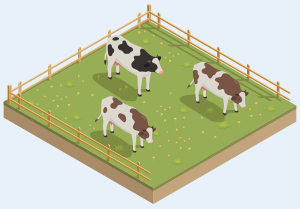


Learned the principles of the crank-rocker mechanism

3. Seeding

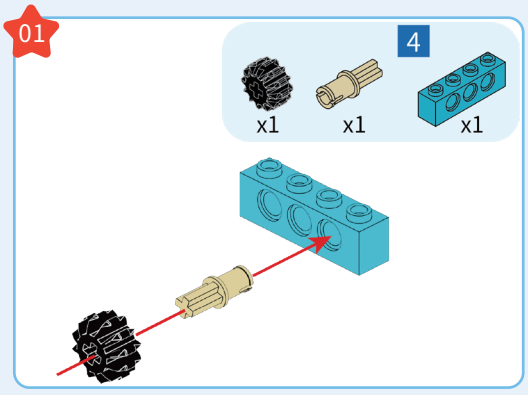
Thinking

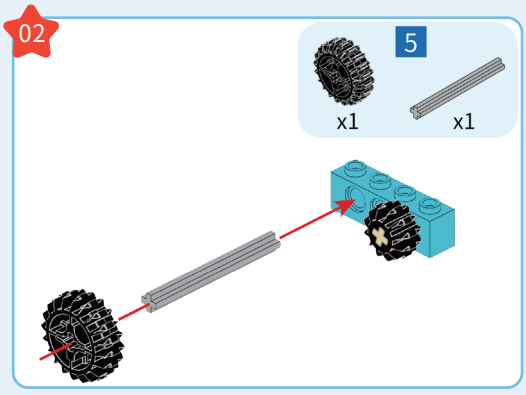
1. What everyday items utilize mechanical structures?
2. How can we make mechanical structures more stable?

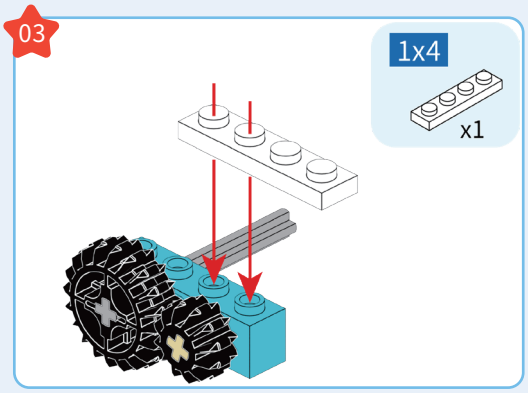


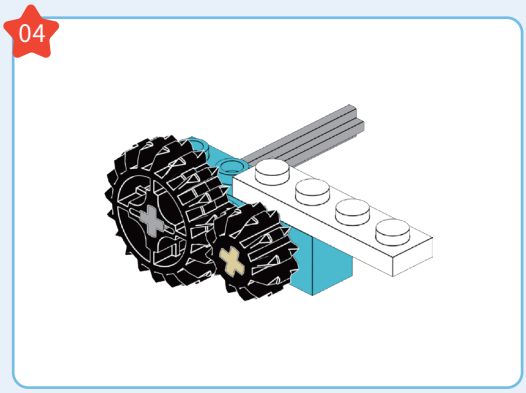
Build:

Hey guys, please follow the steps to build the blocks with your fastest speed. You will find something interesting and useful!





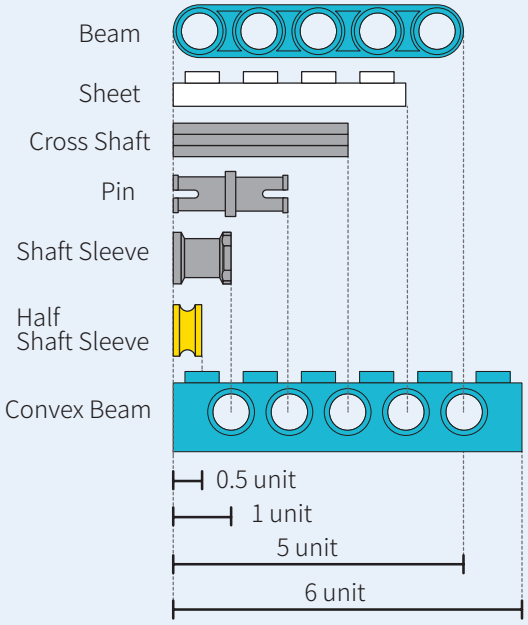


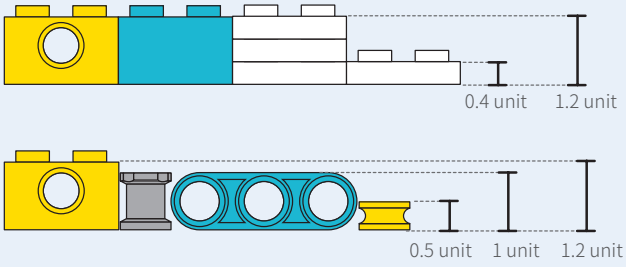


Knowledge

The Unit Size

1 unit = 8mm, Generally the width, height, length of the part and the unit size are integer multiples.





Beam and Brick

Height of the beam(or brick)=1.2 unit=9.6mm
Height of 1 beam(or brick)=Height of 3 sheets
Height of 1 sheet=0.4 unit=3.2mm

Difference between pins

Half pin	Half pin shaft(loose)	Grey pin	Black pin	Long pin	Long half pin
The half part of it is combined with a 0.5 unit accessory.	The pin of it has little friction with the hole, so it's easy to rotate.	It has little friction with the hole, so it's easy to rotate.	It has great friction with the hole, so it's mostly used for fixation.	It has great friction with the hole, so it's used for fixation.	It has little friction with the hole, so it's easy to rotate.

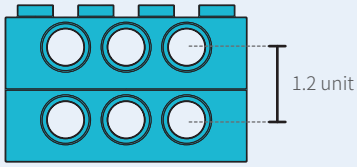
Knowledge

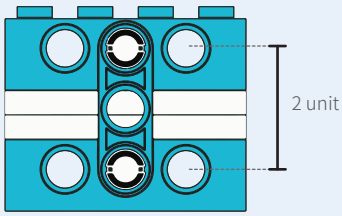
Hamburger Structure

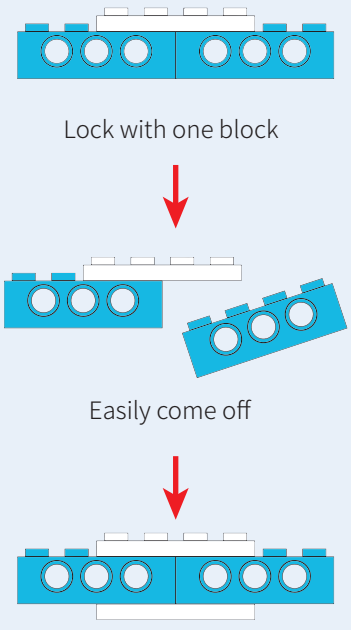
By converting parts from different units and leveraging the principle that two points define a straight line, we can effectively connect and secure the beam.

Height of 2 beams(or bricks) + 2 sheets piled up = 3.2 unit. Distance between two holes is 2 unit. To simply put it is “2 thick+2 thin” (the 2 sheets should be placed in the middle).

The distance between the two holes of the 2 beams(or bricks) is 1.2 unit, the height of the 2 sheets is 0.8 unit, altogether is 2 unit.







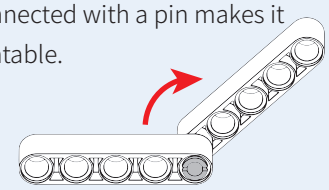
Interlock

The gaps between the upper and lower floors are locked with each other to make the whole structure more solid and not easy to fall apart. It is also very widely used in life.

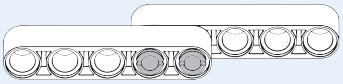
Two points determine a straight line

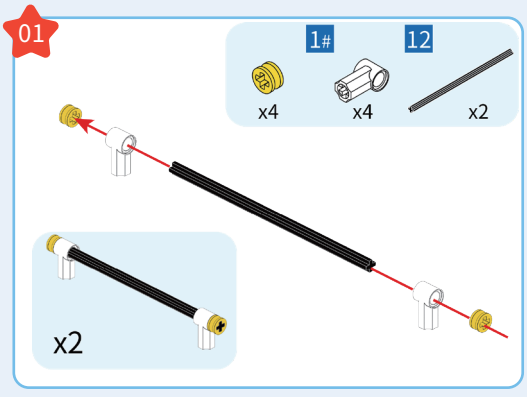
To connect two parallel objects, it is necessary to take two points in the overlapping part and fix them.

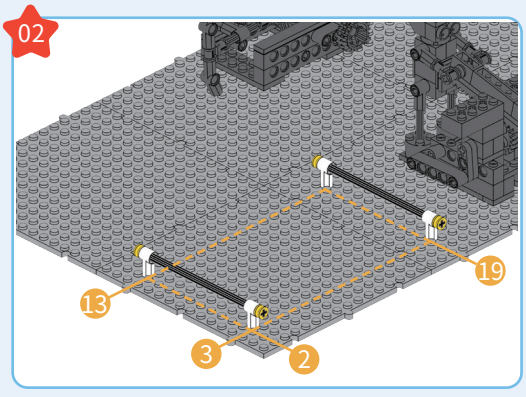
Connected with a pin makes it rotatable.

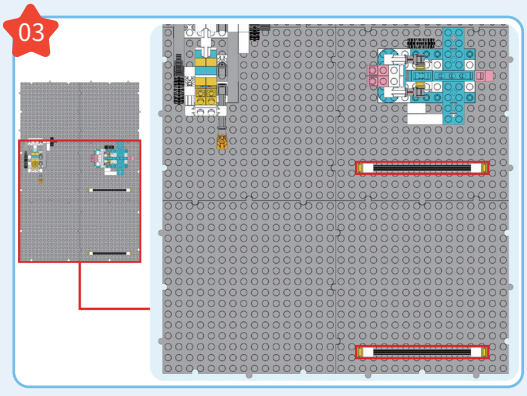


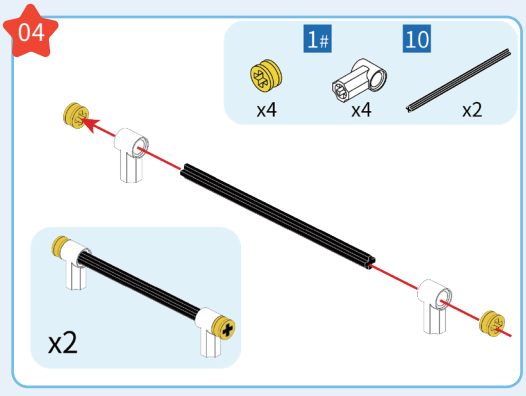
Connected with two or more pins makes it steady.

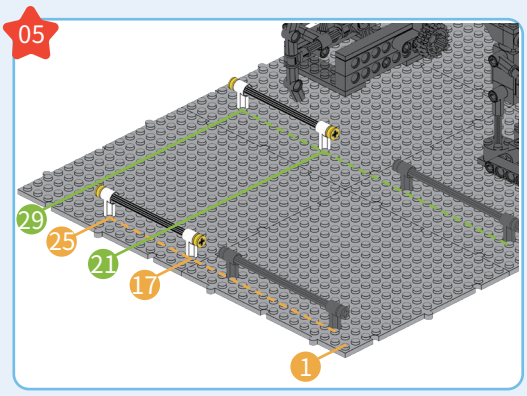


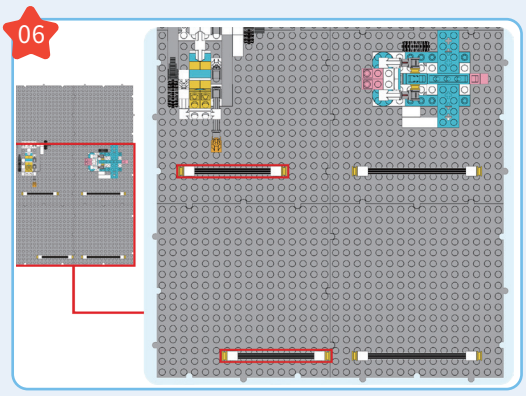


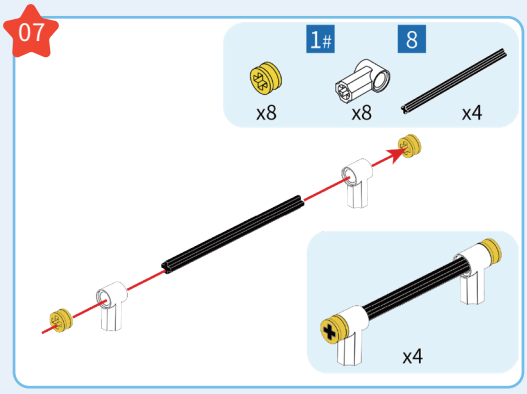








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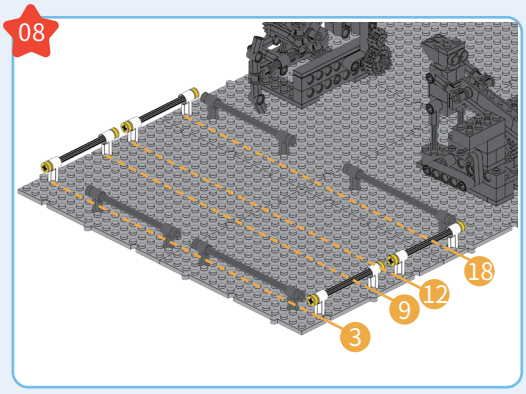
1#
8
x8
x8
x4
x4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18
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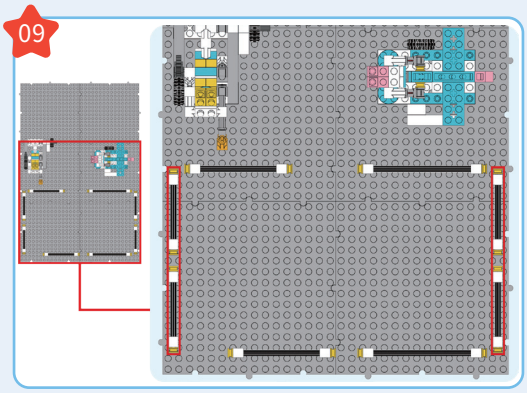
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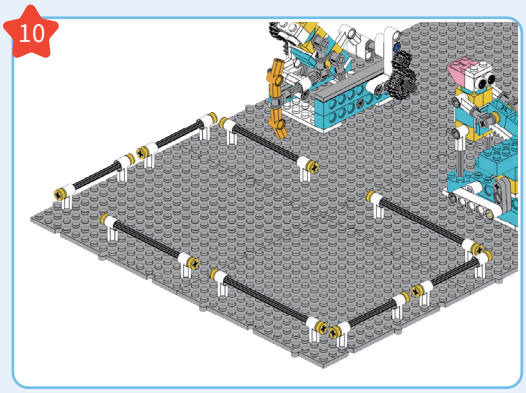
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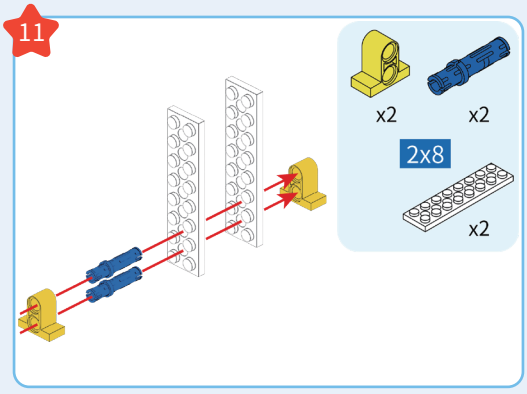
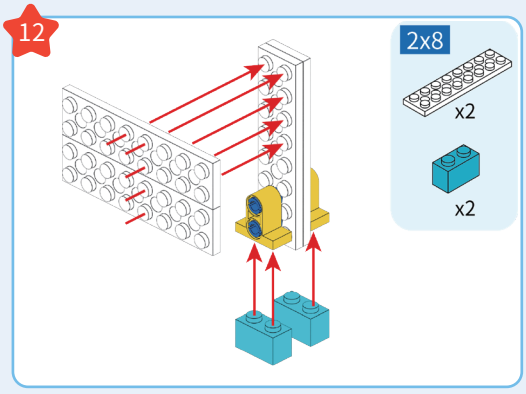

11
x2
x2
2x8
x2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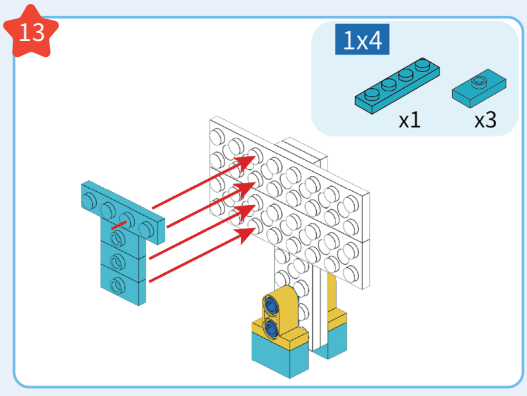
2x8
x2
x2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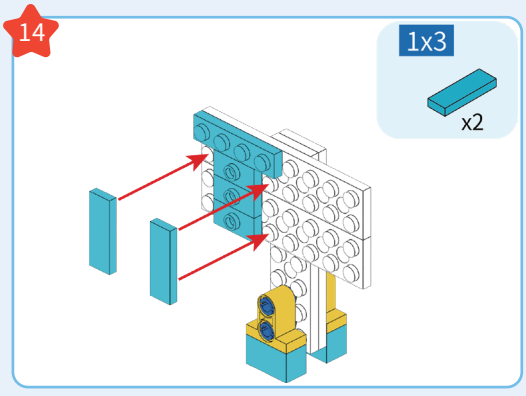
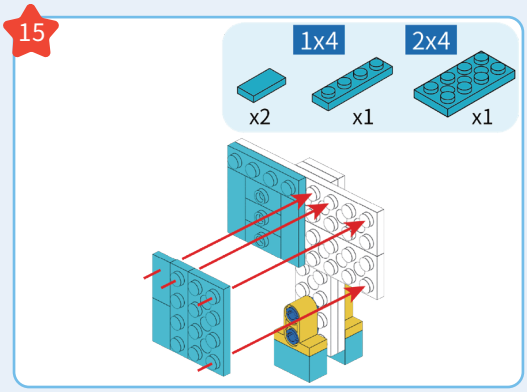
1x4
x1
x3


14
1x3
x2

15



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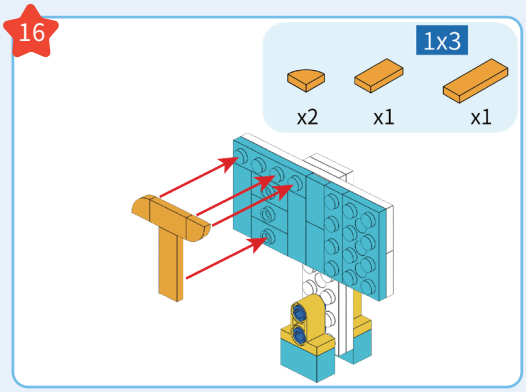

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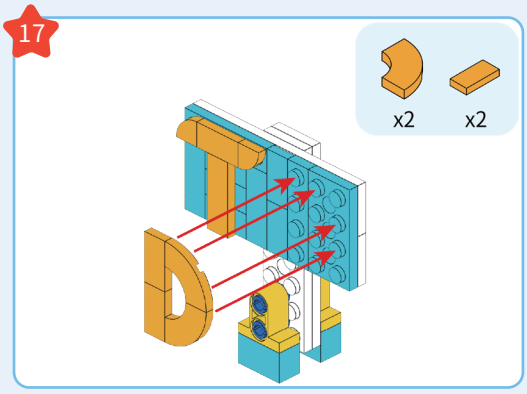

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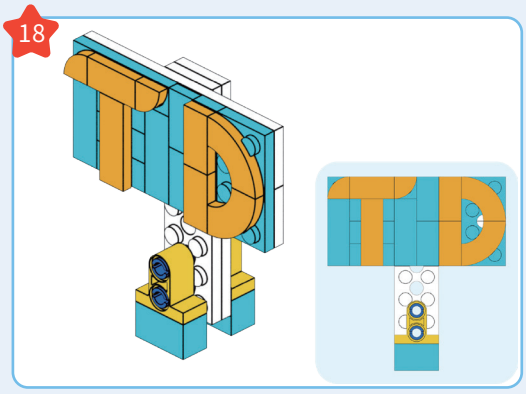

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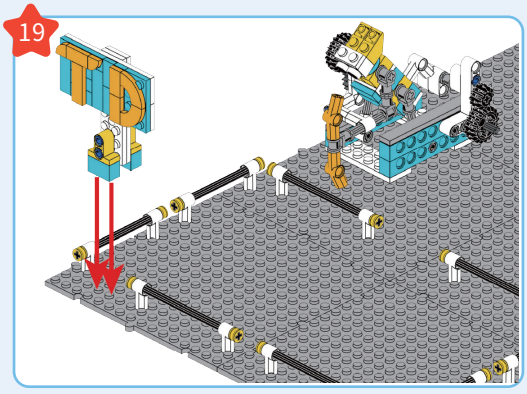

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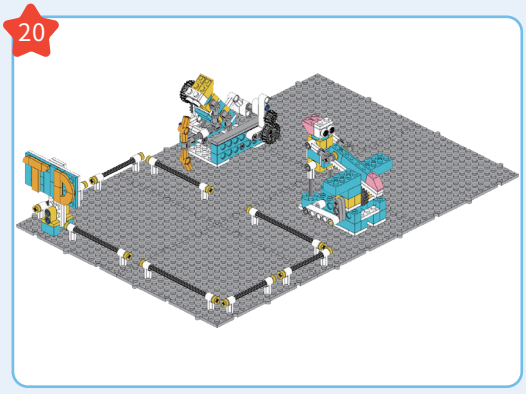
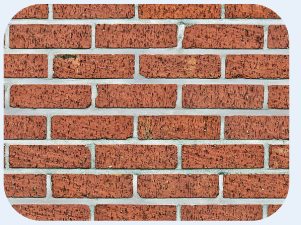


Knowledge

Interlocking structures form the fundamental framework of various buildings and houses. They are often seen in foundations, brick walls, windows, and roofs.



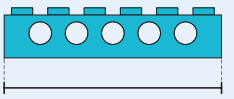
Brick walls

Roofs

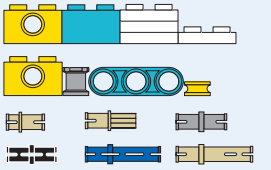
Window

Share

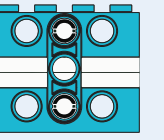
Kids, review and share the knowledge about the mechanism principles with your parents.



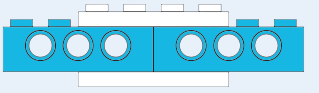
Learned the unit size of the bricks



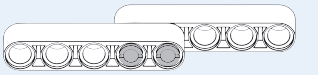
Identified different pins, bricks, and beams



Learned about the hamburger structure



Learned about interlocking structures



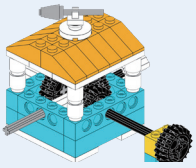
Learned about two-point fixation

4. Power Station

Thinking

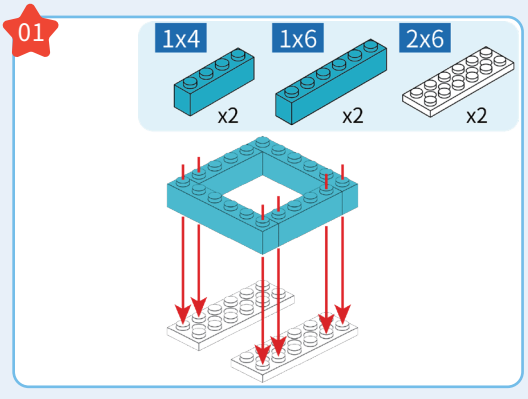
1. What kind of mechanism can be used to move both the pioneer and the sawing craftsman at the same time?

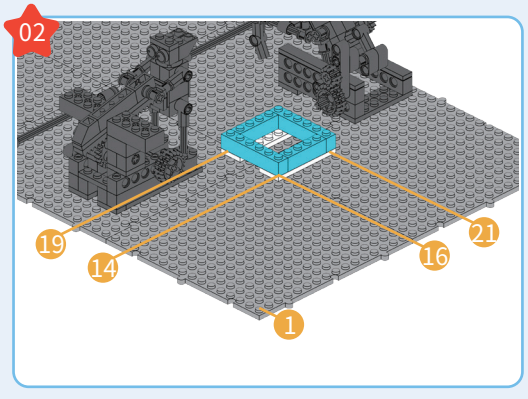
2. What would the speed of their simultaneous movement look like?

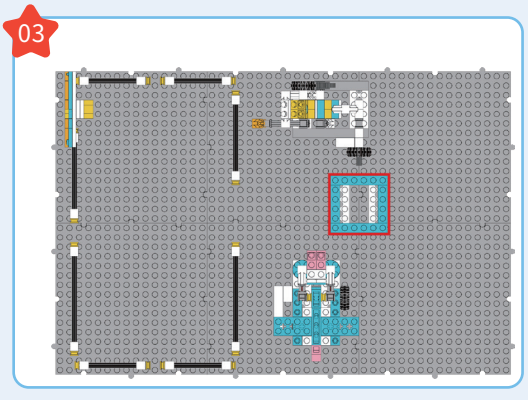


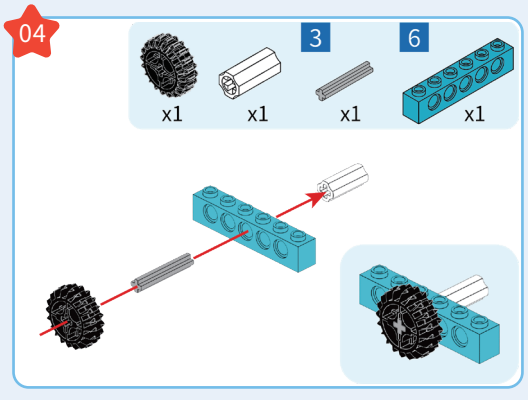
Build:

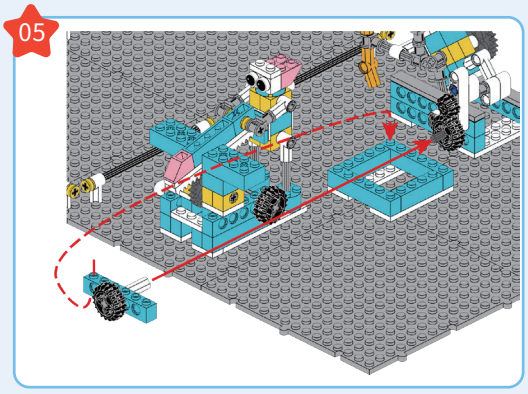
Hey guys, please follow the steps to build the power station with your fastest speed. You will find something interesting and useful!







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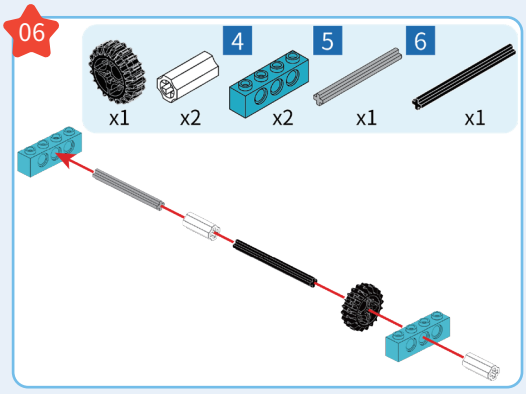
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x2
x2
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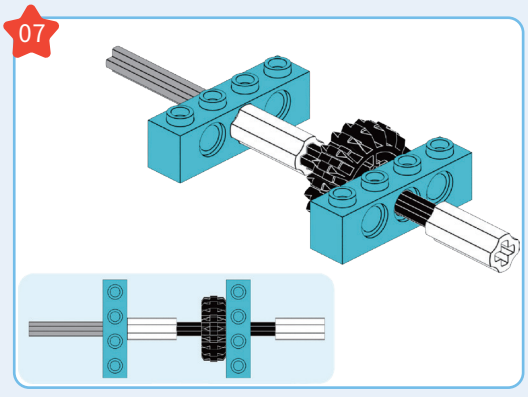
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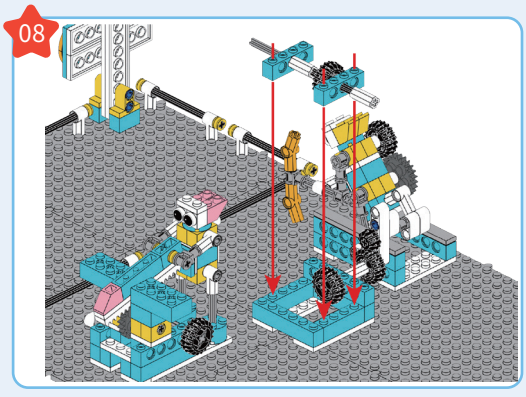
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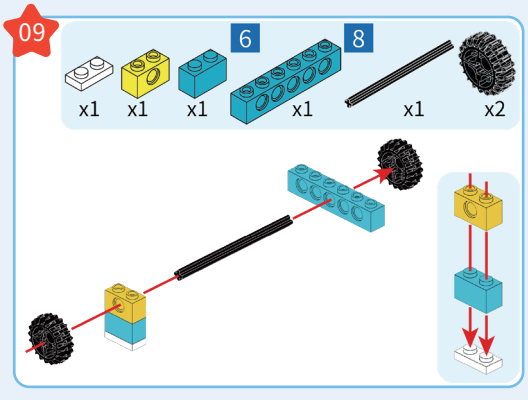
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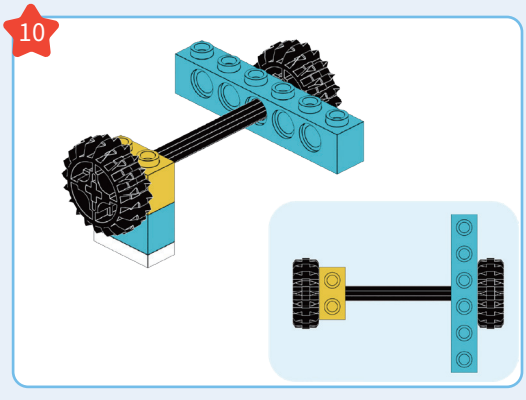
6
8
x1
x1
x1
x1
x1
x2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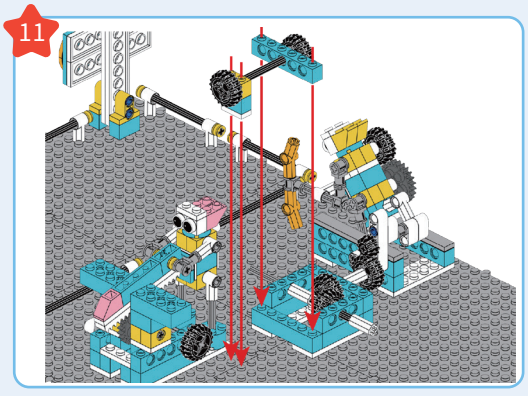
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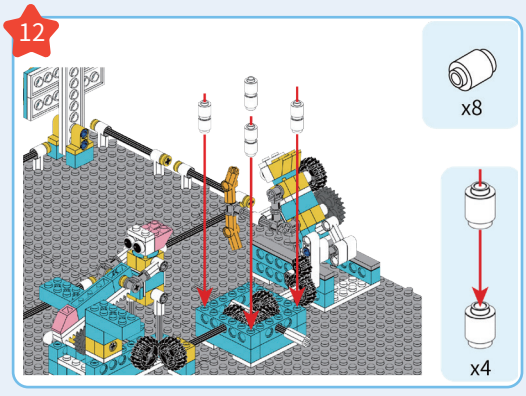
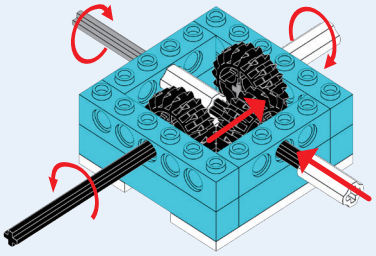
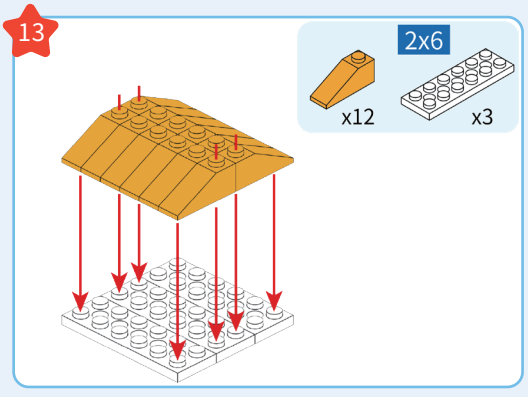

12
x8
x4

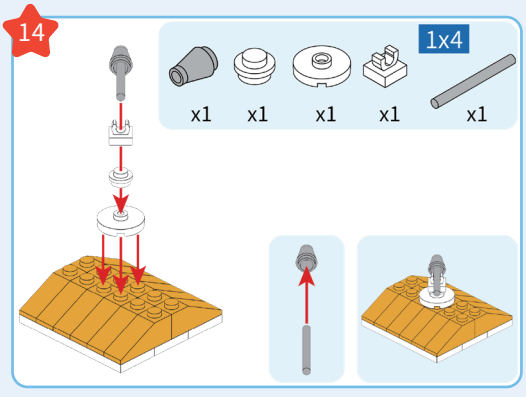
Knowledge

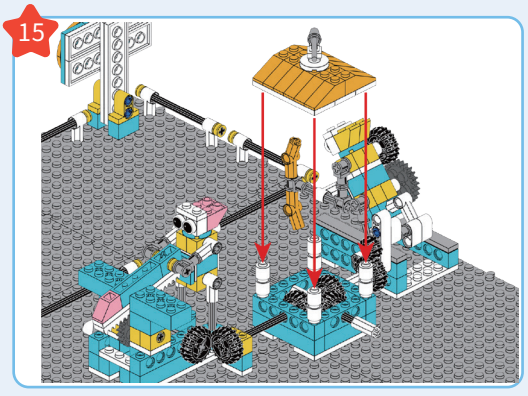
Gear Train

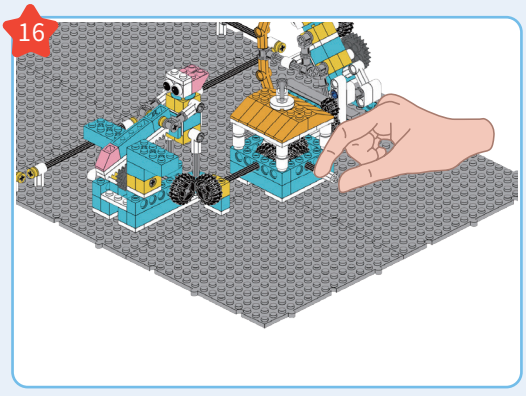
In practical machinery, a series of meshing gears is often used to meet operational requirements. Such a transmission system composed of multiple gears is called a gear train. Using a gear system to transmit power to output from two different positions.









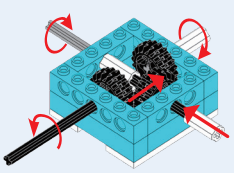


Knowledge

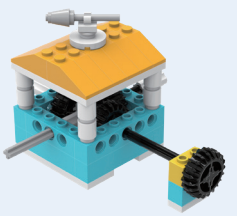
Inside an alarm clock, there are many gears, such as the running wheel and the escapement wheel. The alarm clock uses a coiled spring as its power source. The energy released as the tightly wound spring unwinds drives the thin shafts connected to the gears, causing them to rotate.

Share

Kids, review and share the knowledge about the mechanism principles of the power station with your parents.



Studied gear system transmission



Built a power station

Learned about the internal structure of an alarm clock

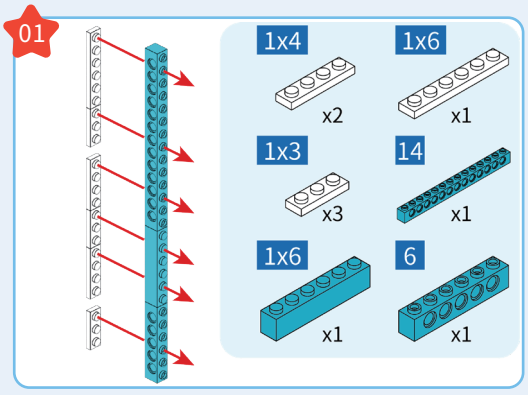
5. Wind Turbine

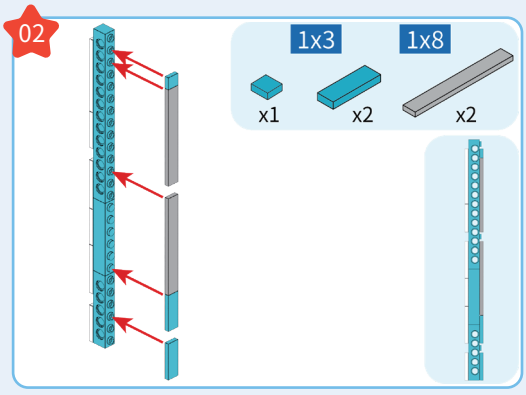
Thinking

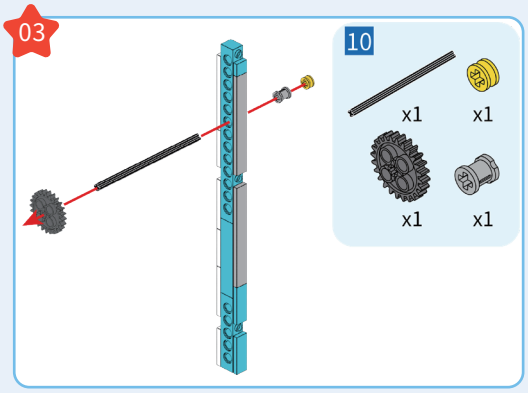
1. How can the windmill drive the farm's machinery?
2. What mechanical mechanism is needed to make the windmill operate?

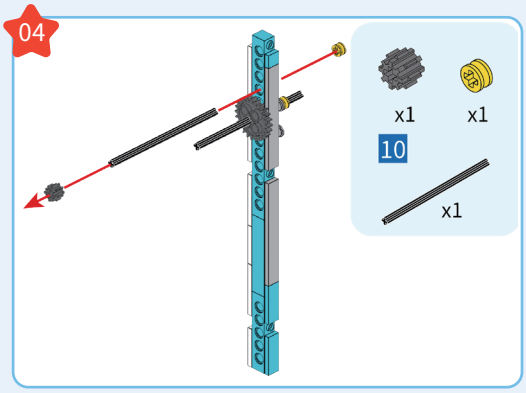
Build:

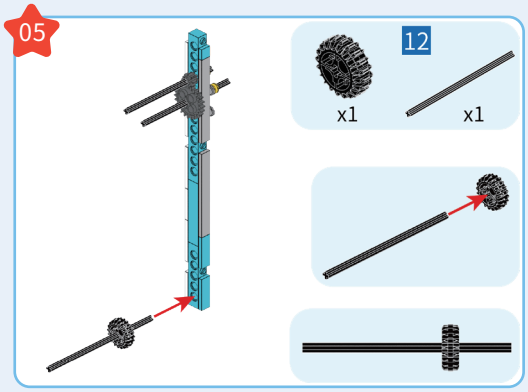
Hey guys, please follow the steps to build the windmill with your fastest speed. You will find something interesting and useful!

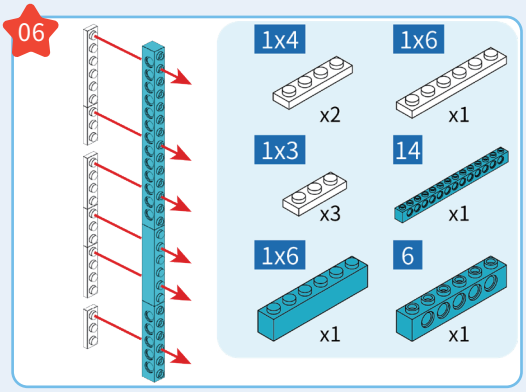


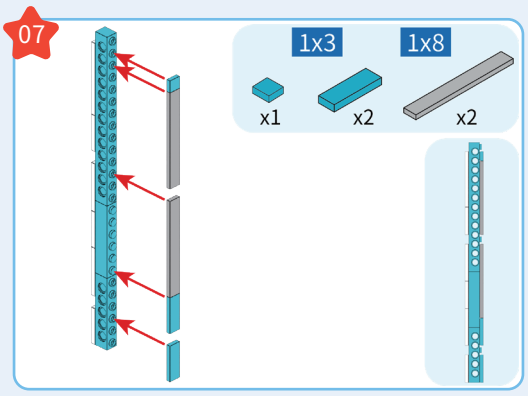


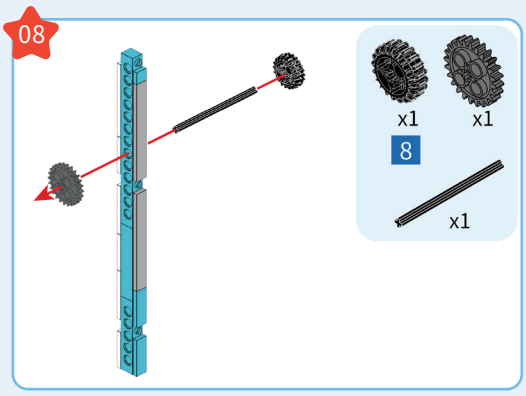


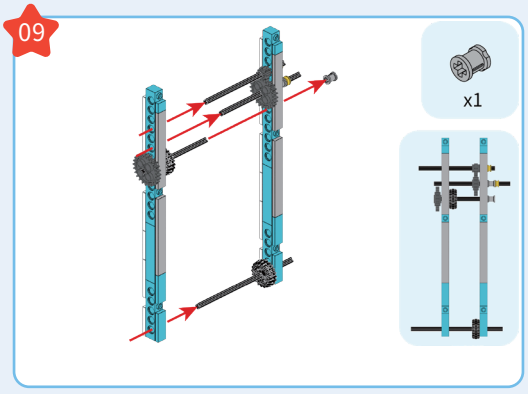


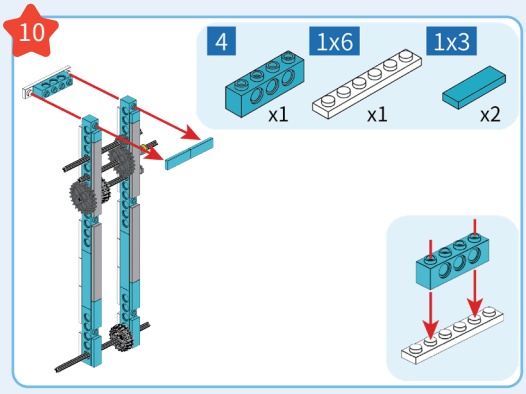








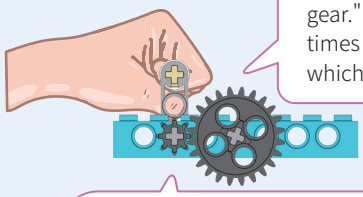




Knowledge

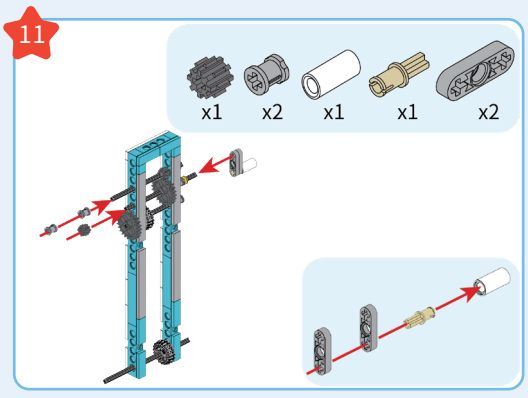
Gear reduction mechanism

A small gear is used as the driving gear to rotate a large gear (driven gear). The rotation speed of the large gear is slower, which is called a gear reduction mechanism.



I am a 24-tooth gear, and I am driven by the driving gear on the left, so I am called the "driven gear." The 8-tooth gear rotates 3 times to make me rotate once, which slows down my speed.

I am an 8-tooth gear. By manually turning me, I can be powered and become the "driving gear."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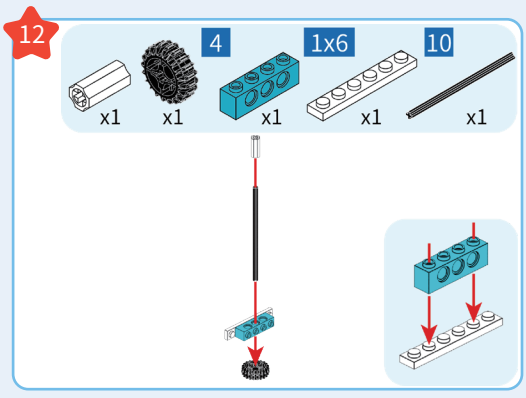
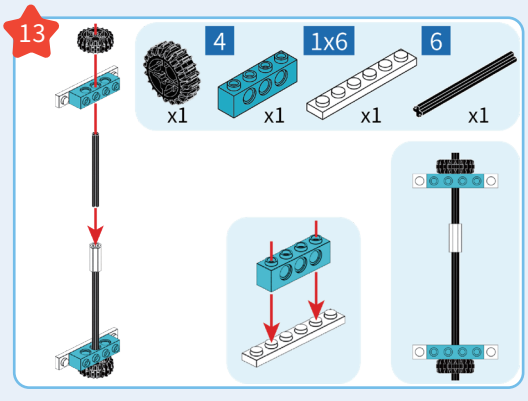
x1
x2
x1
x1
x2


12
4
1x6
10
x1
x1
x1
x1
x1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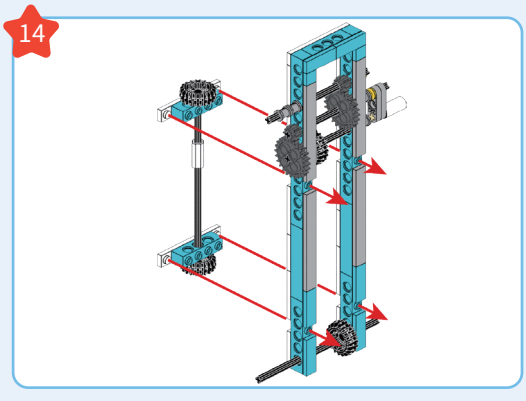
4
1x6
6
x1
x1
x1
x1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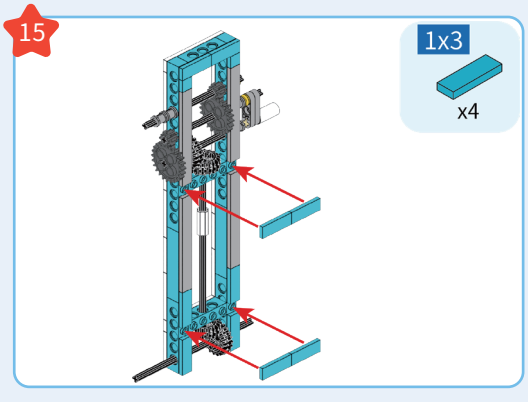
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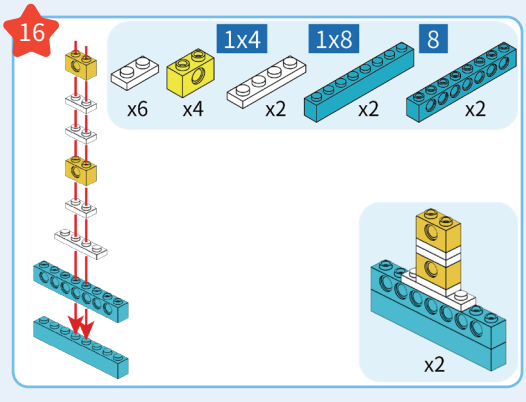
1x3
x4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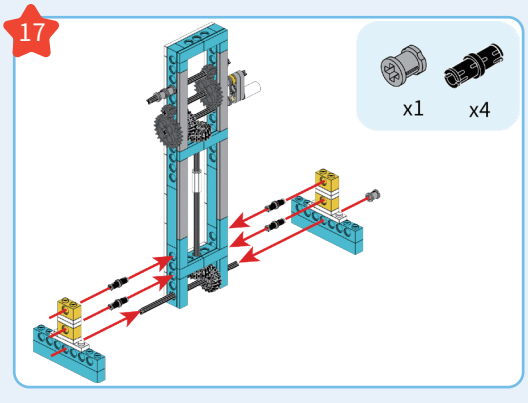
1x8
8
x6
x4
x2
x2
x2
x2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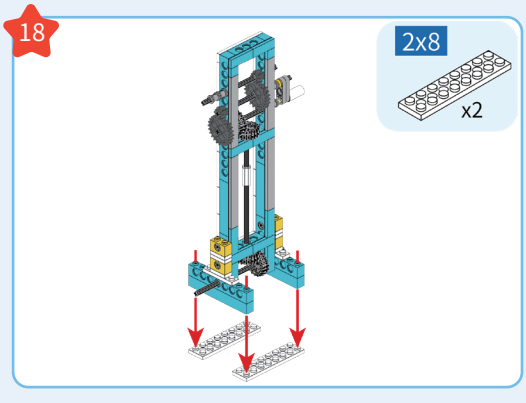
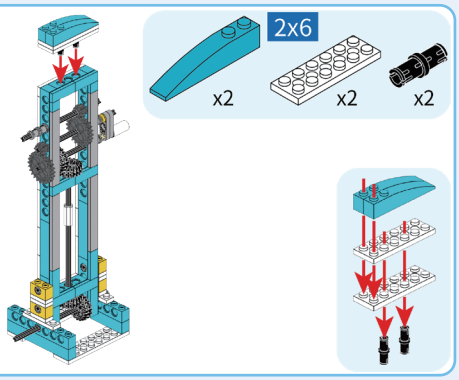
x1
x4


18
2x8
x2

19



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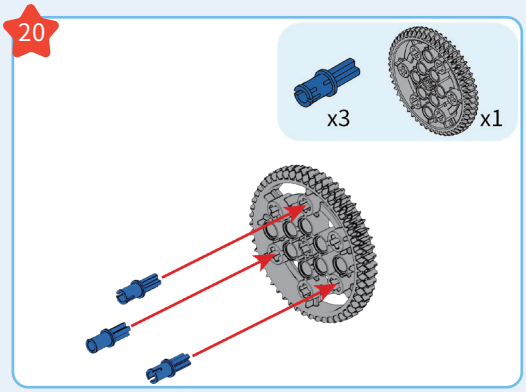

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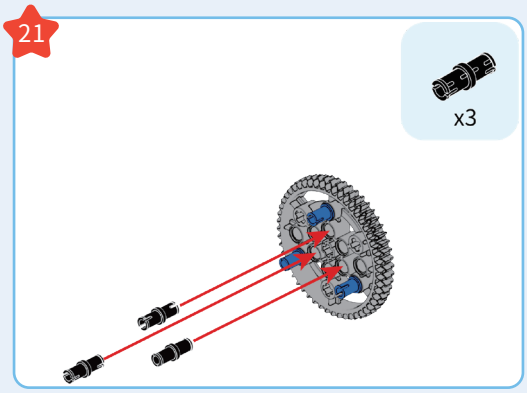

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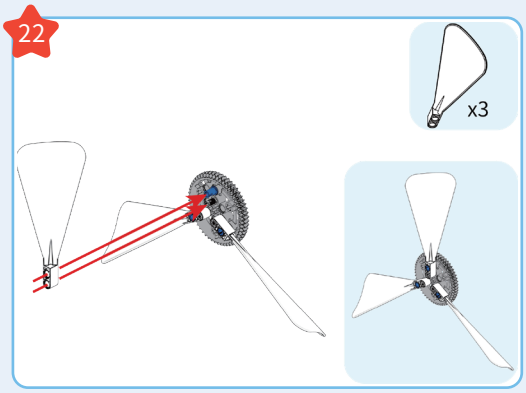

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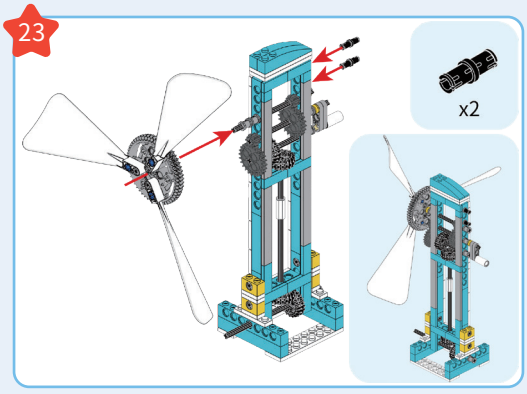

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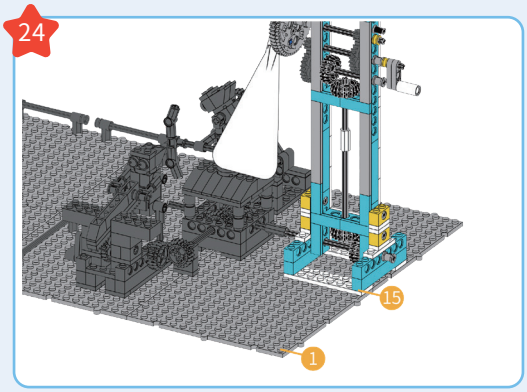

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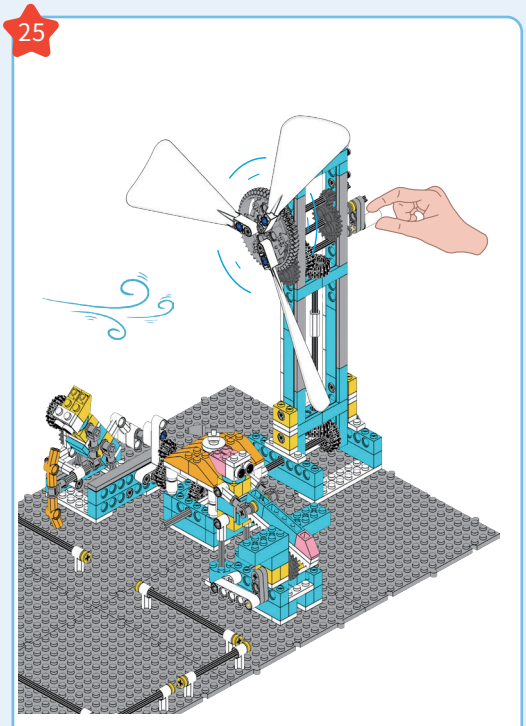


Turn the axle to make the windmill spin!

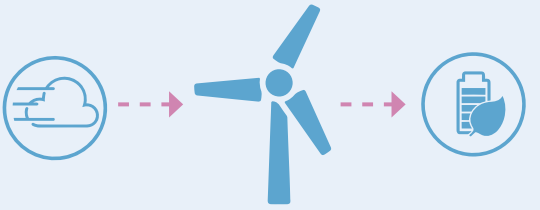
Wind Energy and Kinetic Energy

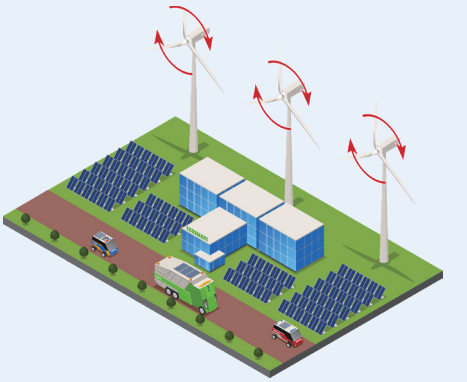
A wind turbine has a large fan called a windmill.

When the wind blows over the windmill, the windmill starts to spin, just like the leaves on a tree. Each blade of the windmill acts like a small wing, capturing the power of the wind and causing the windmill to rotate. This process converts wind energy into kinetic energy, which is what we refer to as wind power.

Knowledge

The rotation of the windmill drives the machines inside the wind turbine, which can convert kinetic energy into electrical energy, the electricity we use in our daily lives.



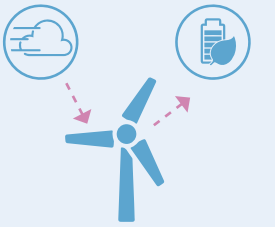


Share

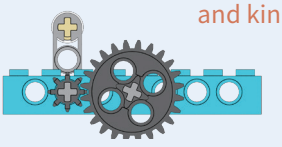
Kids, review and share the knowledge about the mechanism principles of the windmill with your parents.

Learned about wind turbine

Learned about wind energy and kinetic energy

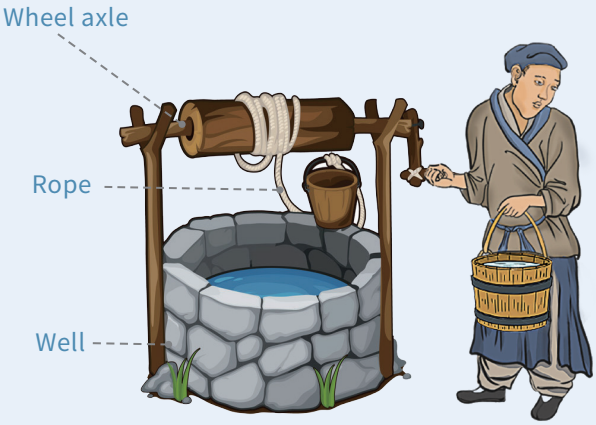


Understood the function of wind turbine



Studied gear reduction mechanisms

6. Irrigating



Water pump

The winch was originally widely used to extract underground water, for irrigating fields and meeting daily water needs.

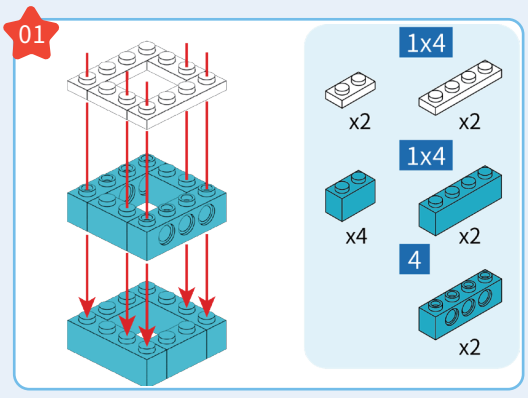
The winch utilizes the lever effect of the pulley and the tension transfer principle of the rope. When people pull the rope up and down, the pulley rotates and uses the rope to lift a bucket or other container to the desired height, thereby achieving the goal of lifting water.
Whether in ancient times or today, the winch is a very practical tool. It helps us do more with less effort.

Thinking

1. What mechanisms can drive a mechanical winch?
2. How can we make the mechanical winch lift water quickly and steadily?

Build:

Hey guys, please follow the steps to build the mechanical winch with your fastest speed. You will find something interesting and useful!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x2
1x4
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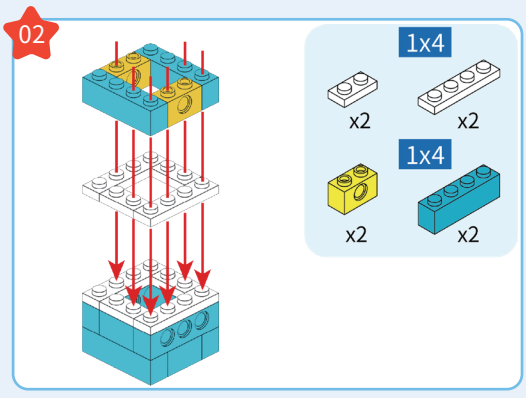
x2
4
x2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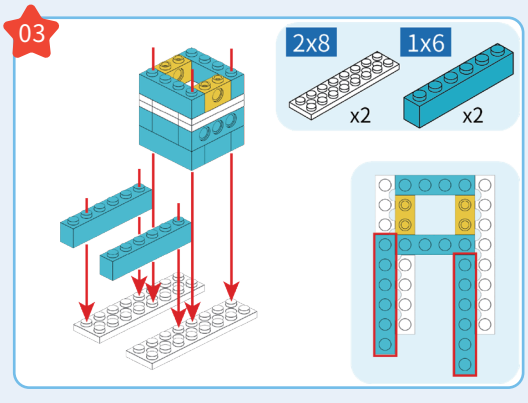
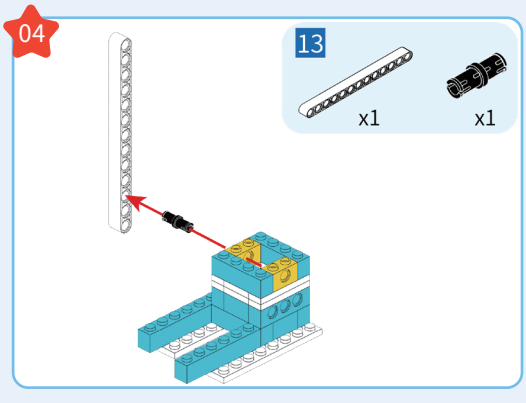
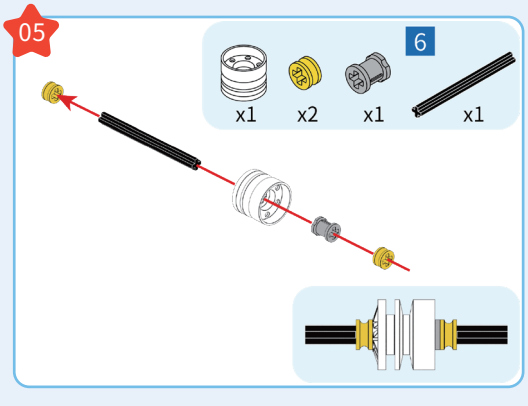
x2
x2
1x4
x2
x2


03
2x8
1x6
x2
x2


04
13
x1
x1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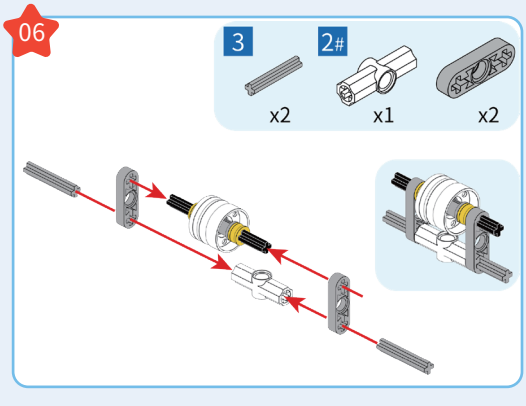
x1
x2
x1
x1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3
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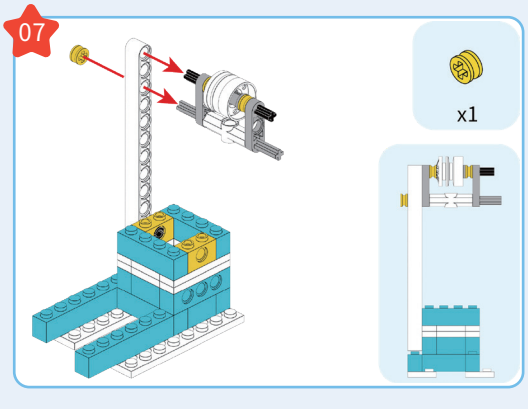
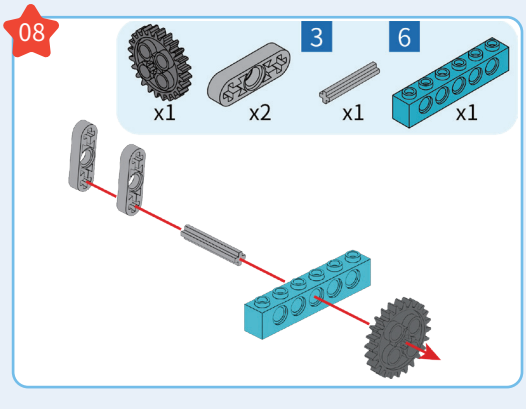
x2


07
x1


08
3
6
x1
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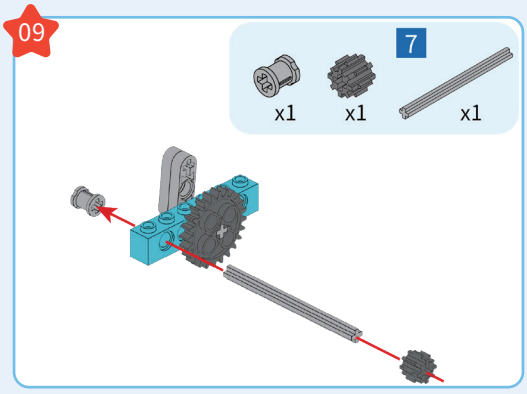
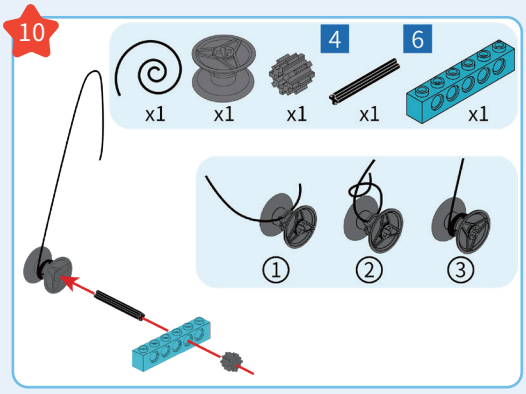
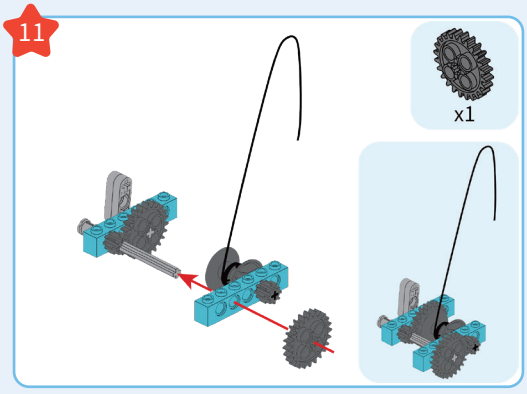
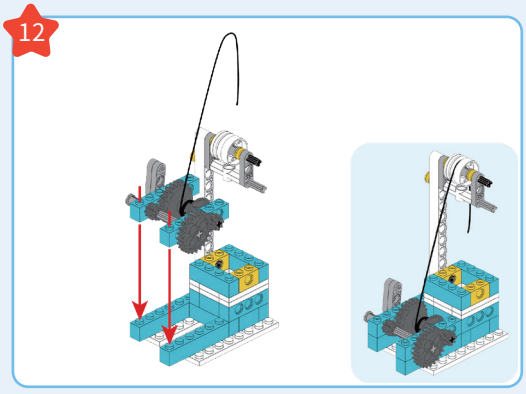
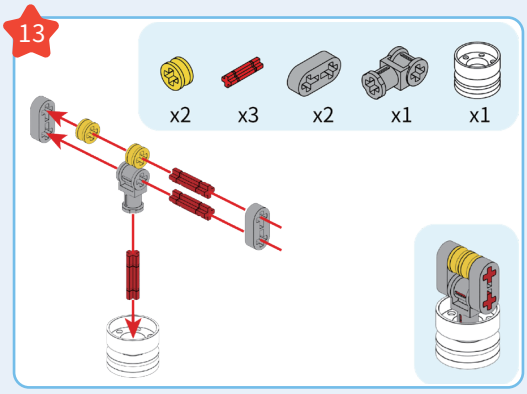
x1
x1

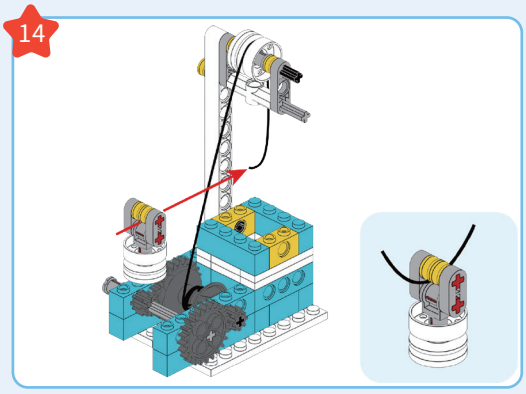








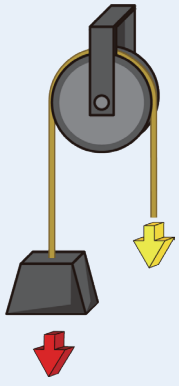




Knowledge

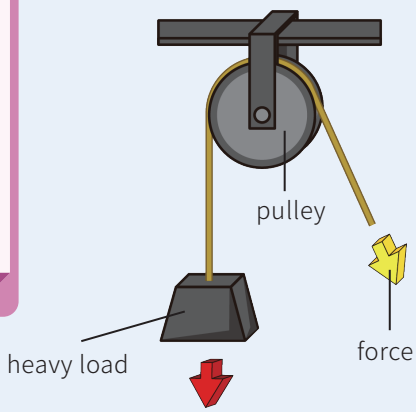
Pulley

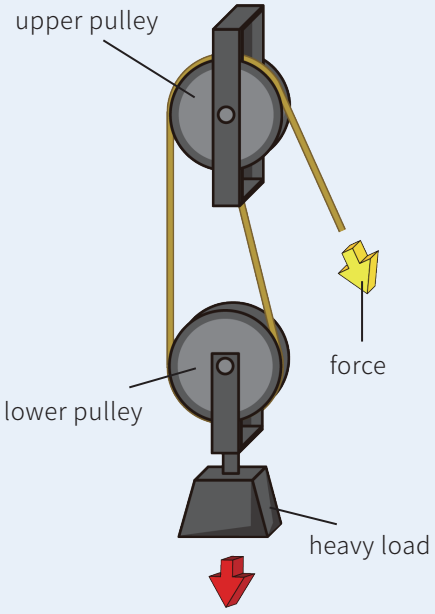
A pulley is a simple machine that can be used to lift heavy objects. It consists of a wheel and a rope. The edge of the wheel has a groove. We can tie the object to be lifted at one end of the rope, then thread the rope through the groove of the pulley. When you pull the rope down, the object is lifted up.



Fixed Pulley

A fixed pulley system consists of a single pulley fixed in place on a support. The rope is passed over the pulley and connected to the heavy object. When using a fixed pulley, the distance the object moves is the same as the distance the rope is pulled. It does not increase the force, but it can change the direction of the applied force.



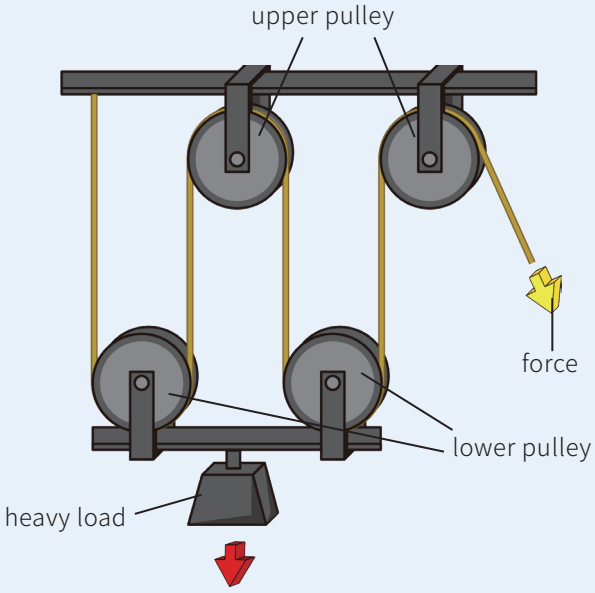


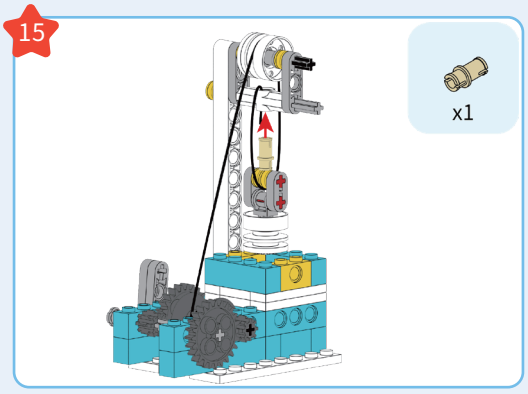
Movable Pulley

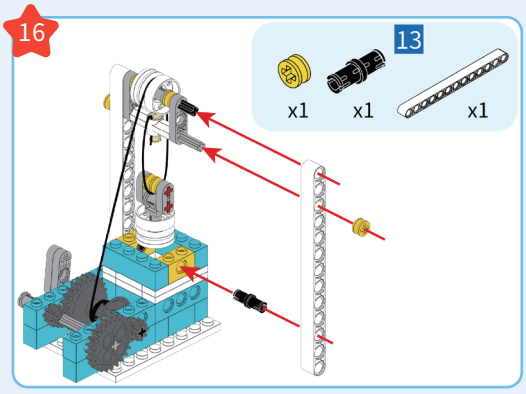
In a movable pulley system consisting of two pulleys, the rope passes over the upper pulley, then downward through the lower pulley, and returns to the upper pulley. The load on the lower pulley can move freely. When the rope is pulled, the load can be lifted. The distance the load moves is half the distance the rope is pulled. Although the distance the load rises is halved, the force required to pull the rope is also halved, making it easier to lift the load.

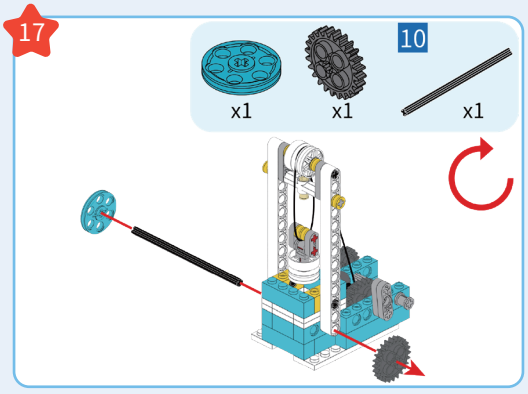
Pulley System

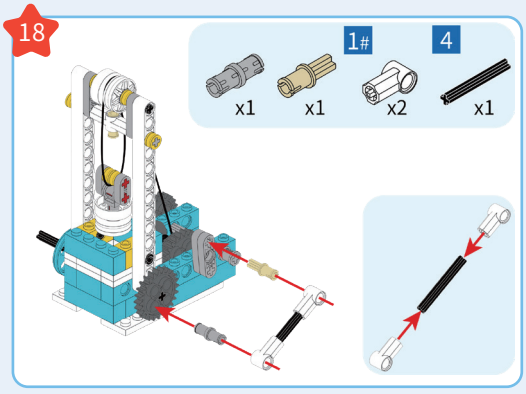
A pulley system consists of multiple pulleys, formed by a rope and two separate pulley groups surrounded by the rope. Each pulley in the group can rotate freely on the same axis. The upper pulley group is fixed to a support, while the lower pulley group is connected to the load. A pulley system can lift very heavy objects, and the more pulleys in the system, the less effort is required to move the object.

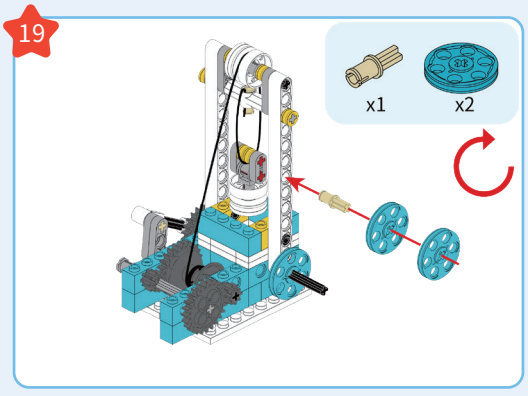


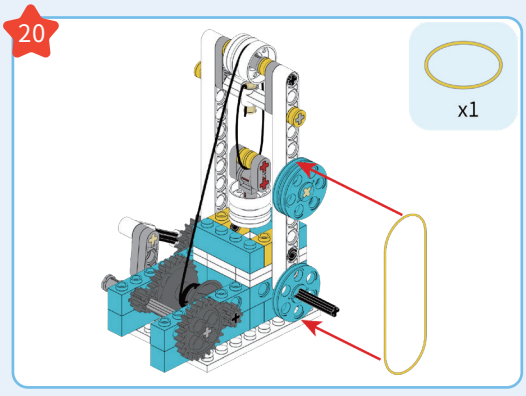




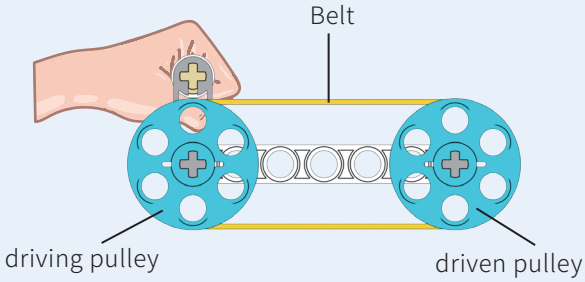






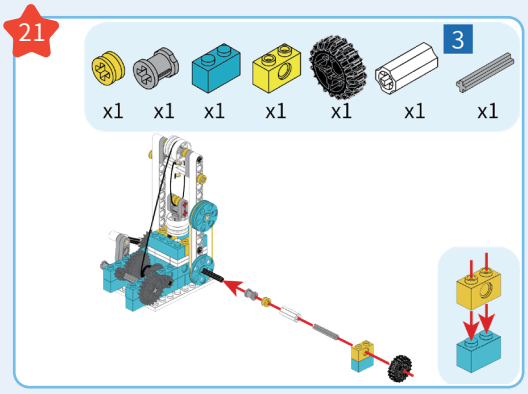


Knowledge



Belt drive

Belt drive is a mechanical transmission that relies on friction to transfer motion and power, consisting of a driving pulley, a driven pulley, and a belt. The pulley that is powered is called the driving pulley, and the pulley driven by the driving pulley through the belt is called the driven pulley.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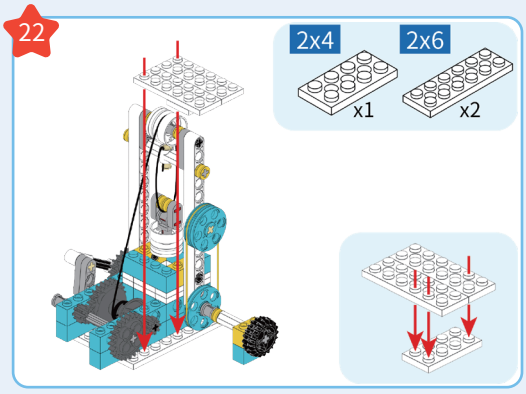
3
x1 x1 x1 x1 x1 x1 x1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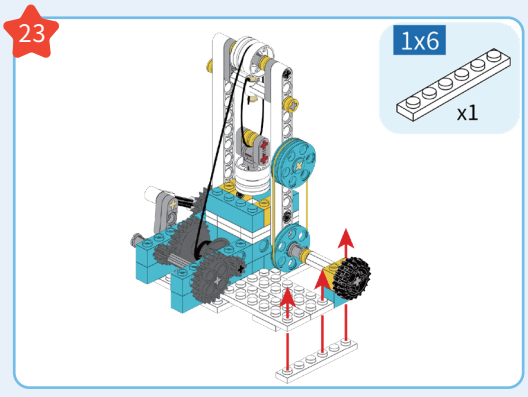
2x4
2x6
x1
x2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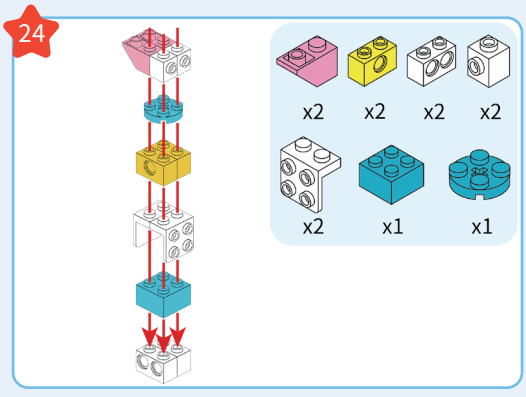
1x6
x1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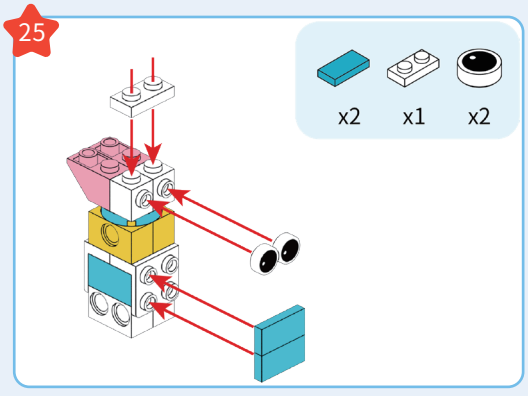
x2 x2 x2 x2
x2 x1 x1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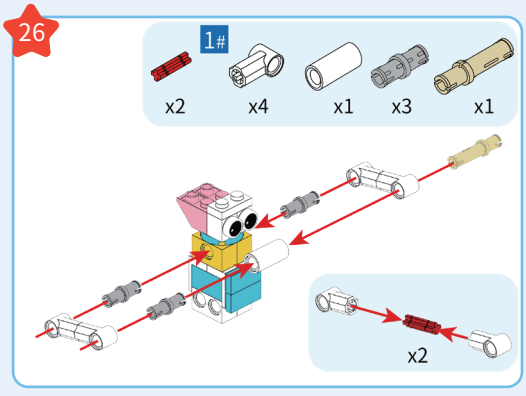
x2 x1 x2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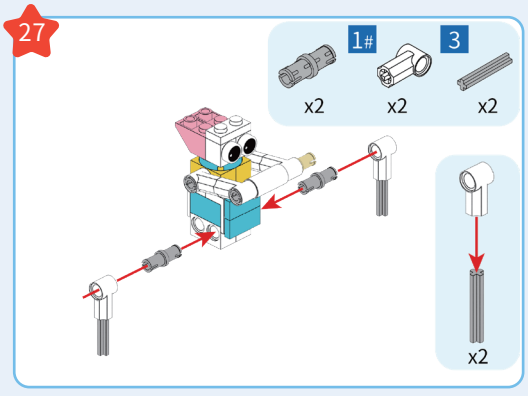
1#
x2 x4 x1 x3 x1
x2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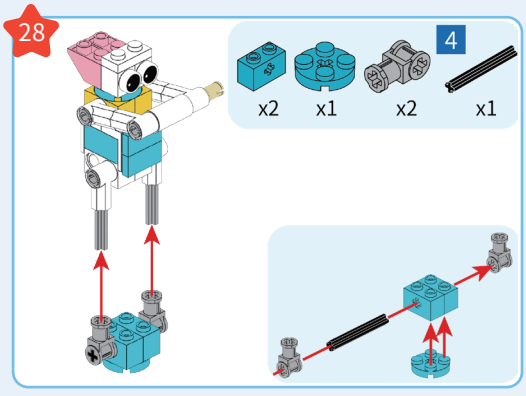
x2 x2 x2
x2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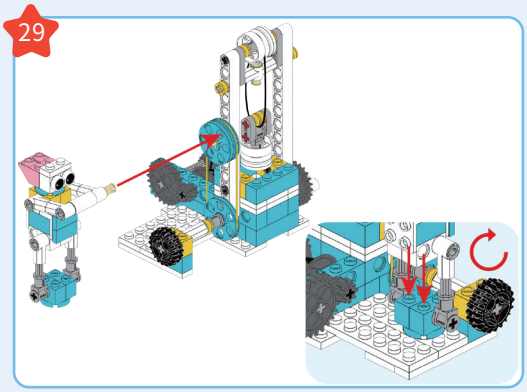
4
x2 x1 x2 x1

29



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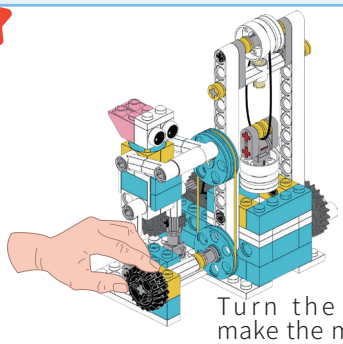
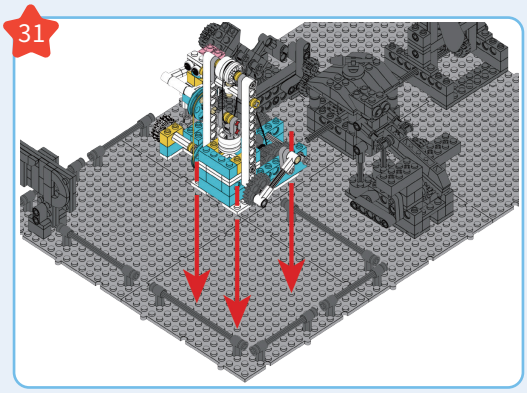


Turn the gears to make the mechanical winch start moving!

31



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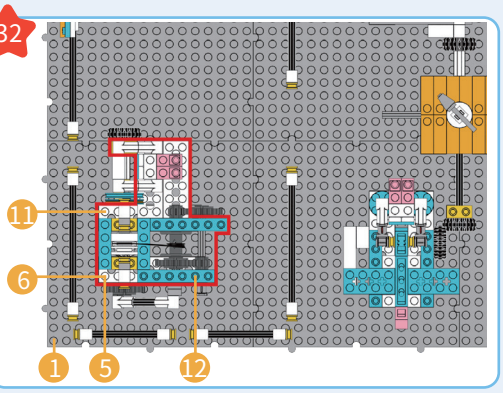

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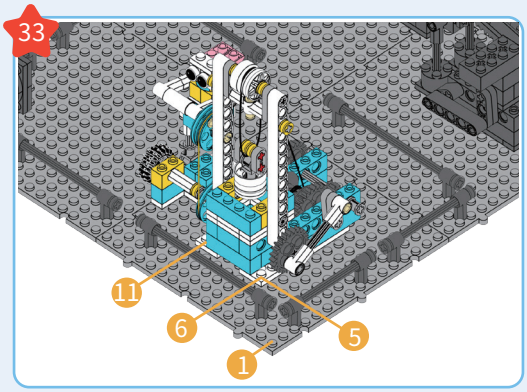

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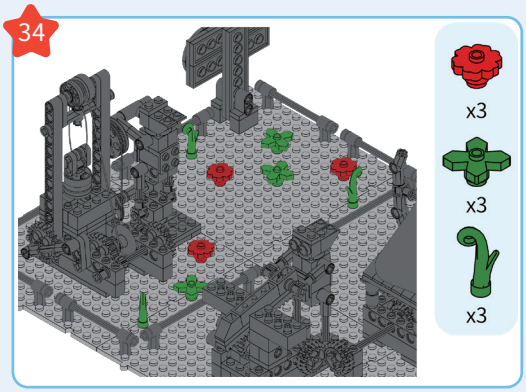

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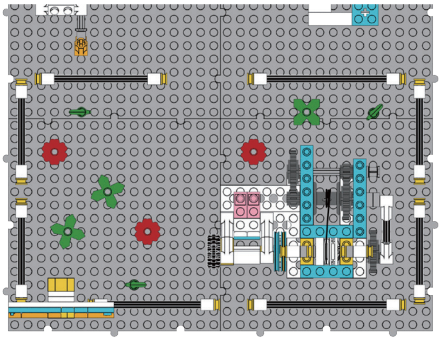

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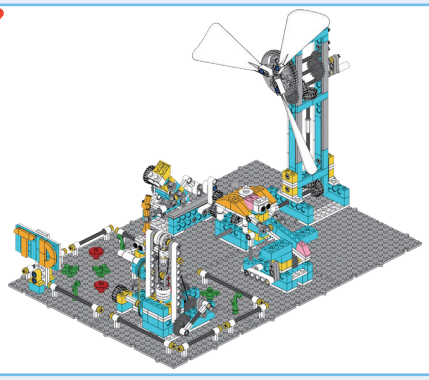
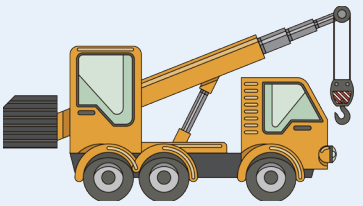
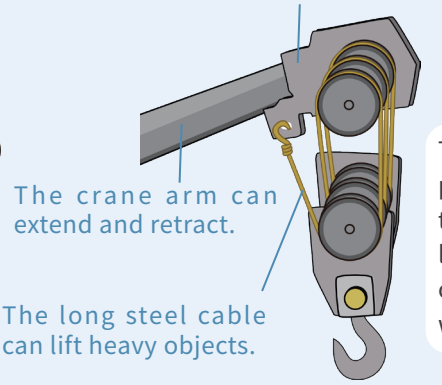


Knowledge





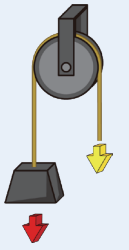
The six pulleys in the pulley system reduce the force needed to lift the heavy object to one-sixth of its original weight.

The truck crane, when fully loaded, can lift heavy objects up to more than 40 meters. Its crane arm can rotate 360 degrees, allowing the heavy object to be placed in the exact position.

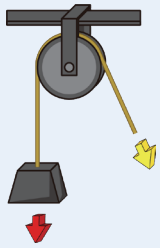
Share

Kids, review and share the knowledge about the mechanism principles of the windmill with your parents.

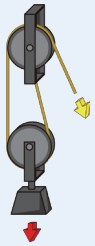
Learned about the structure of the mechanical winch



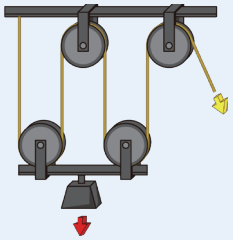
Learned about pulleys



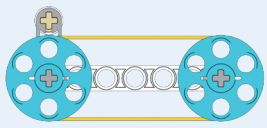
Studied the working principle of a fixed pulley



Learned about the working principle of a movable pulley



Learned about the working principle of a pulley system



Mastered belt drive

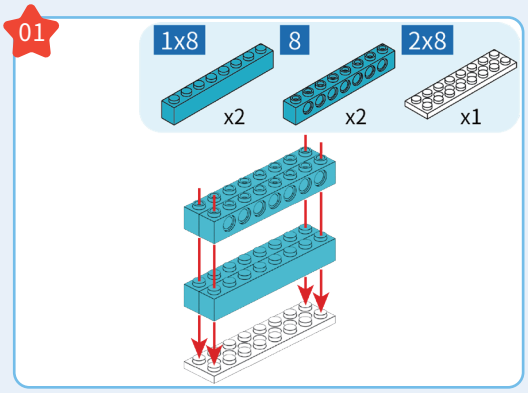
7. Scarecrow

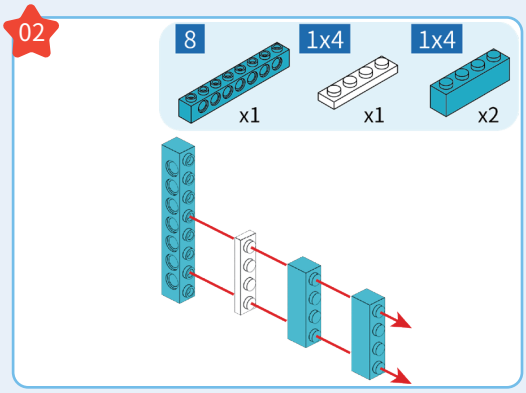
Thinking

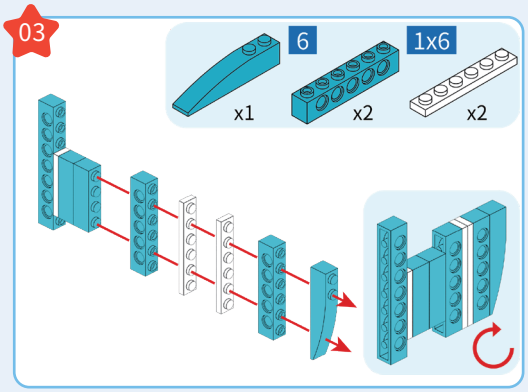
1. What mechanism can make a mechanical scarecrow move?
2. What is the movement state of a mechanical scarecrow?

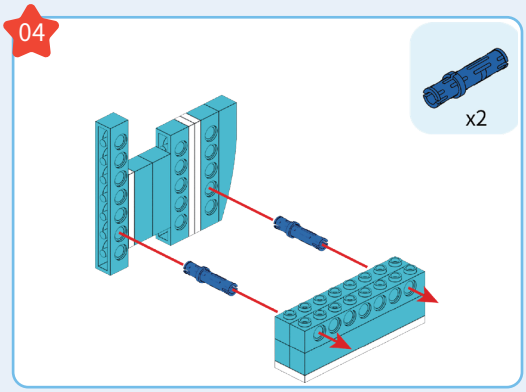
Build:

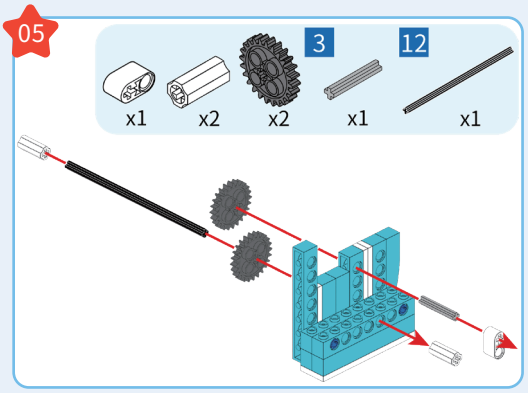
Hey guys, please follow the steps to build the mechanical scarecrow with your fastest speed. You will find something interesting and useful!

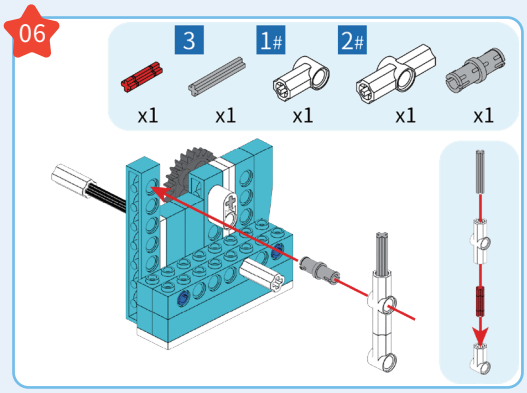


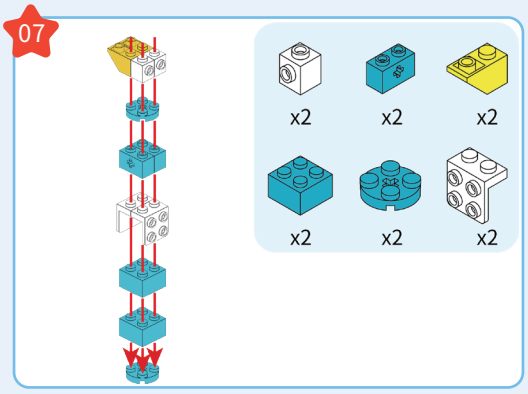


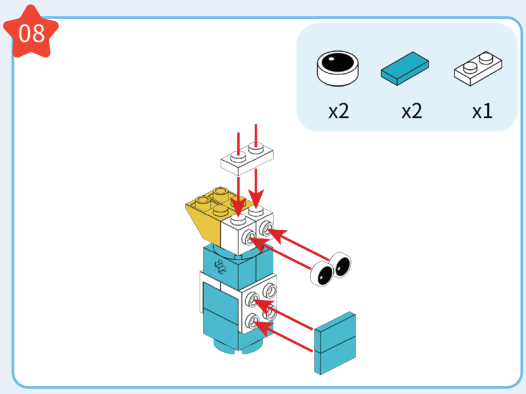


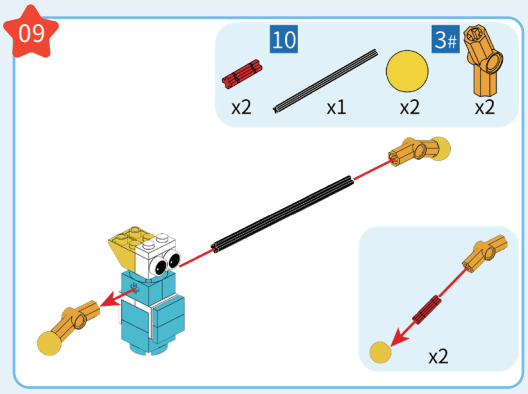


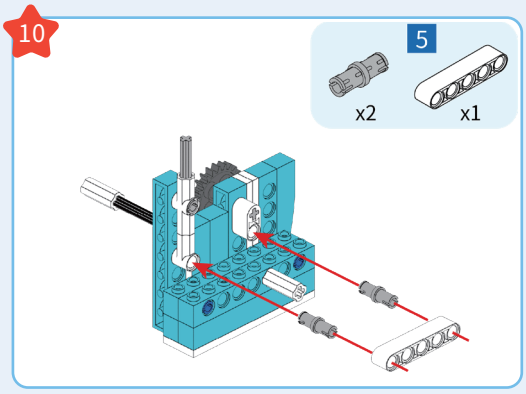








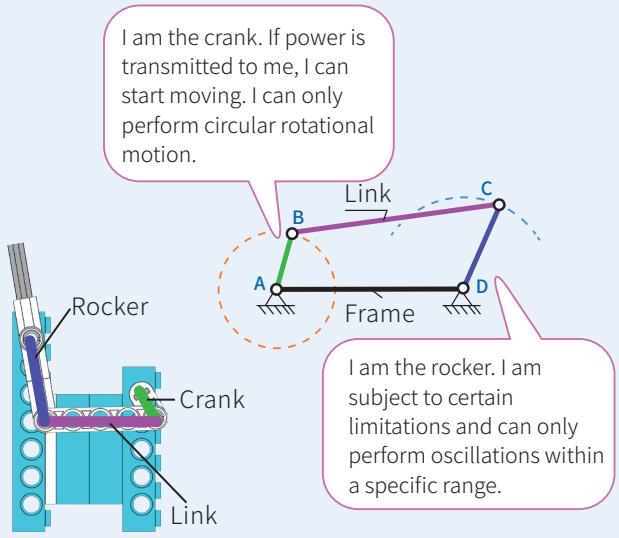




Knowledge

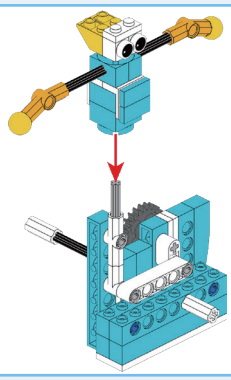
Crank rocker mechanism

The crank-rocker mechanism is a four-bar linkage consisting of a crank and a rocker. The crank performs uniform circular motion, while the rocker undergoes reciprocating oscillation. When the crank is the driving component, the rocker is the driven component, performing the reciprocating motion.



The gear drive drives the crank-rocker mechanism, allowing the scarecrow to achieve a left-right swinging motion!

11



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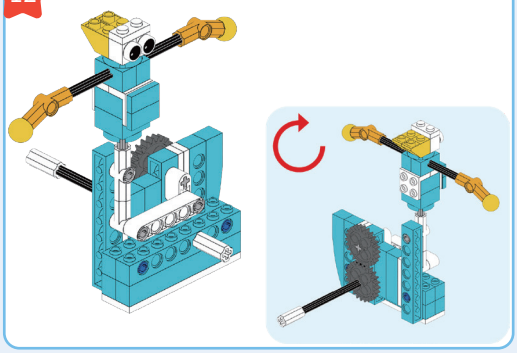

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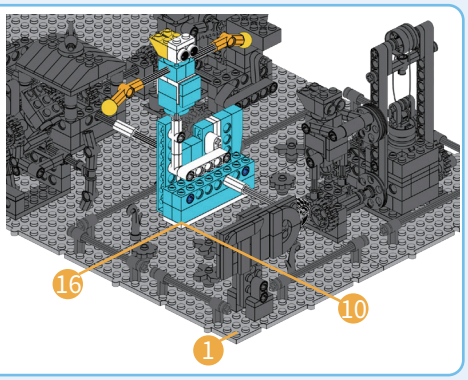

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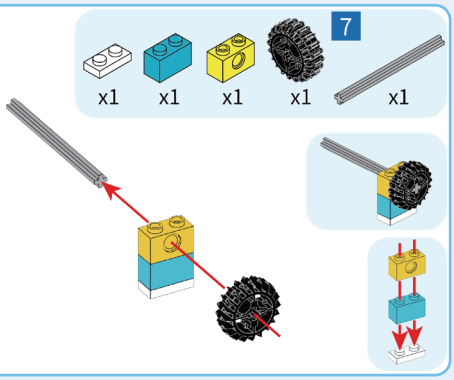

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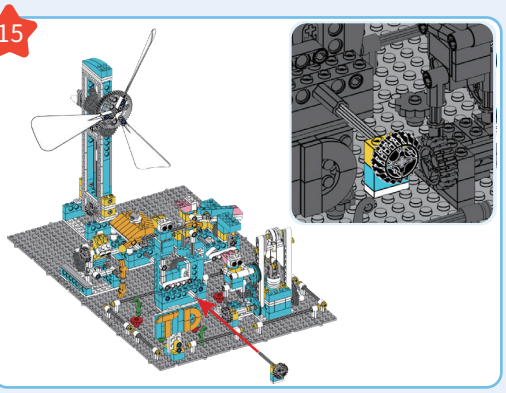

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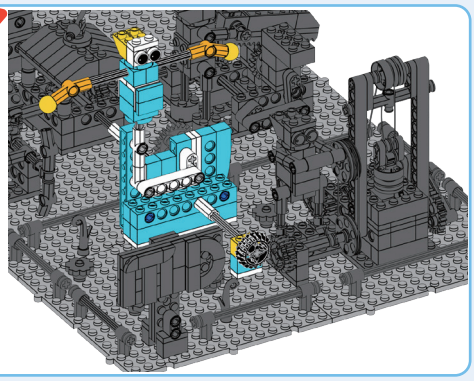

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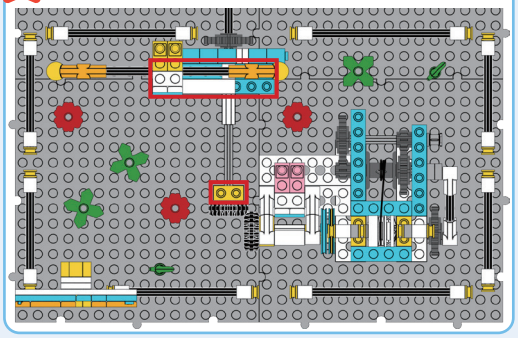
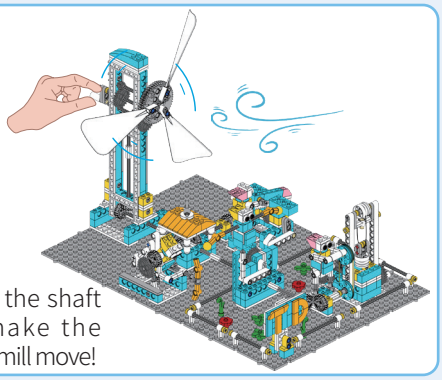


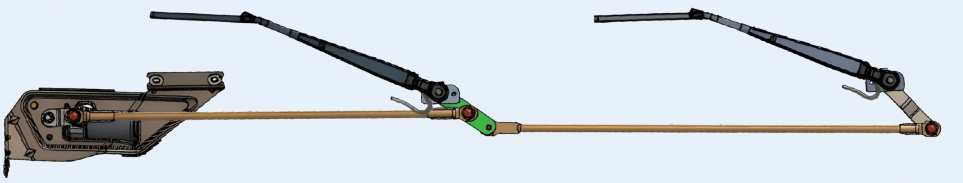
18



Turn the shaft to make the windmill move!

Knowledge

The wiper on the car also utilizes the crank rocker mechanism.

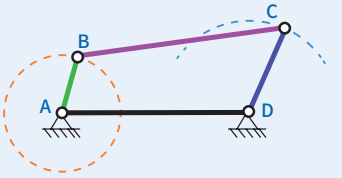


When the crank rotates, the connecting rod moves accordingly, transmitting the motion to the wiper arm. This enables the wiper arm to swing back and forth across the windshield at the appropriate speed and amplitude, clearing rain, snow, and other debris, ensuring a clear line of sight.

Share

Kids, review and share the knowledge about the crank-rocker mechanism with your parents.

Learned about the Scarecrow



Mastered the crank rocker mechanism

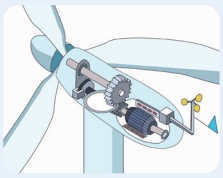
Learned about the crank rocker mechanism of the wiper

8. Wind Power Engineer

Thinking

1. Will the windmill rotate faster or slower after adding more blades?

2. After changing the gear transmission ratio, will the force increase or decrease?

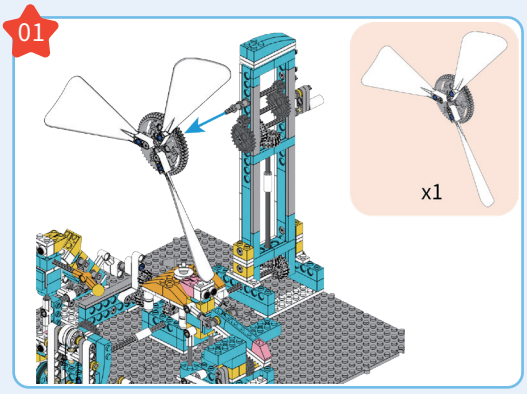


Build:

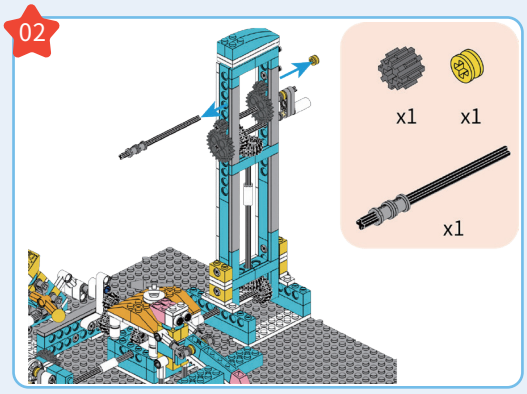
Hey guys, please follow the steps to re-build the windmill with your fastest speed.

Step 1-4 are the disassembly steps!

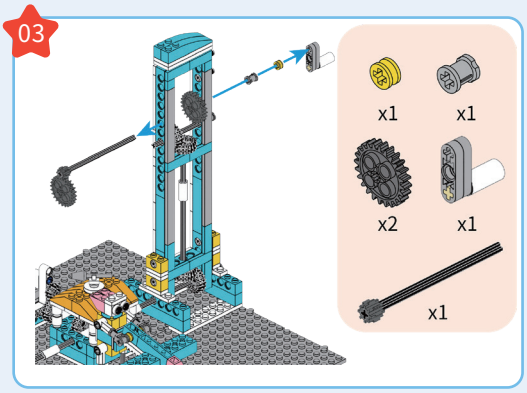
The parts removed in Steps 1-4 will be needed in Steps 5-8.



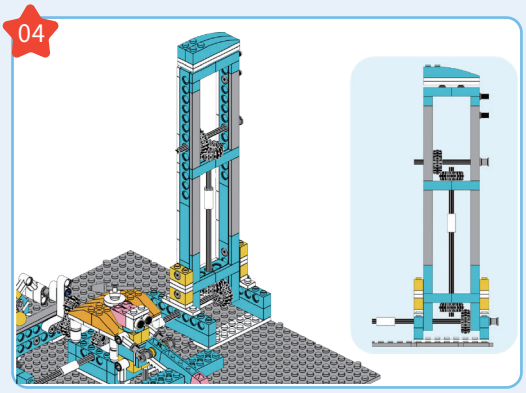
Follow the steps to disassemble the blocks



Follow the steps to disassemble the blocks

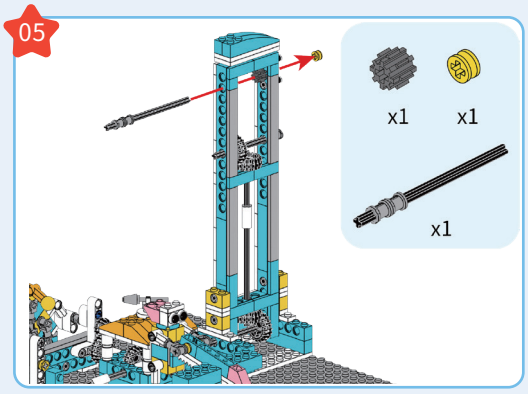


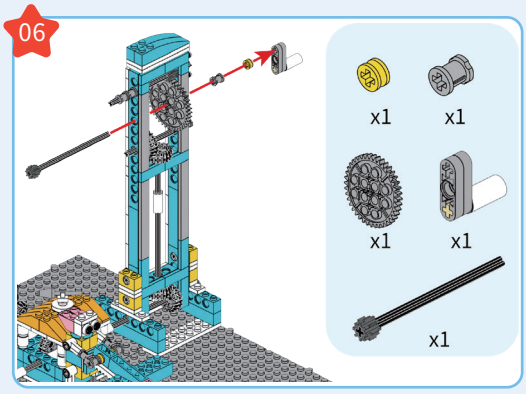
Follow the steps to disassemble the blocks

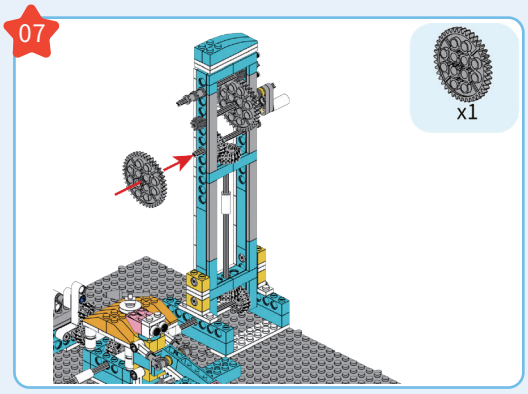


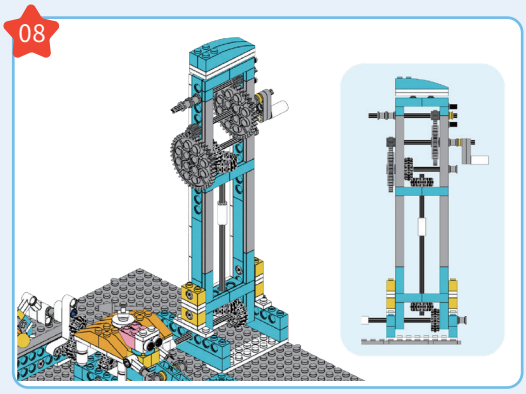
After disassembly, let's reassemble the windmill's rotating mechanism!

Starting from Figure 5, we will add the powerful power unit!







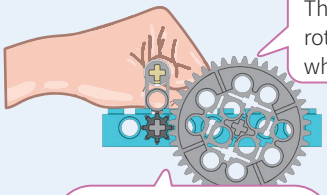


Knowledge

Transmission Ratio

The transmission ratio, also known as the gear ratio, is the rotational speed ratio between two interacting gears.

Transmission ratio = Number of teeth on the driving gear ÷ Number of teeth on the driven gear.

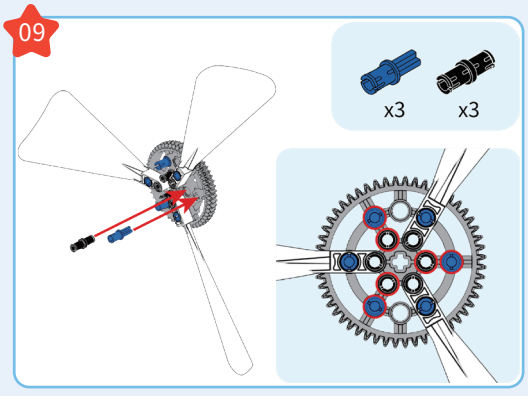


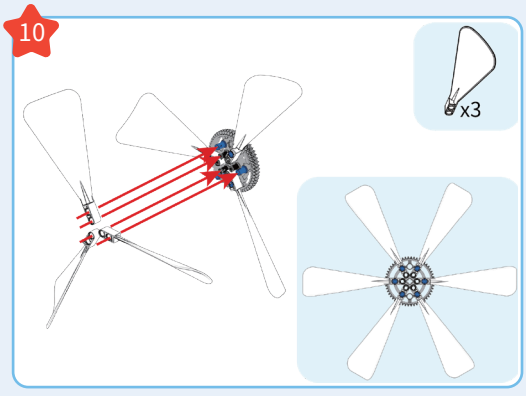
I am a 40-tooth gear, driven by the driving gear on the left, so I am called the "driven gear." The 8-tooth gear makes 5 full rotations to turn me once, which slows down my speed.

I am an 8-tooth gear. Manually turning me will inject power and turn me into the "driving gear.

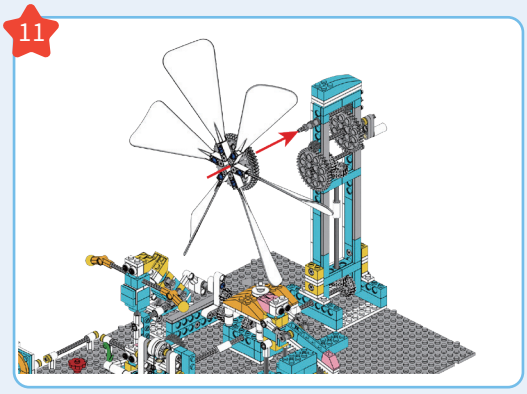
The gear ratio (driven:driving) is 40:8 = 5:1.

The speed decreases, the force increases.





11



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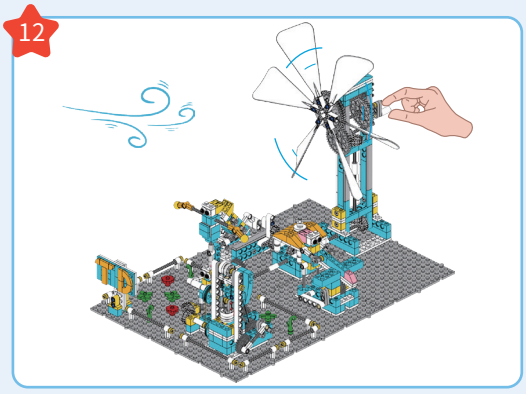
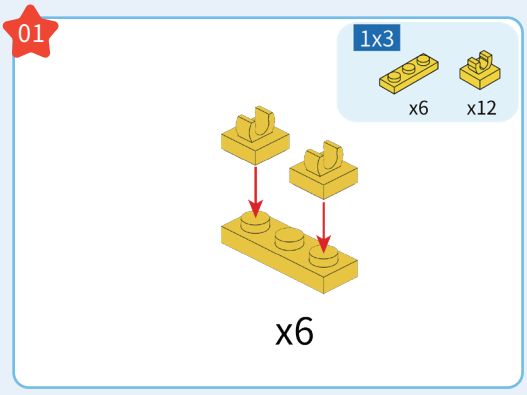


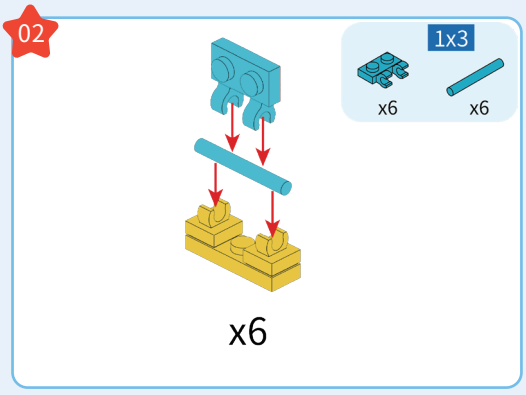
Adding the motor to keep the farm running continuously!

Kids, you need to place a **principle board** in front of each machine on the farm to fully showcase the function and features of each machine for future maintenance and repair needs.

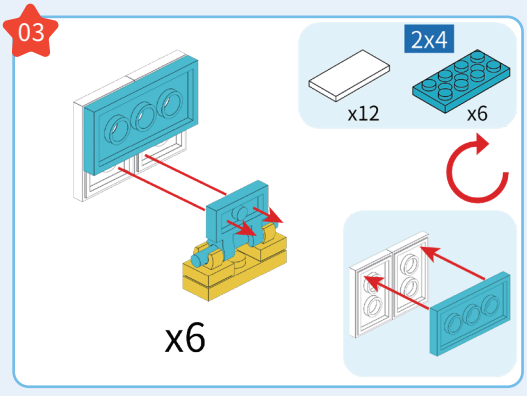
01



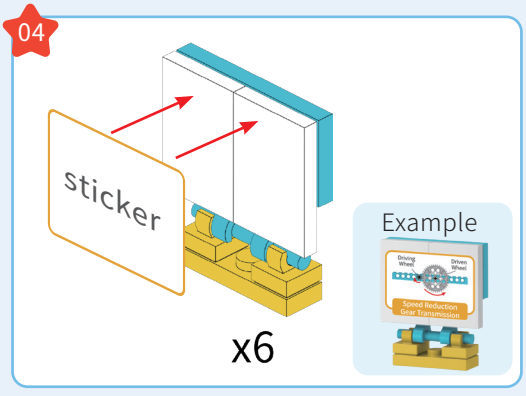
02



03



04

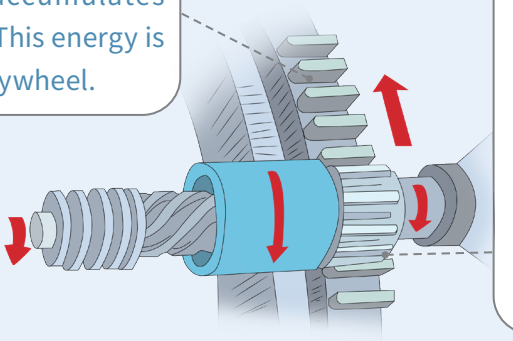


We have already applied the mechanical principle stickers!

Knowledge

The car engine is an important component for the car's operation, and the small gear is one of its parts. What is its function?

When the crankshaft rotates, the flywheel also rotates and accumulates some energy. This energy is stored in the flywheel.

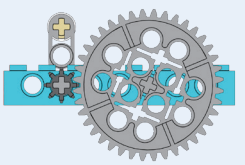


When the car's ignition system is activated, the starter motor begins to rotate quickly. The shaft of the starter motor rotates faster than the small gear, causing the small gear to move along the threads. The car engine is driven and operated by the starter motor and the flywheel.

The small gear transmits power to enable the engine to operate normally, while the flywheel stores energy to provide additional power to the engine.

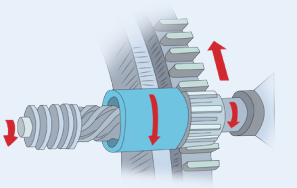
Share

Kids, review and share the knowledge about the mechanism principles of the windmill with your parents.



Learned about gear ratios

Reviewed mechanical principles



Learned the principles of engines

Find more ideas here.

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