



A

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Part list

Block / Adapter / Wheel



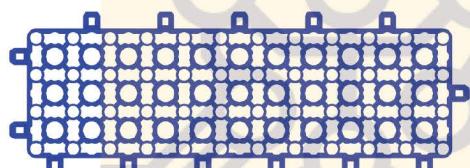
Angle Block33 (2)



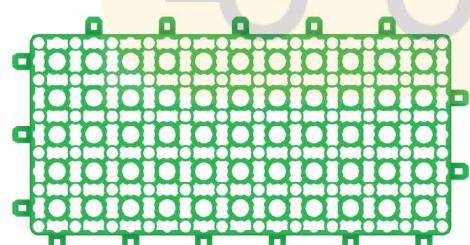
Angle Block66 (2)



Block111R(4)



Block311B(4)



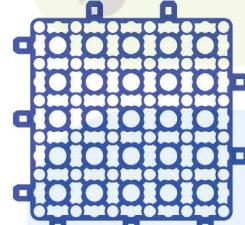
Block511G(4)



Block15B(8)



Block35R(4)



Block55B(4)



L Adapter (4)



Adapter5 (8)



Adapter11(4)



Connect Block1(12)



Connect Block2(8)



Triangle Block(4)



Axis Block(4)



Round Block(4)



Gear Wheel(4)



Eye Block(4)



Crank Block(2)



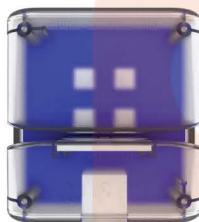
Rubberframe (2)

The form and color of some parts may be different when compare to the actual parts due to continues improvement of production quality.

Electronics



Mainboard(1)



Card Reader(1)



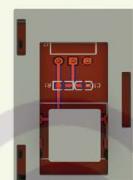
Touch Sensor / LED Sensor Cable(5)



Motor/Card Check Module Cable(3)



Triaxis DC Motor(2)

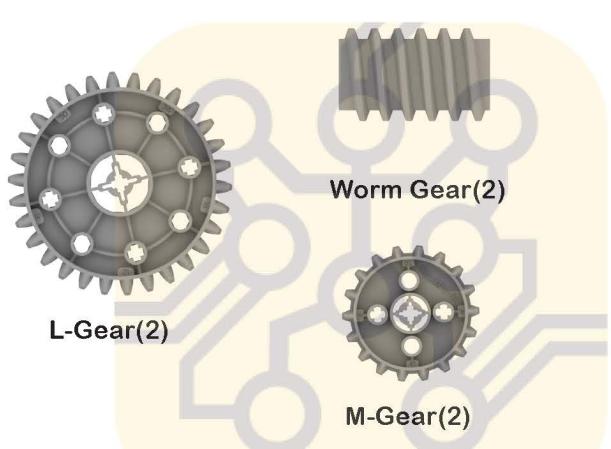


Touch Sensor(3)



LED Sensor(2)

Wheels / Gear



L-Gear(2)

Worm Gear(2)

M-Gear(2)



Blue Wheel (2)



S-Gear (2)



S-Wheel (2)



II



Shaft / Bush / etc



Connecting Shaft(4)



S-Shaft(4)



M-Shaft(4)



L-Shaft(4)



Bush(10)



Bush(20)



Coupling(4)



T-Coupling(4)

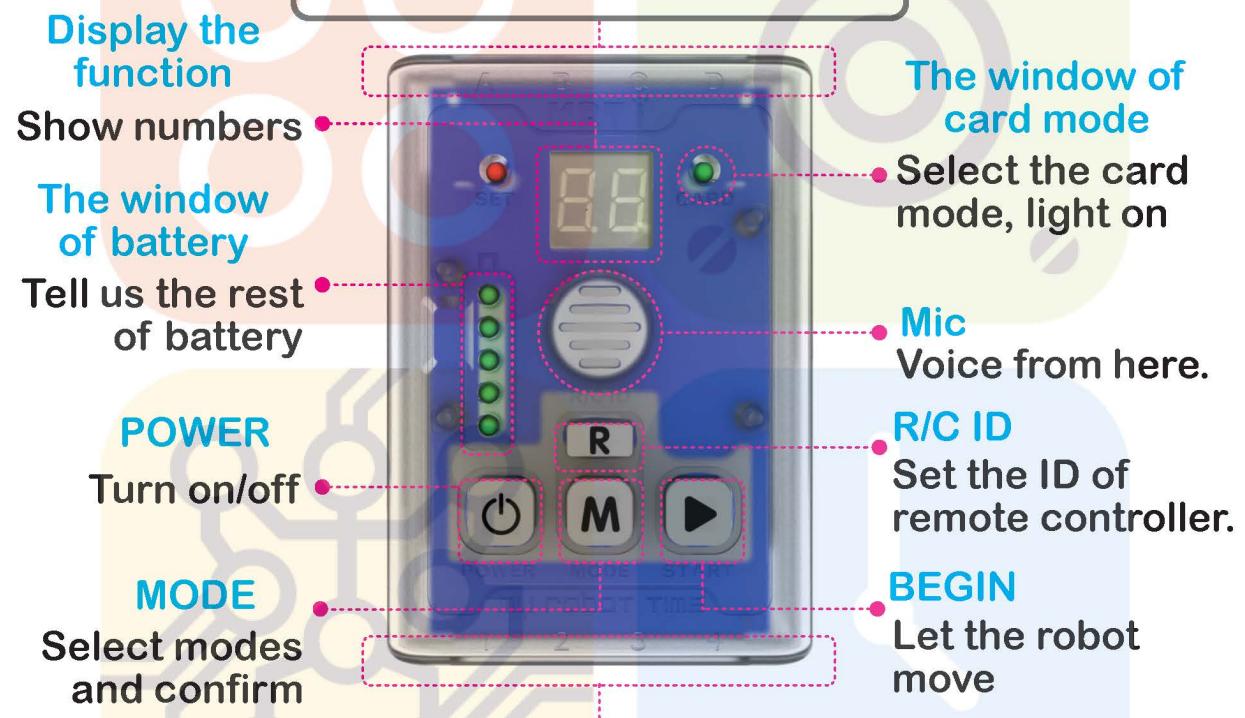
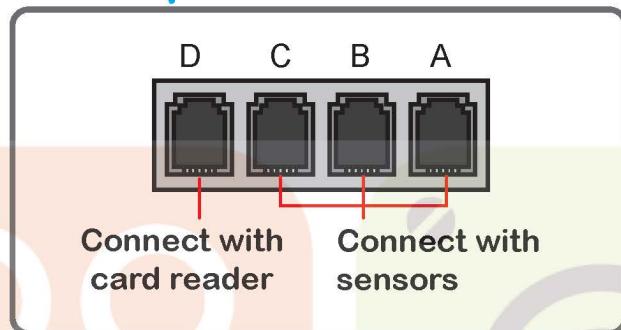
The form and color of some parts may be different when compare to the actual parts due to continues improvement of production quality.



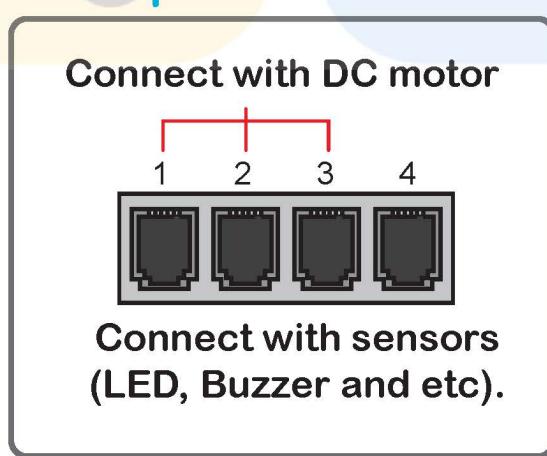
Learn the usage of mainboard and card reader

The functions of mainboard

Input Connector

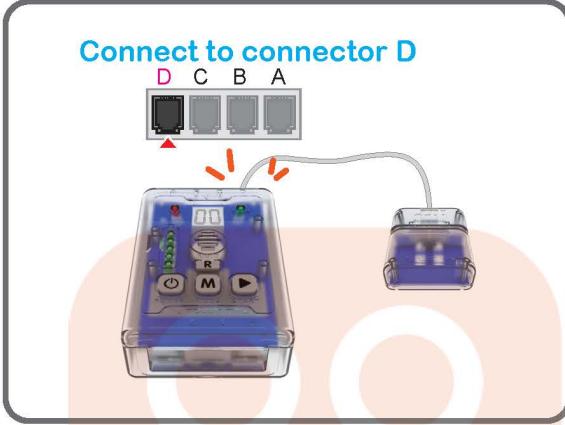


Output Connector

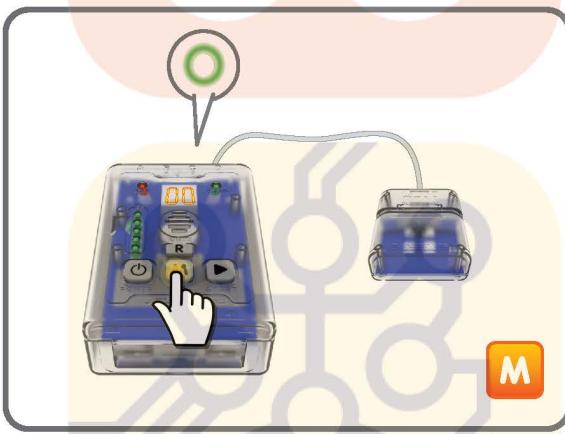


How to use mainboard and card reader

1. Connect with mainboard and card reader. 2. Press "Power" and turn on mainboard.



3. Press "M" and the green light on with voice of "Bi....".

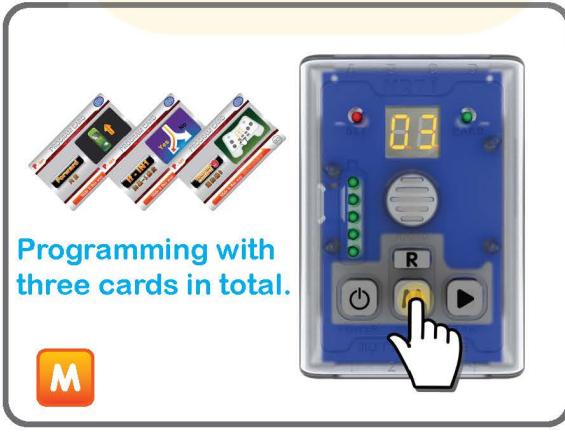


4. Wipe card.

With the "Bee...", the card number will show one time. And then amount of card will show.



5. Once finished the program with cards according to orders, please press "M" to confirm it.



6. Pull off card reader from mainboard and press "Start" to make the model move.



How to stop the model



- ※ When you wanna stop models.
- 1. Catch the moving models with hands.
- 2. Press "Power"  lightly.
- 3. If touch&hold "Power"  for seconds, the mainboard will turn off.

How to make models restart



- ※ If wanna restart the models with same program that you already did before.
- 1. Press "Power" 
- 2. Press "Start" 

How to reprogram



- ※ Compile with new program or with wrong programming.
- 1. Please order the steps of programming cards.
- 2. Press "Power"  lightly to reset.
- 3. Restart the mainboard with music.
- 4. Press "M"  to program according to the orders of cards.

IF program with wrong card



- ※ If program with wrong card
- 1. Press "R"  to reset and program with right card.
If program with two wrong cards, press twice of "R"  and continue to program.
- 2. Program with programming cards according to right order.



Learn the functions of cards

Learn the functions of cards

PO01-PO09



DC motor moves forward.



DC motor moves backward.



The right DC motor moves forward and left DC motor stop to make model turn left.



The left DC motor moves forward and right DC motor stop to make the model turn right.



The right DC motor moves backward and left DC motor stop.



The left DC motor moves backward and right DC motor stop.



The left DC motor moves backward and right DC motor moves forward to make the model turn as anticlockwise.



The left DC motor moves forward and right DC motor moves backward to make the model turn as clockwise.



Stop all DC motors and other output components.

Control the run time

PO10-PO12



DC motors and all output components run for one second.



DC motors and all output components run for three seconds.



DC motors and all output components run for five seconds.

Control the speed

P013-P015



DC motor moves at half of normal speed.



DC motor moves at 75% of normal speed.



DC motor moves at normal speed.

Control LED and other Output components

P016-P023



Open No.1 output connector.



Open No.2 output connector.



Open No.3 output connector.



Open No.4 output connector.



Close No.1 output connector.



Close No.2 output connector.



Close No.3 output connector.



Close No.4 output connector.

Control the Input connector

P025-P028



Recognize Input connector A.



Recognize Input connector B.



Recognize Input connector C.



Can't recognize any Input connector.

Repeat the movements

P024



Use this card if you wanna the models to repeat its movements.
(We must use this card when we programming with IF cards)

Multiple card : 14 kinds

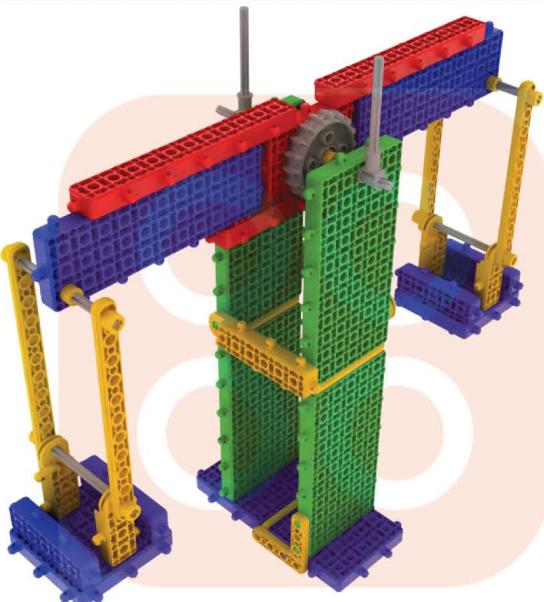
M001-M014



To make different models move with one Multiple card.



Look carefully these assembled robots



1.Balance



2.Catapult



3.Water-Mill



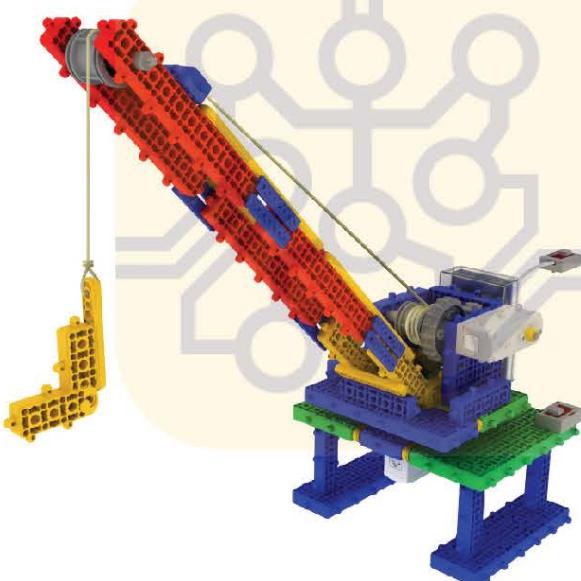
4.Roulette-Bot



5.Frog-Bot



6.Pirate-Ship



7.Crane



8.Fishing-Rod



9. Mixer



10. Robot-Arm



11. Car



12. Merry-Go-Round



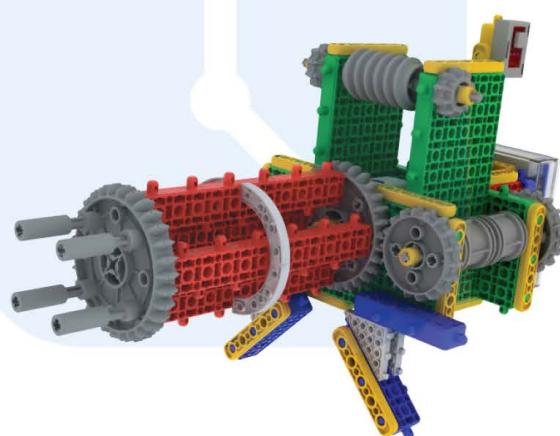
13.Bumper Car



14.Crab



15.Serving-Bot



16.Gatling-Gun



Lever principle



What is lever ?

The lever
is?

It is a tool to
convey force
with pole .



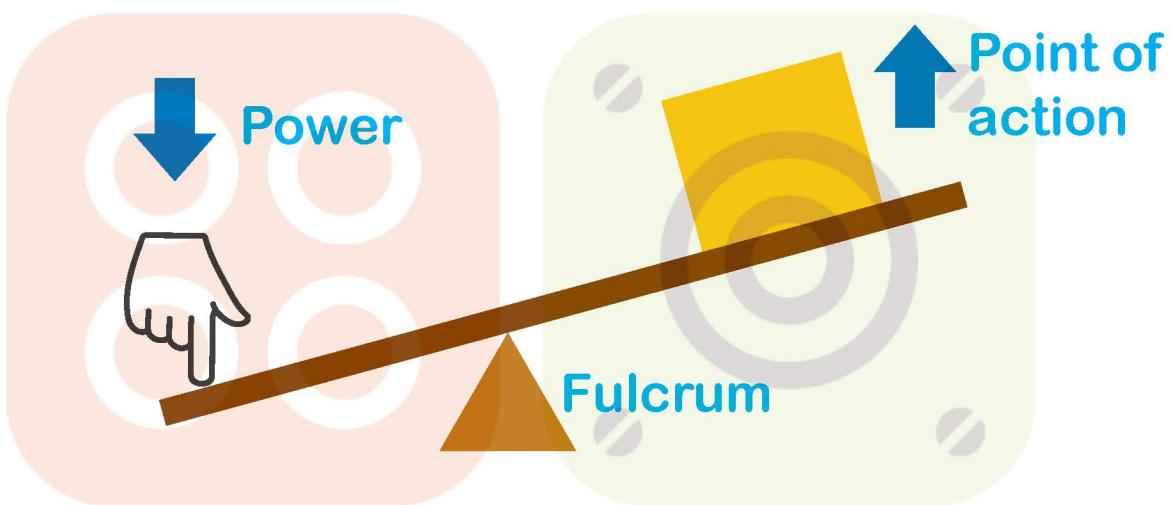
Let's find out other use of lever principle around us.



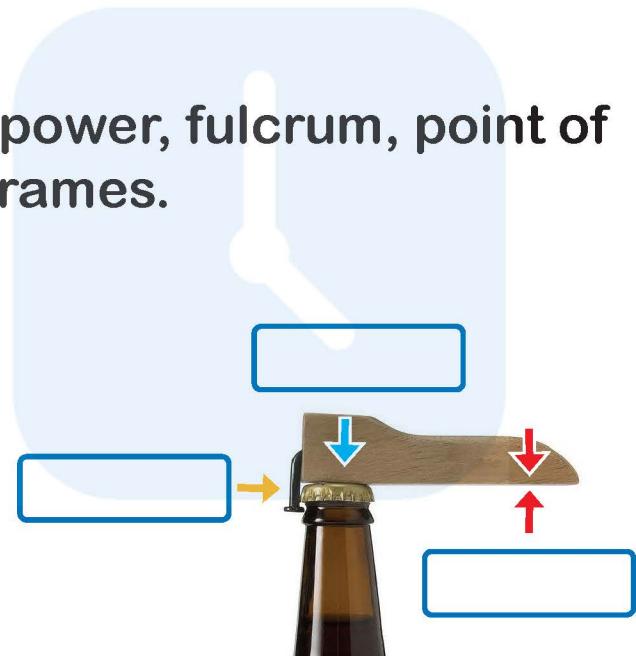
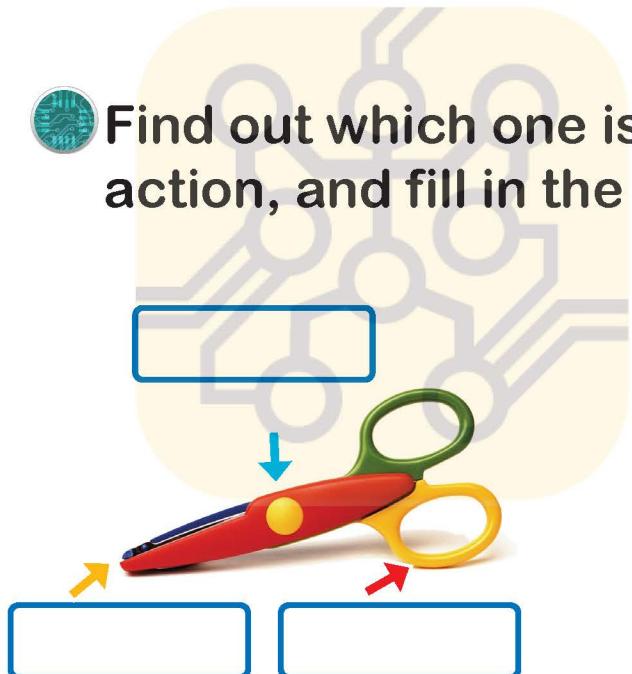


There are three points on lever : Power, Fulcrum and Point of action.

People can raise heavy thing easily when put the fulcrum near to the heavy thing.

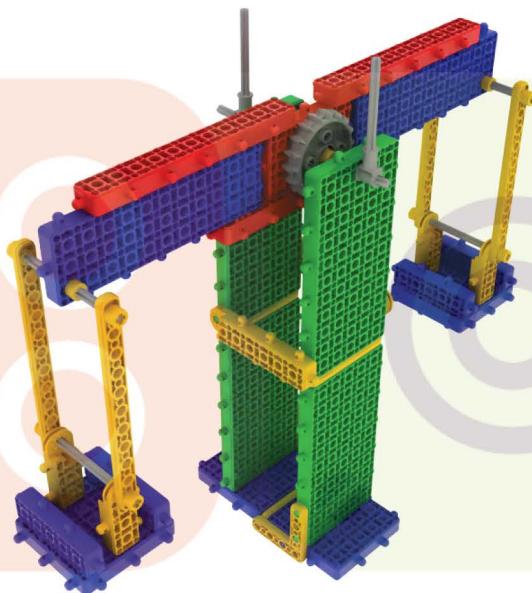


Find out which one is power, fulcrum, point of action, and fill in the frames.

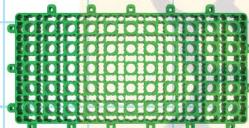




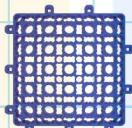
Balance



Part List



x4



x4



x2



x2



x1



x15



x3



x4



x1



x1



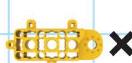
x2



x1



x1



x2



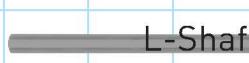
x2



x4



x3



x1

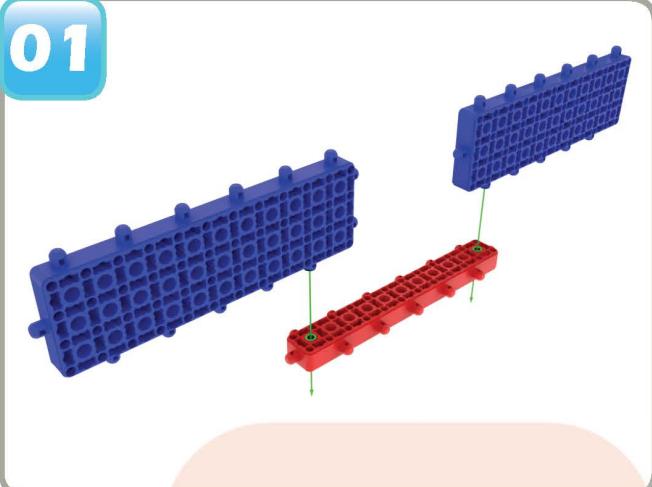


x4

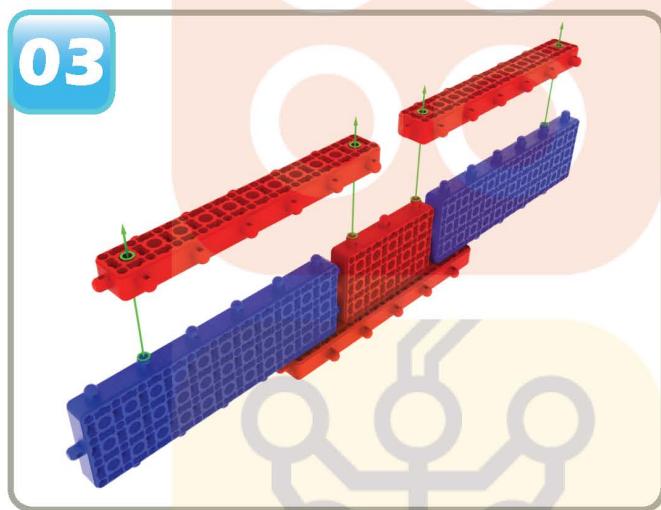


x2

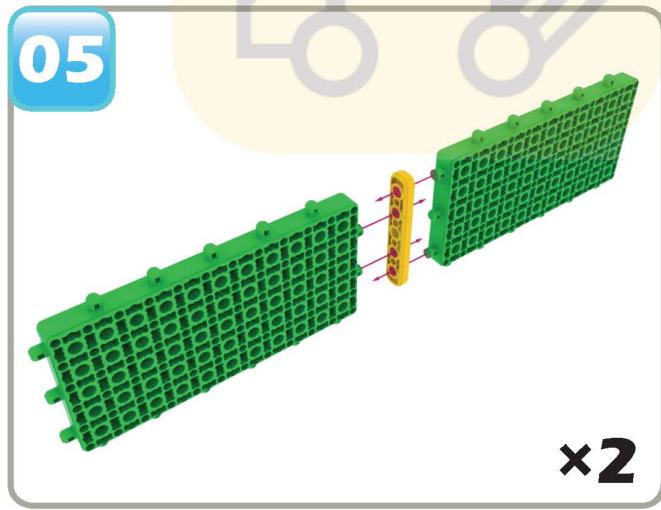
S-Shaft



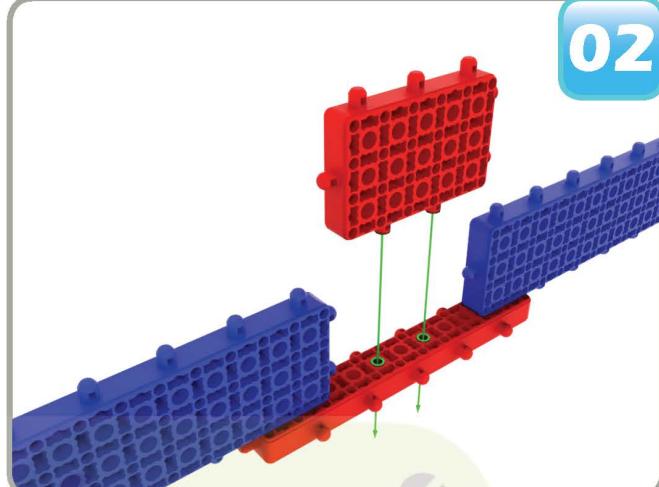
01 ×2 ×1



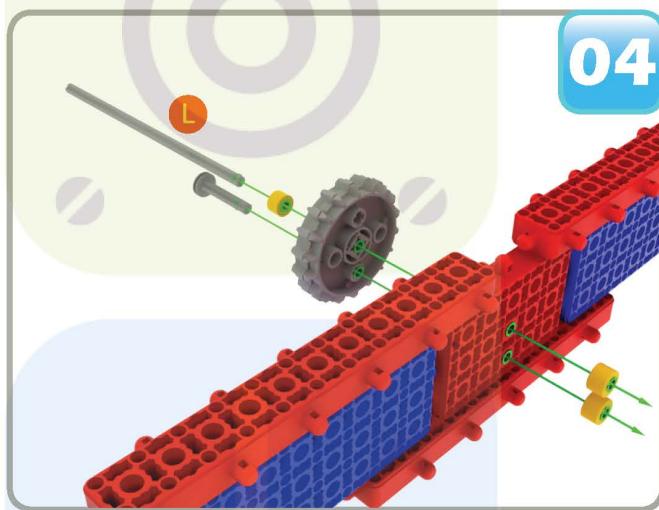
03 ×2



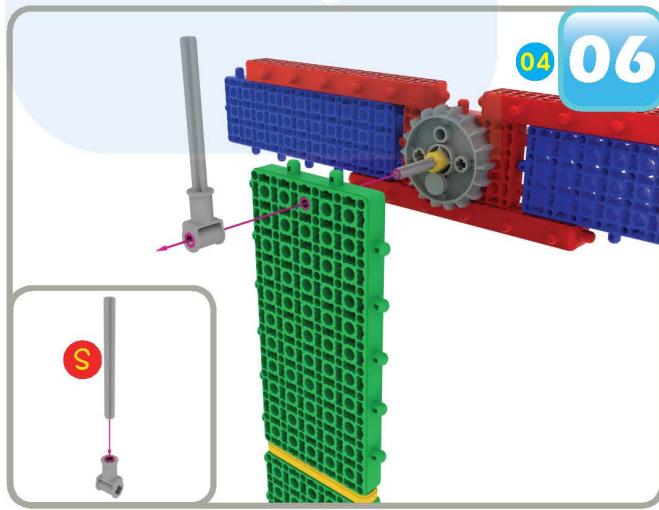
05 ×2 ×2



02 ×1

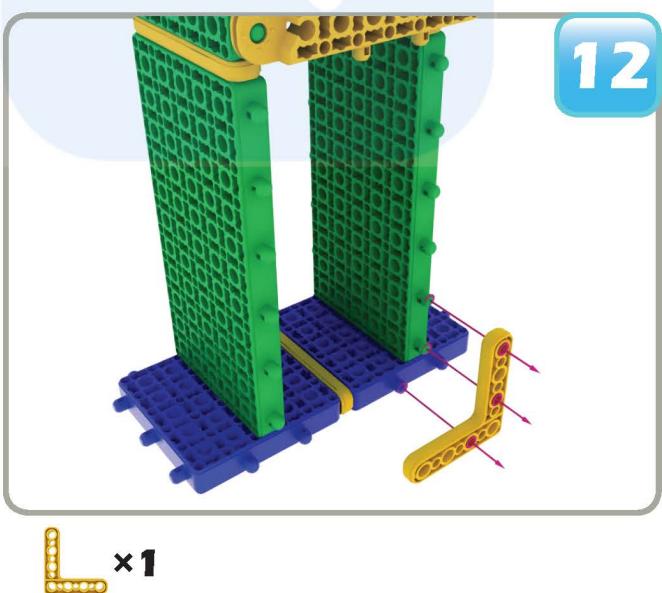
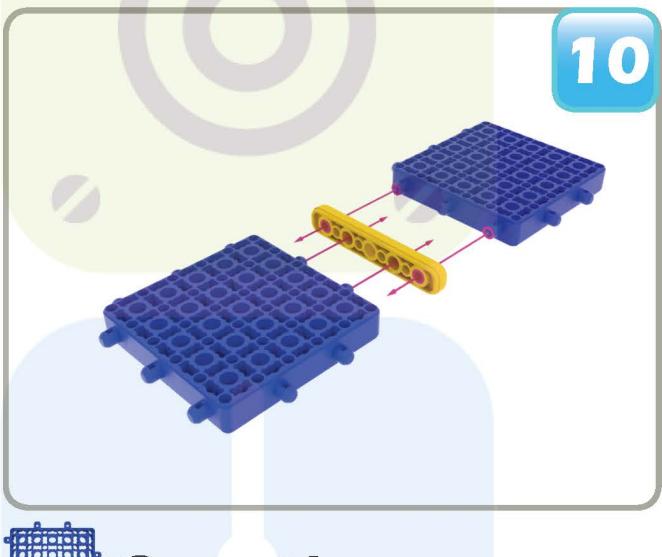
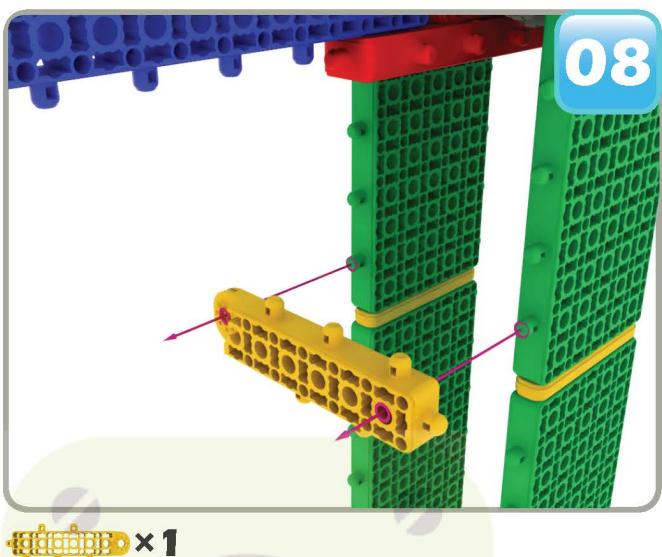
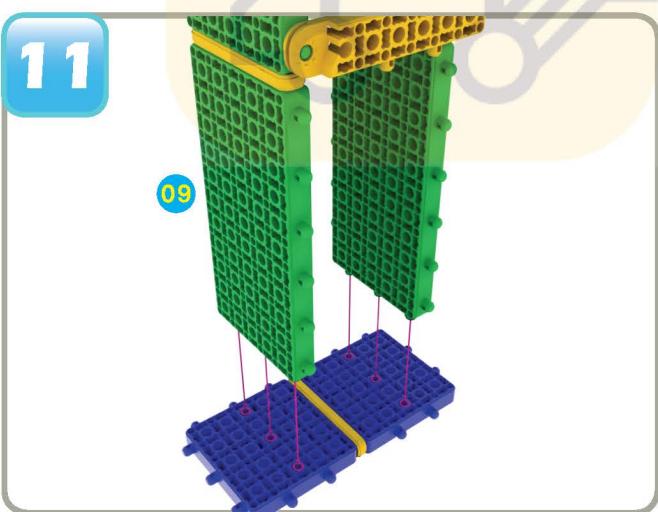
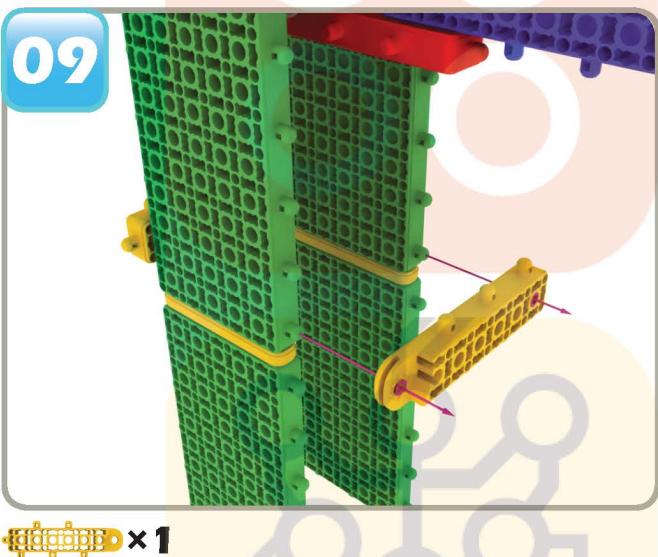
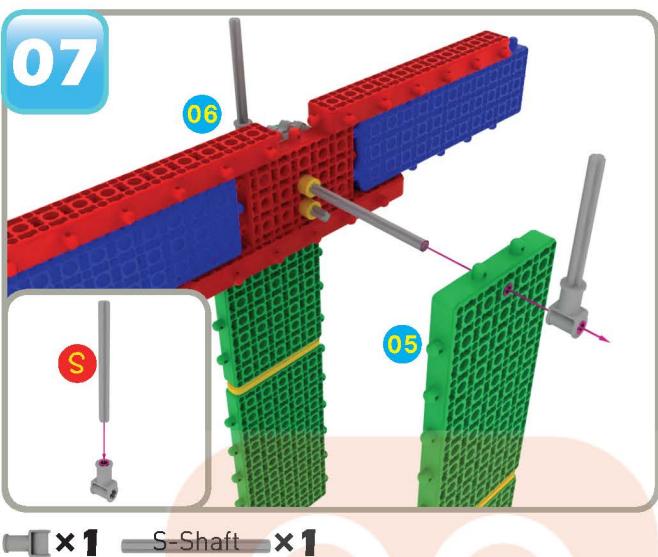


04 ×1 ×1 ×1
 ×1 ×1 ×1
 ×3

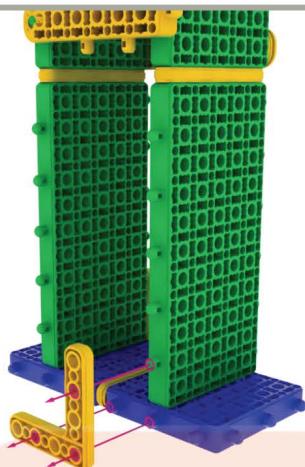


06 ×1 ×1

1:1

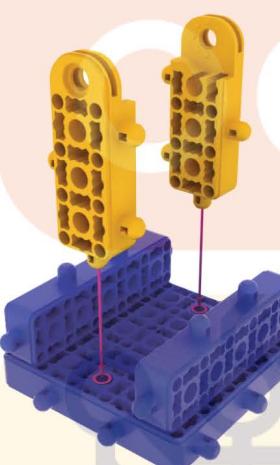


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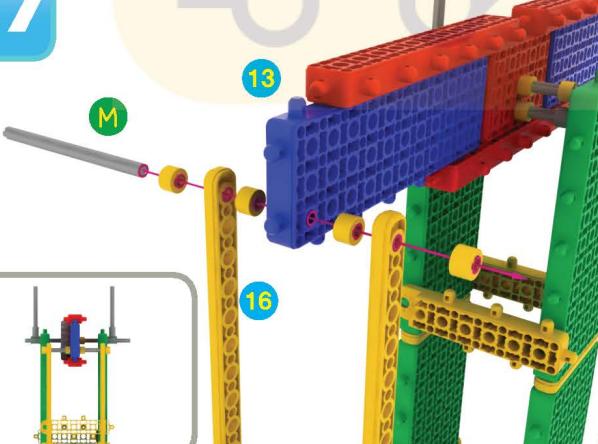
L × 1

15



×2

17

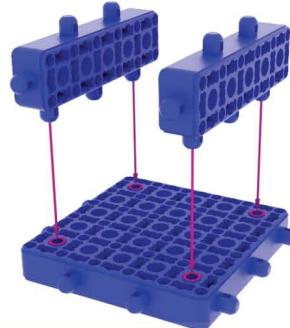


M-Shaft

× 1

○ × 4

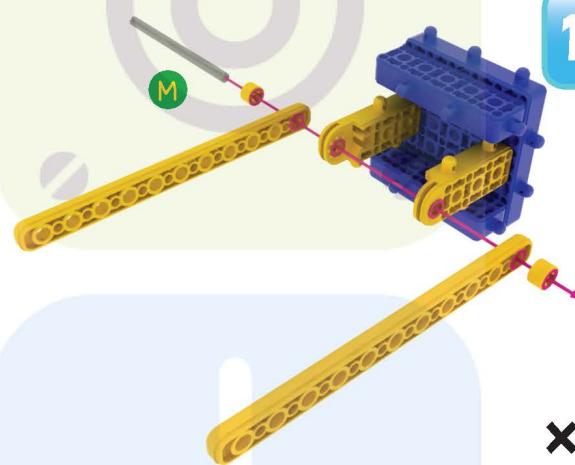
14



× 2

■ × 2 ■ × 4

16



× 2

— × 4 — M-Shaft × 2 ○ × 4

OK



M-Shaft

× 1

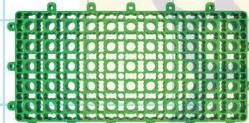
○ × 4



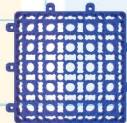
Catapult



Part List



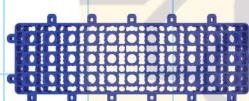
x4



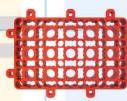
x1



x2



x4



x4



x10



x4



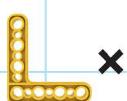
x2



x10



x4



x4



x2



x3



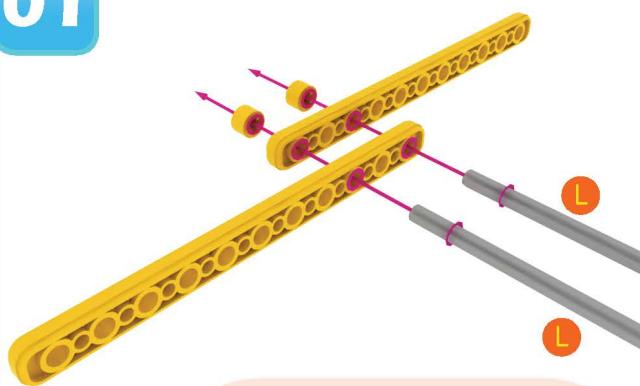
x3



x5

S-Shaft

01



S-Shaft × 2

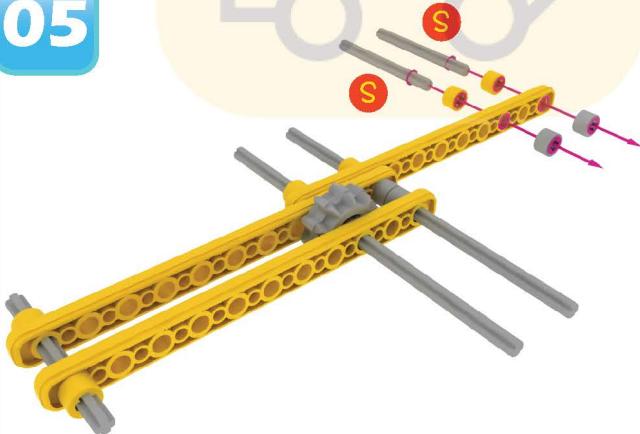
L-Shaft × 2

03



L-Shaft × 1

05

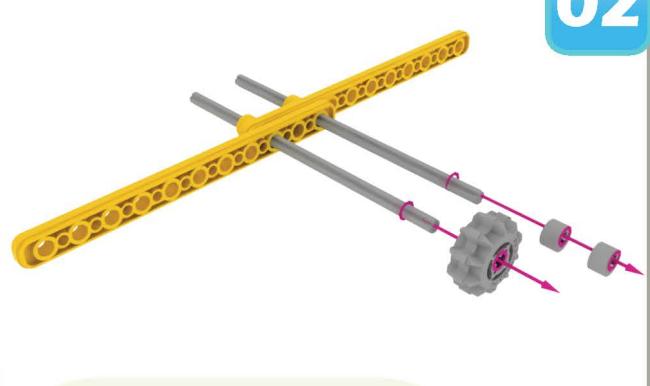


S-Shaft × 2

⊕ × 2

⊕ × 2

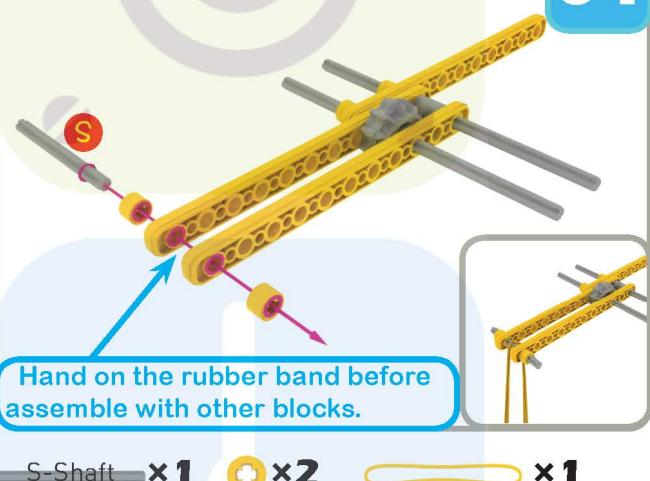
02



⊕ × 1

⊕ × 2

04

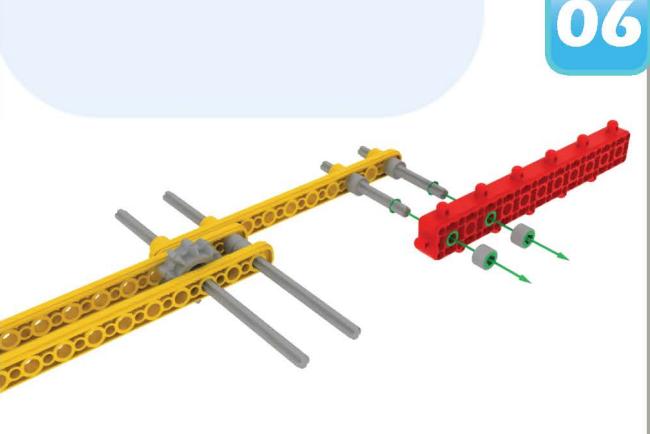


S-Shaft × 1

⊕ × 2

⊕ × 1

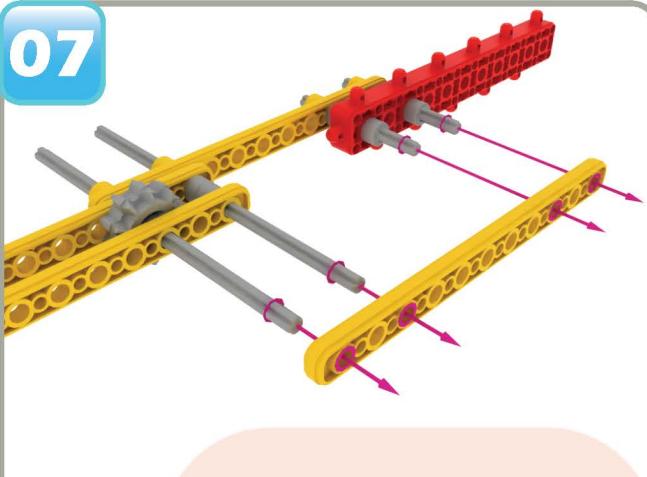
06



Technic Beam × 1

⊕ × 2

07



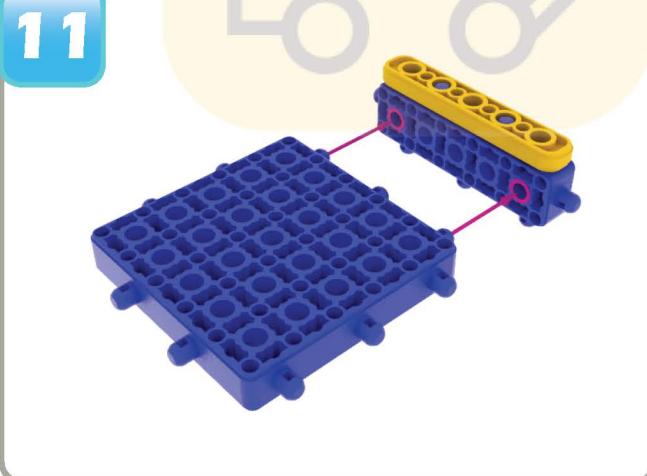
---x1

09



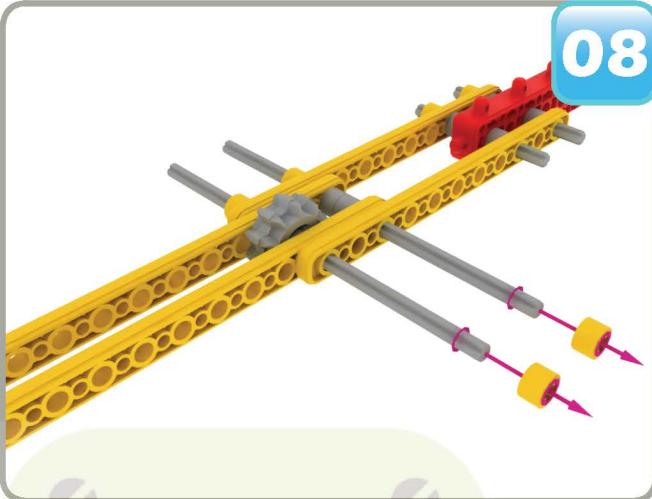
---x2

11



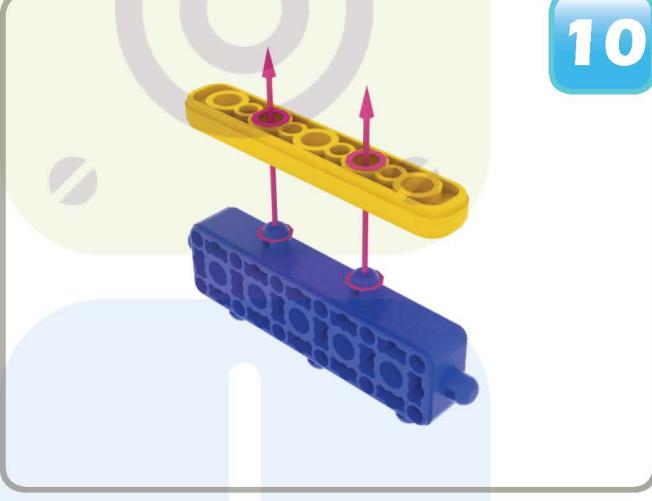
---x1

08



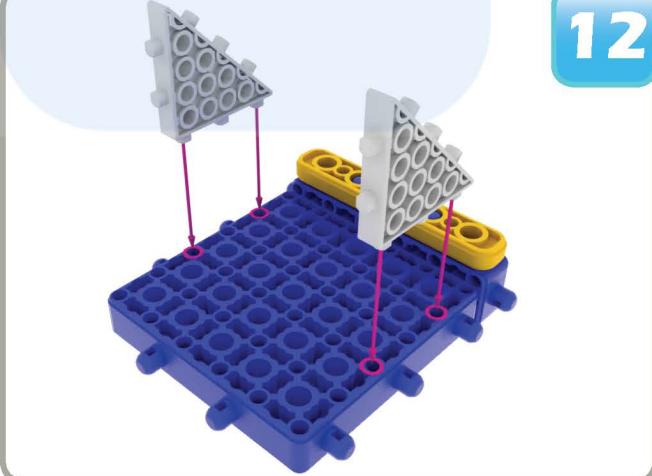
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10



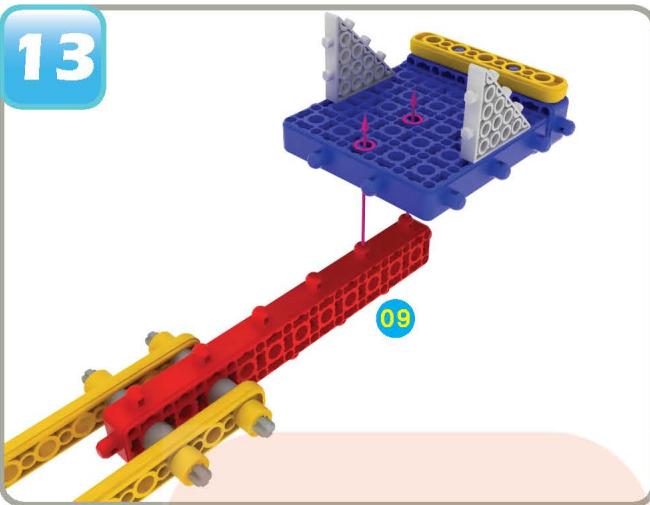
---x1 ---x1

12



---x2

13



09

14

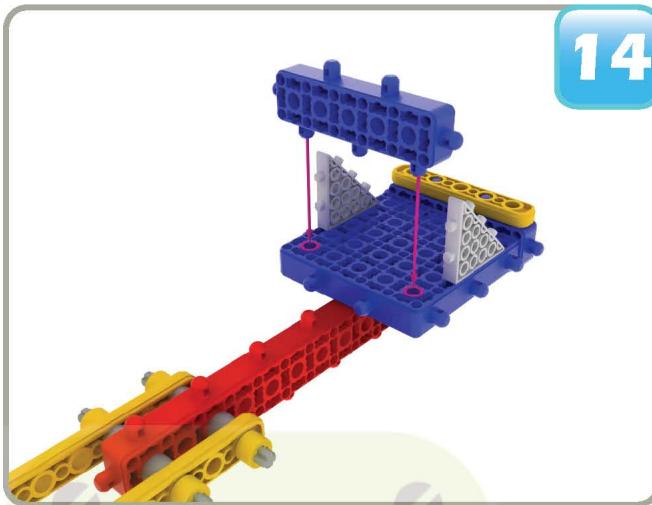
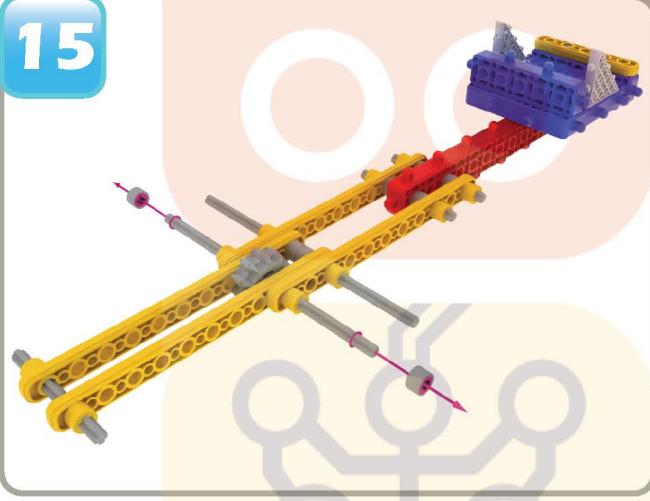


plate × 1

15



+ × 2

16

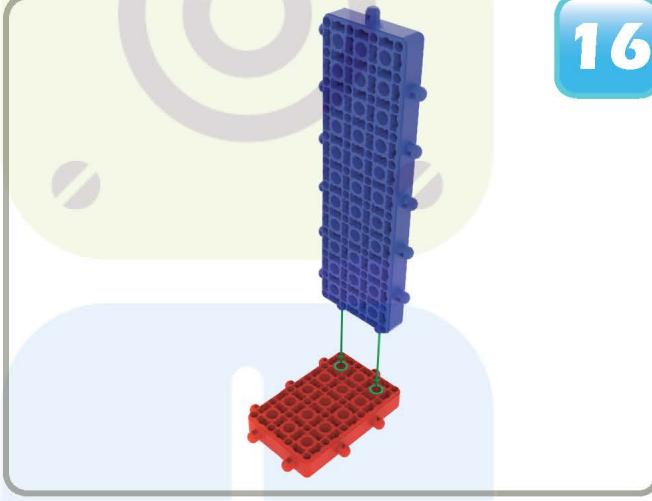
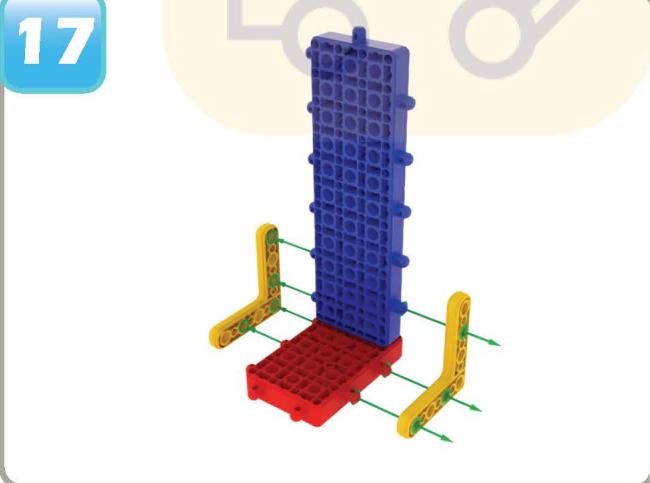


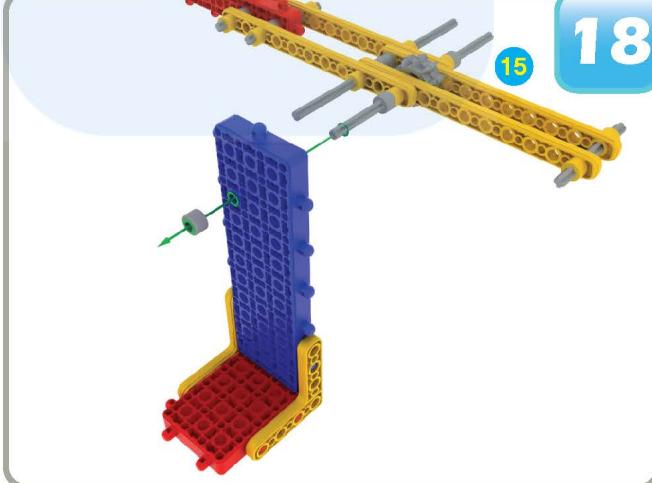
plate × 1 plate × 1

17



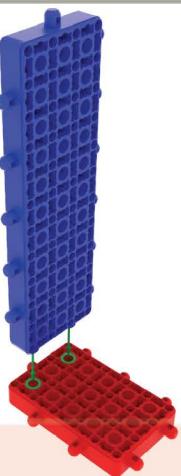
L × 2

18



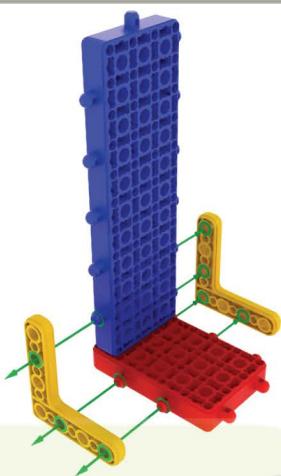
+ × 1

19



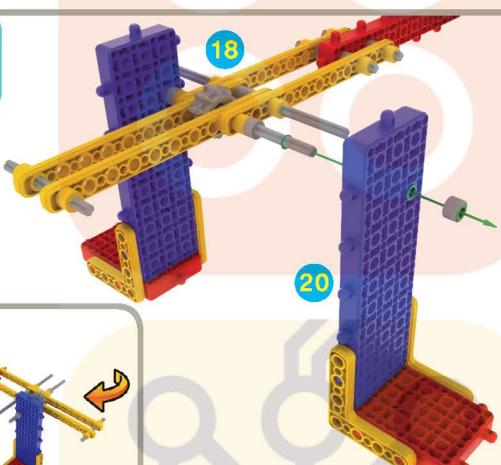
× 1 × 1

20



× 2

21

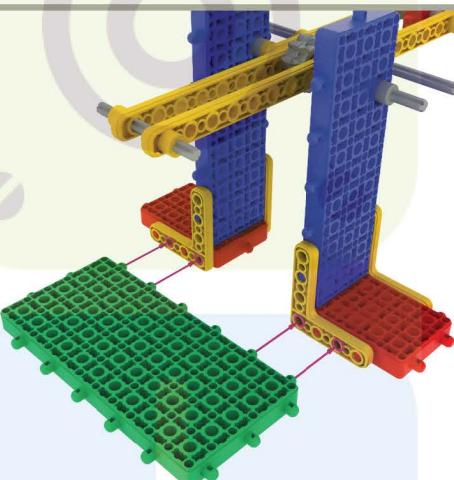


× 1

18

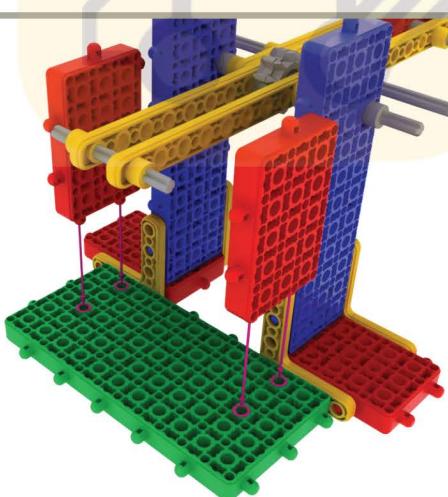
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22



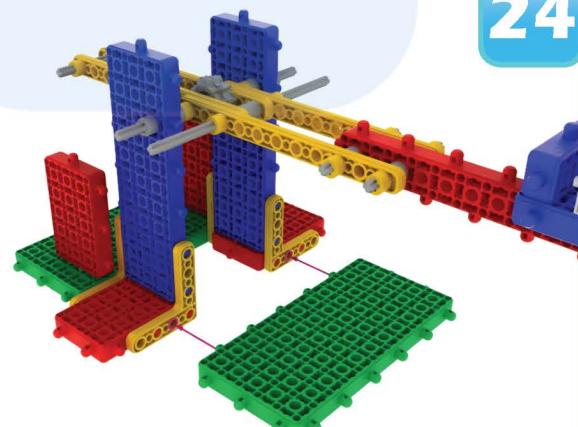
× 1

23



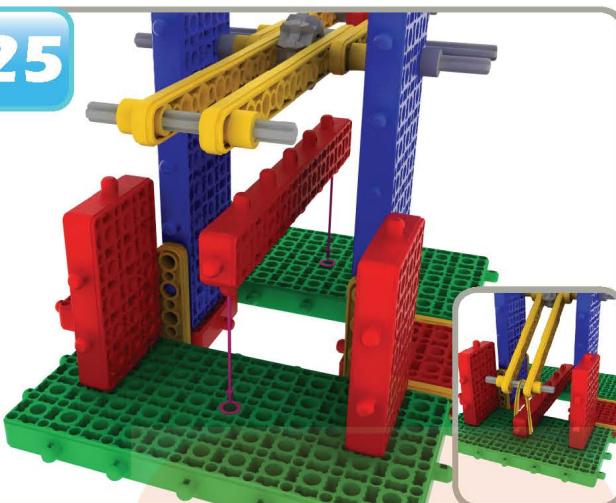
× 2

24



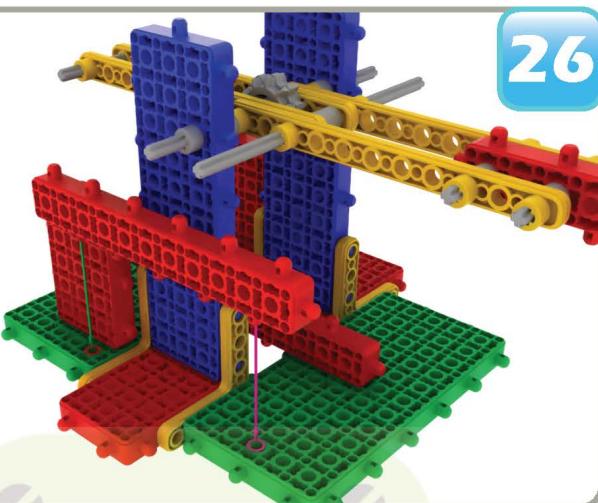
× 1

25



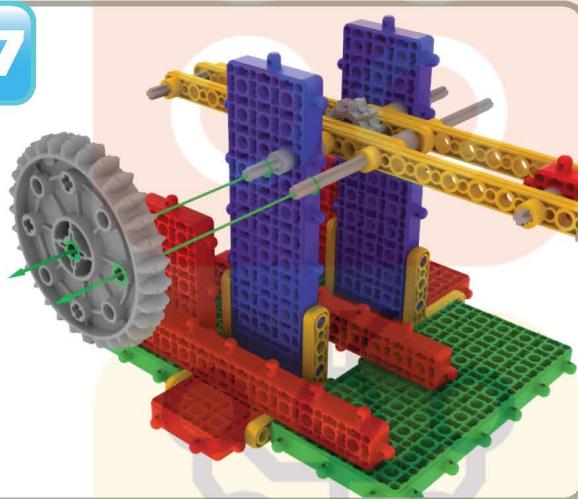
L-Shaft × 1

26



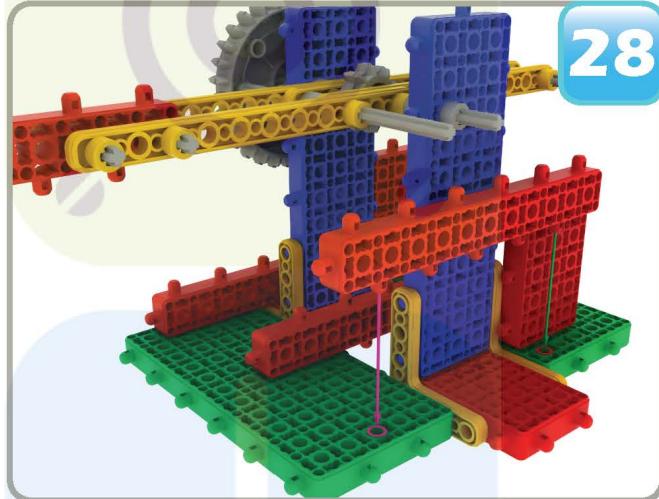
L-Shaft × 1

27



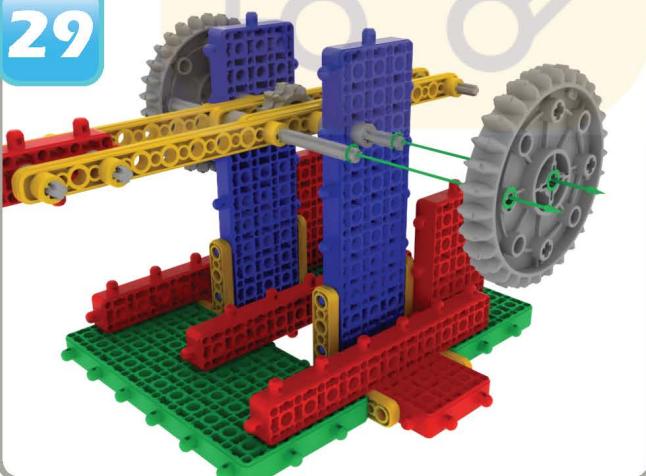
Gear × 1

28



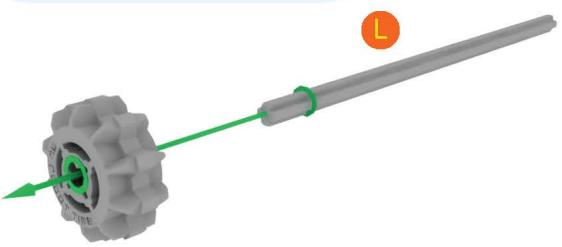
L-Shaft × 1

29

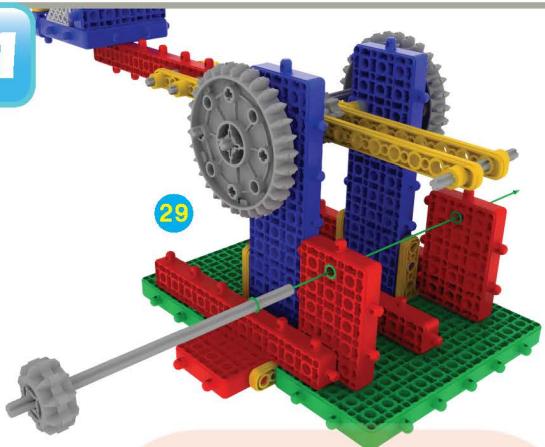
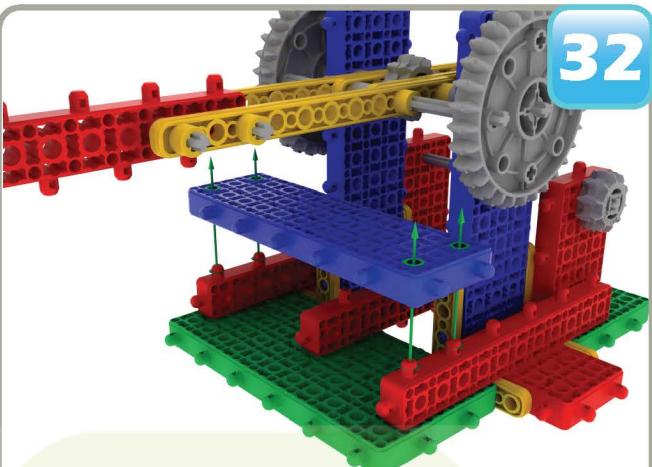
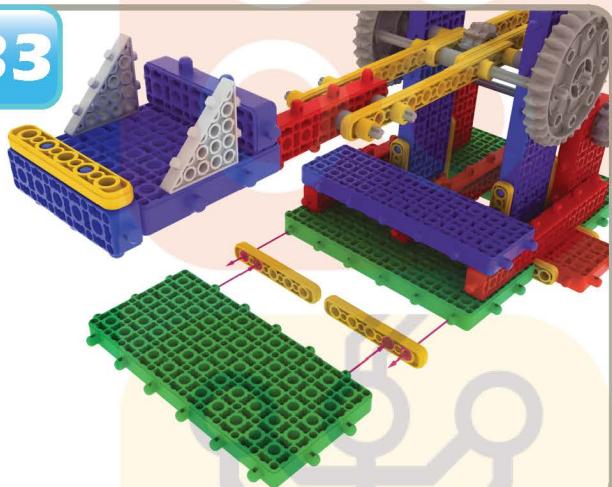


Gear × 1

30



Gear × 1 L-Shaft × 1

31**32****33****34****35****OK****31****32****33****34****35**



Water-Mill



Part List

Yellow Link × 5

L-Shaft × 2

L-Link × 4

S-Shaft × 4

Yellow Link × 4

M-Shaft × 2

Cross Pin × 9

Red Link × 4

Cross Pin × 1

Cross Pin × 6

Blue Link × 4

Yellow Link × 2

Control Panel × 1

Gear × 1

Green Link × 4

Yellow Link × 2

Blue Link × 6

Gear × 1

L-Shaft

× 1

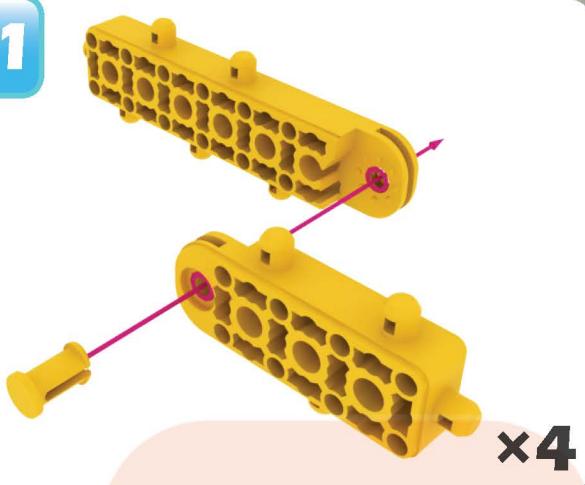
M-Shaft

× 1

S-Shaft

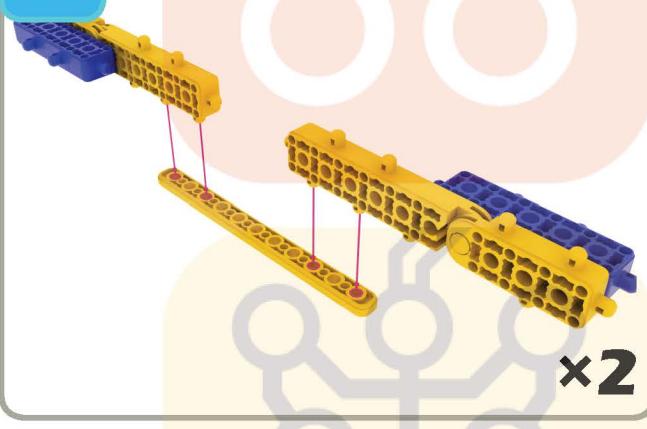
× 1

01



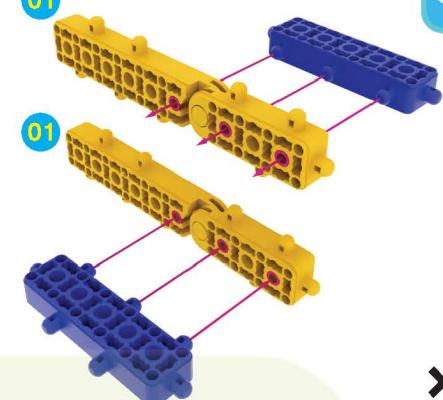
Yellow Technic Beam 1x4 with 1x4 cross-holes x2
Yellow Technic Connector x4

03



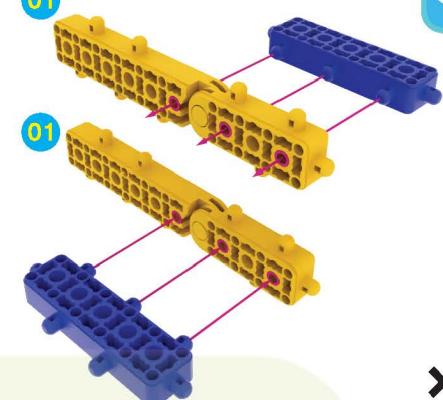
Blue Technic Beam 1x4 with 1x4 cross-holes x2

01



Blue Technic Beam 1x4 with 1x4 cross-holes x4

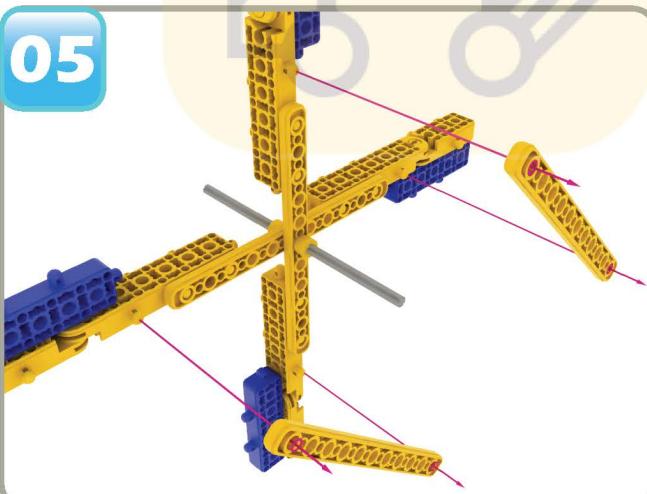
02



Yellow Technic Beam 1x4 with 1x4 cross-holes x2
L-Shaft x1

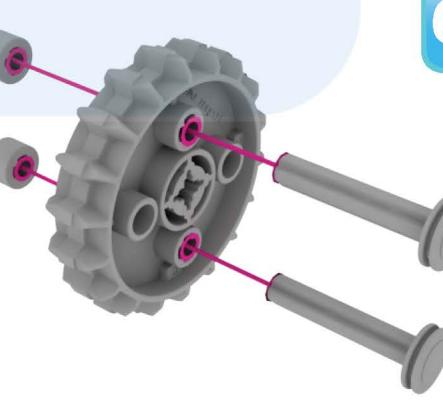
04

05



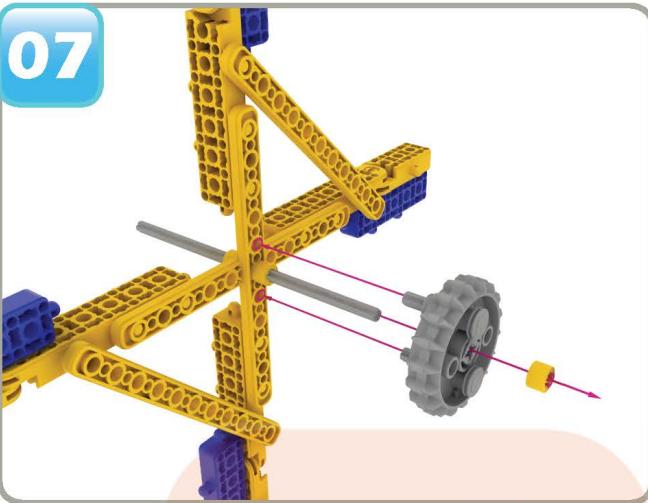
Yellow Technic Beam 1x4 with 1x4 cross-holes x2

03

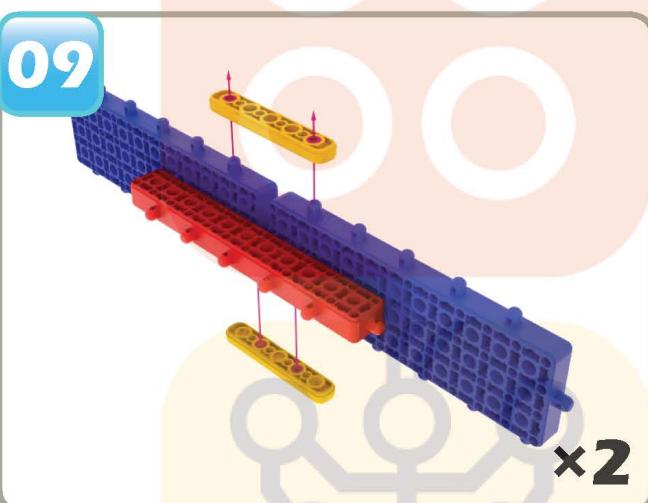


Grey Technic Connector x1
Grey Technic Connector x2
Grey Technic Connector x2

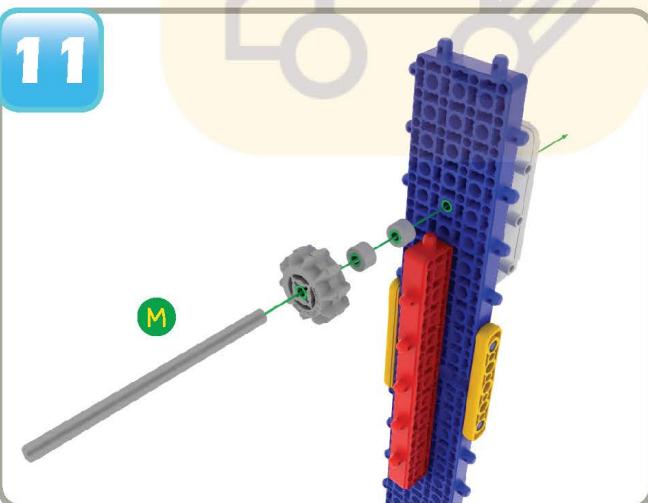
06



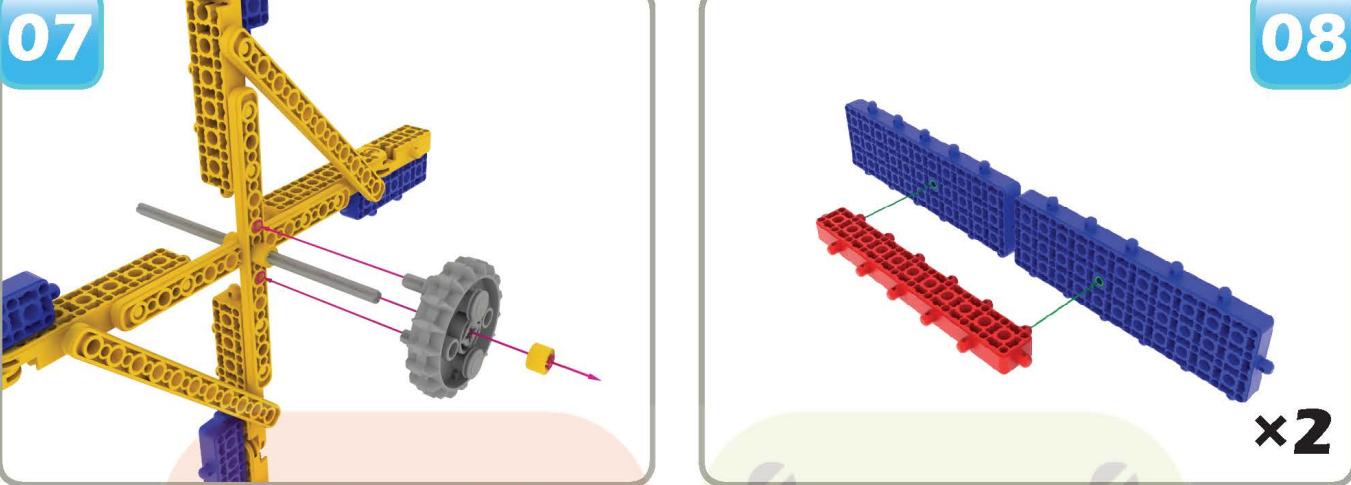
⊕ × 1



⊕ × 4

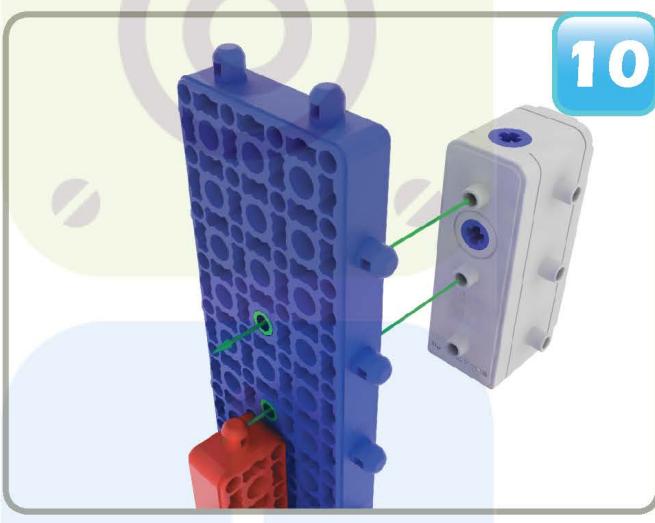


⊕ × 1 ⊕ × 2 — M-Shaft — × 1

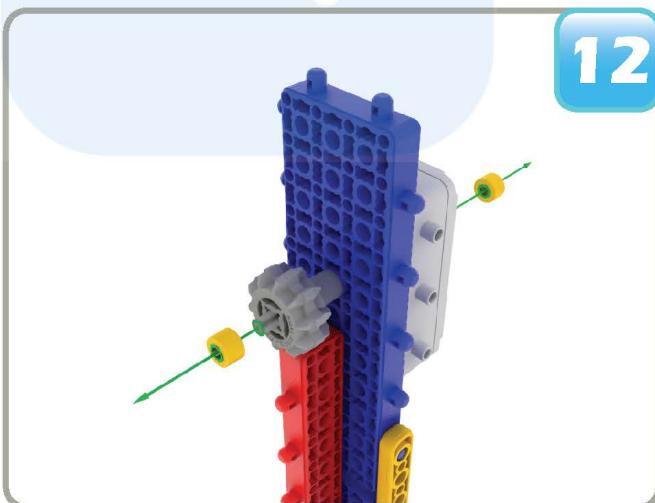


× 2

⊕ × 4 ⊕ × 2

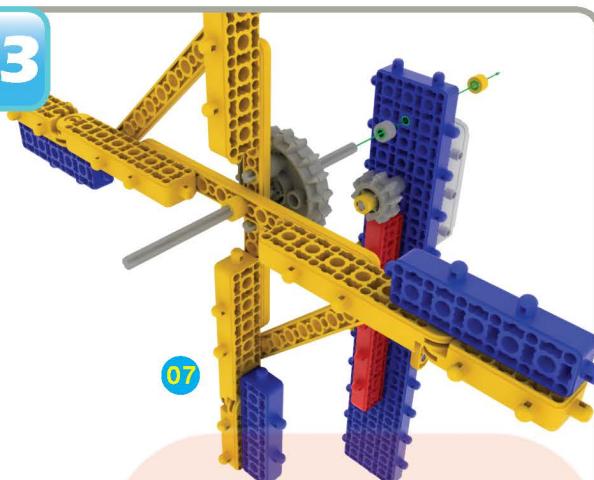


⊕ × 1



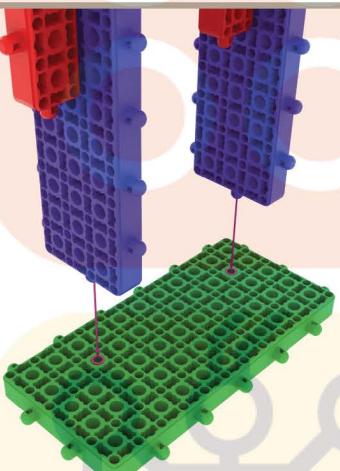
⊕ × 2

13



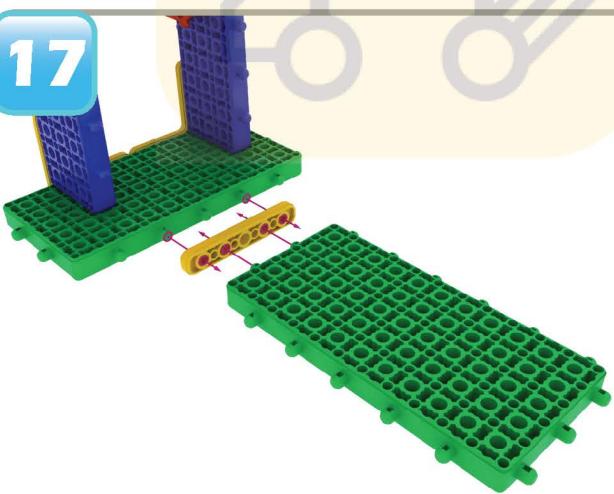
○ × 1 ○ × 1

15



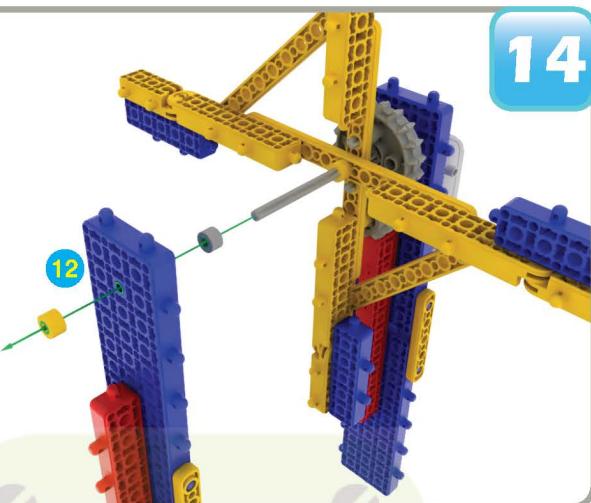
■ × 1

17



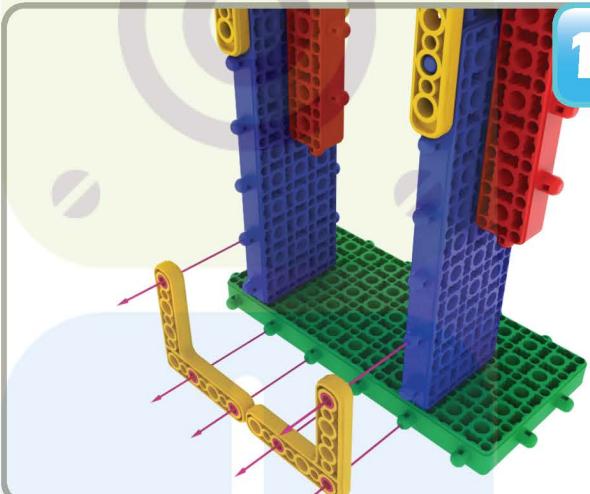
■ × 1 ■ × 1

14



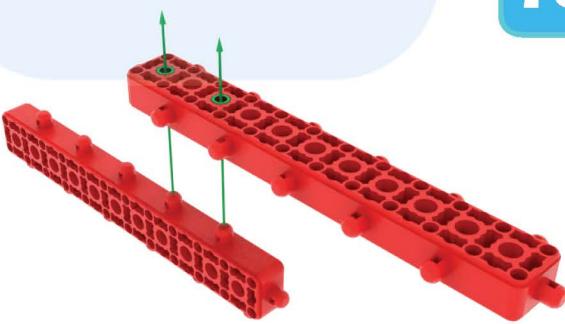
○ × 1 ○ × 1

16



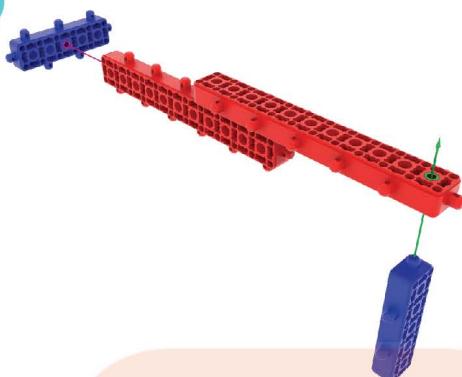
L × 2

18



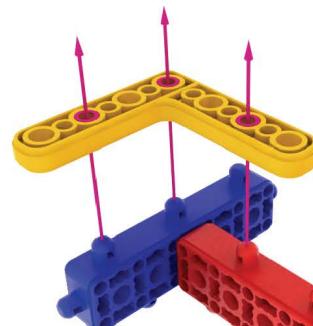
■ × 2

19

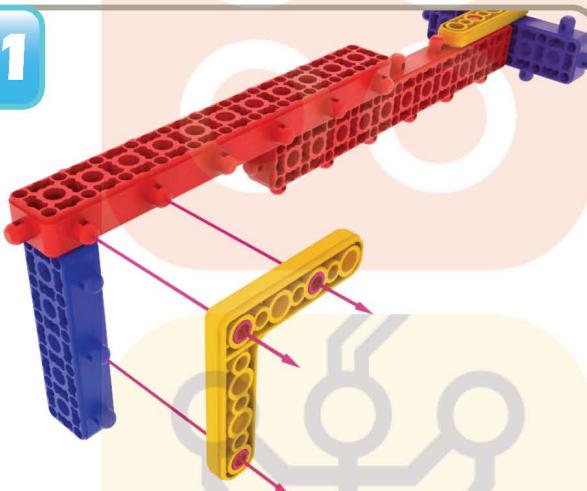


Blue beam × 2

20

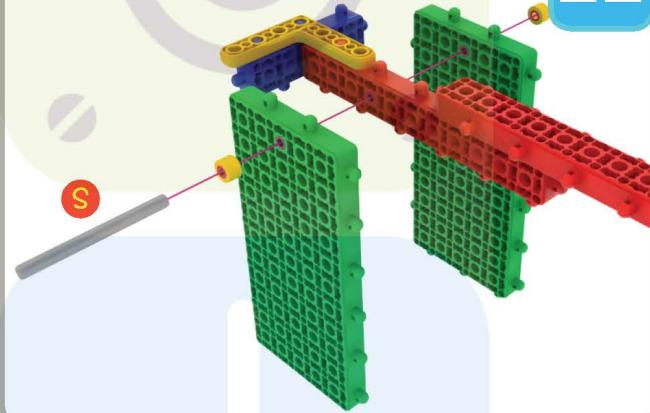


21



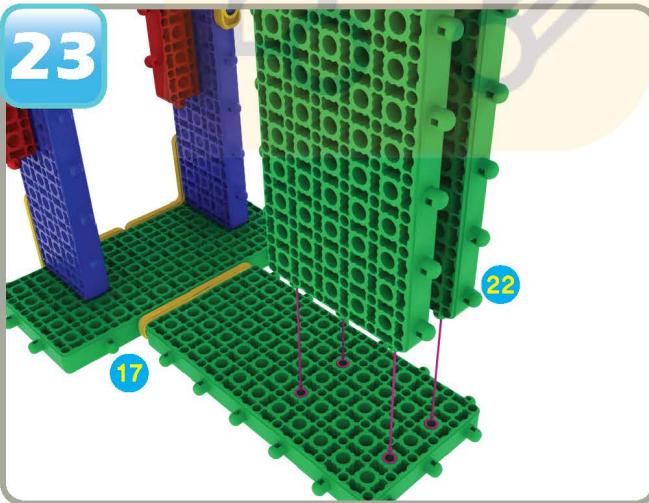
Yellow L × 1

22



Green panel × 2 Yellow L × 2 Grey S-Shaft × 1

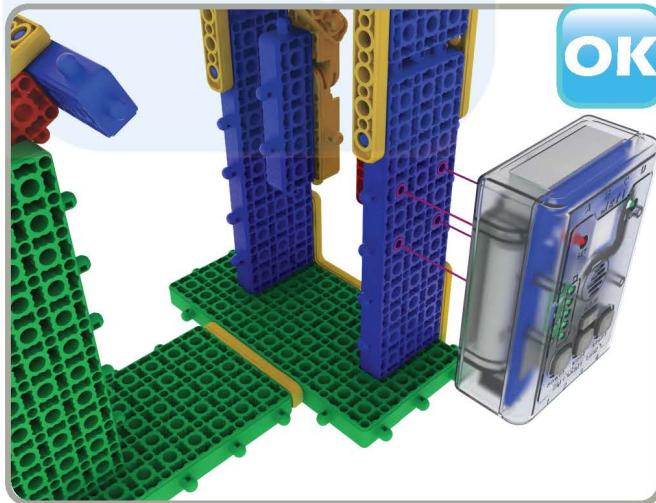
23



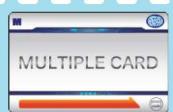
17

22

1:1
S-Shaft

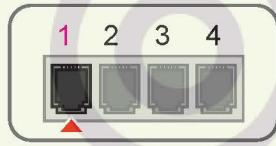
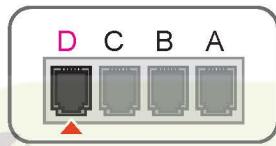
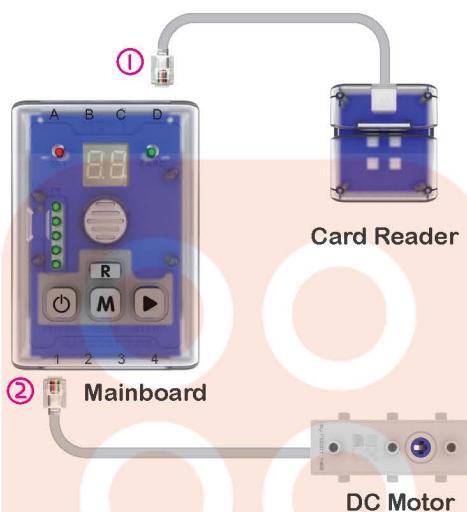


1x1
S-Shaft



Make robot move

Connect mainboard



Learn how to operate the mainboard



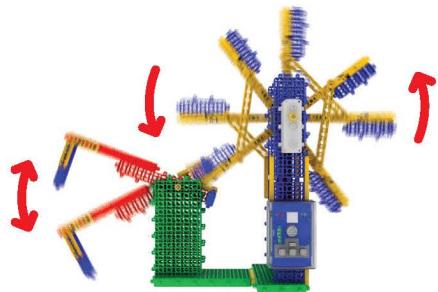
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Water-Mill move

Multiple Card-001



Action mode



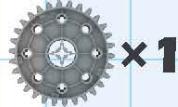
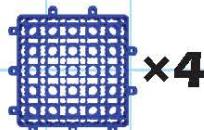
Press "Play", the water-mill will turn and the hammer will move up and down.



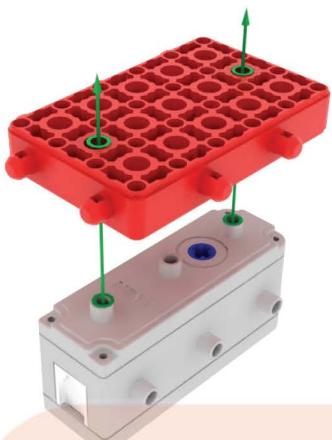
Roulette-Bot



Part List

Yellow Technic Beam $\times 4$ Yellow Technic Pin $\times 4$ Red Technic Beam $\times 1$ Grey Technic Pin $\times 1$ Blue Technic Beam $\times 1$ Grey Technic Pin $\times 1$ Green Technic Beam $\times 1$ Grey Technic Pin $\times 1$ M-Shaft $\times 1$ M-Shaft $\times 2$ 

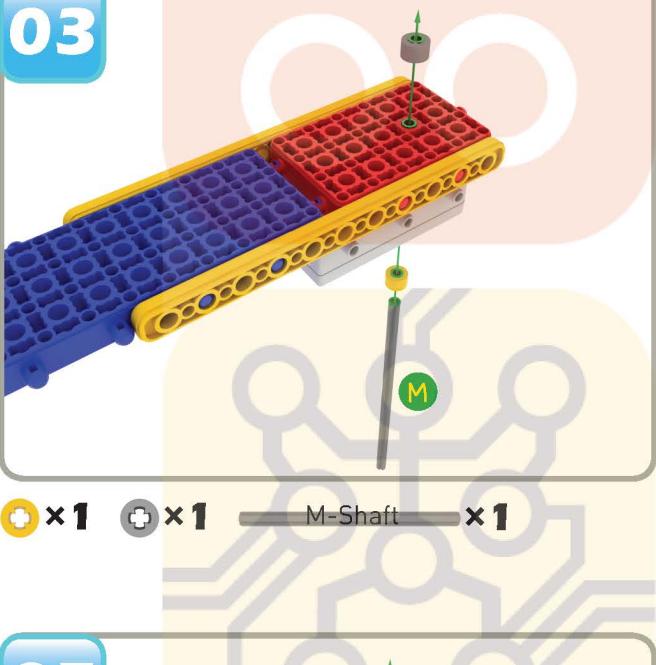
01



■ × 1

■ × 1

03



○ × 1

○ × 1

M-Shaft × 1

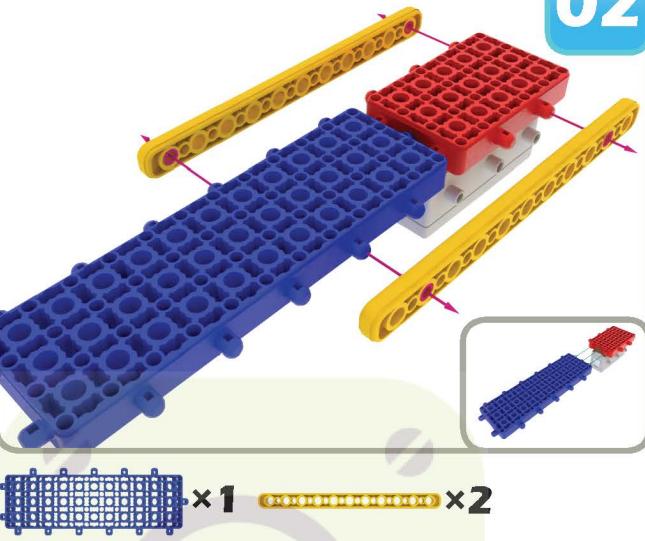
05



○ × 1

03

02



■ × 1

■ × 2

04



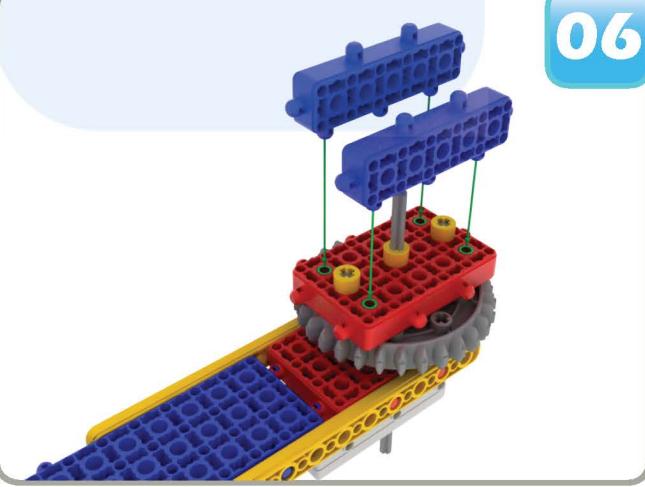
○ × 1

○ × 2

○ × 2

■ × 1

06

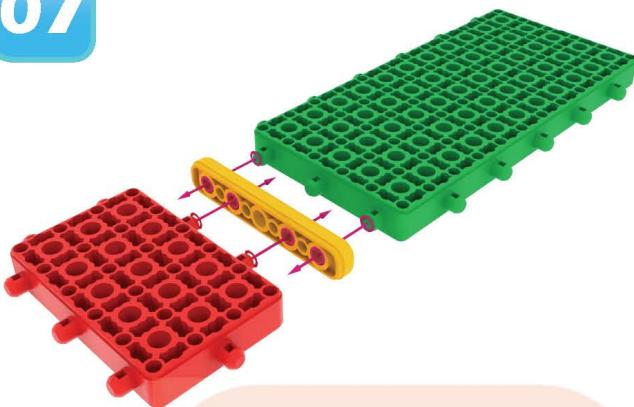


■ × 2

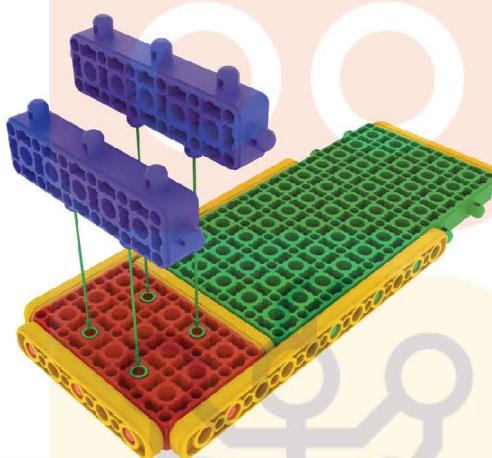
M-Shaft

1:1

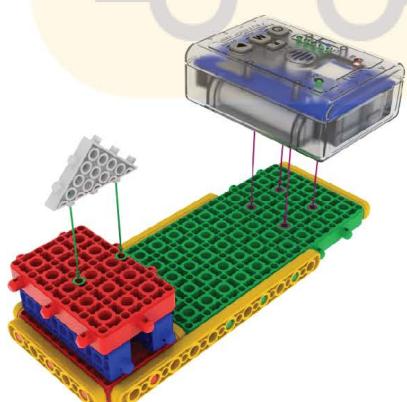
07



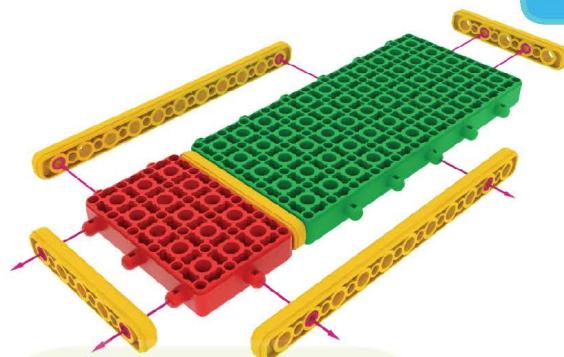
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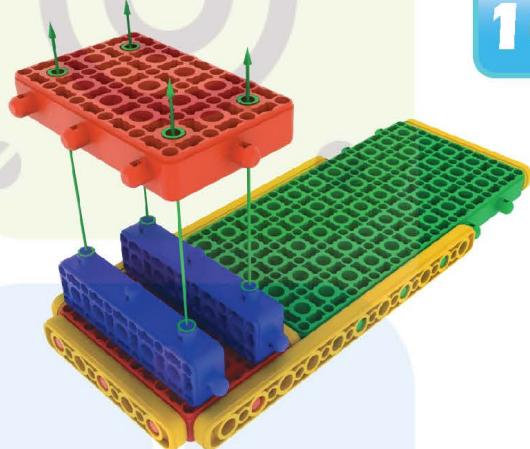
11



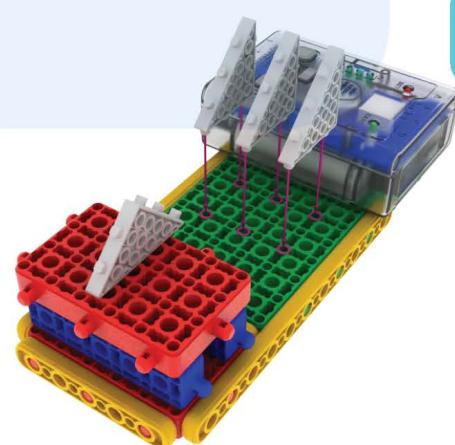
08



10 ×2 ×2



11 ×1

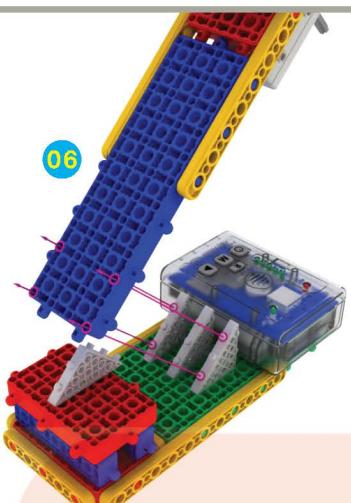


12

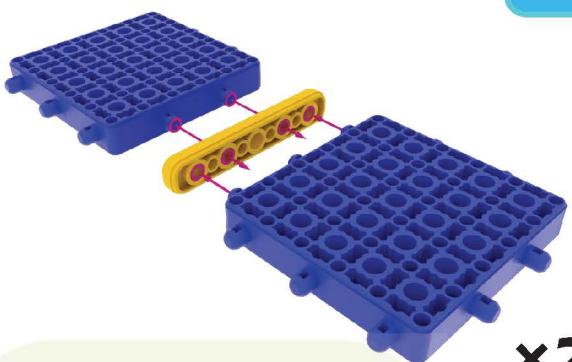
×1 ×1

×3

13

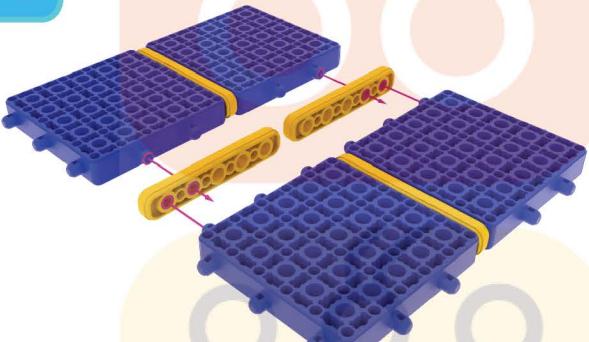


14



x2

15



x2

16



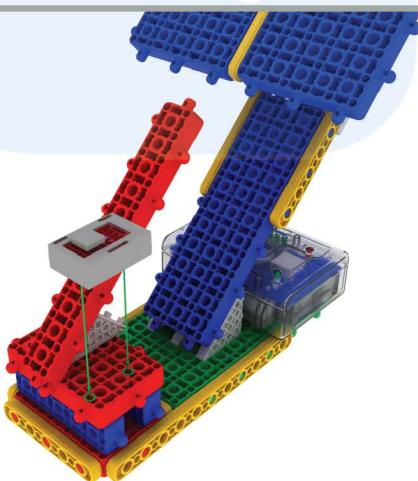
13

17



x 1

OK

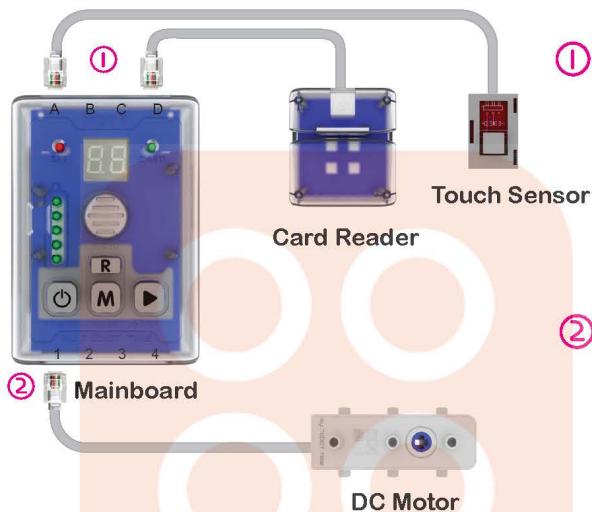


x 1

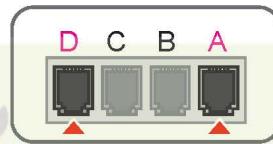
Cut down the attached game paper
and play games with friends.



Connect mainboard



① Connect Card Reader to connector D. Connect Touch Sensor to connector A.



② Connect DC motor to connector 1.



Learn how to operate the mainboard

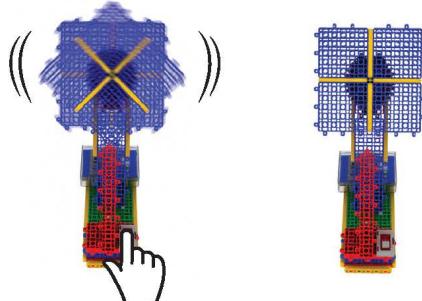


1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

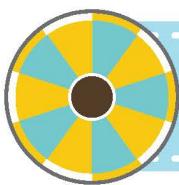
Let Roulette-Bot move



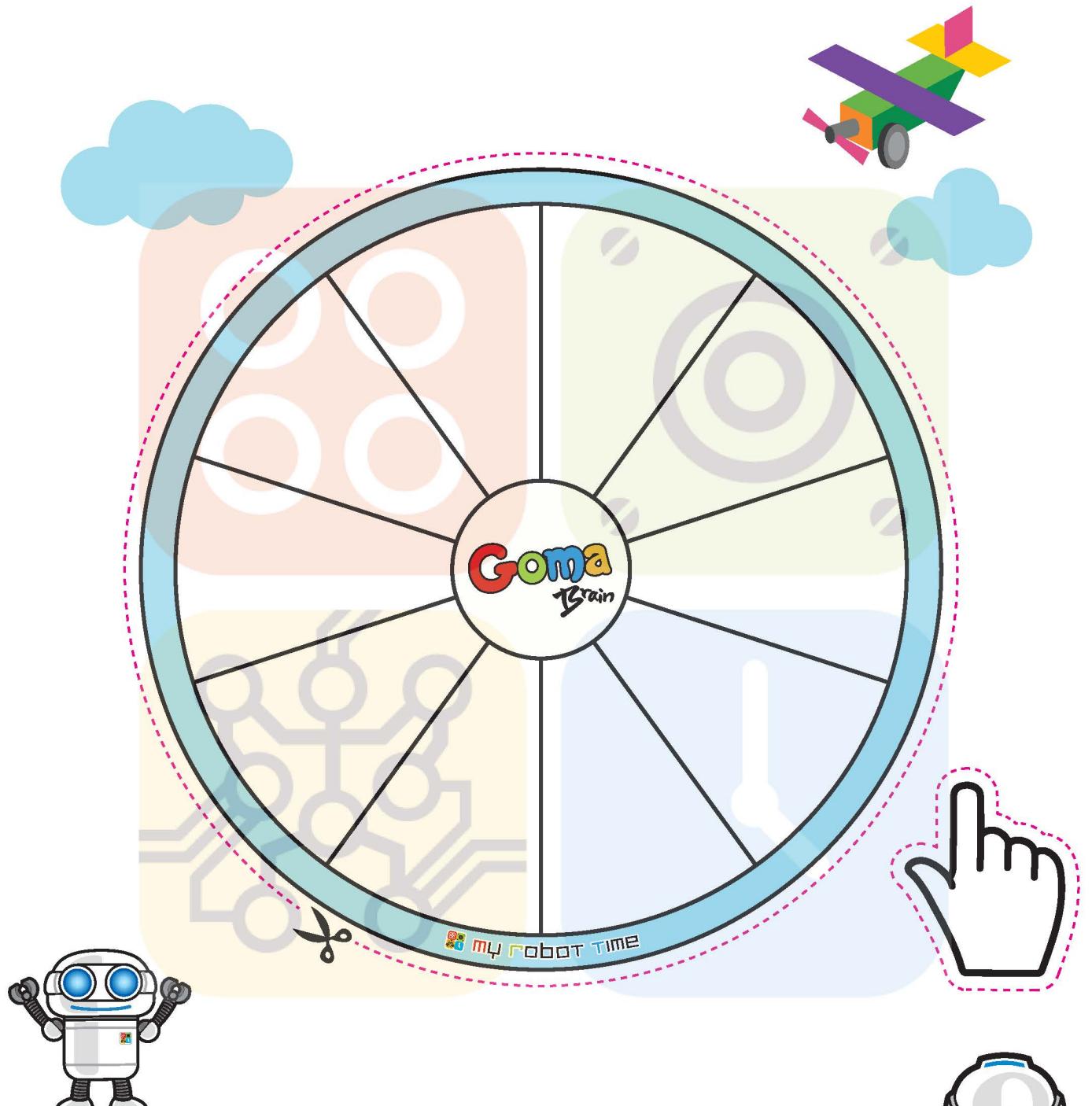
Action mode



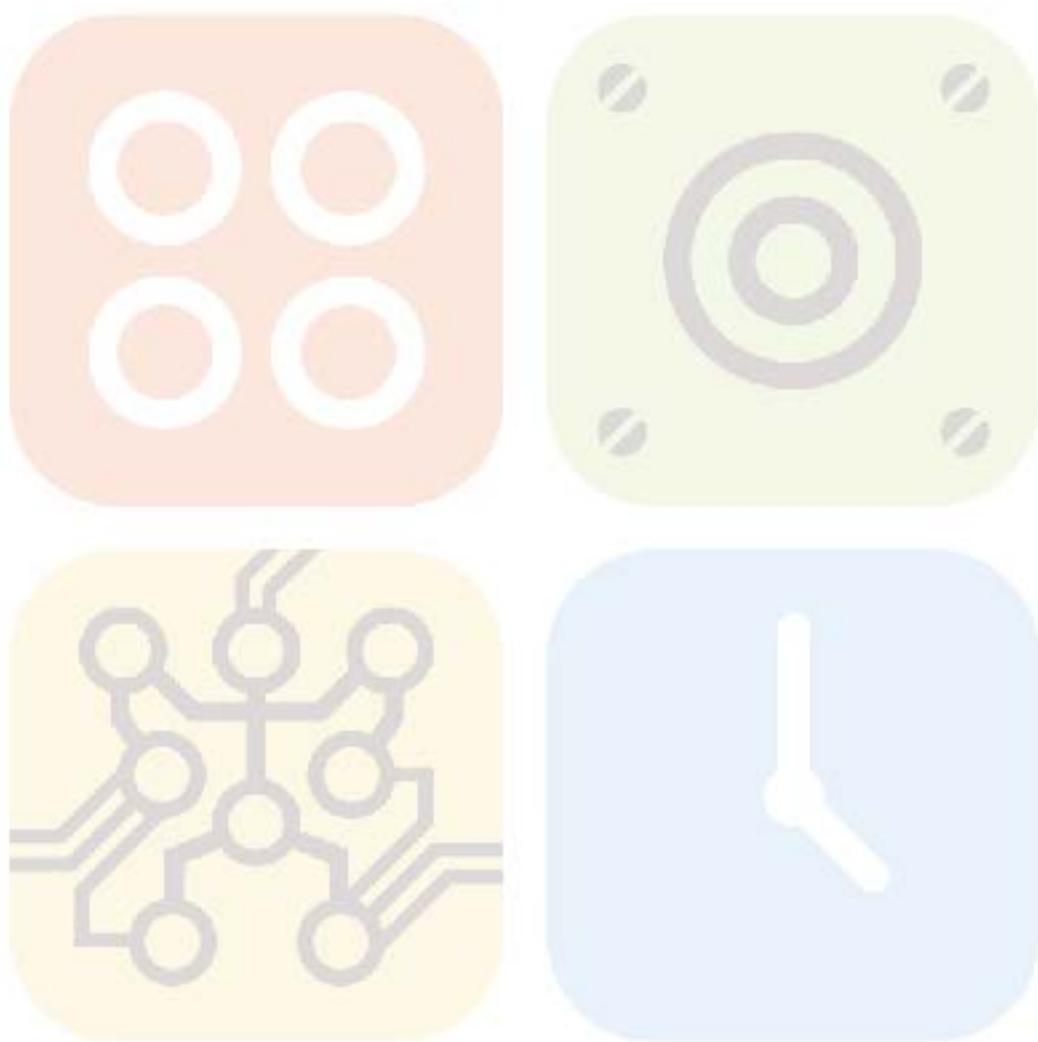
Press touch sensor, the roulette-bot will turn.
Release touch sensor, the roulette-bot will stop.



Roulette-Bot Game

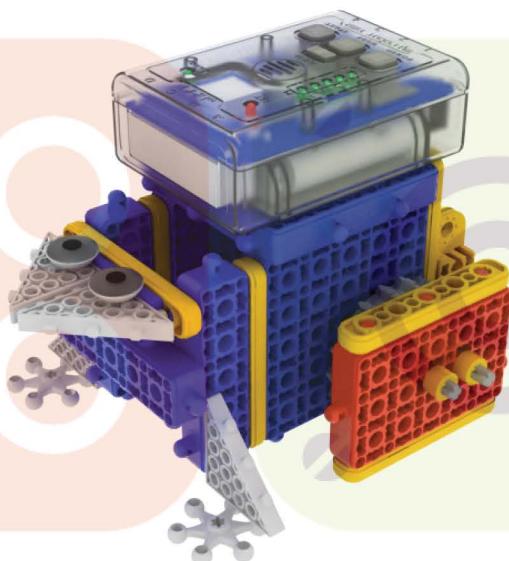


1. Cut down along the dotted line.
2. Write the rules on the game paper with friends.
3. Stick this game paper to robot.
4. Play games with teachers and friends.

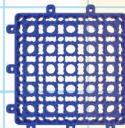




Frog-Bot



Part List



x3



x1



x2



x2



x2



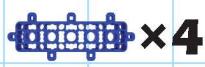
x4



x1



x2



x4



x1



x1



x4

L-Shaft

x1



x2

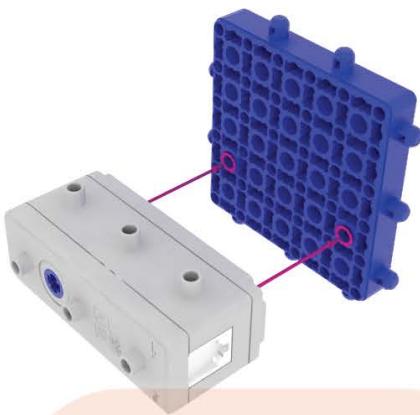


x8



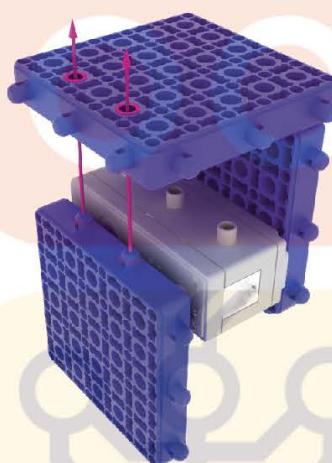
x2

01



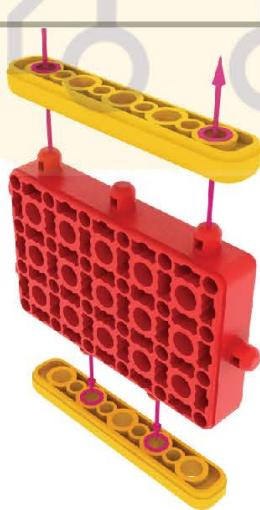
×1 ×1

03



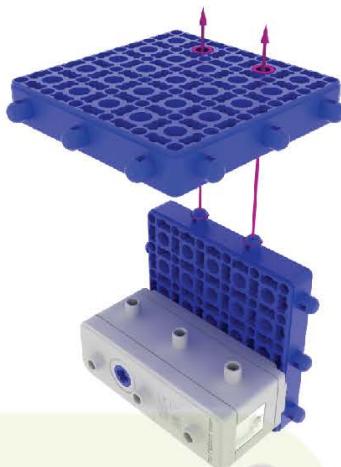
×1

05



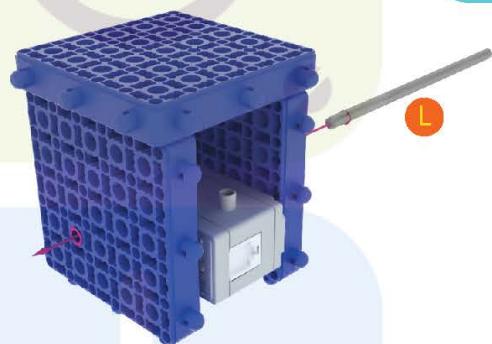
×1 ×2

02



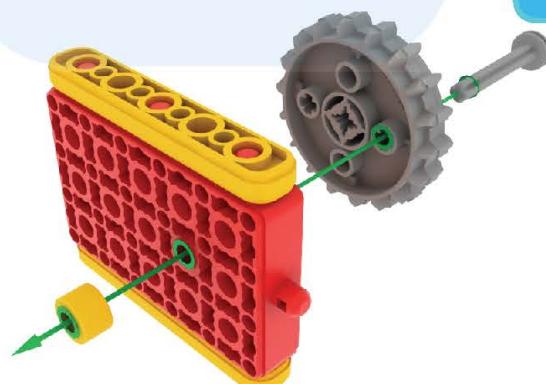
×1

04



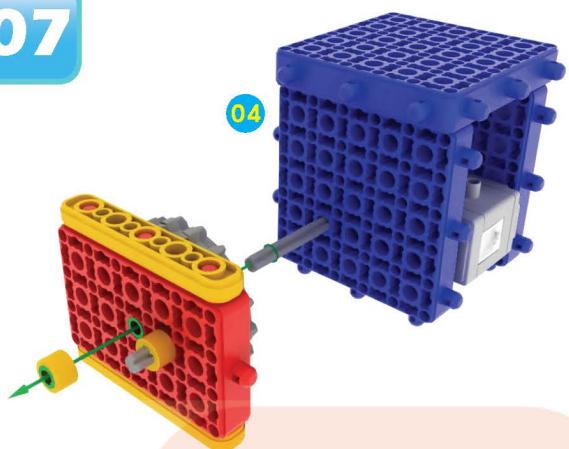
L-Shaft ×1

06



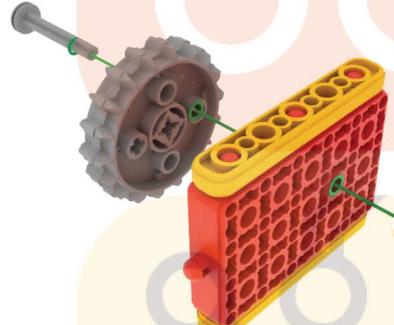
×1 ×1 ×1

07



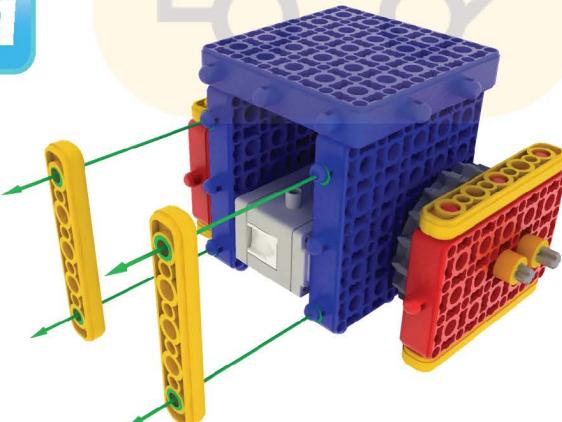
○ × 1

09



● × 1 — × 1 ○ × 1

11



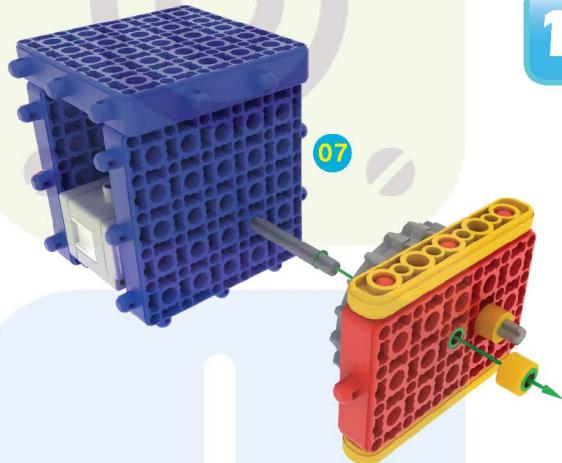
— × 2

08



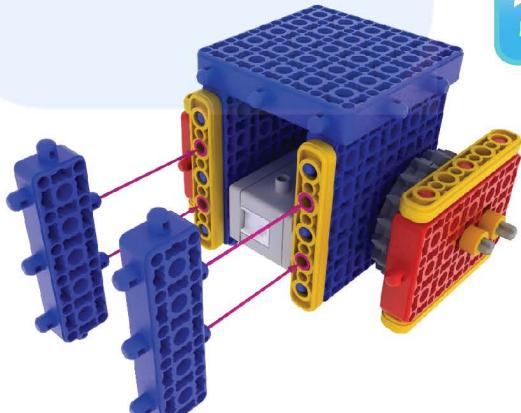
— × 1 — × 2

10



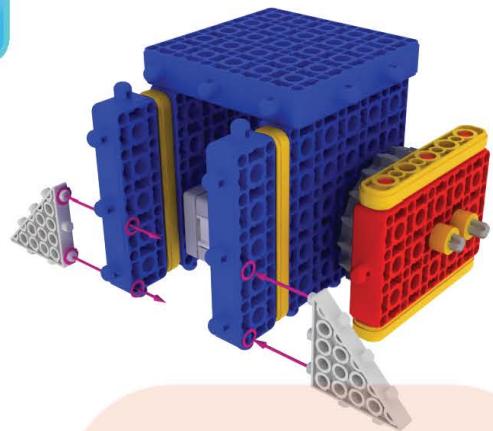
○ × 1

12

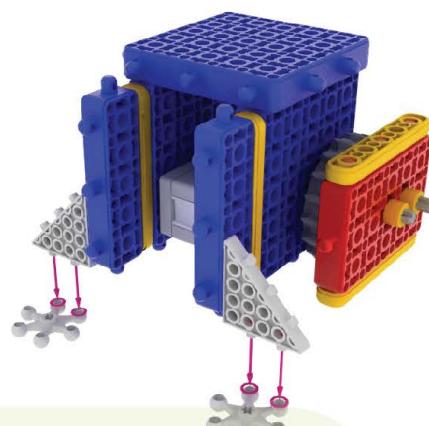


— × 2

13

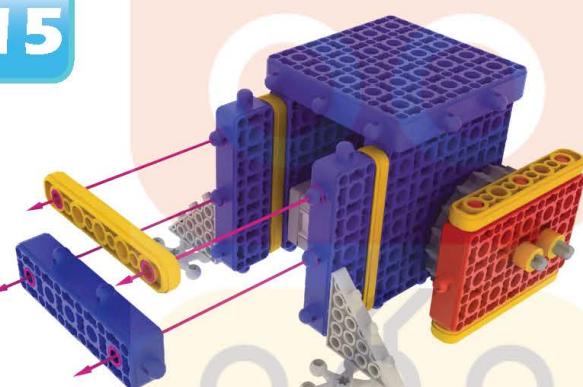


14



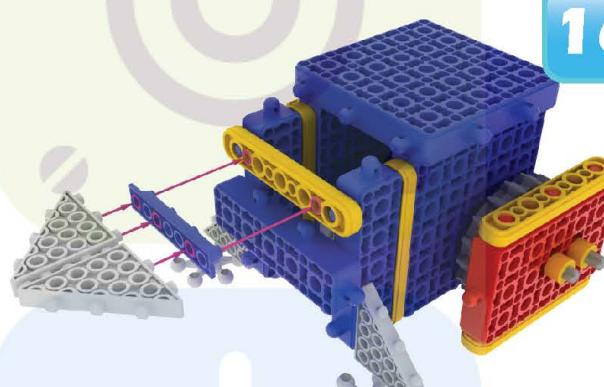
x2

15



x1 **x1**

16



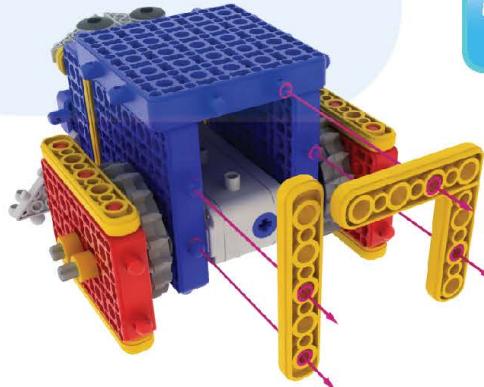
x2 **x1**

17



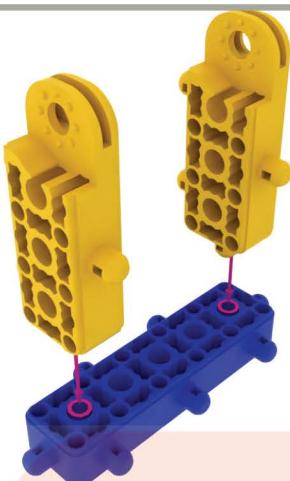
x2

18



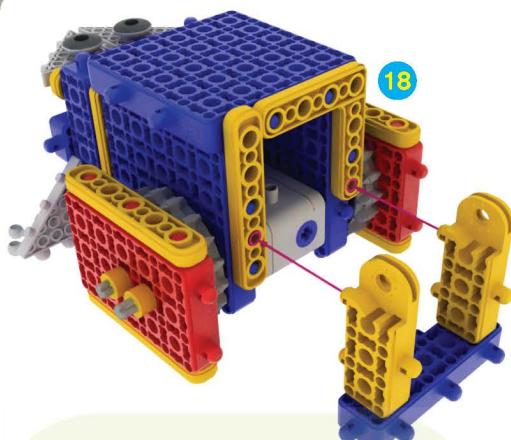
x1 **x1**

19

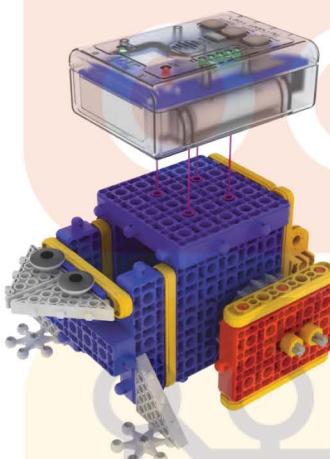


2x x 2 1x

20



21

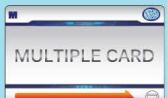


1x x 1

OK

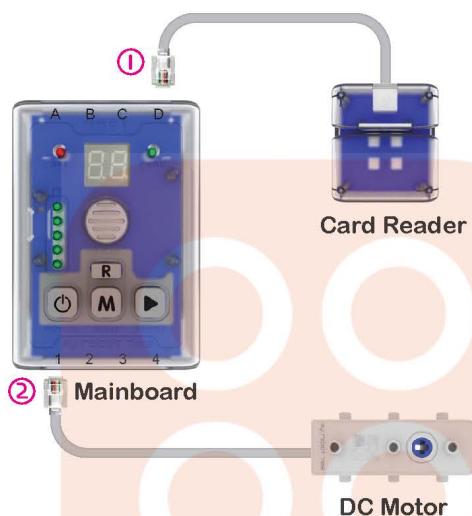


Brain

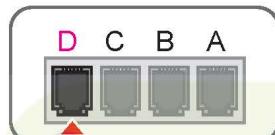


Make robot move

Connect mainboard



① Connect Card Reader to connector D.



② Connect DC Motor to connector 1.



Learn how to operate the mainboard



1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Frog-Bot move

★ Multiple Card-003



Action mode



Press "Play" the frog-bot will go forward.



What is elastic force ?



The power make the deformed object caused by external force back to its original shape is called elastic.



Find out the things with elasticity around us.





Pirate-Ship



Part List



×2



×2



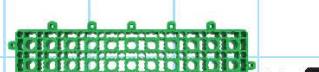
×3



×3



×2



×4



×1



×2



×2



×1



×4



×8



×9



×1



×3



×4



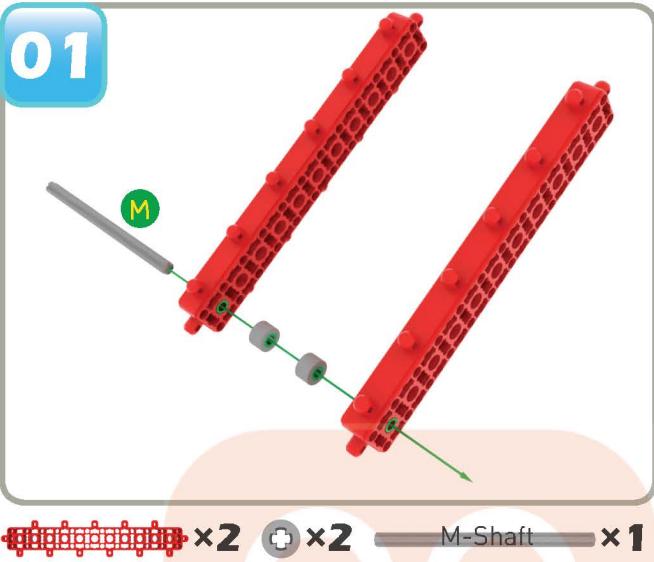
×4

L-Shaft **×2**

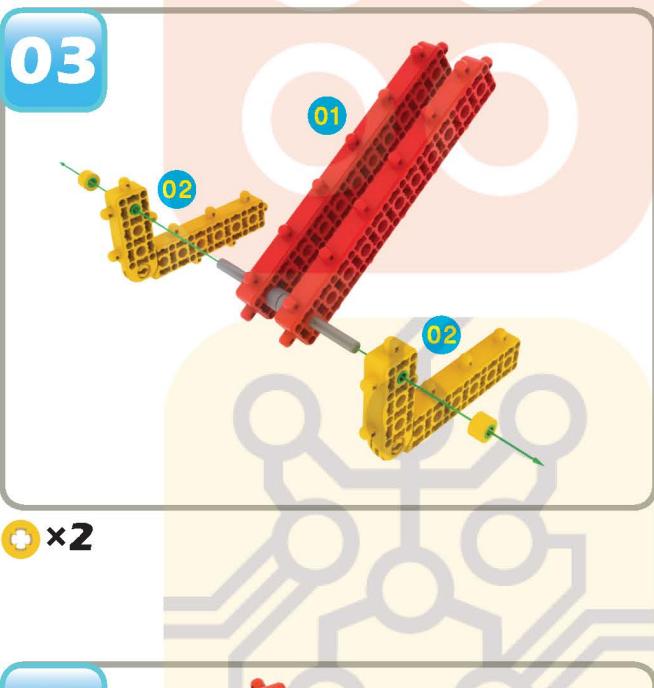
M-Shaft **×1**

S-Shaft **×1**

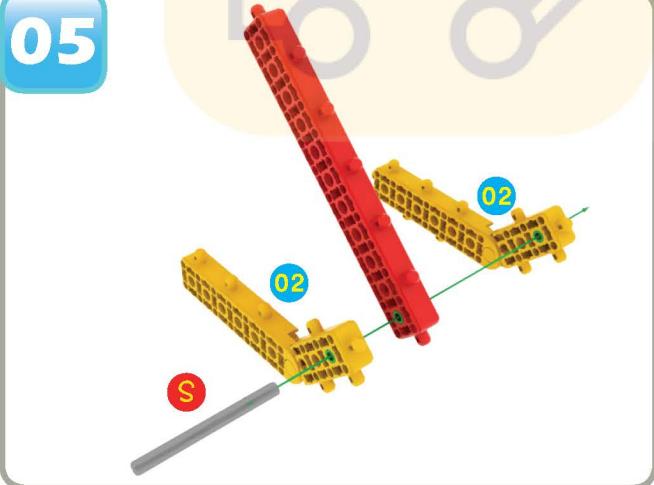
01



03

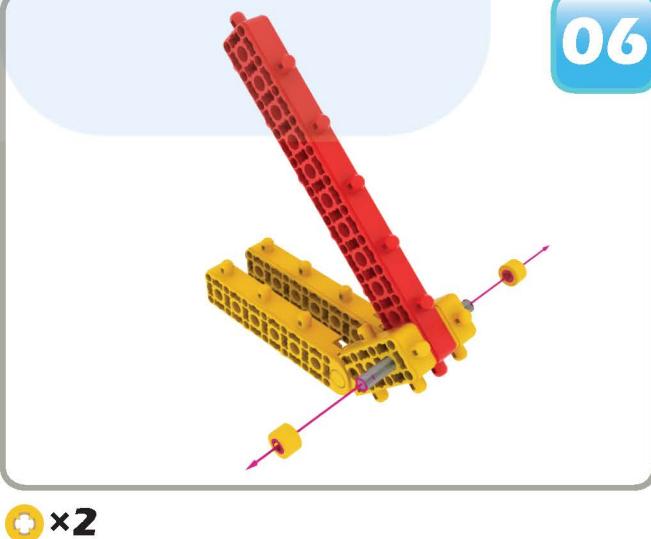
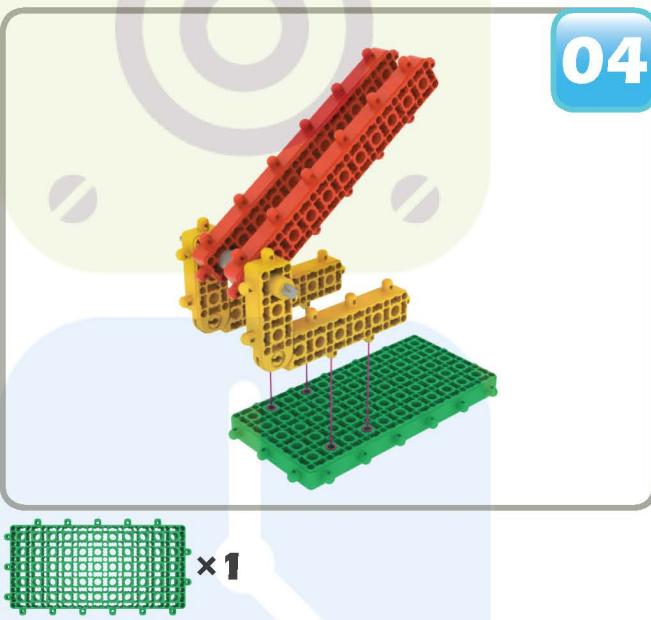
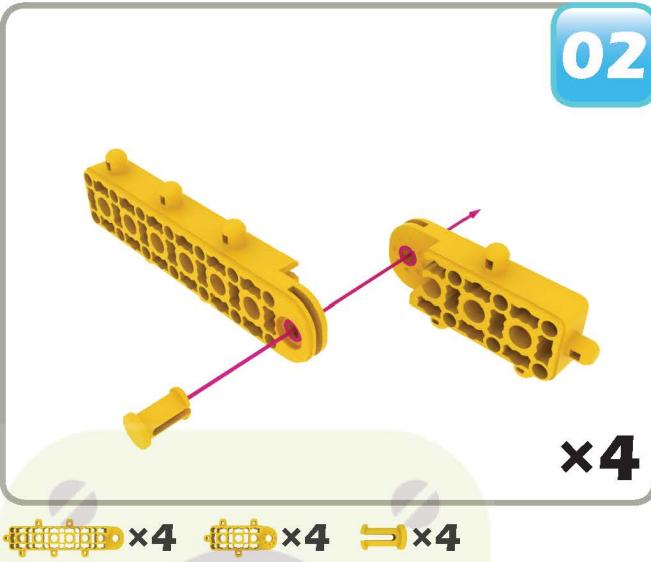


05



Red Technic beam x 1 Grey S-shaft x 1

02



Yellow Technic pin x 2

S-Shaft

1:1

07



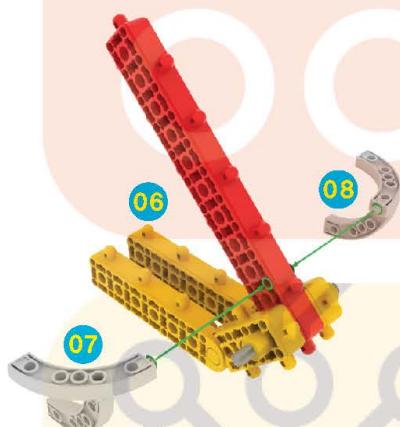
2x ×2

08

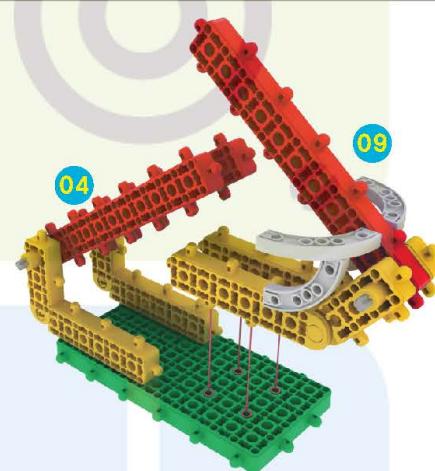


2x ×2

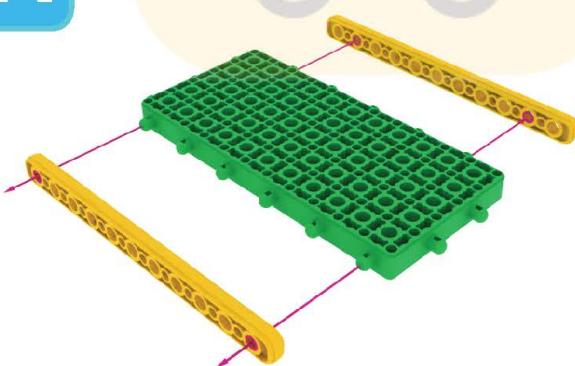
09



10



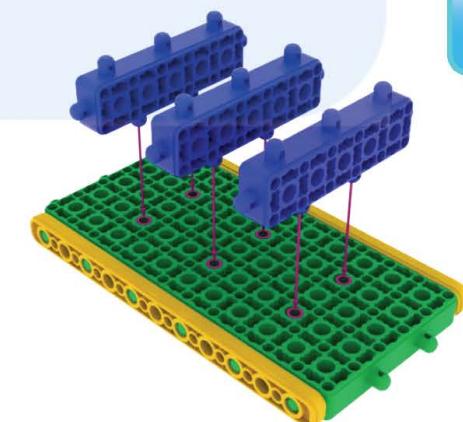
11



1x ×1

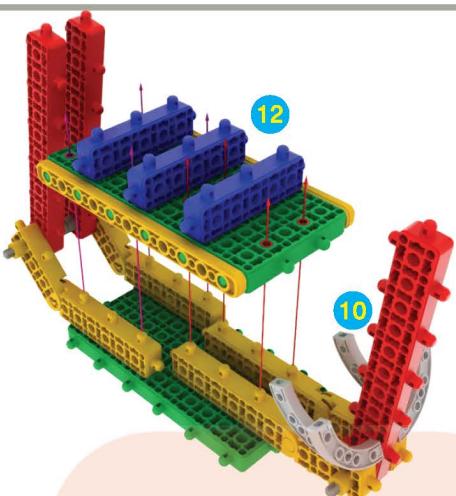
2x ×2

12

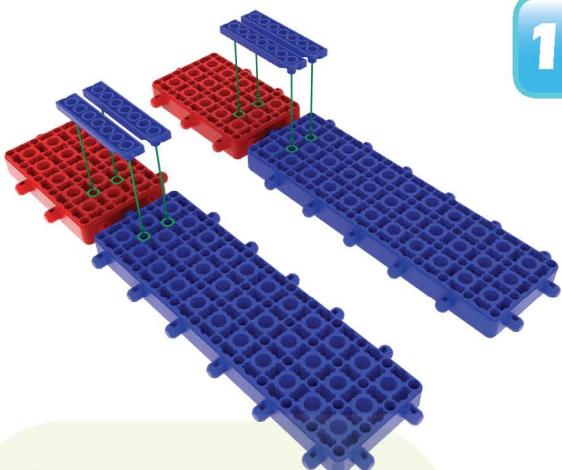


3x ×3

13

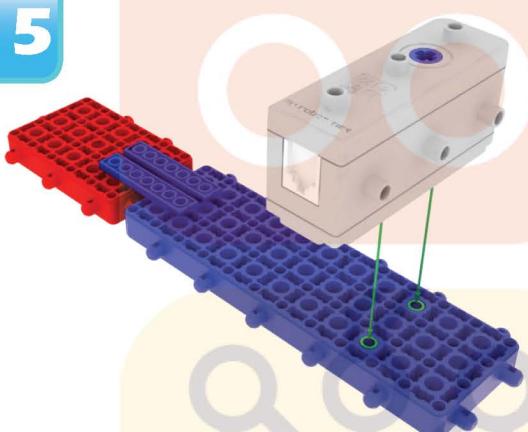


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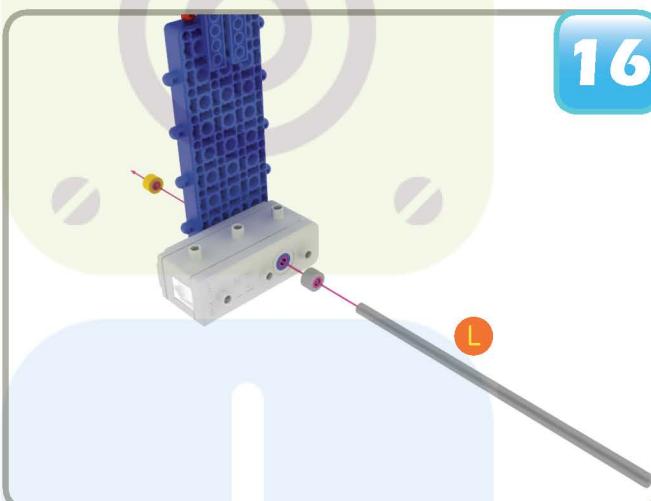
×2 ×2 ×4

15



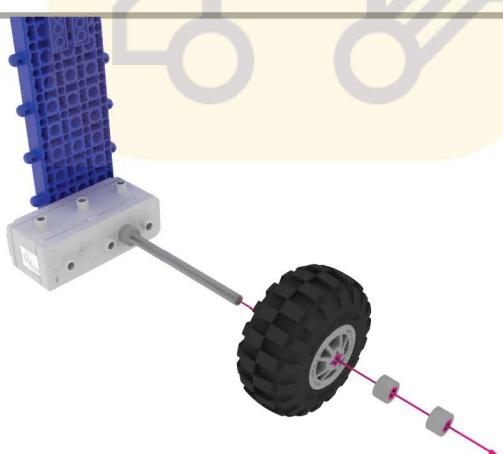
×1

16



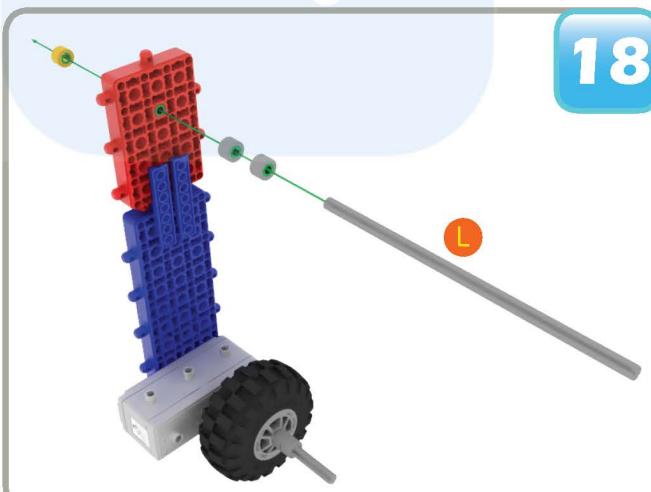
×1 ×1 ×1

17



×1 ×2

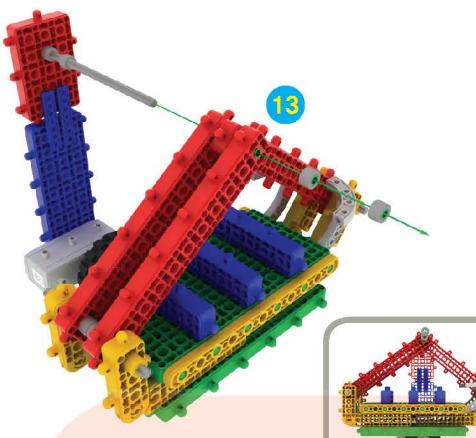
18



×1 ×1 ×2

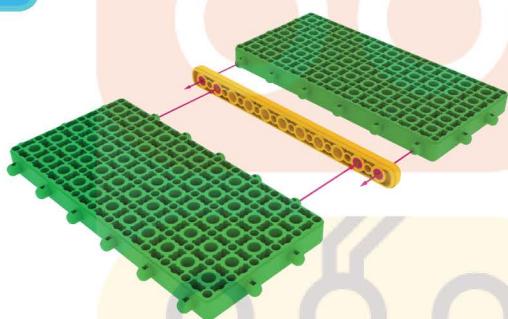
1:1

19



⊕ x2

21



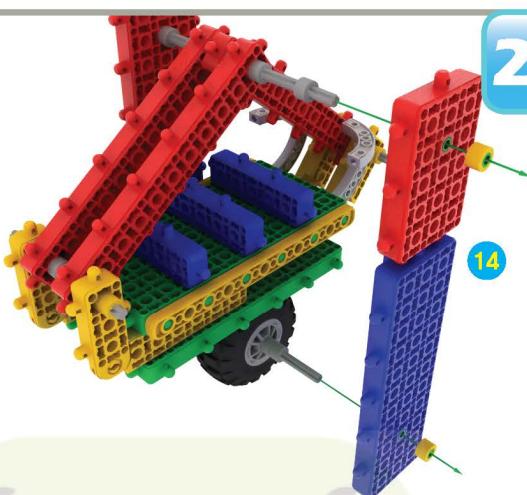
⊖ x2 ⊕ x1

23



⊖ x1

20



⊕ x2

22

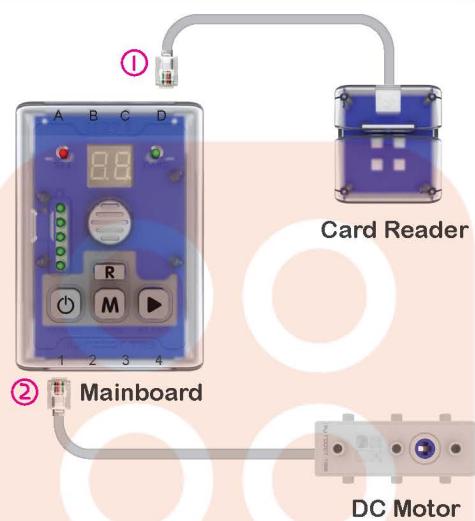


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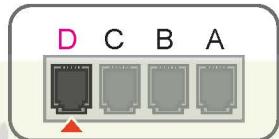




Connect mainboard



① Connect Card Reader to connector D.



② Connect DC motor to connector 1.



Learn how to operate the mainboard



1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Pirate-Ship move

★Multiple Card-004



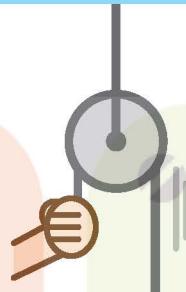
Action mode



Press "Play" and pirate-ship will move from right to left.



What is a pulley ?



It's a device to transfer the direction of power or play with smaller force as big one.



Find out things with pulley around us.



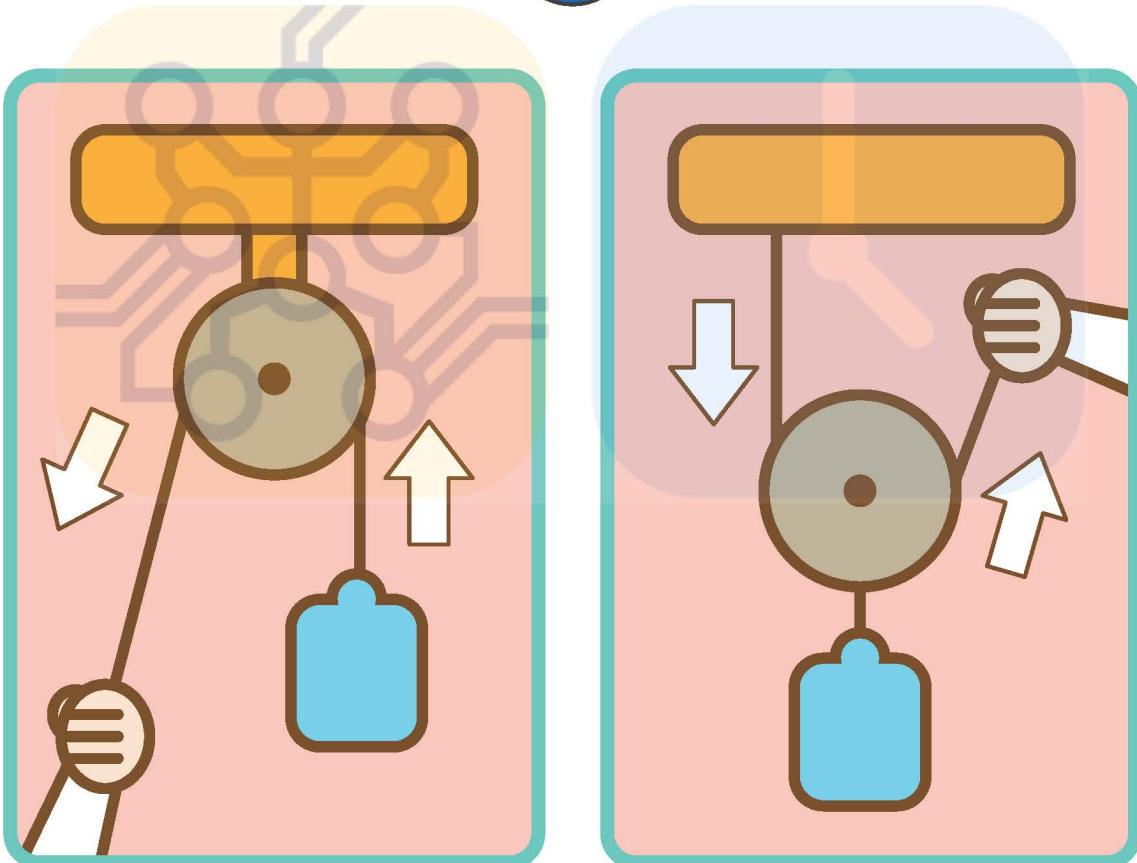


Pulley is divided into crown block and traveling block.

Learn about crown block and traveling block.
Find out the direction of power and color it.

Crown block is fixed with axis of rotation, power force can't change but it can transfer the direction.

Traveling block can decrease half power with two times the size of rope.





Crane



Part List



x8



x1



x1



x3



x4



x1



x1



x5



x4



x2



x2



x5



x4



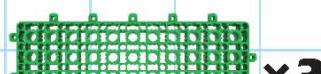
x2



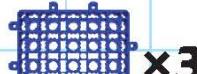
x1



x2



x3



x3



x1



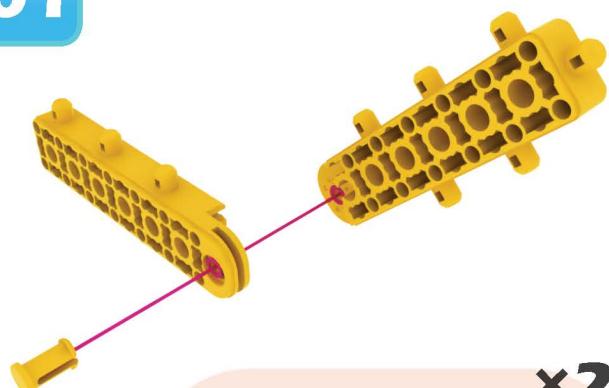
x3

L-Shaft **x1**

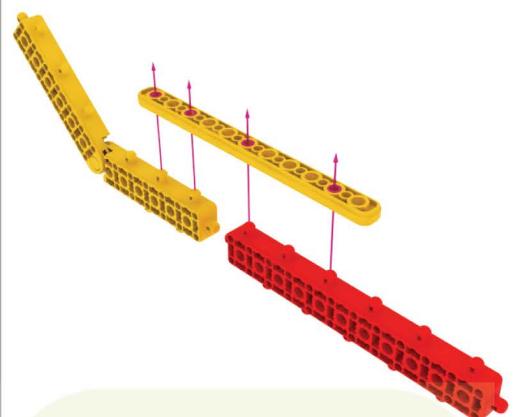
M-Shaft **x3**

Shaft **x2**

01



02



x2

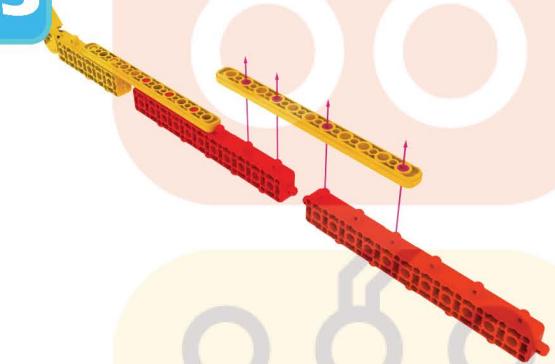
---x2

---x2

---x2

x2

03

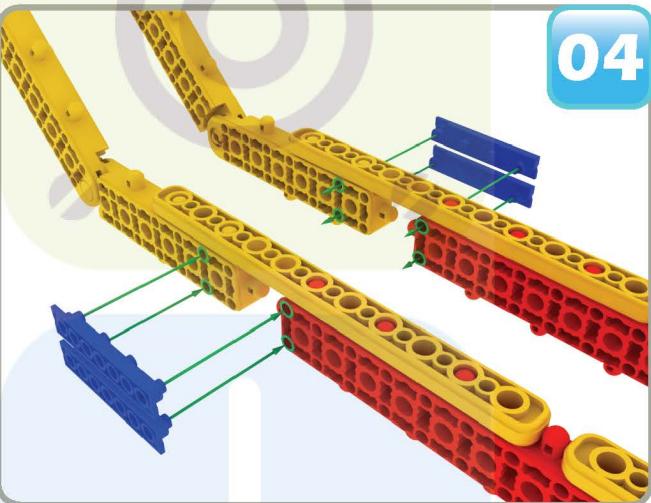


x2

---x2

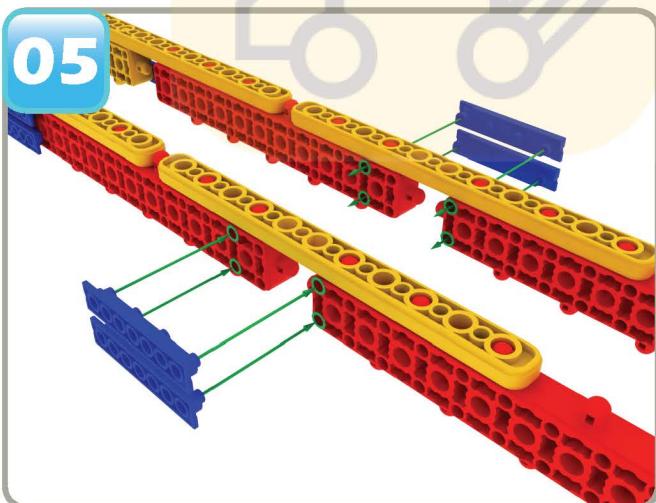
---x2

04



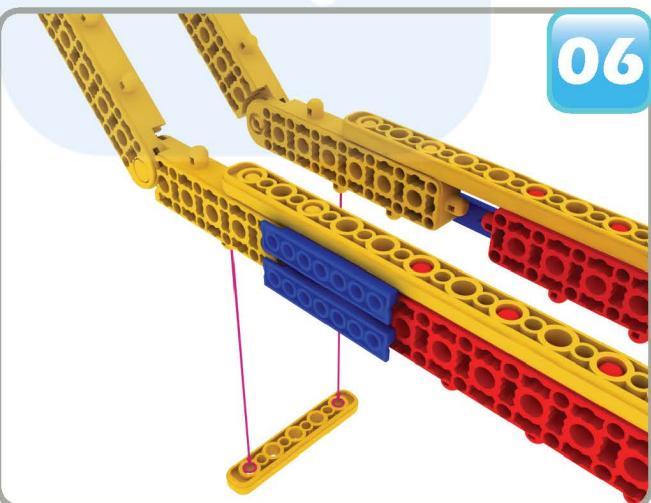
---x4

05



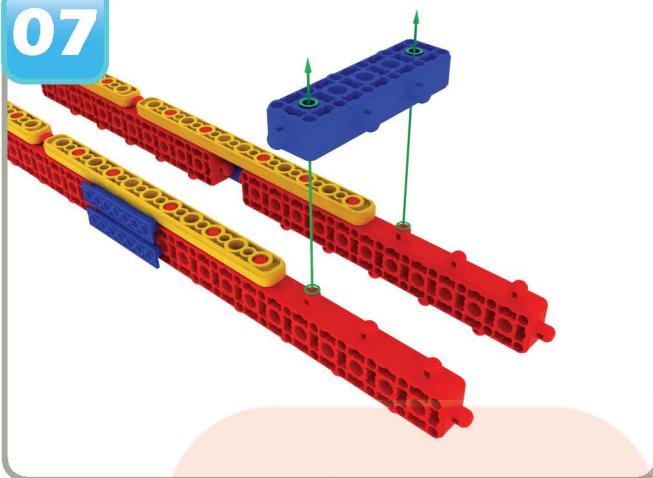
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06



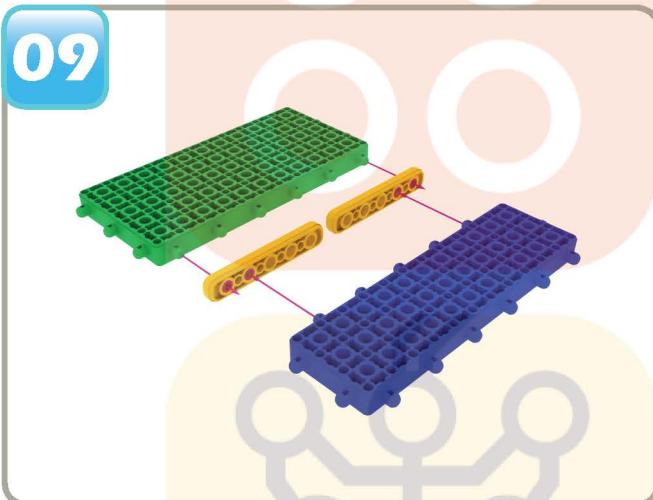
---x1

07



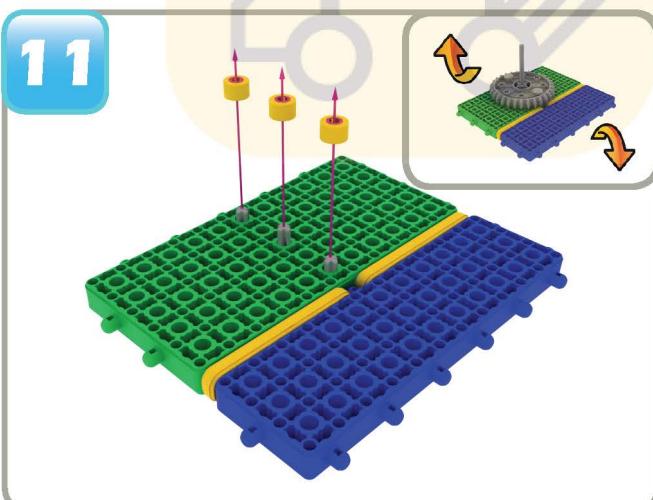
Technic Beam × 1

09



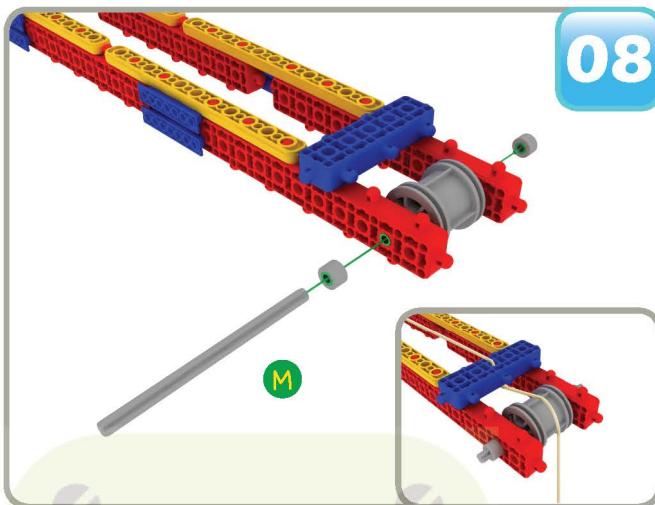
Technic Beam × 1 Technic Pin × 1 Technic Pin × 2

11



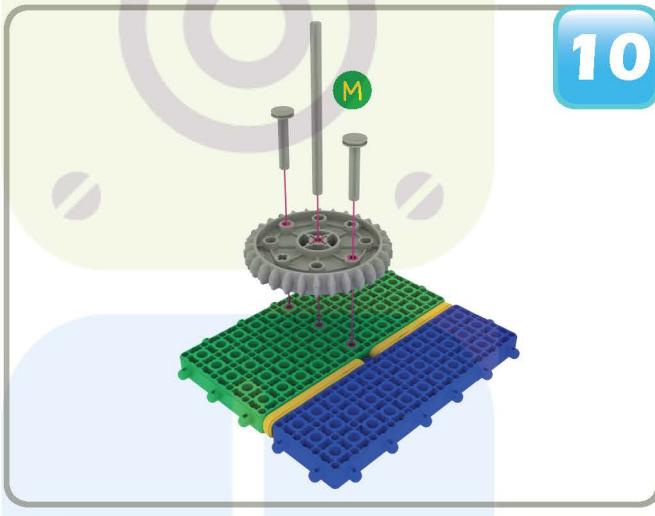
Technic Pin × 3

08



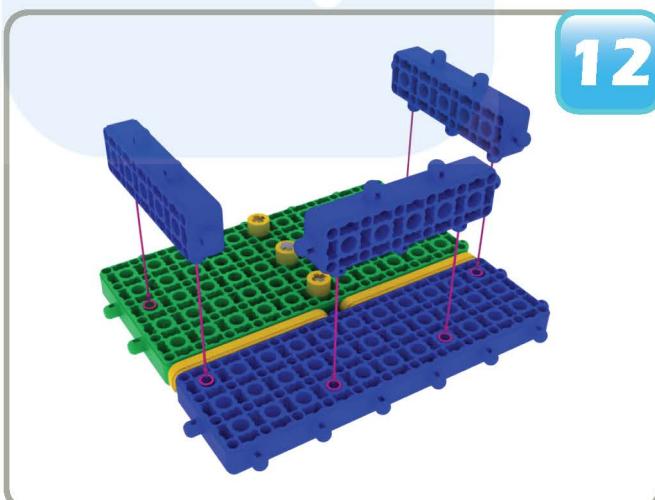
Technic Pin × 1 Technic Pin × 2 M-Shaft × 1

10



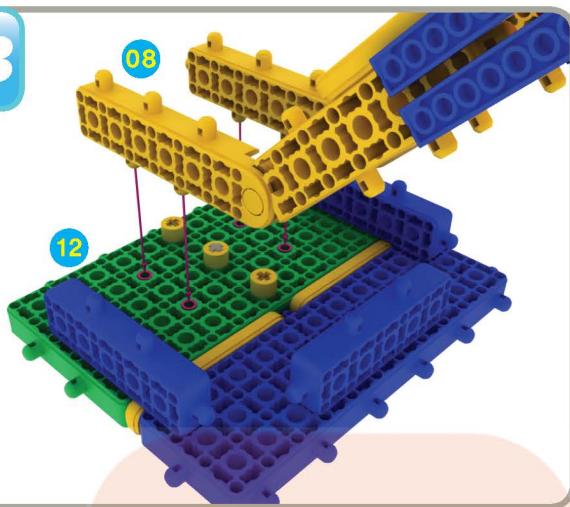
Technic Pin × 1 M-Shaft × 1 Technic Pin × 2

12

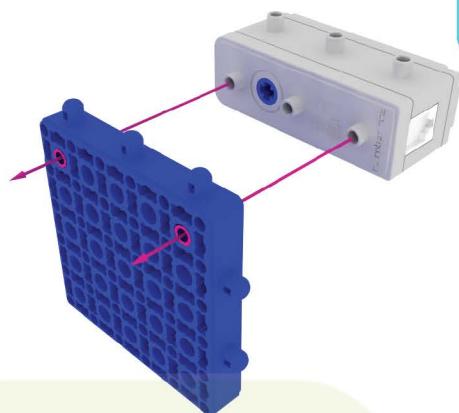


Technic Beam × 3

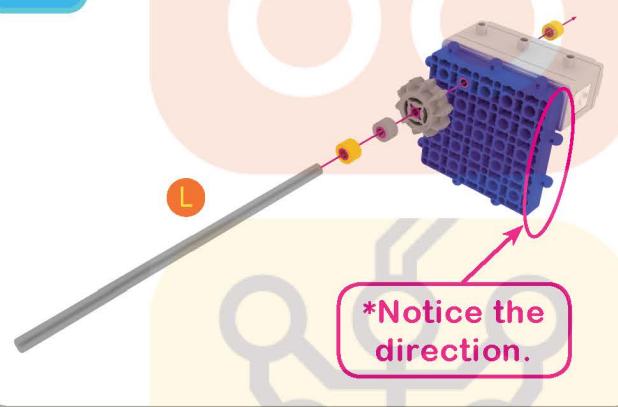
13



14



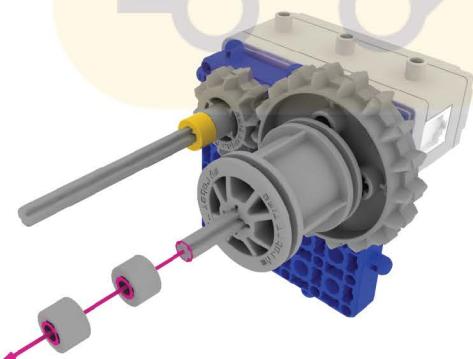
15



Gear × 1 + × 1 — L-Shaft × 1

0 × 1

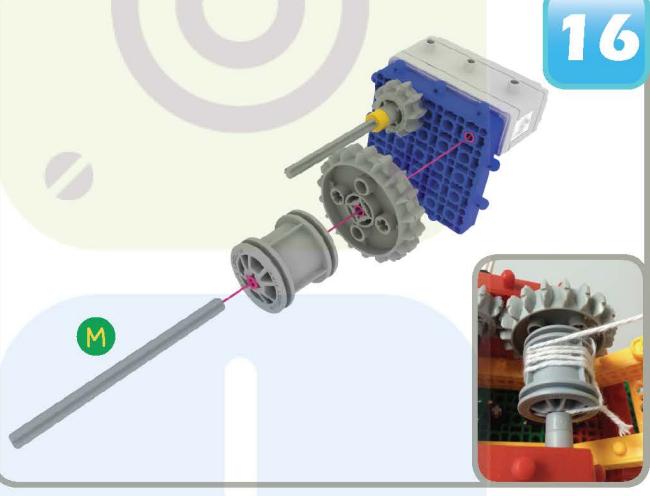
17



+ × 2

Technic L-plate × 1 Technic Pin × 1

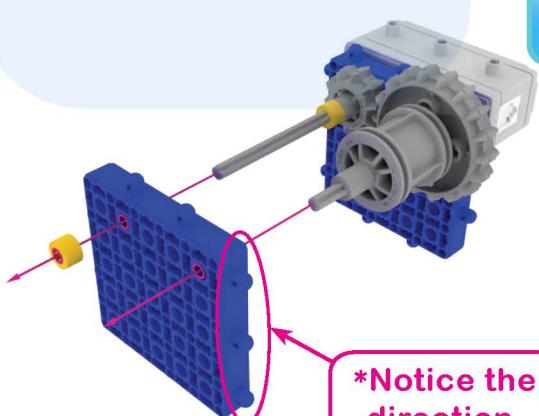
16



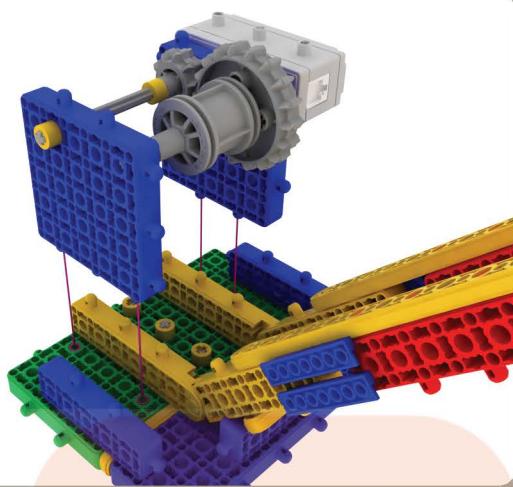
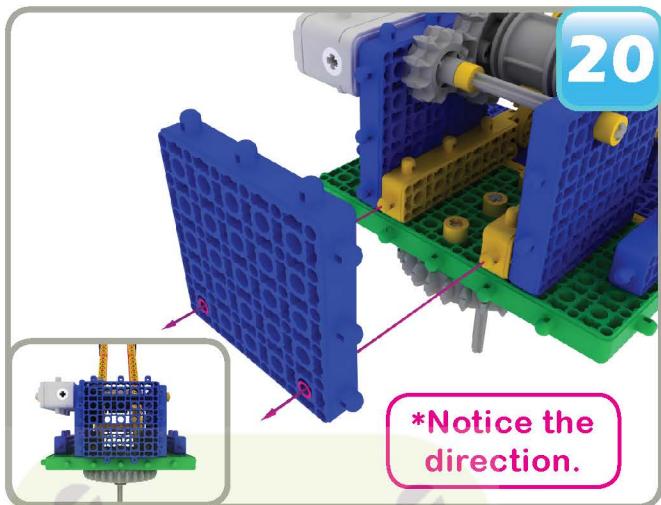
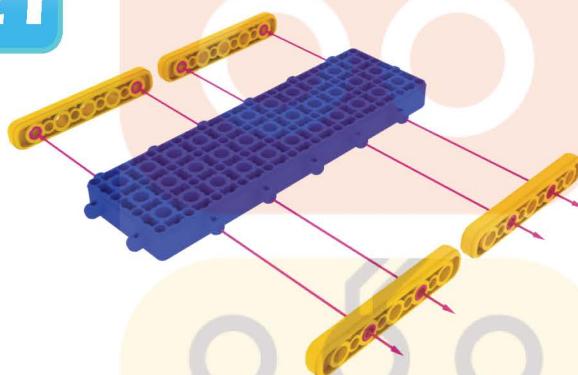
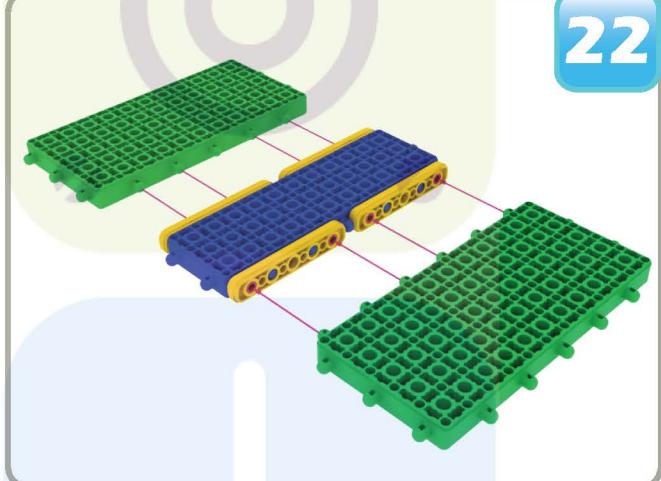
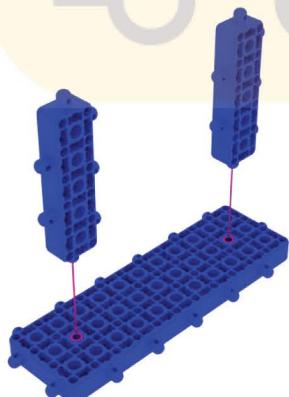
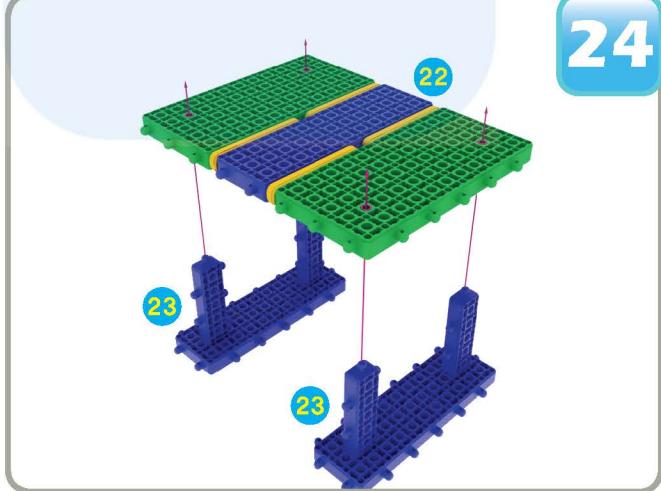
Gear × 1 + × 1 — M-Shaft × 1

0 × 1

18



Technic L-plate × 1 Technic Pin × 1

19

20

21

22

23

24


x2 **x4**

25



• ⚡ × 1

20

26



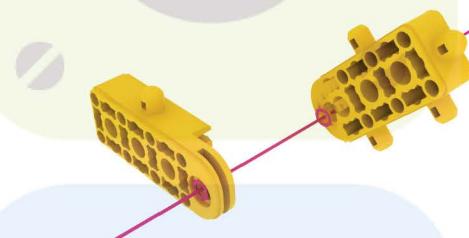
• ⚡ × 1

27



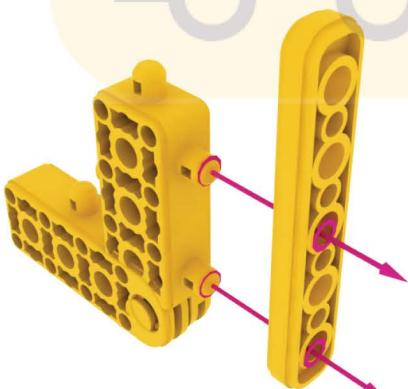
• 🔍 × 3

28



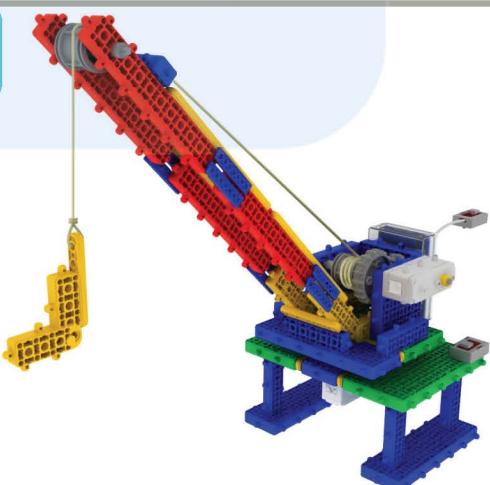
• ⚡ × 1 • ⚡ × 1

29



• ⚡ × 1

OK

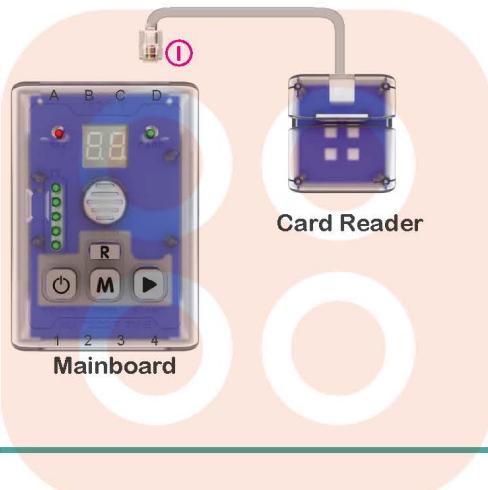




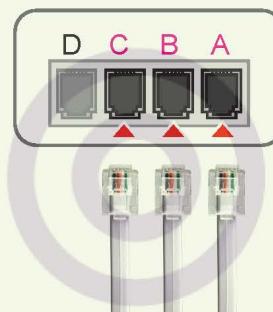
Make robot move

Connect Touch Sensor

- ① Connect Card Reader to connector D.



- ② Connect 3 pcs of touch sensors to connect A, B, C.

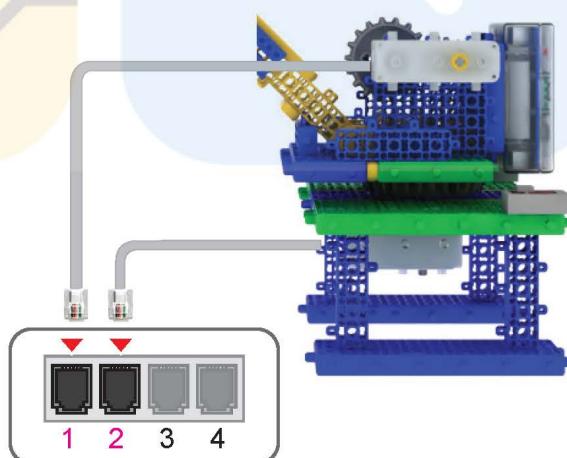


Connect DC Motor

- ① Connect 2 pcs of DC motors to connector 1, 2.



- ② Connect the up and down DC motor to connector 1. Connect the right and left DC motor to connector 2.



Learn how to operate the mainboard



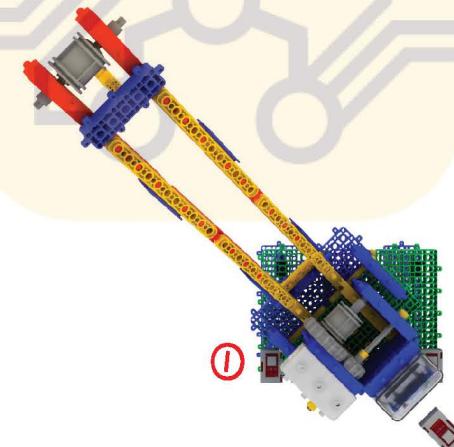
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Crane move

★Multiple Card-005



Action mode



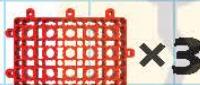
Press No.1 and 2 touch sensors, the crane will move left and right.
Press No.3 touch sensor, crane moves up and down.



Fishing-Rod



Part List



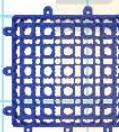
x3



x4



x2



x1



x4



x2



x4



x5



x1



x4



x4



x2



x1



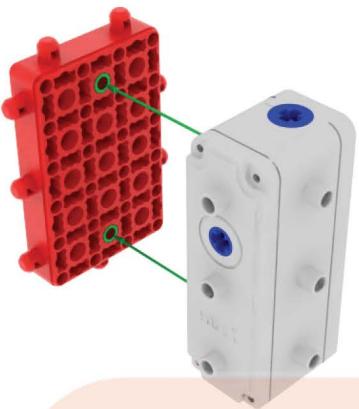
x1



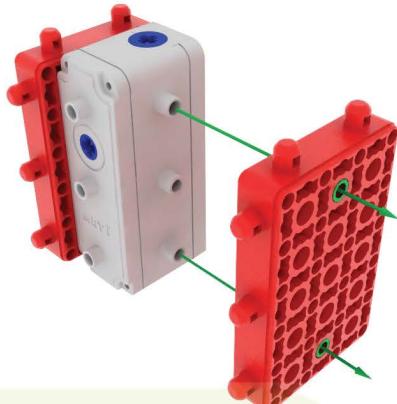
x1



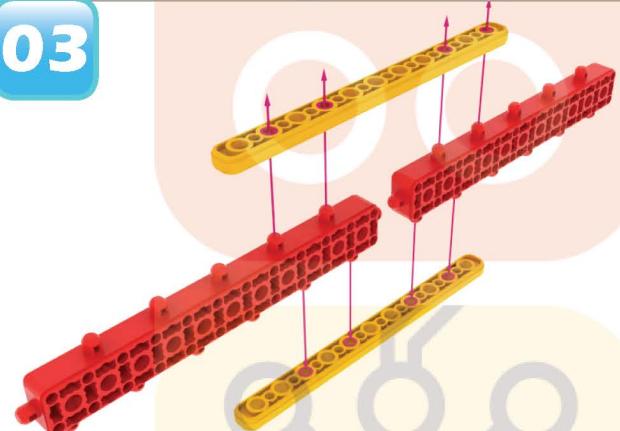
x1

01

× 1 × 1

02

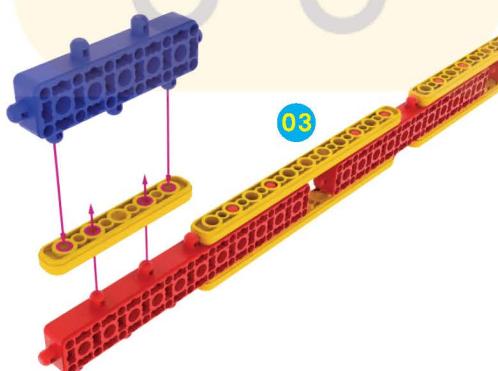
× 1

03

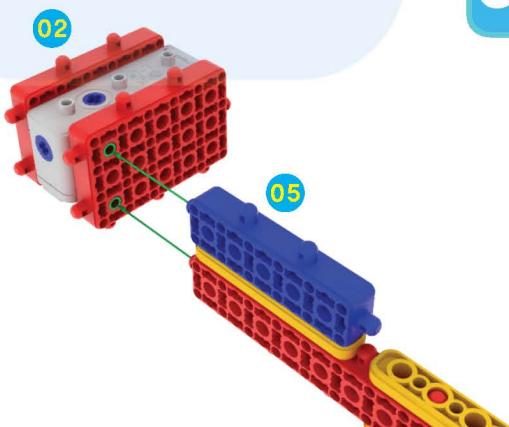
× 2 × 2

04

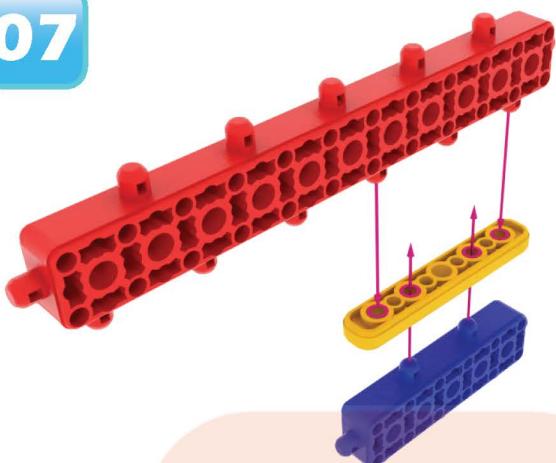
× 1 × 2

05

× 1 × 1

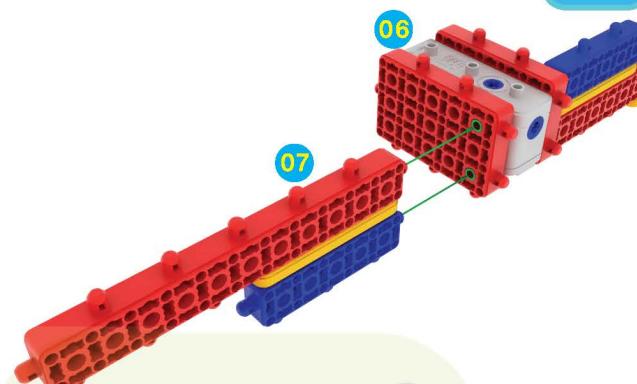
06

07

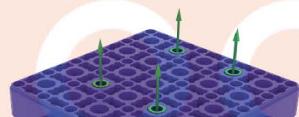


× 1 × 1 × 1

08



09

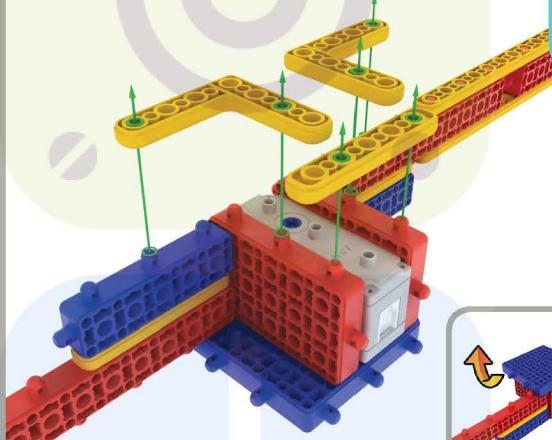


11



× 1

10



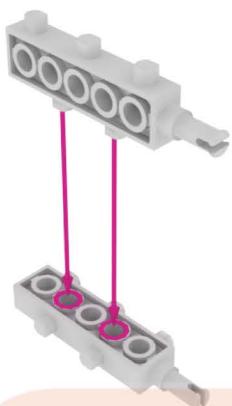
× 2 × 1

12



× 1 × 2 × 1

13



x2

Technic Beam 5x1x2 x4

15



12

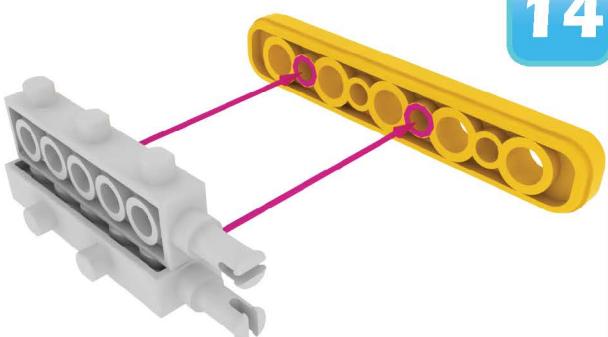
14

17



L x2

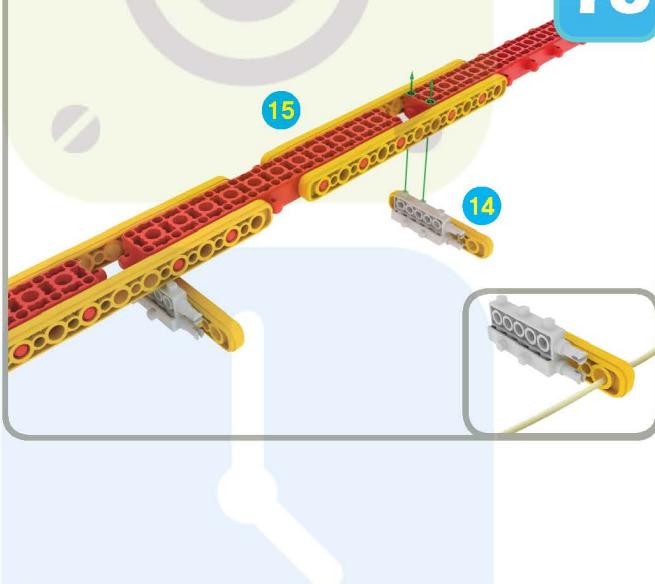
14



x2

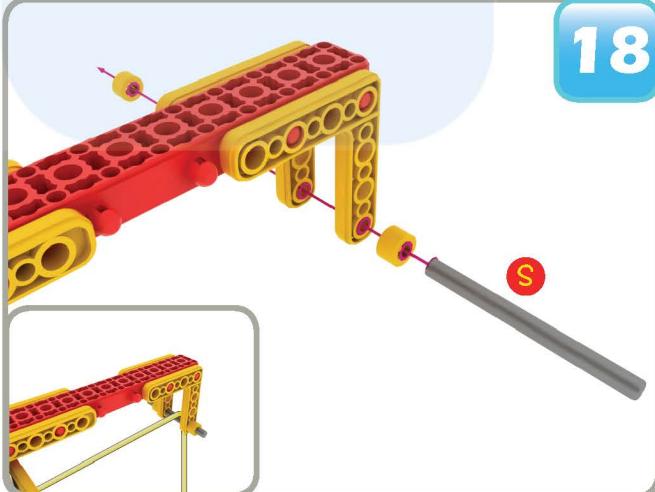
Technic Beam 5x1x2 x2

16



15

14

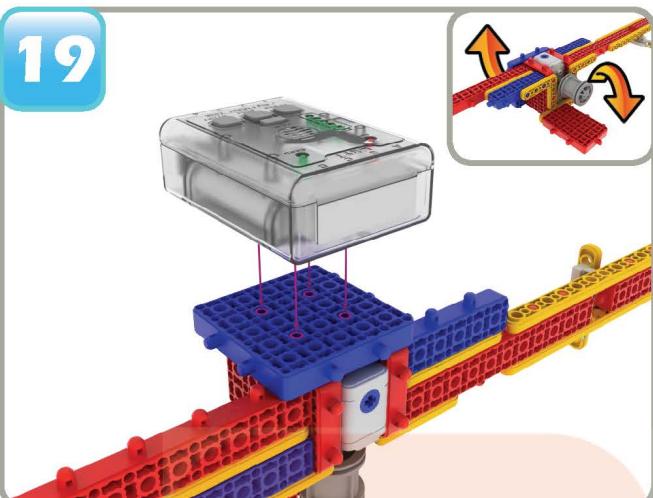


S-Shaft x1

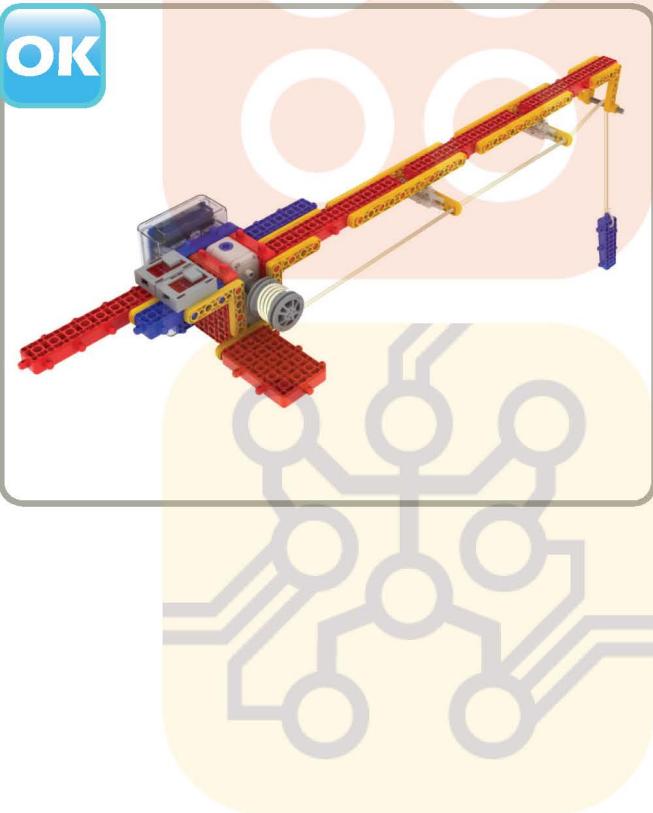
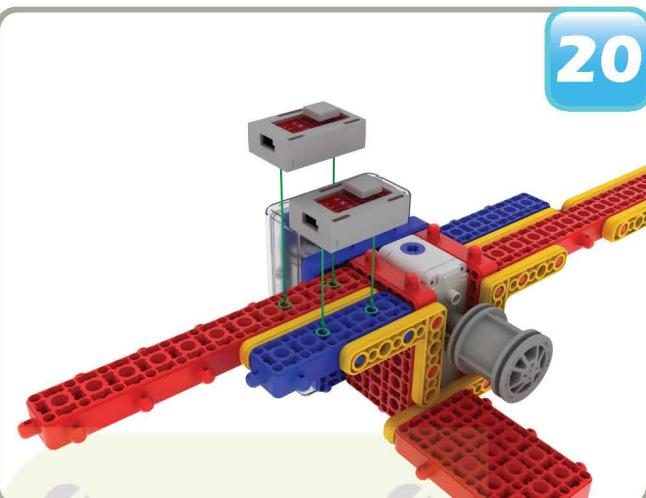
+ x2

S-Shaft

1:1

19

x 1

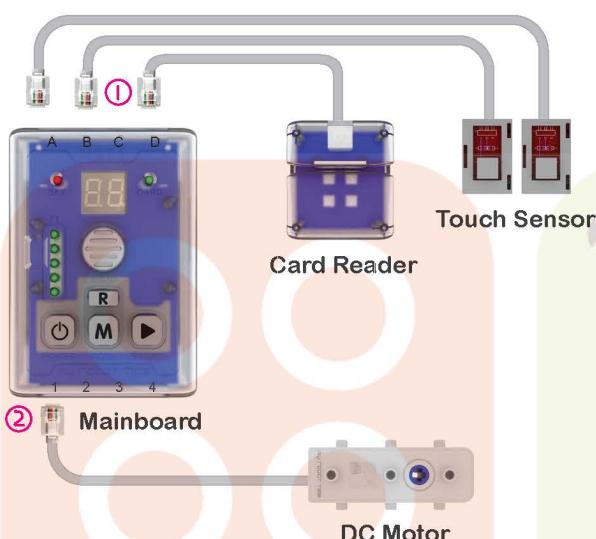
OK**20**

x 2

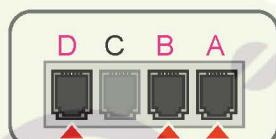


Make robot move

Connect mainboard



① Connect card reader to connector D, and connect touch sensors to connector A, B.



② Connect DC motor to connector 1.



Learn how to operate the mainboard



1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Fishing-Rod move

Multiple Card-006



Action mode



Press touch sensor 1, 2, the fishing-rod will move up and down.



Gear theory

The device communicate between two or more than two axis rotation to transfer power.

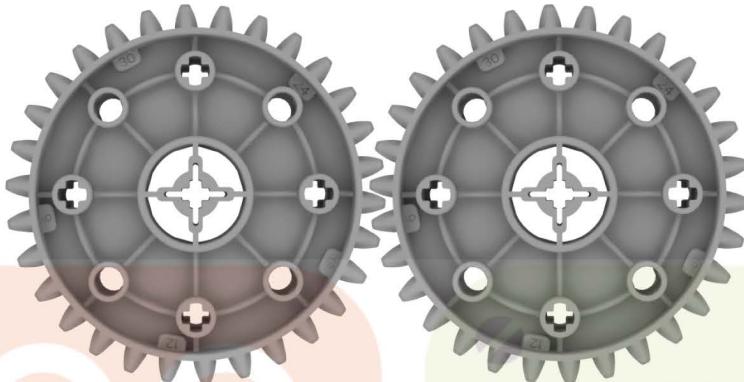


Find out some things with gears around us.

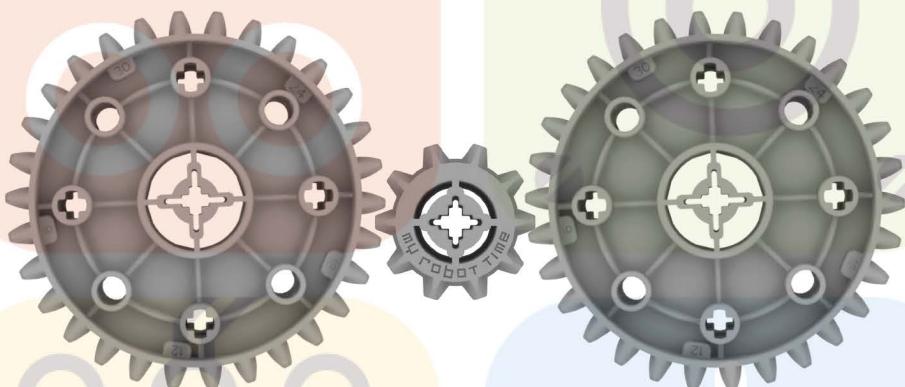




learn about the gear rotating direction.



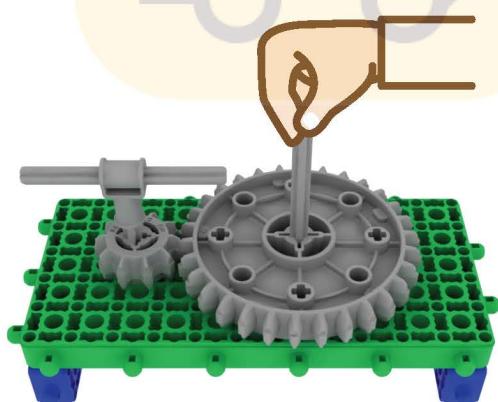
The direction of these two gears are (same / different).



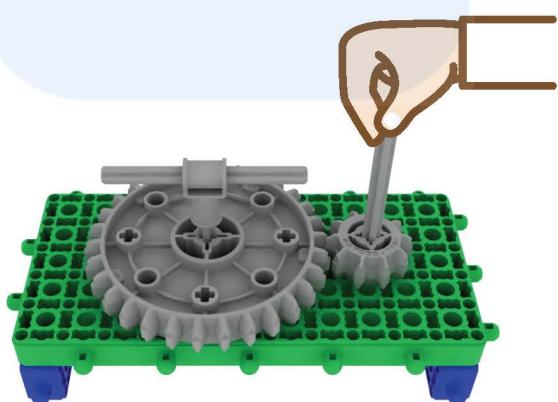
The direction of these two big gears are (same / different).



Assemble gears with blocks together and learn about the rotation speed to know which one is faster.



The speed of small gear is (fast / slow).



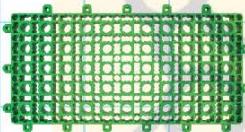
The speed of big gear is (fast / slow).



Mixer



Part List

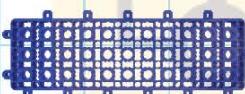


×4



×2

○ ×6



×4



×4

○ ×10



×4



×1

■ ×4

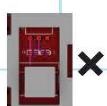


×4



×1

— ×4



×1

L ×4



— ×1

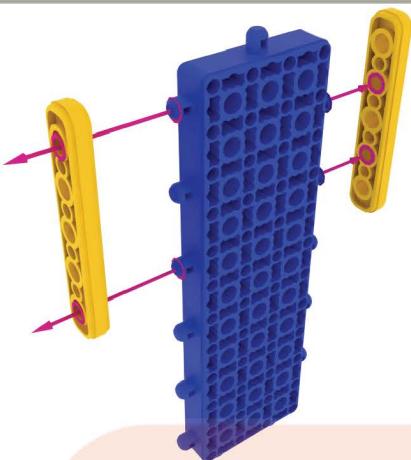


— ×4

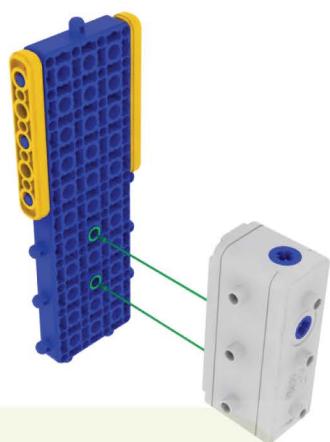


— ×2

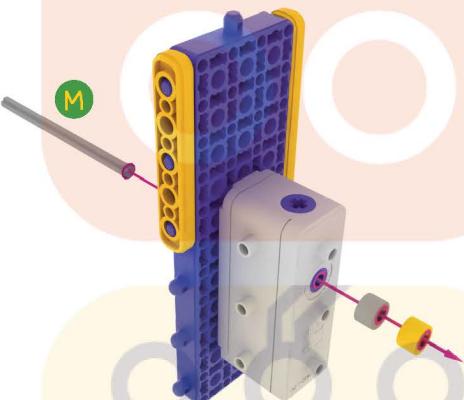
01



02

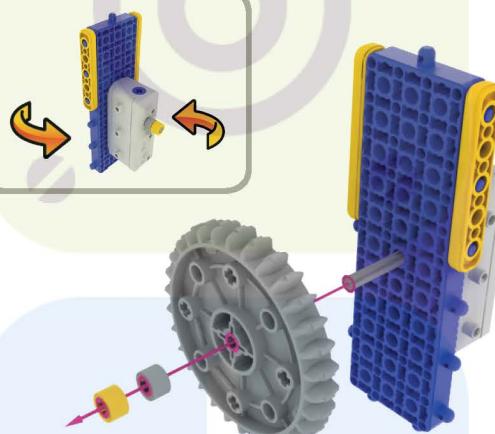


03



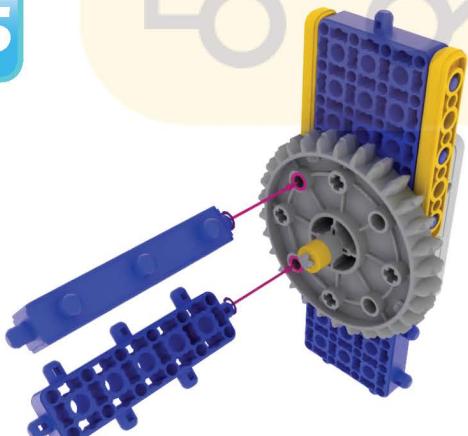
M-Shaft × 1 ⚡ × 1 ⚪ × 1

04



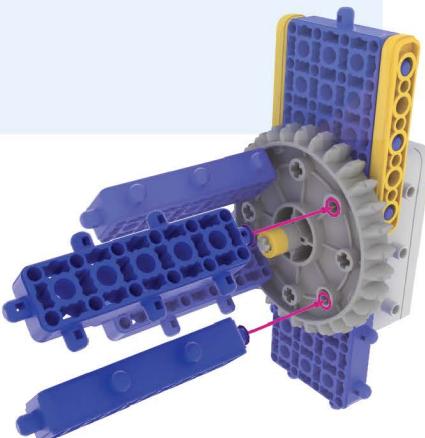
⚡ × 1 ⚪ × 1

05



L-beam × 2

06

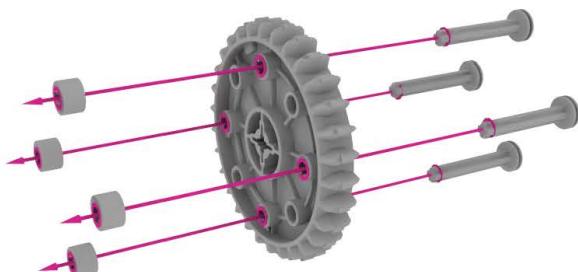


L-beam × 2

M-Shaft

1:1

07

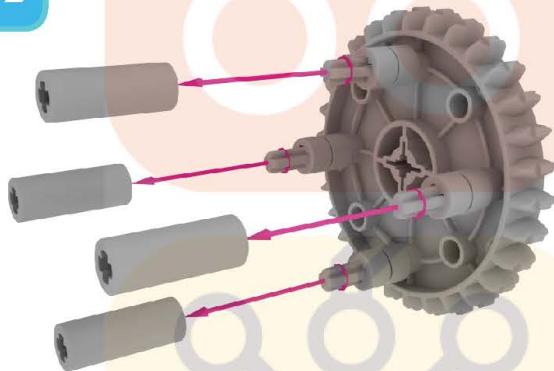


● ×1

— ×4

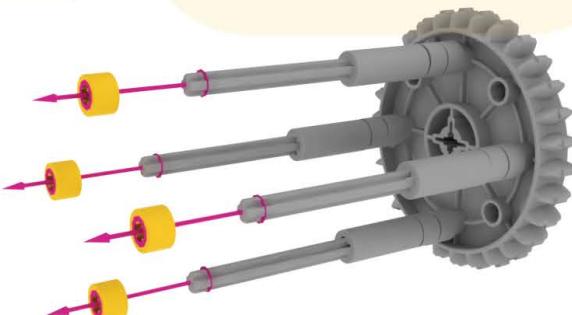
⊕ ×4

09



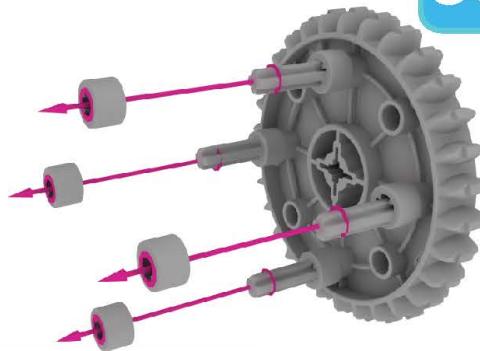
— ×4

11



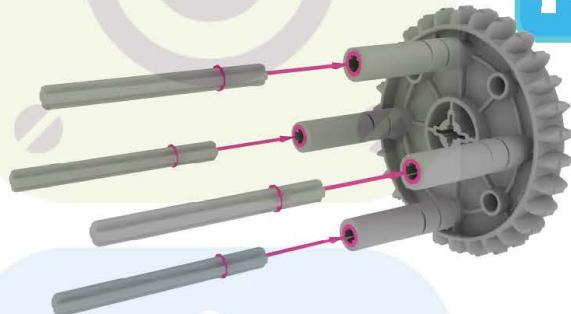
⊕ ×4

08



⊕ ×4

10



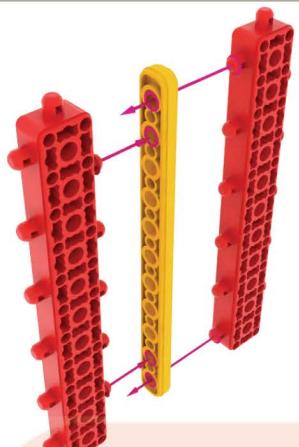
S-Shaft ×4

12



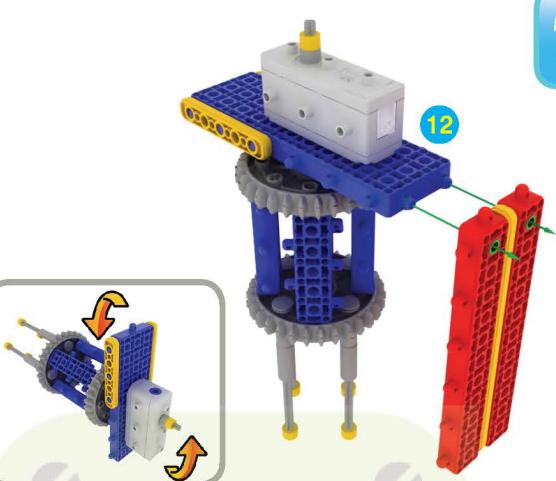
06

13

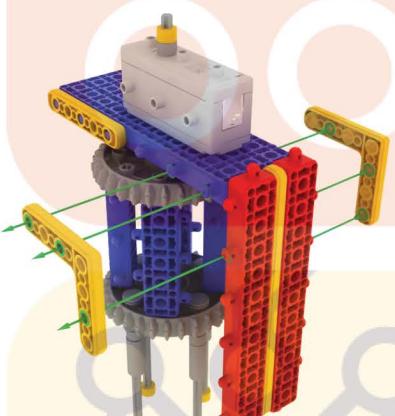


× 2 × 1

14

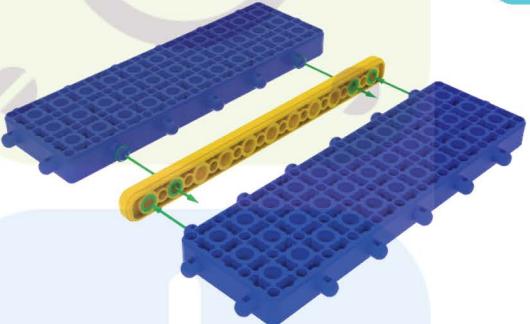


15



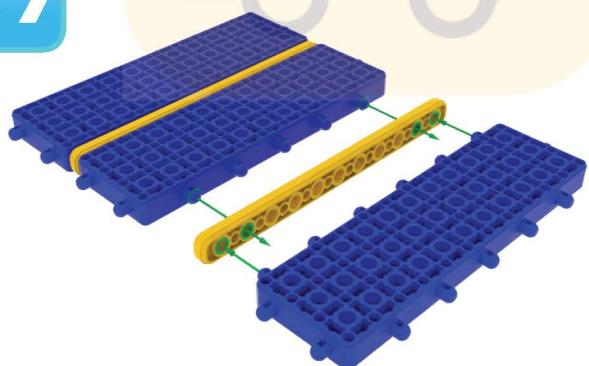
× 2

16



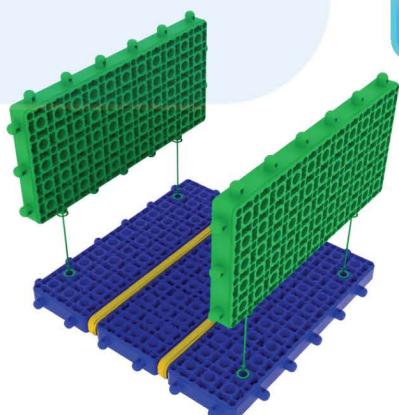
× 2 × 1

17



× 1 × 1

18

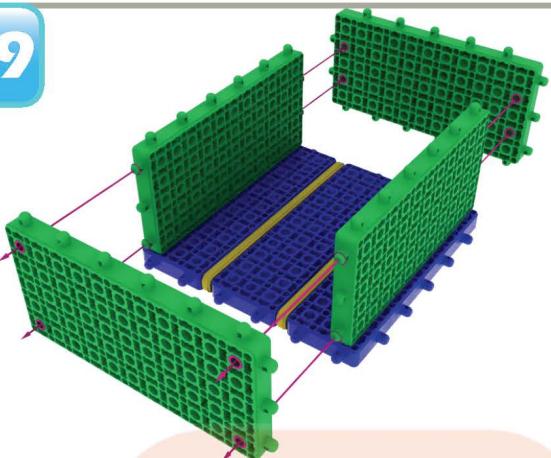


× 2

S-Shaft

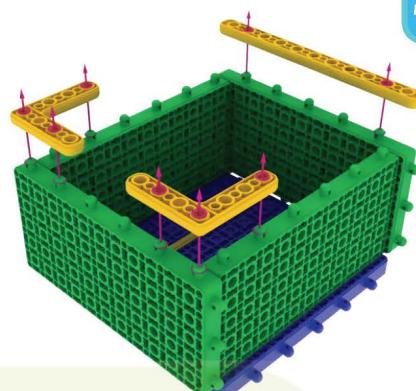
1:1

19



green panel $\times 2$

20

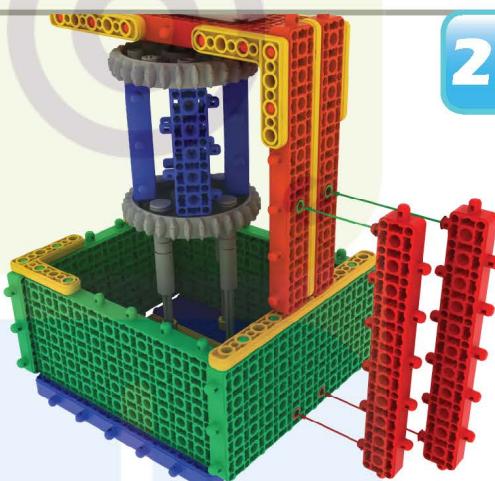


L $\times 2$ — $\times 1$

21

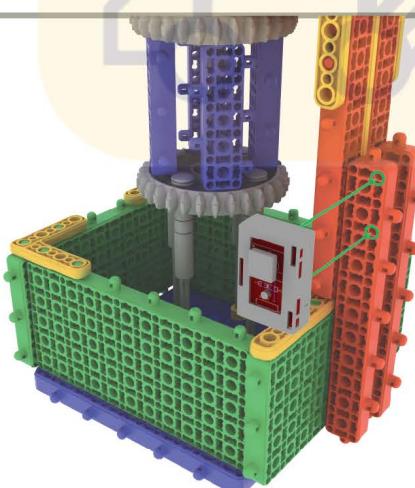


22



red panel $\times 2$

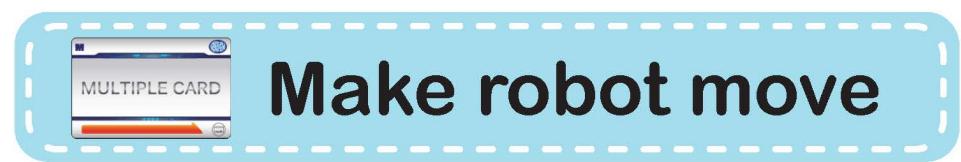
23



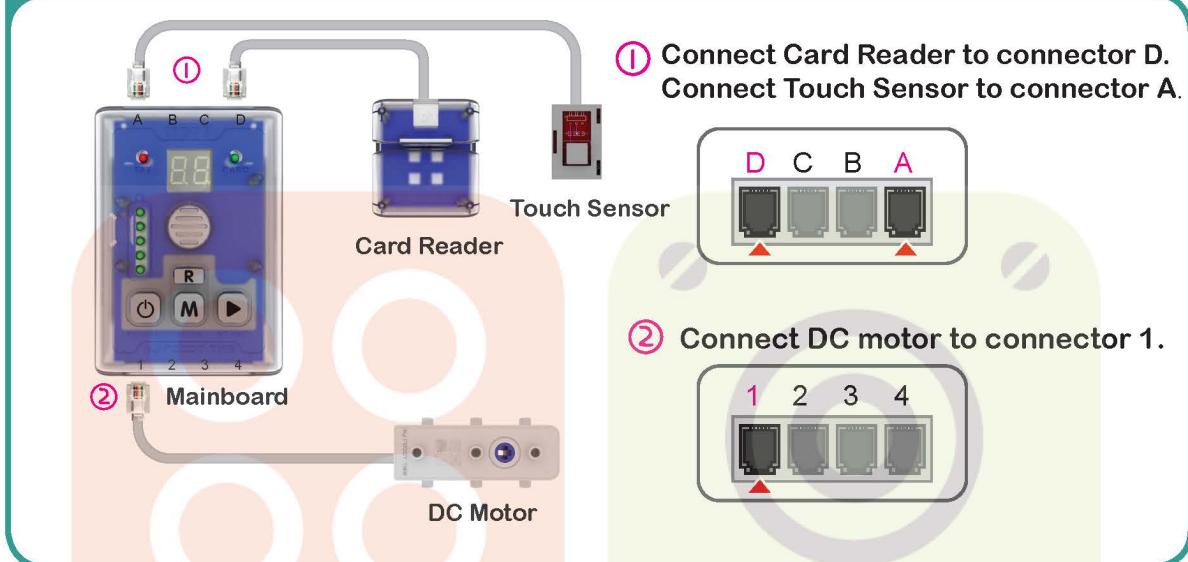
red panel $\times 1$

OK

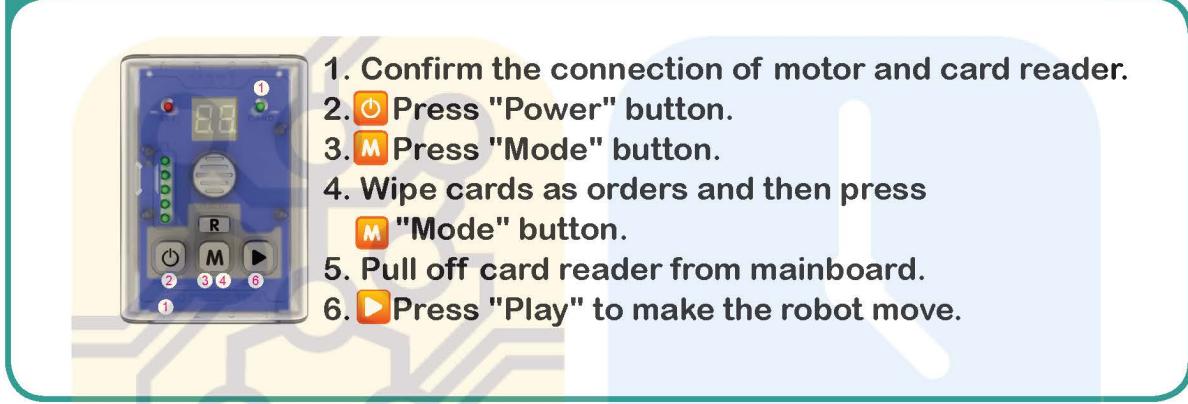
control panel $\times 1$



Connect mainboard



Learn how to operate the mainboard

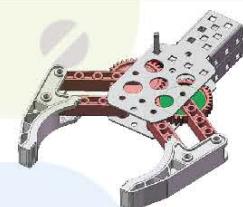


Let Mixer move





Robot-Arm



Part List

×8

×2

×2

×2

×3

M-Shaft ×1

×3

×1

×1

×1

×3

S-Shaft ×1

×2

×5

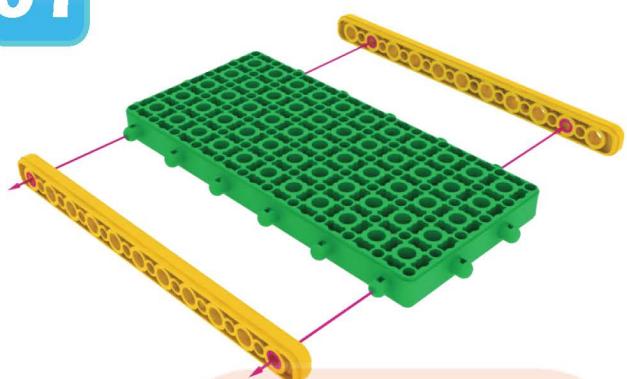
×2

×2

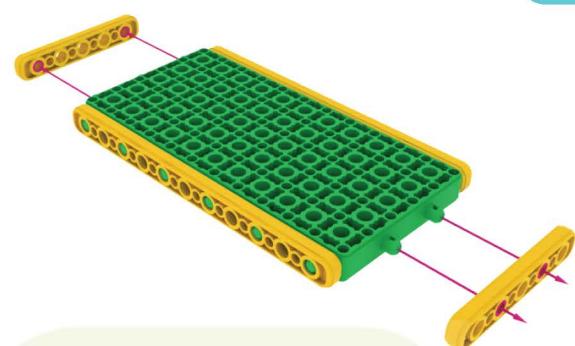
×4

×2

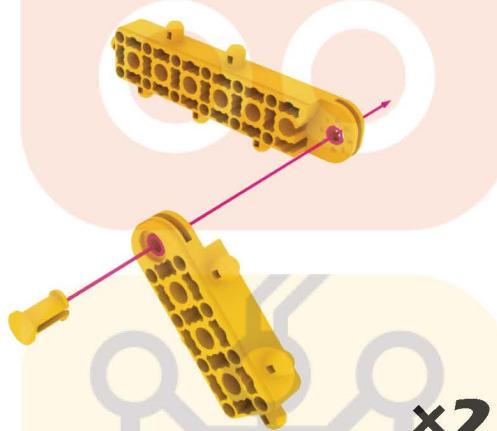
01



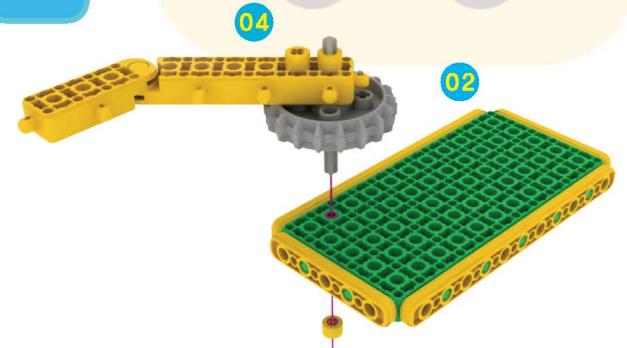
02



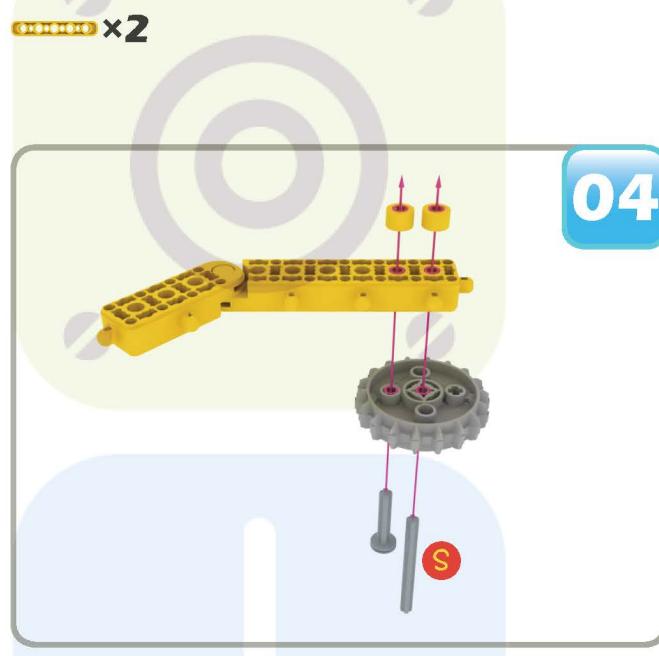
03



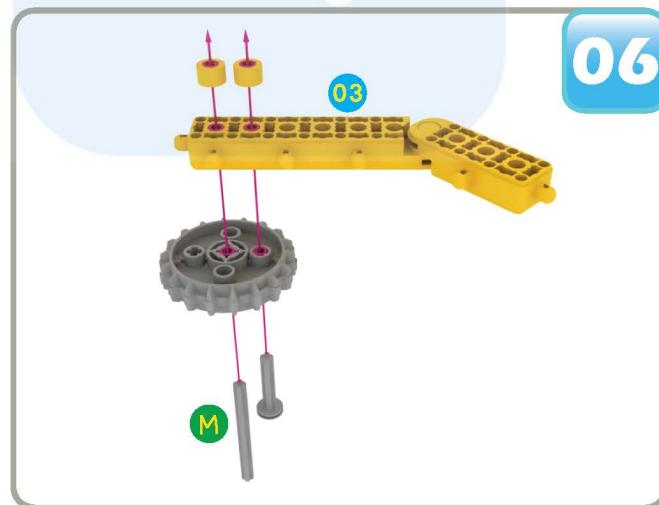
05



0+ × 1



06



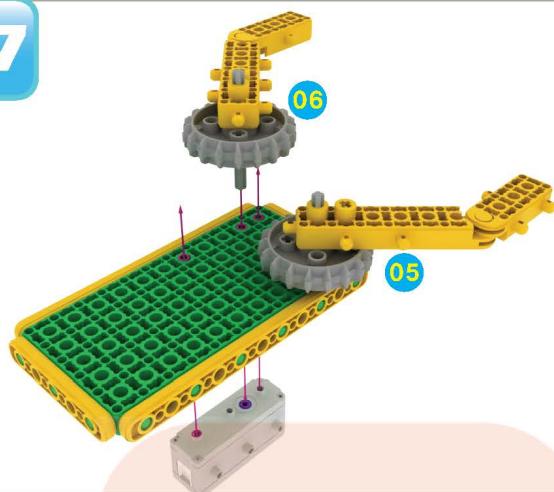
0+ × 1 03 M 0+ × 2 M-Shaft × 1 M-Shaft × 1

S-Shaft

M-Shaft

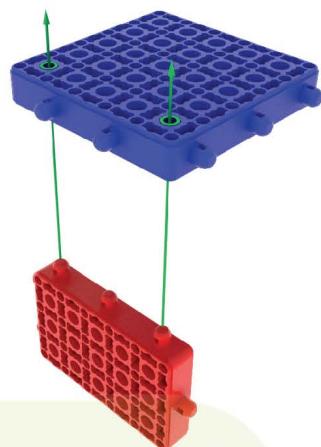
1:1

07



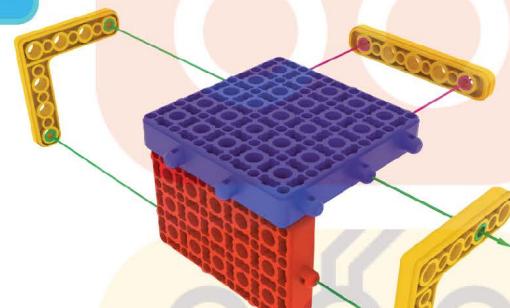
 × 1

08



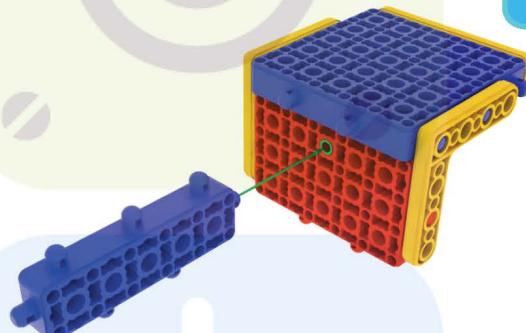
 × 1  × 1

09



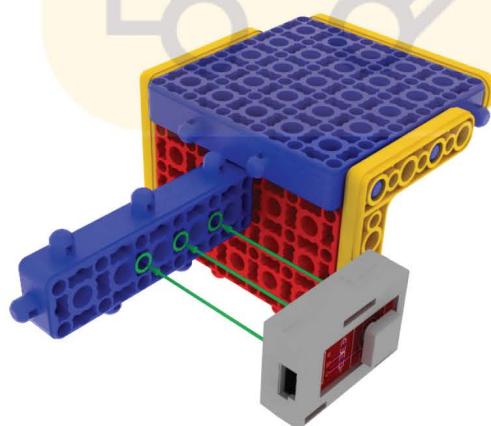
 × 2  × 1

10



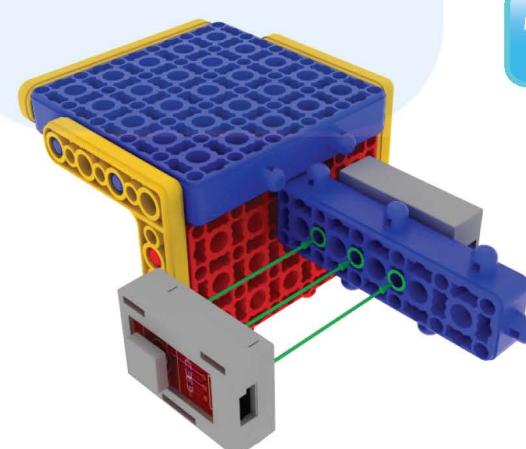
 × 1

11



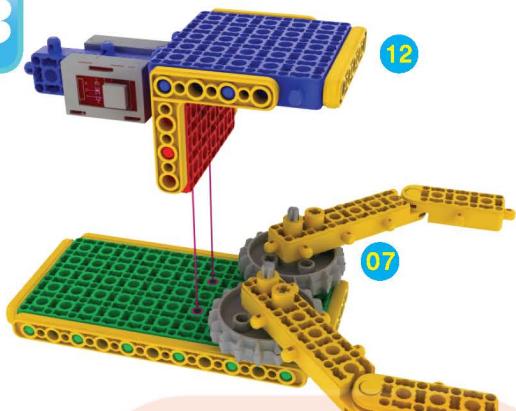
 × 1

12

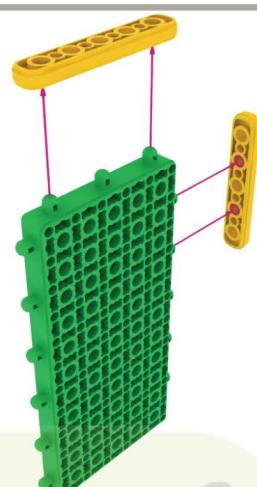


 × 1

13

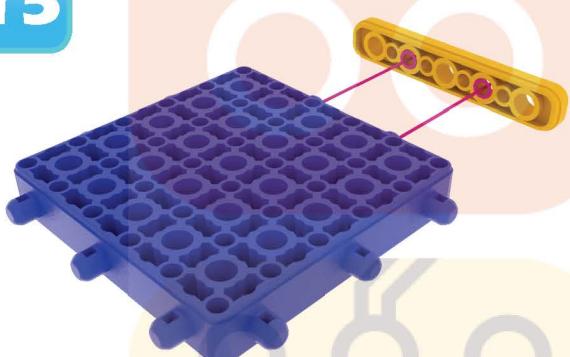


14



x2

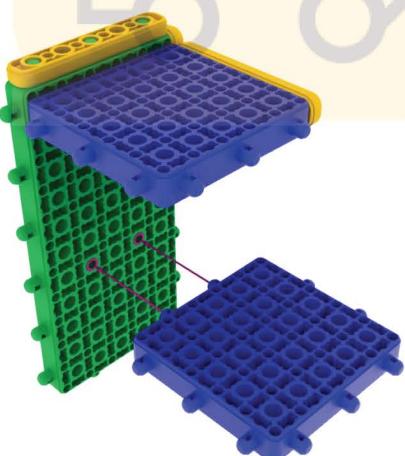
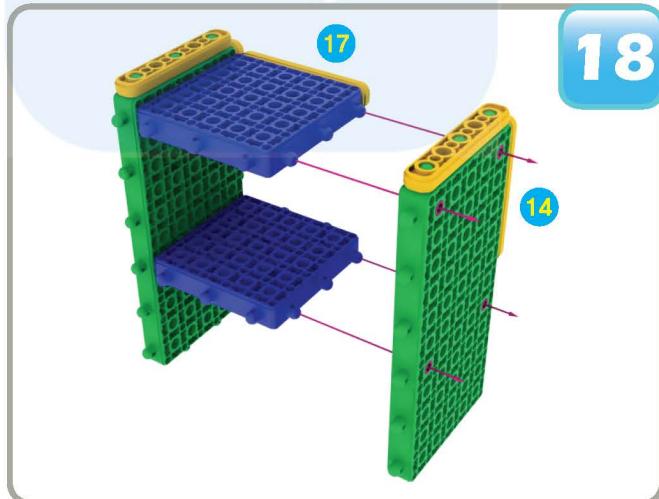
15



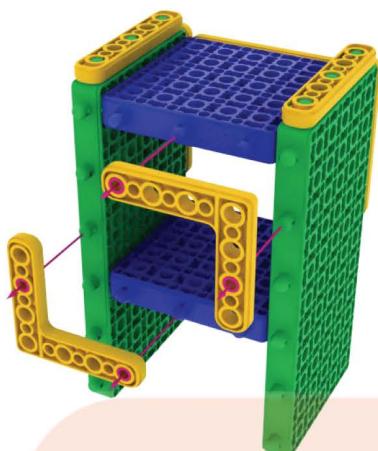
16



17

19



L ×2

21

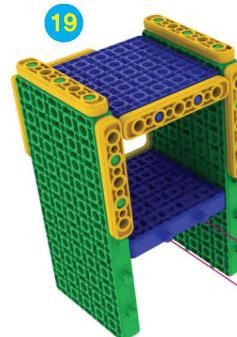


██████ ×2

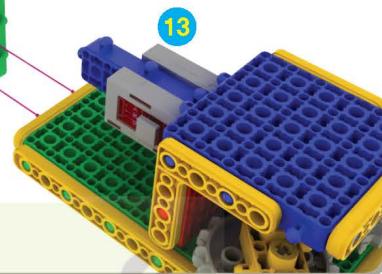
OK



19



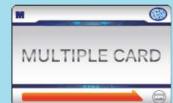
20



22



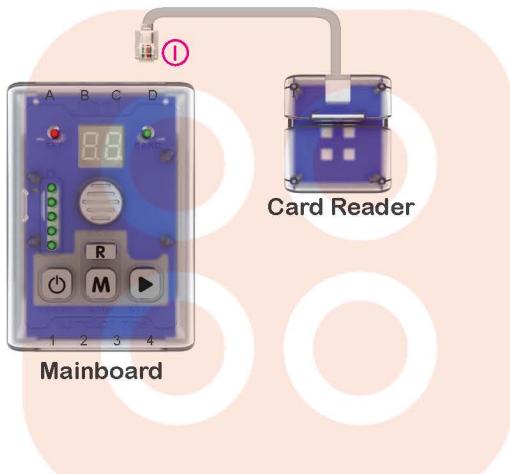
█████ ×1



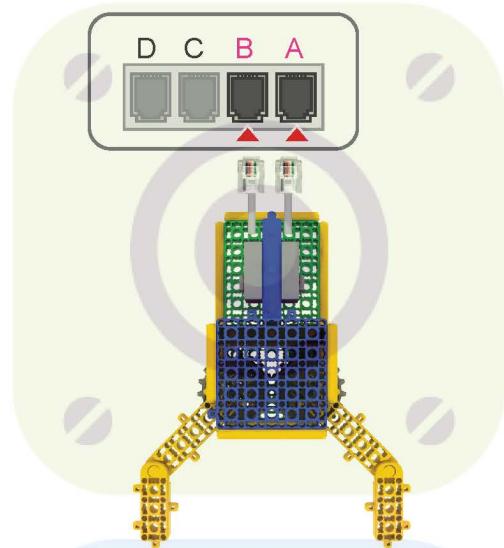
Make robot move

Connect mainboard and touch sensor

① Connect Card Reader to connector D.

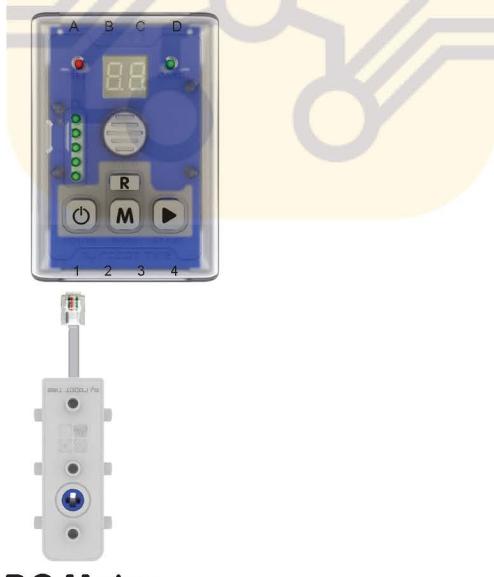


② Connect 2 pcs of touch sensors to connector A, B.



Connect DC motor

Connect DC motor to connector 1.



Learn how to operate the mainboard

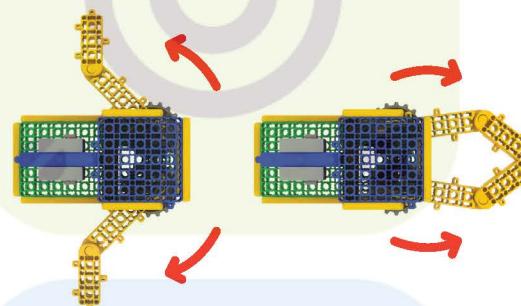


1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Robot-Arm move



Action mode



Press touch sensor 1、2, the robot-arm will open and close.

★ Learn how to use program cards.

① P-025



② P-001



③ P-026



④ P-002



⑤ P-028



⑥ P-009

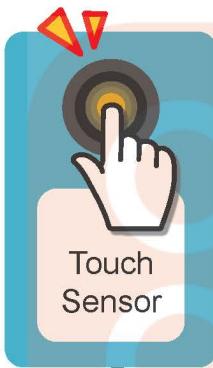


⑦ P-024

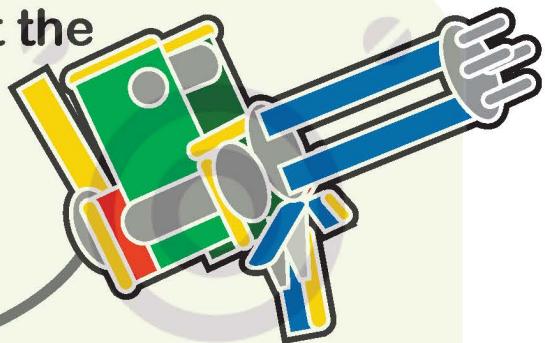




Touch sensor



Press touch sensor
that can export the
program.



Find out some things with touch sensors around us.



The buttons on elevator



Mouse



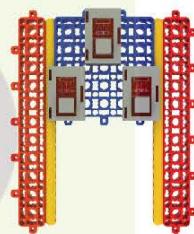
The buttons on remote controller



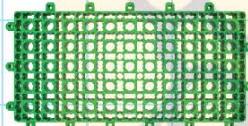
Game machine



Car



Part List



×3



×3



×2



×2



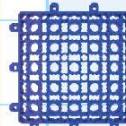
×2



×3



×2



×3



×4



×7



×2



×2



×8



×2



×2



×4



×2



×4



×2



×3



×2

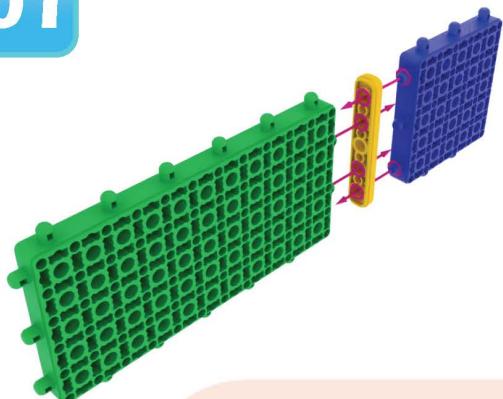


×1

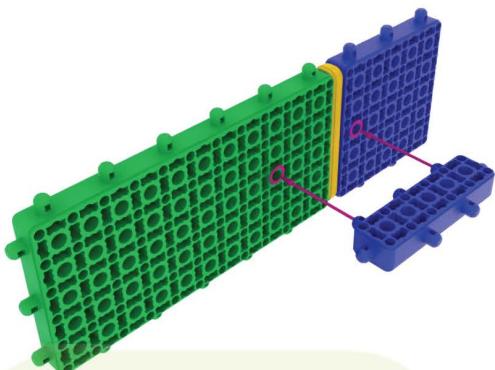


×2

01



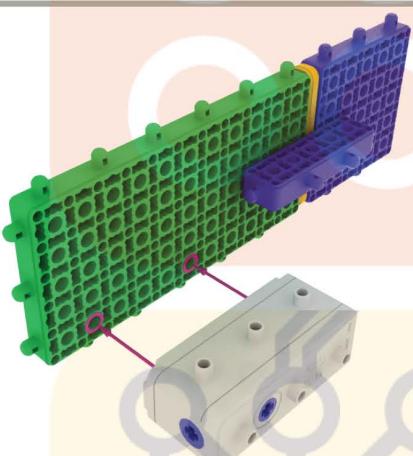
02



x2

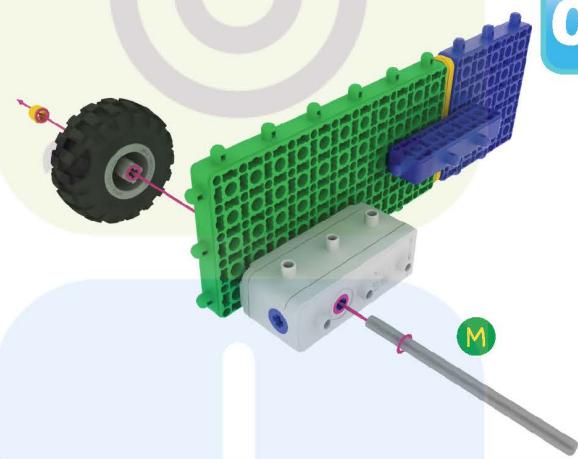
2 × 2 2 × 2 2 × 2

03



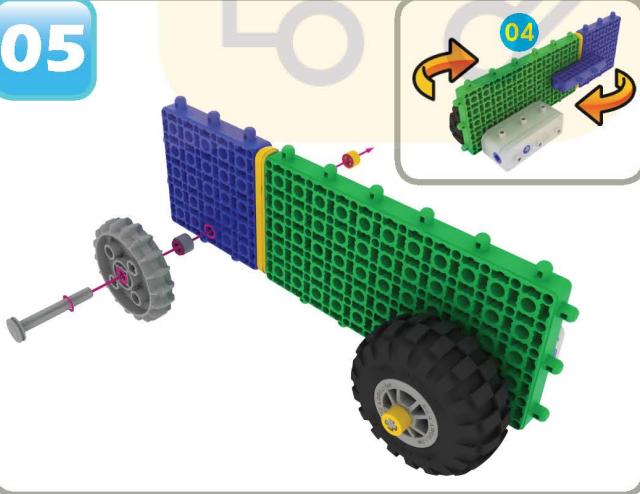
1 × 1

04



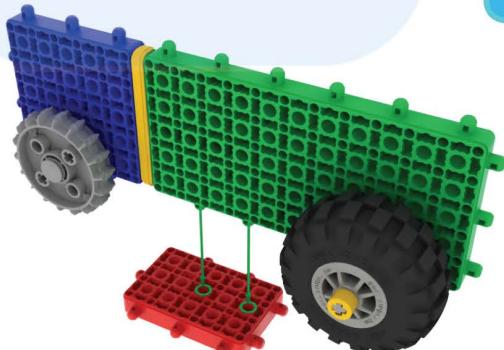
1 × 1 1 × 1 1 × 1

05



1 × 1 1 × 1 1 × 1 1 × 1

06

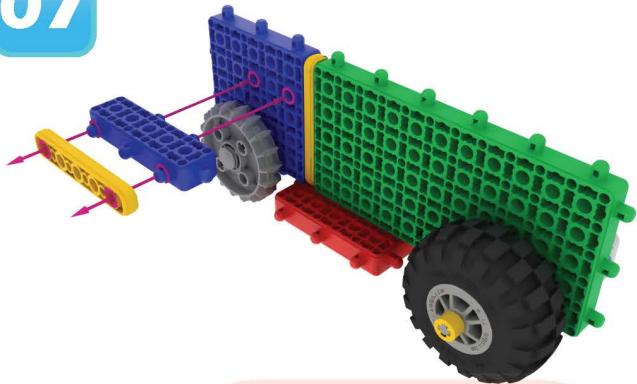


1 × 1

M-Shaft

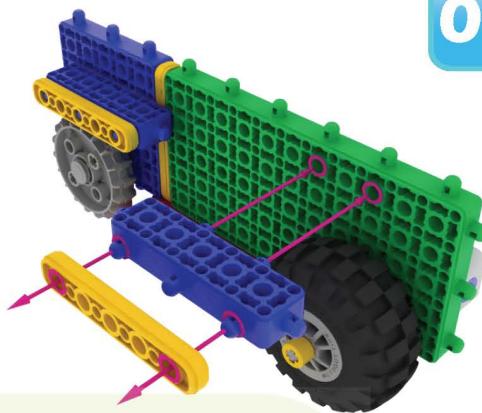
1:1

07



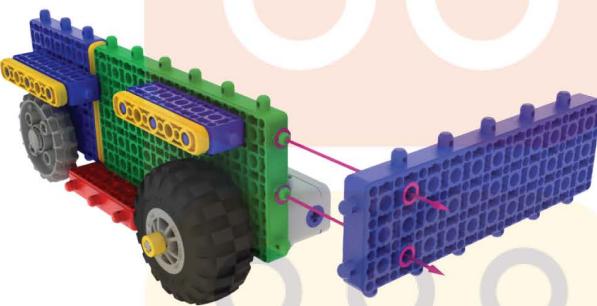
Technic Beam (1x8) x 1 Yellow Technic Beam (1x8) x 1

08



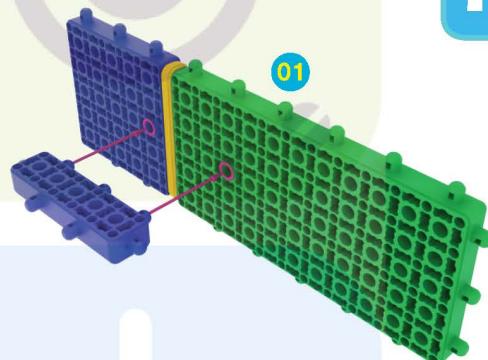
Technic Beam (1x8) x 1 Yellow Technic Beam (1x8) x 1

09



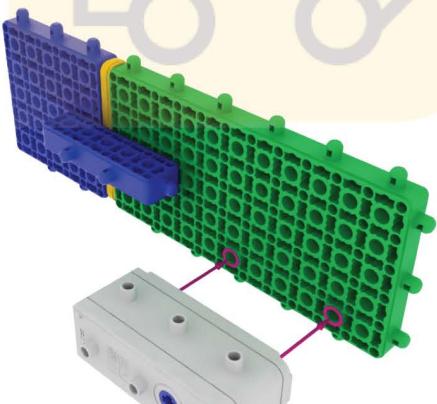
Technic Beam (1x8) x 1

10



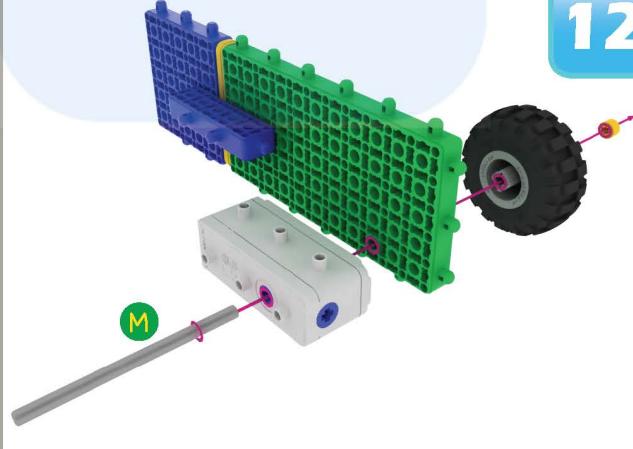
Technic Beam (1x8) x 1

11



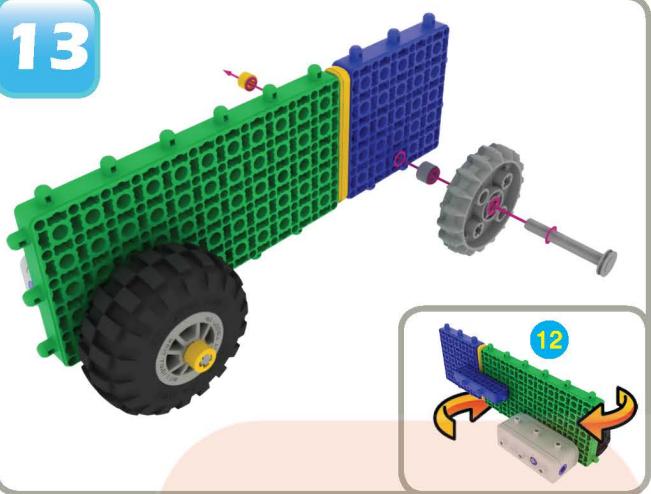
Motor x 1

12



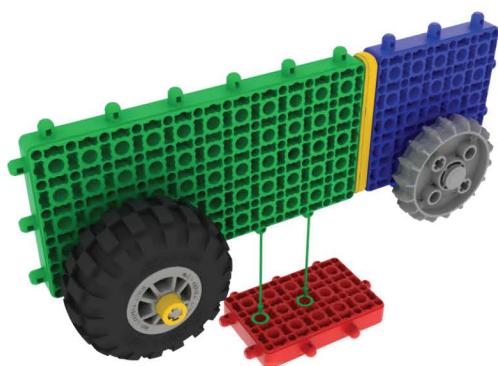
Wheel x 1 M-Shaft x 1 Motor x 1

13



× 1 × 1 × 1 × 1

14



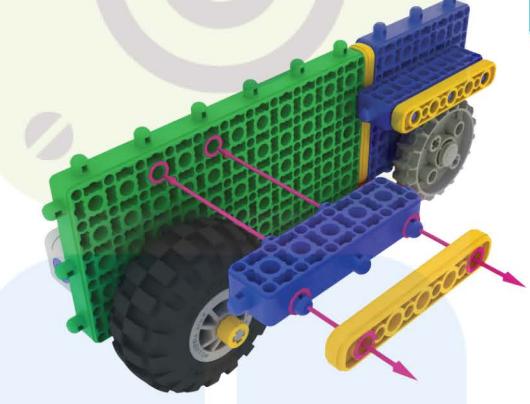
× 1

15



× 1 × 1

16



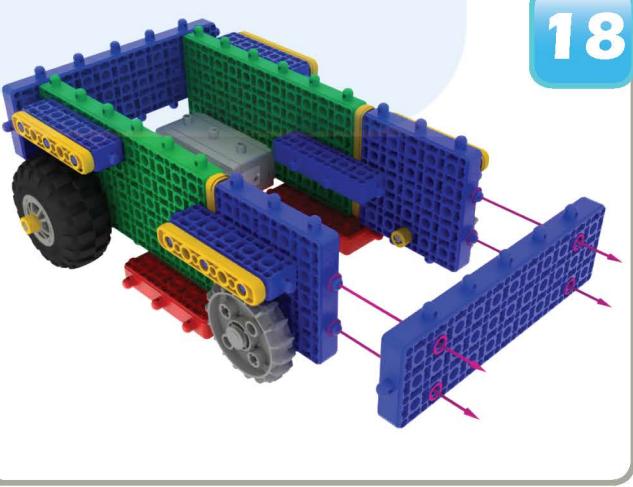
× 1 × 1

17

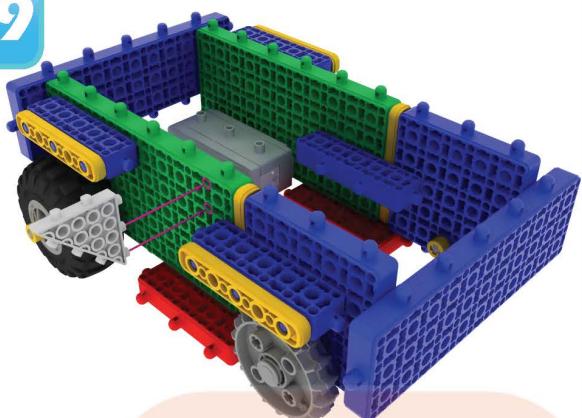


× 1

18

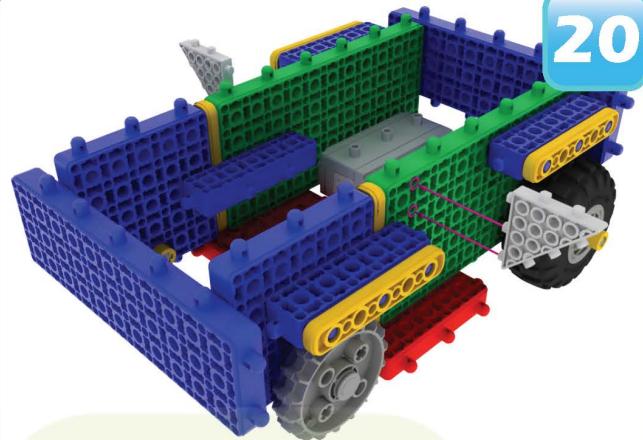


19



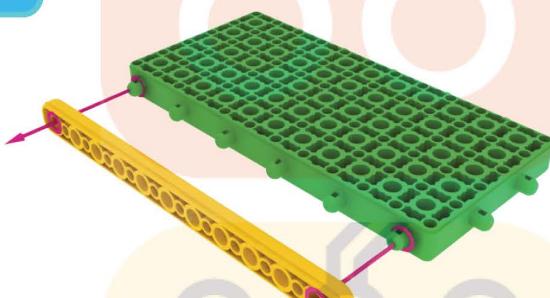
△ ×1

20



△ ×1

21



△ ×1 △ ×1

22

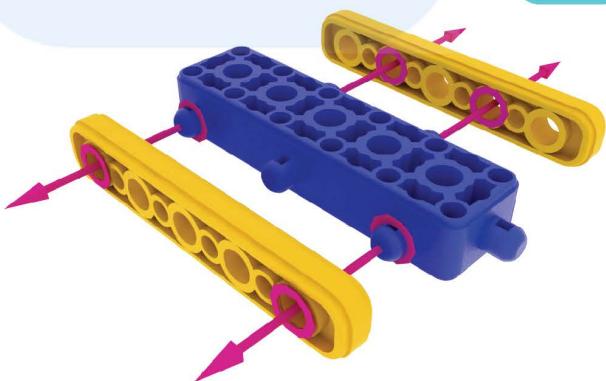


23



△ ×1

24



△ ×1 △ ×2

25

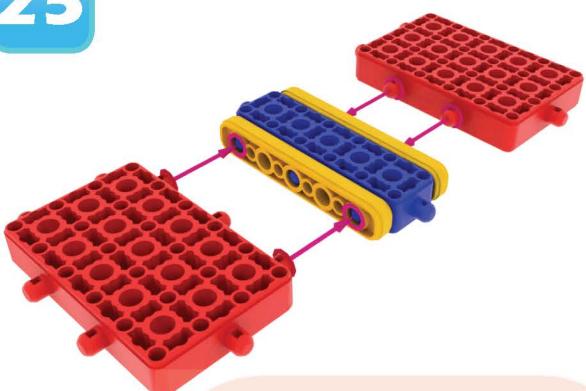
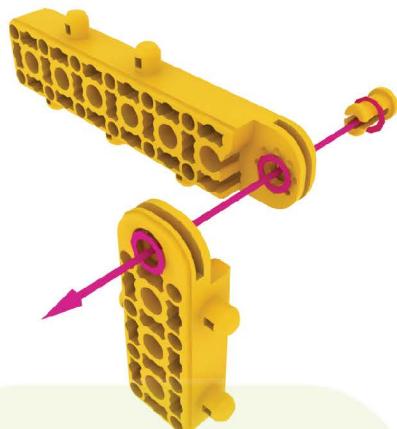


plate ×2

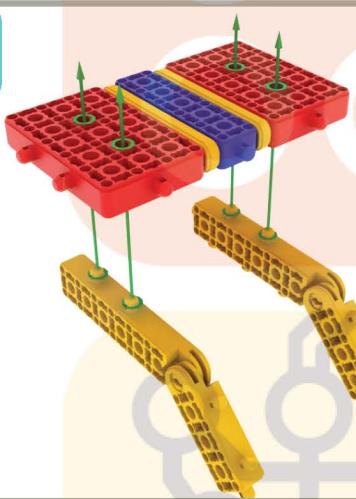
26



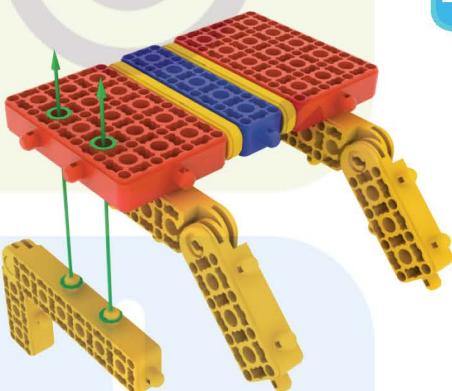
×4

beam ×4 L-connector ×4 connector ×4

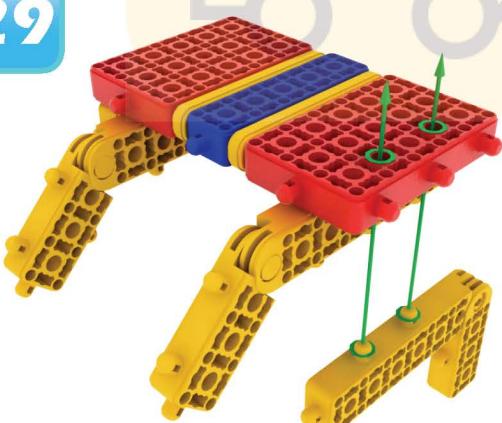
27



28



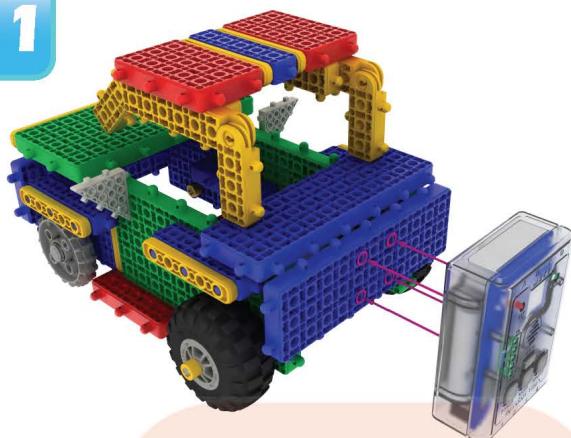
29



30

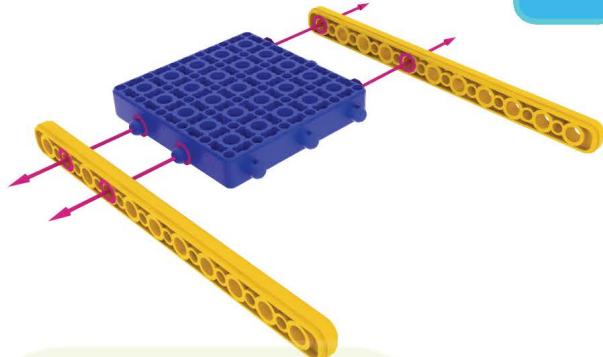


31



 × 1

32



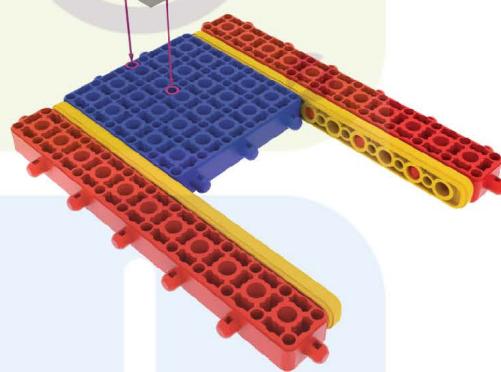
 × 1  × 2

33



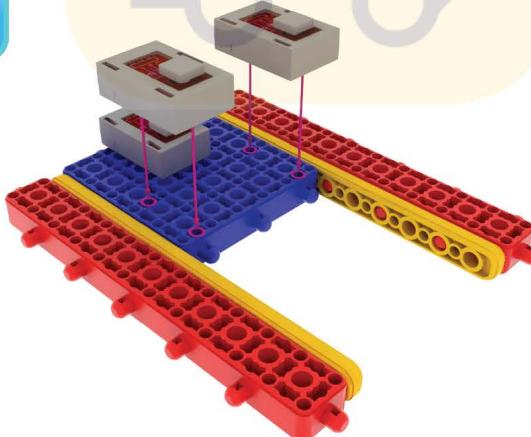
 × 2

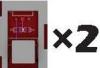
34



 × 1

35



 × 2

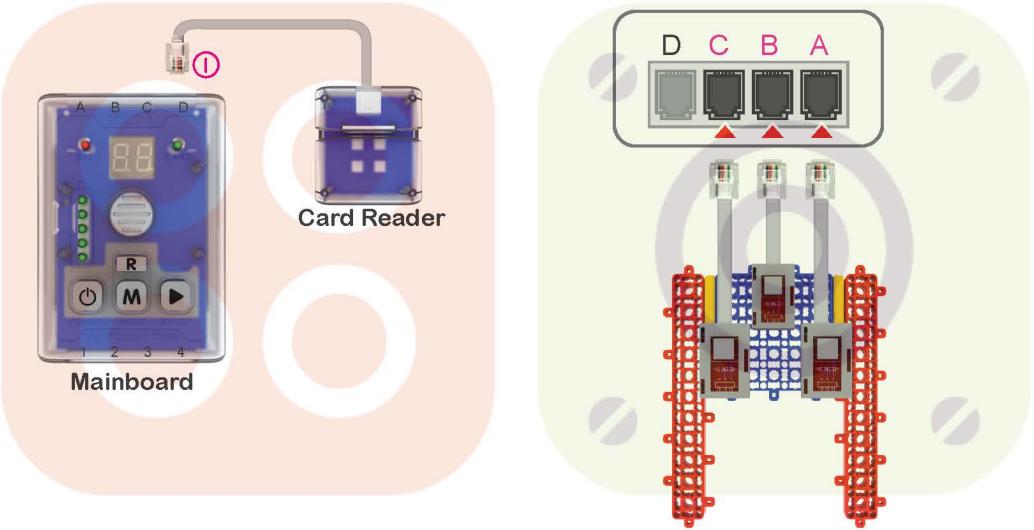
OK





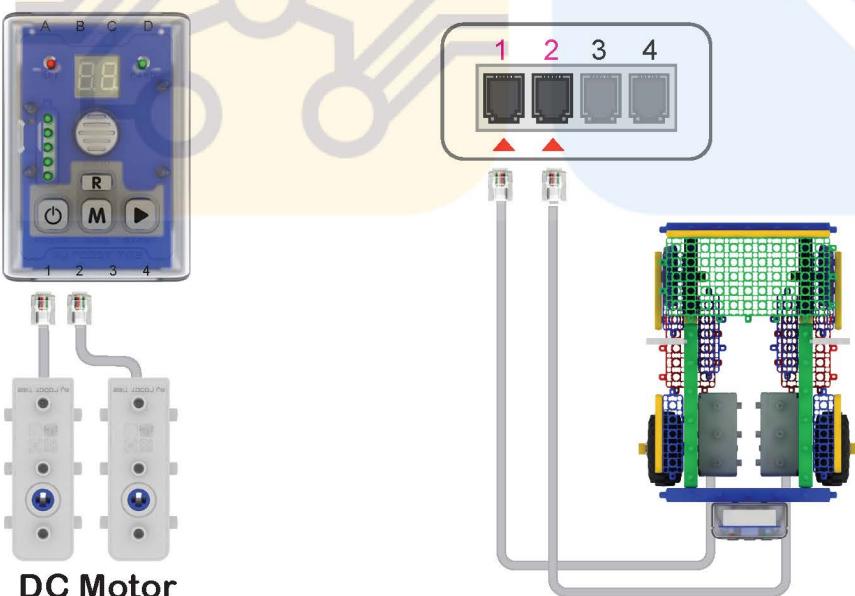
Connect mainboard / touch sensor

- ① Connect Card Reader to connector D.
- ② Connect 3 pcs of touch sensors to connector A, B, C.



Connect DC motor

- ① Connect 2 pcs of DC motors to connector 1, 2.
- ② Connect left DC motor to connector 1, connect right DC motor to connector 2.



Learn how to operate the mainboard



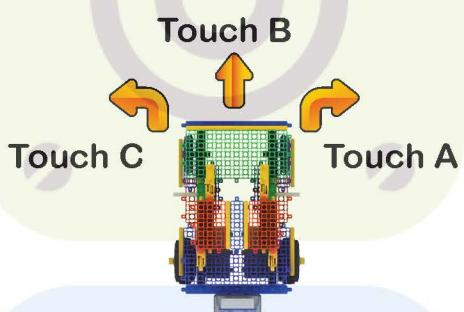
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Car move

★ Multiple Card-009



Action mode



Press touch A、B、C
to control the car.

★ Learn how to use program cards.

① P-026



② P-001



③ P-025



④ P-003



⑤ P-027



⑥ P-004



⑦ P-028



⑧ P-009



⑨ P-024





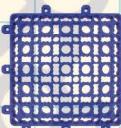
Merry-Go-Round



Part List



×3



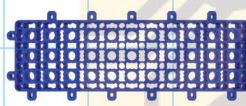
×3



×1



×2



×4



×4



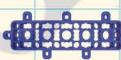
×4



×4



×4



×6



×1



×7



×1



×2



×1



×1



×4



×1



×2



×2



×7



×4



×4



×2



×4



×1



×1



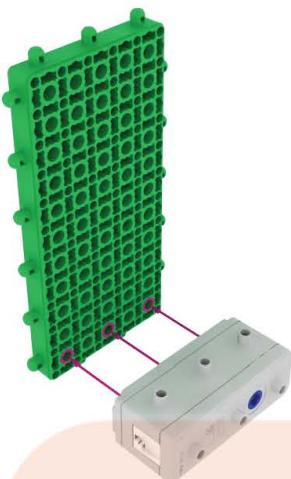
×1

L-Shaft **×2**

M-Shaft **×3**

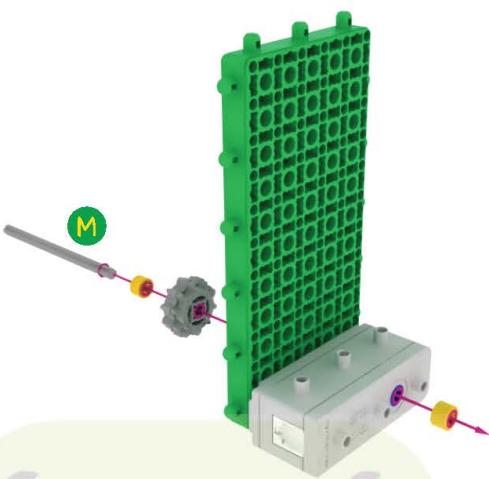
S-Shaft **×3**

01



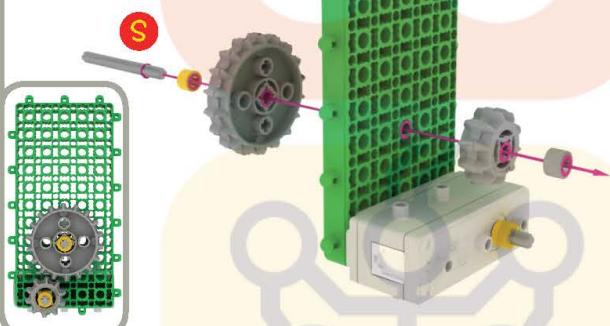
Green Technic frame × 1 Grey S-shaft × 1

02



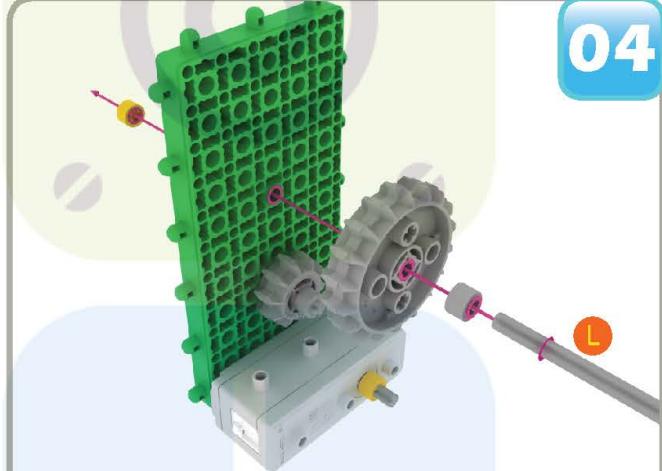
Grey gear × 1 Yellow cross × 2 Grey M-shaft × 1

03



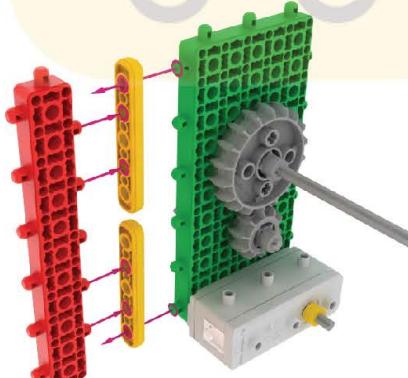
Grey gear × 1 Grey gear × 1 Yellow cross × 1 Yellow cross × 1
Grey S-shaft × 1

04



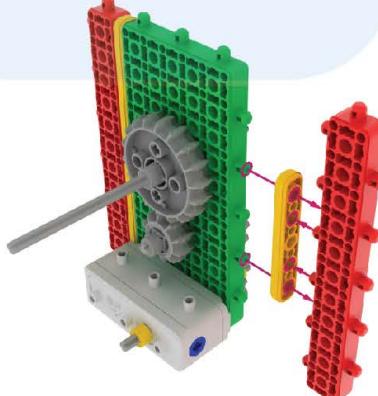
Grey gear × 1 Grey gear × 1 Grey L-shaft × 1
Yellow cross × 1

05



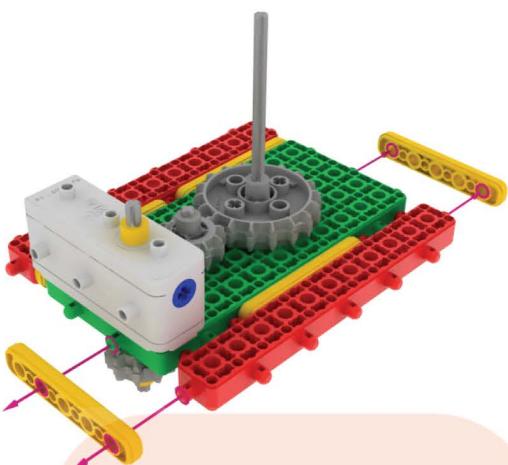
Red Technic beam × 1 Yellow Technic beam × 2

06



Red Technic beam × 1 Yellow Technic beam × 1

07



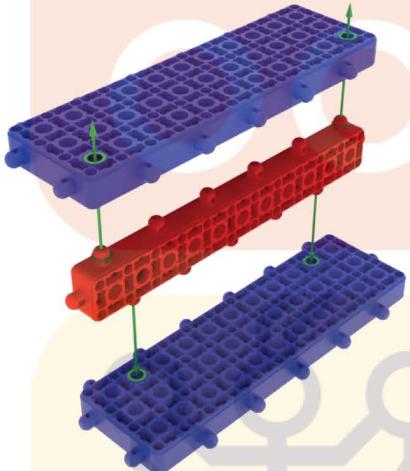
---x2

08



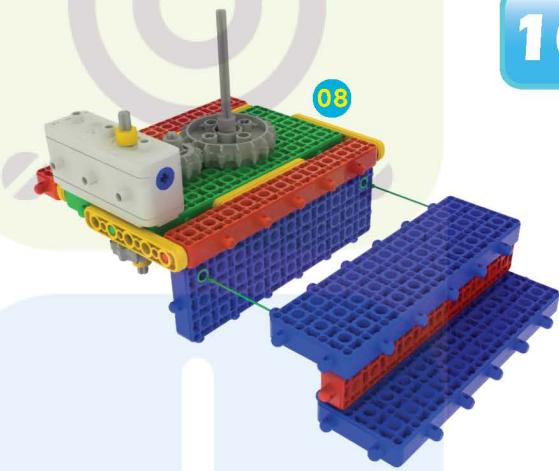
---x1

09

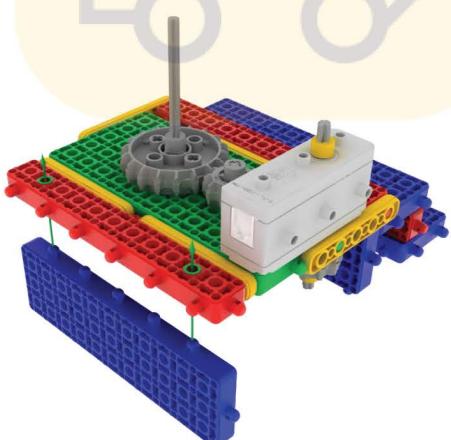


---x2 ---x1

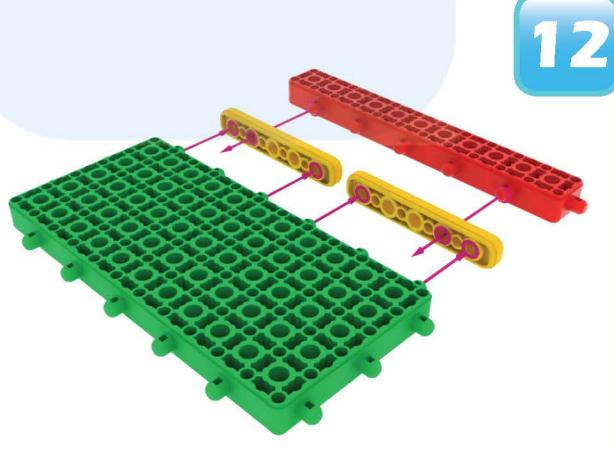
10



11

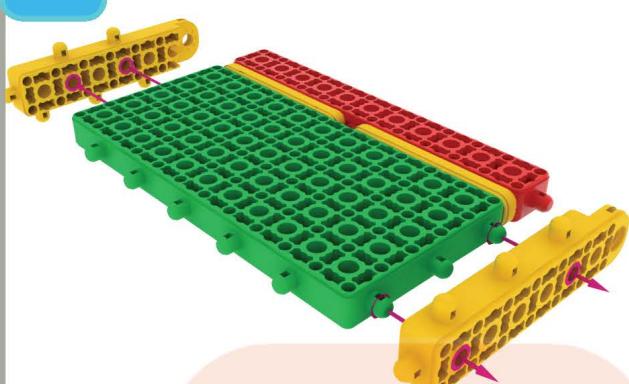


---x1



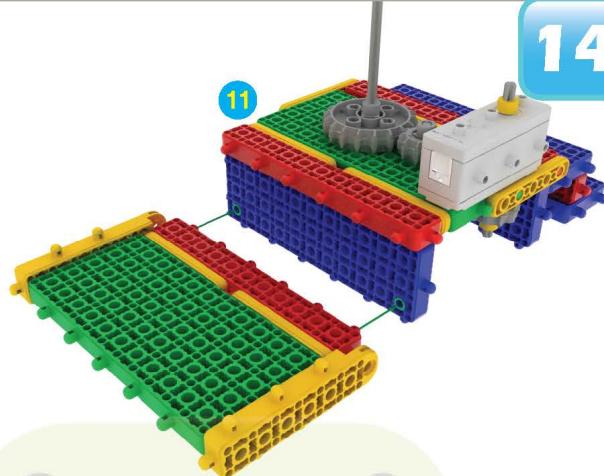
---x1 ---x1 ---x2

13



Technic beam × 1 Technic beam × 1

14

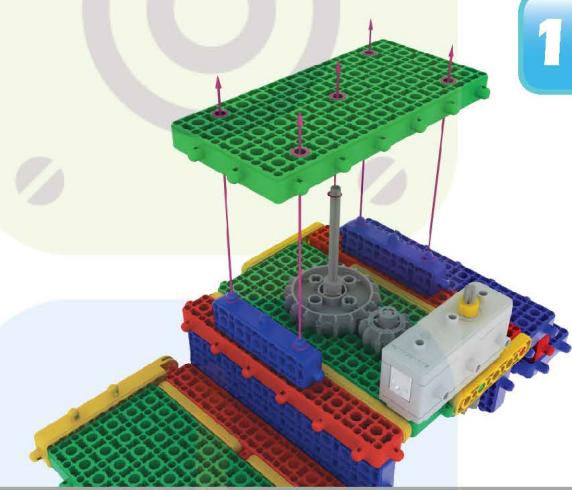


15



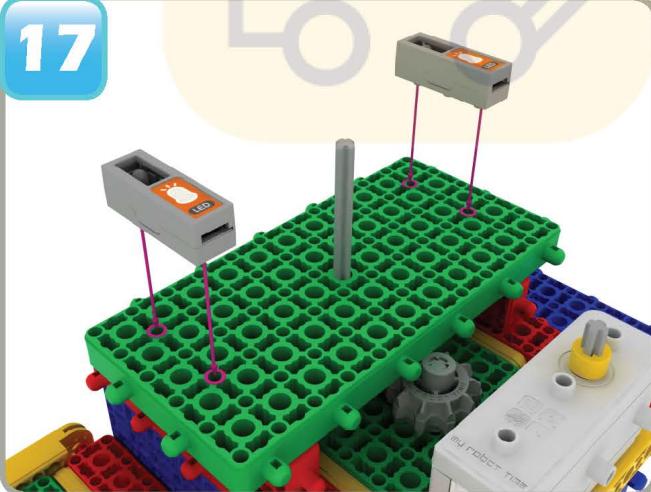
Technic beam × 2

16



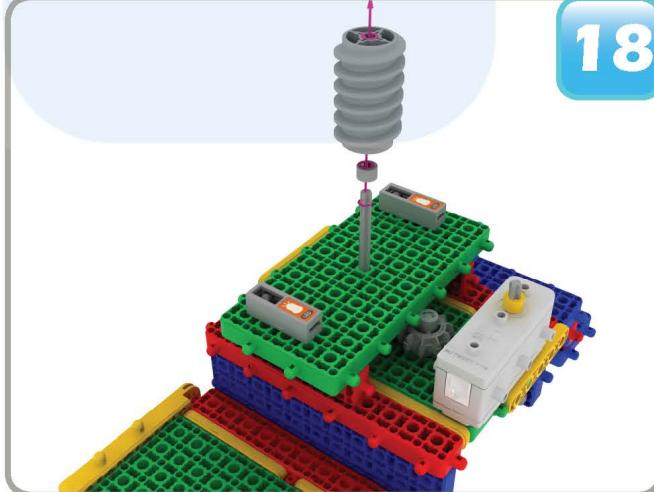
Technic beam × 1

17



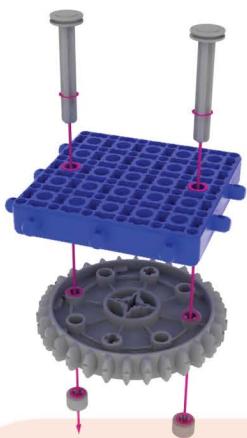
Technic beam × 2

18



Spring × 1 Pin × 1

19



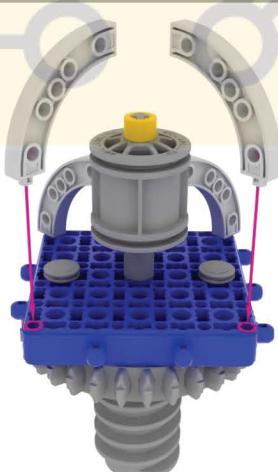
×1 — ×2 — ×2

21



×1 — ×2 — ×1

23

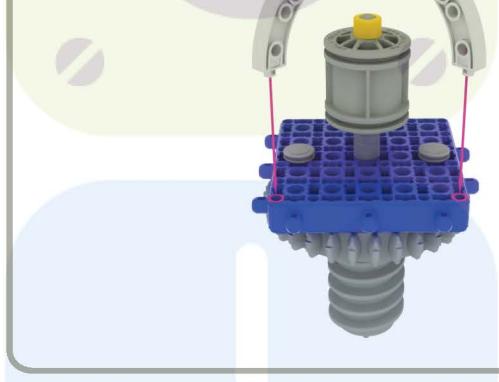


×2



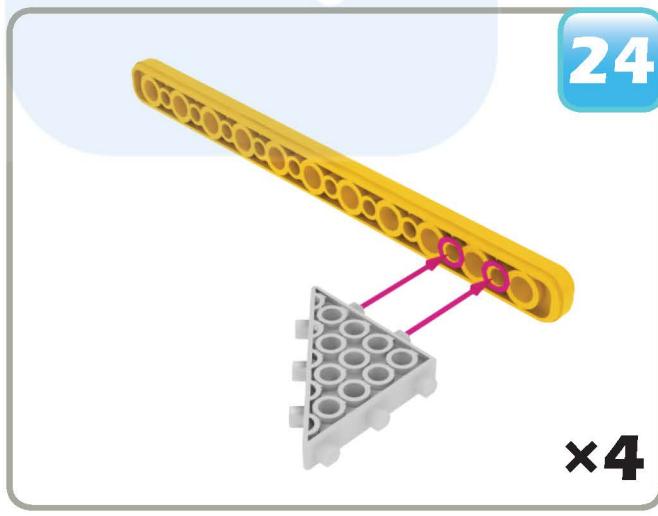
×1 — L-Shaft ×1

22



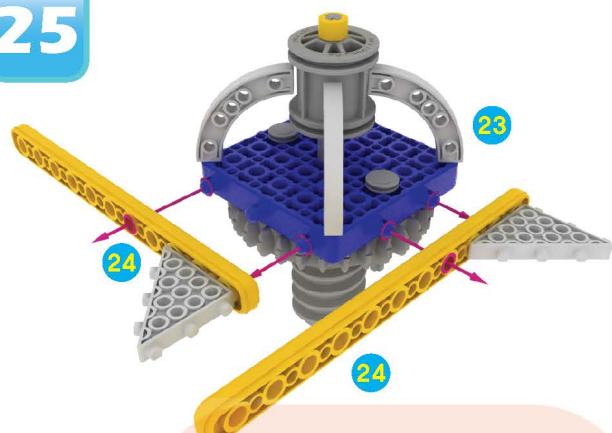
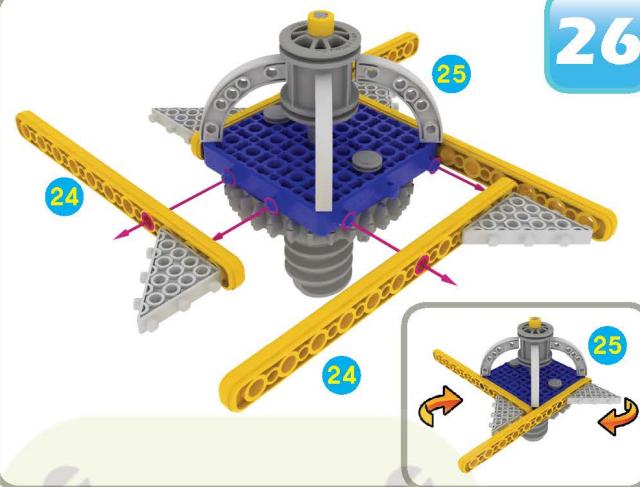
×2

24

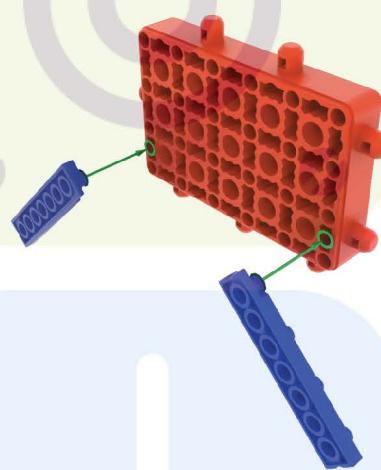
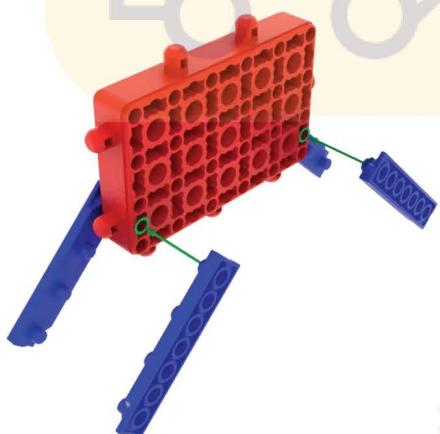
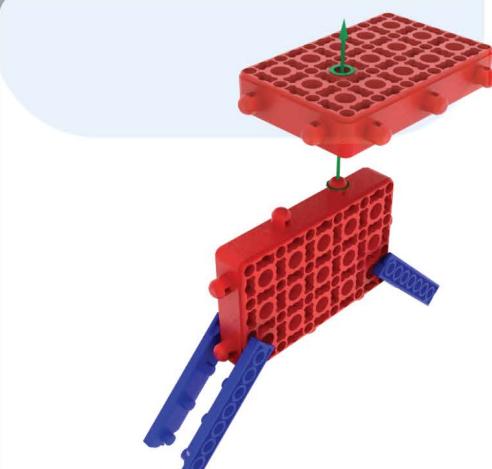


×4

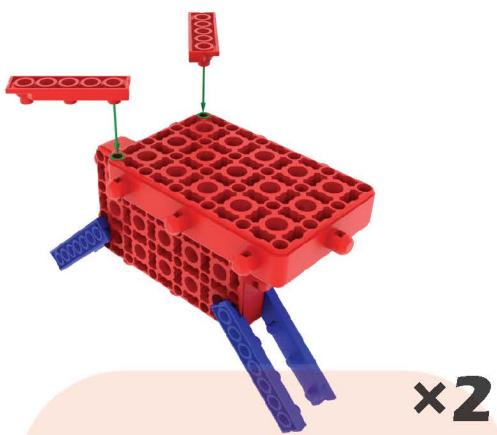
×4 — ×4

25

26

27

18

28

x2
red Technic beam ×2 **blue Technic beam ×4**
29

x4
30

x2
red Technic beam ×2

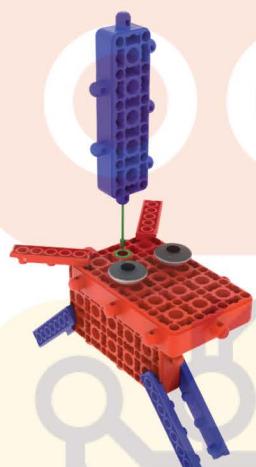
31



x2

50000 × 4

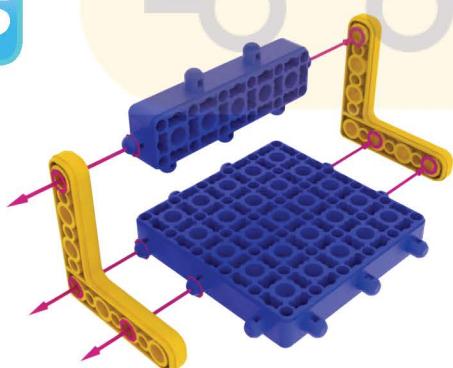
33



x2

50000 × 2

35



x2

50000 × 2

L × 4

50000 × 2



x2

50000 × 4



50000 × 2 S-Shaft × 1



x2

M-Shaft × 2 50000 × 2 50000 × 2

S-Shaft

M-Shaft

1:1

37



— × 1 ○ × 1

39



— × 1 ○ × 1

OK



1:1

38



S-Shaft × 1 ○ × 2

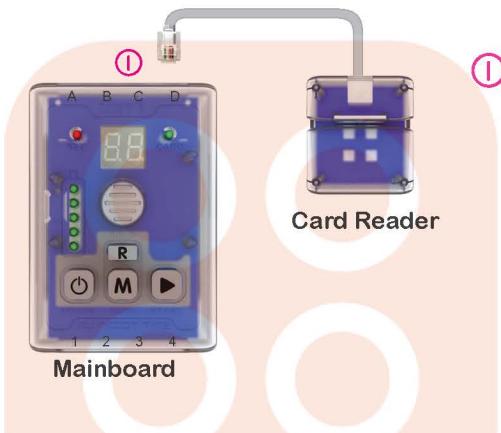
40



— × 1



Connect mainboard



① Connect Card Reader to connector D.

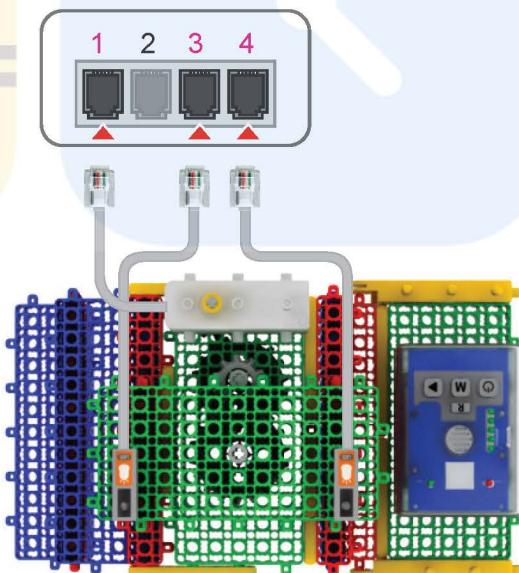


Connect DC Motor / LED

① Connect DC motor to connector 1, 2.



② Connect LED to connector 3, 4.



Learn how to operate the mainboard



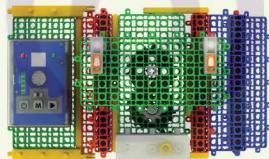
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Merry-Go-Round move

Multiple Card-010



Action mode



Press "", the LED will light on and Merry-Go-Round will move .

Learn how to use program cards.

① P-001



② P-018



③ P-010



④ P-022



⑤ P-010



⑥ P-023



⑦ P-010



⑧ P-019



⑨ P-010



⑩ P-024

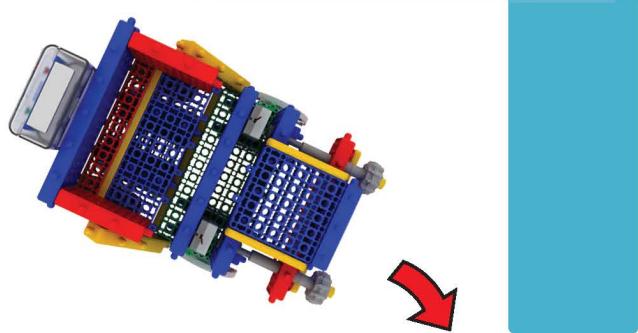
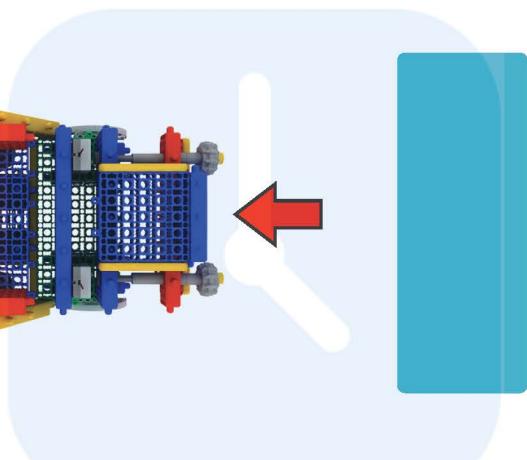
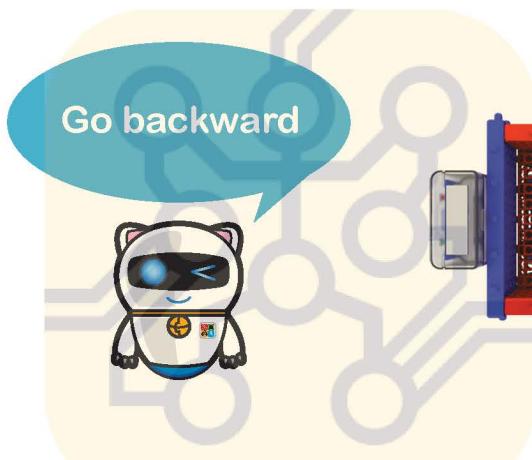
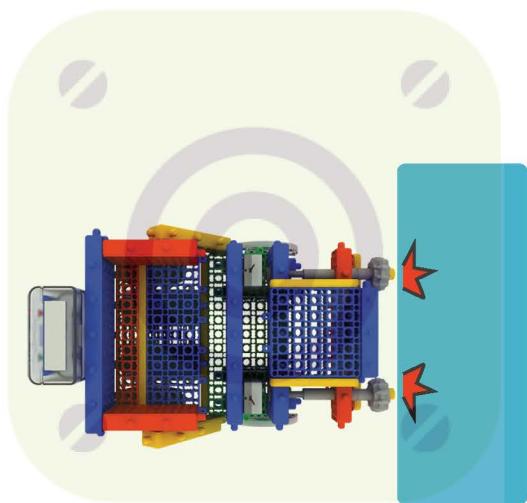
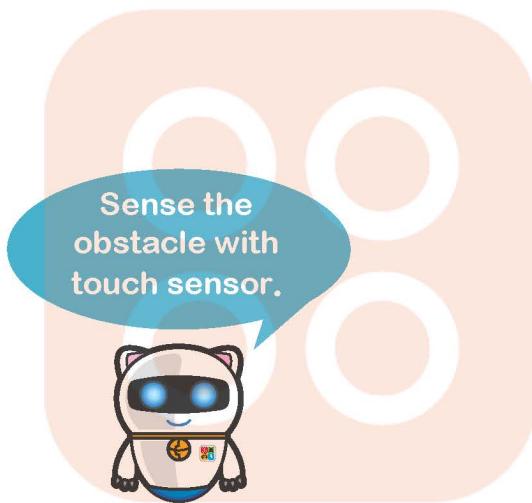




Avoider



Avoider is a robot that can sense the obstacle and avoid it.

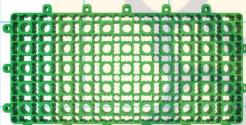




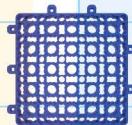
Bumper Car



Part List



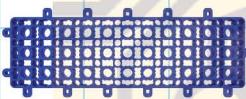
×1



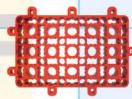
×3



×2



×4



×2



×6



×3



×6



×2



×8



×4



×8



×1



×4



×2



×1



×2



×2



×2



×2



×2



×4



×2

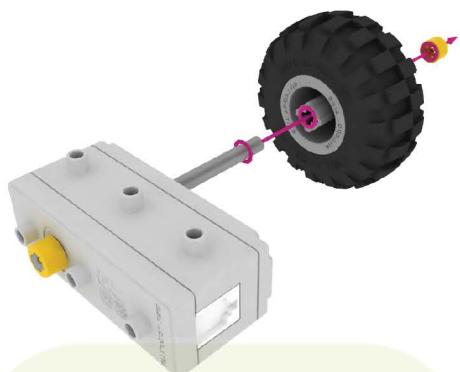


×1

01



02



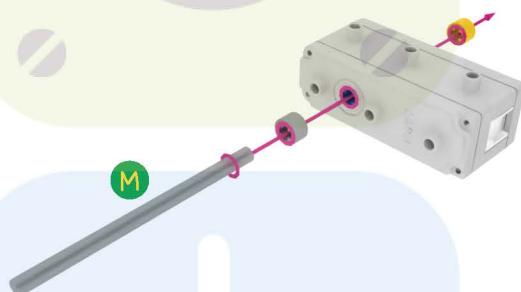
M-Shaft × 1 ⚡ × 1 ⚡ × 1

03



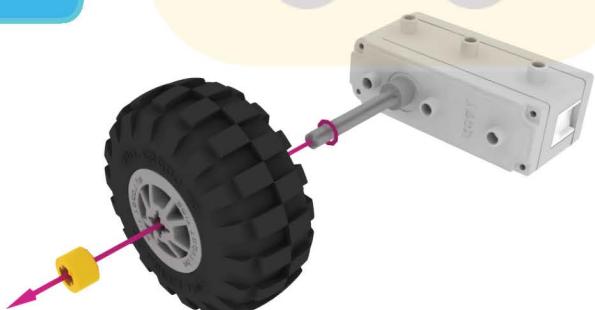
grid × 1

04



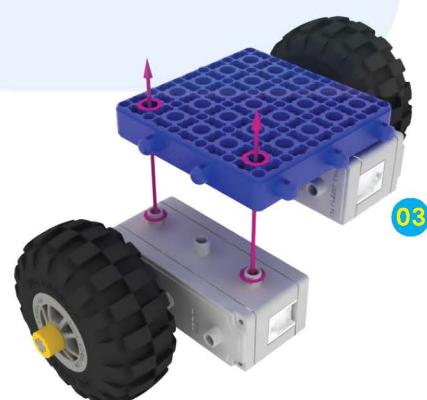
M-Shaft × 1 ⚡ × 1 ⚡ × 1

05



tire × 1 ⚡ × 1

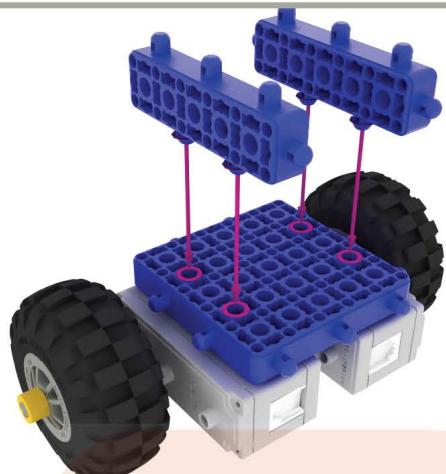
06



M-Shaft

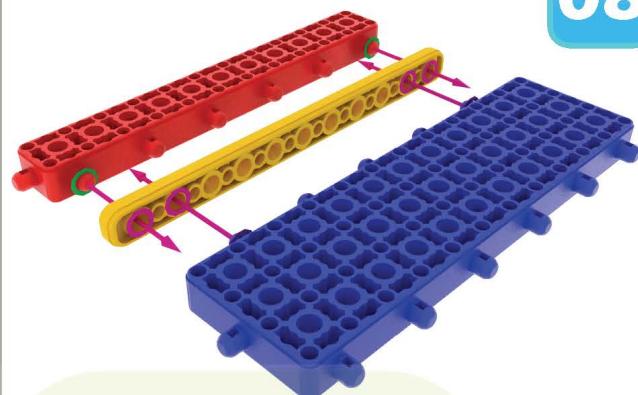
1:1

07



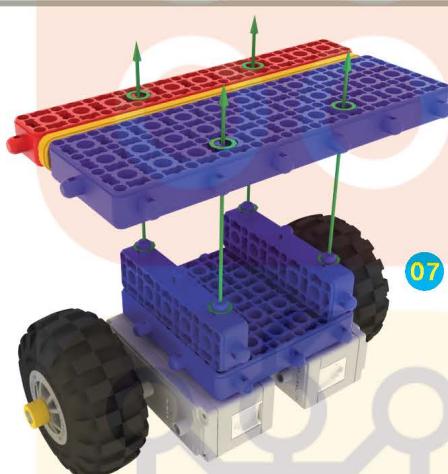
×2

08



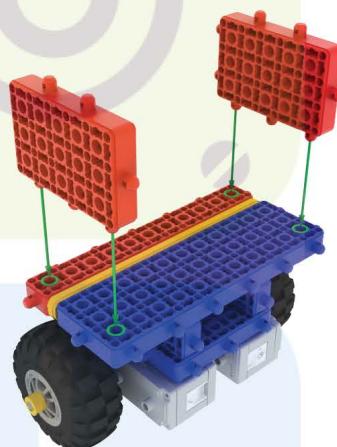
×1 ×1
 ×1

09



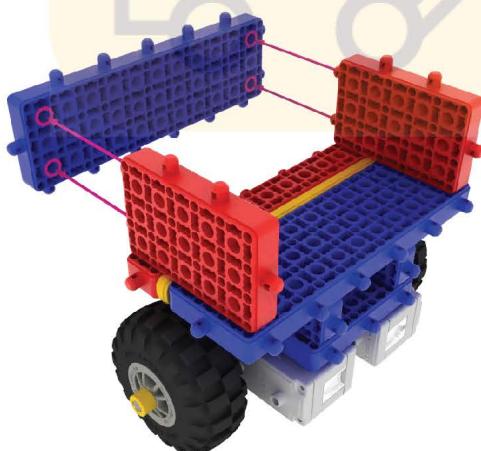
07

10



×2

11



×1

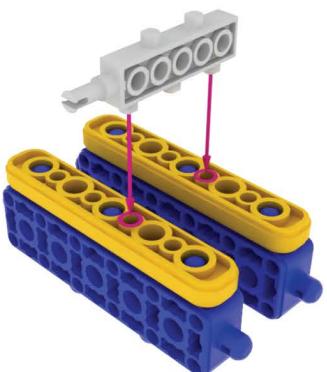
12



×4

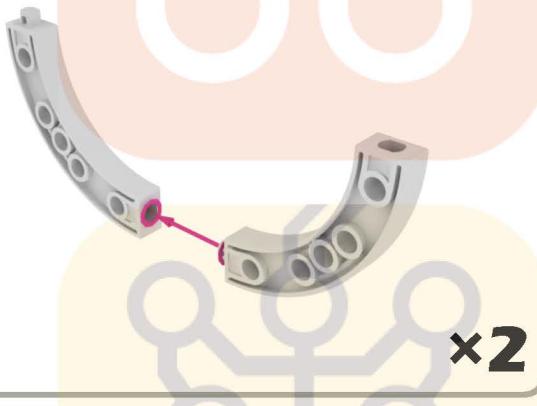
×4 ×4

13



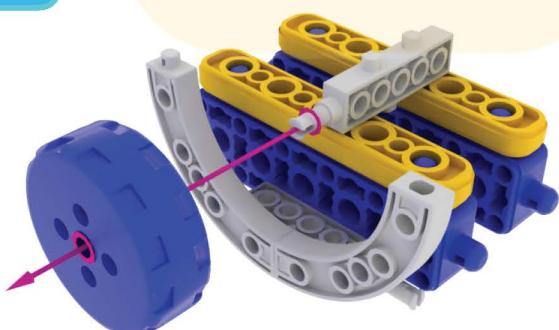
oooooooo × 1

15



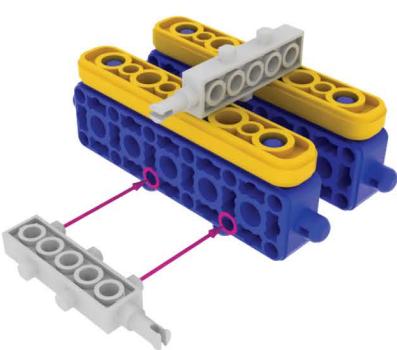
ooooo × 4

17



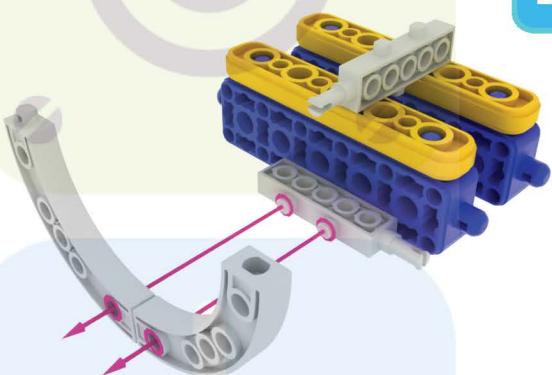
● × 1

14



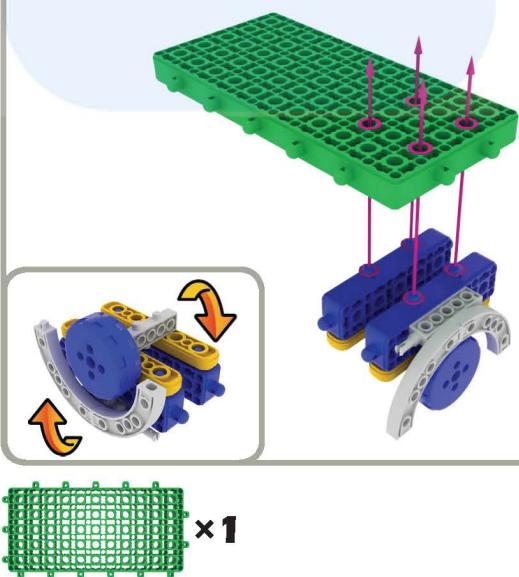
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16



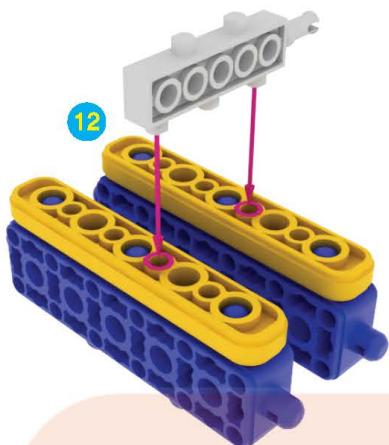
oooooooo × 1

18



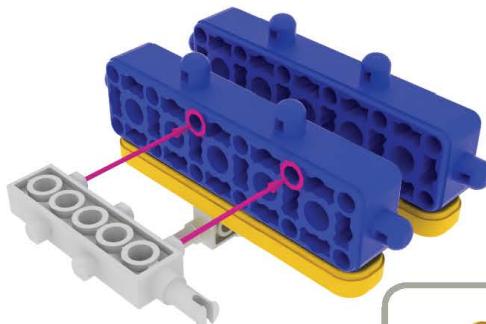
oooooooo × 1

19



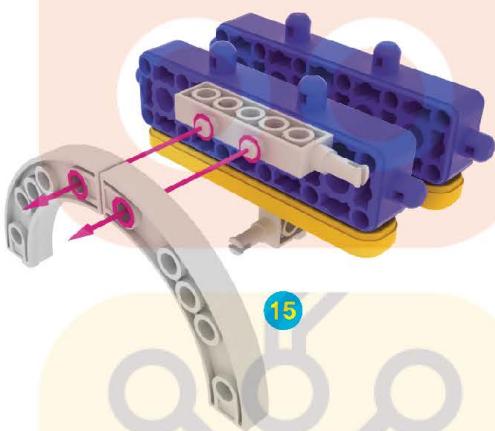
× 1

20



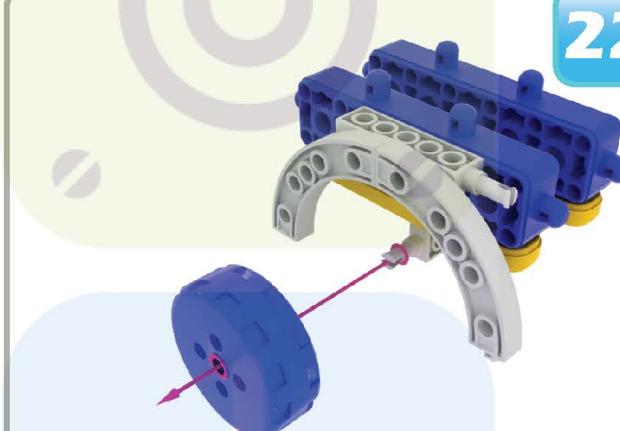
× 1

21



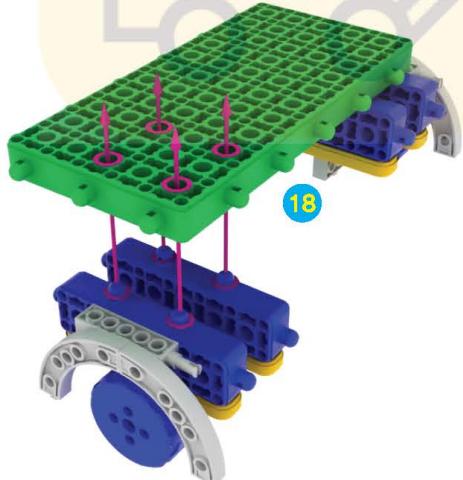
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22



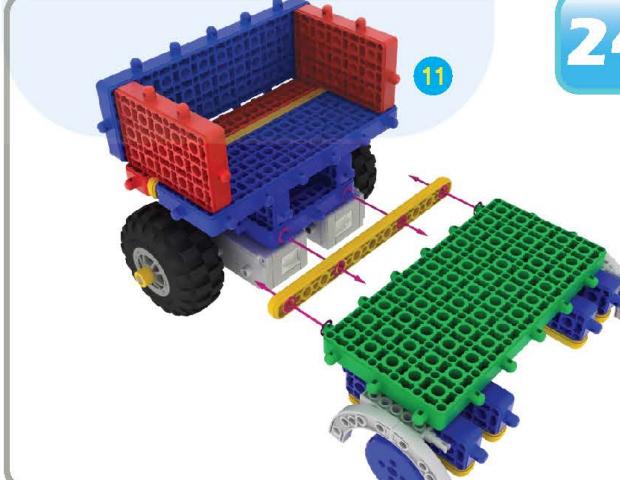
× 1

23



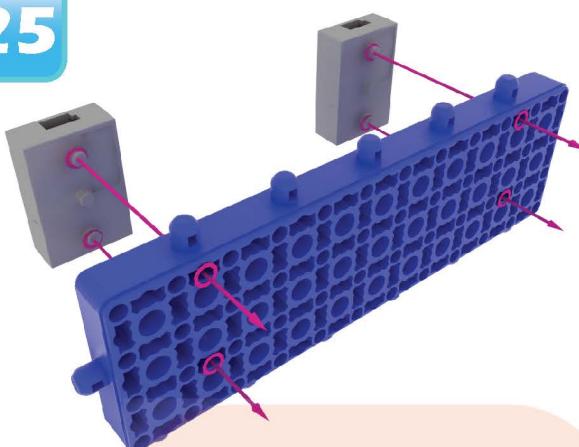
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24



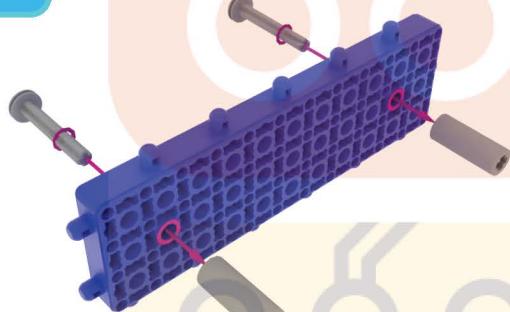
× 1

25



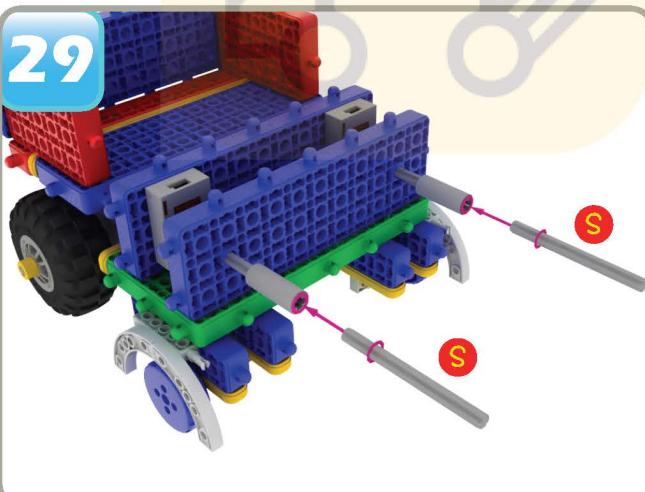
×2 ×1

27

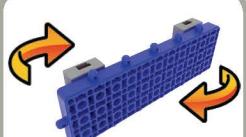


×1 ×2 ×2

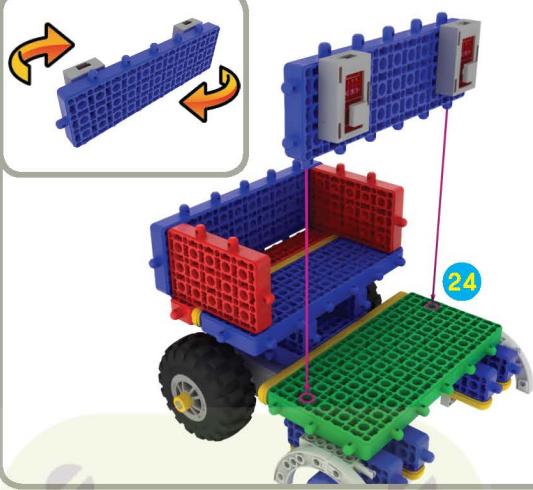
29



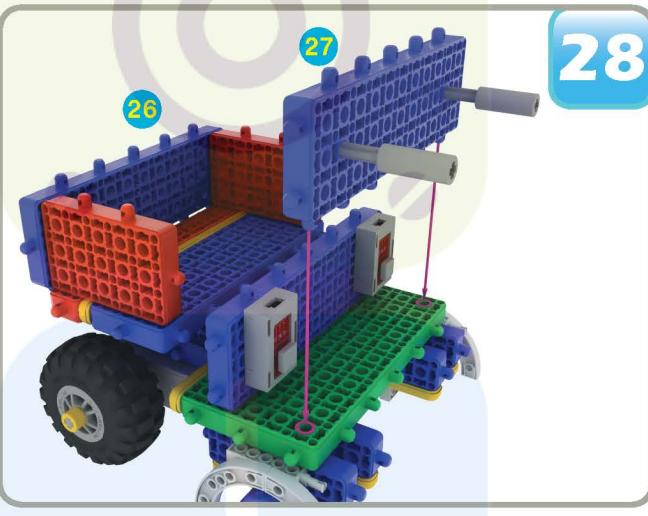
S-Shaft ×2



26



24

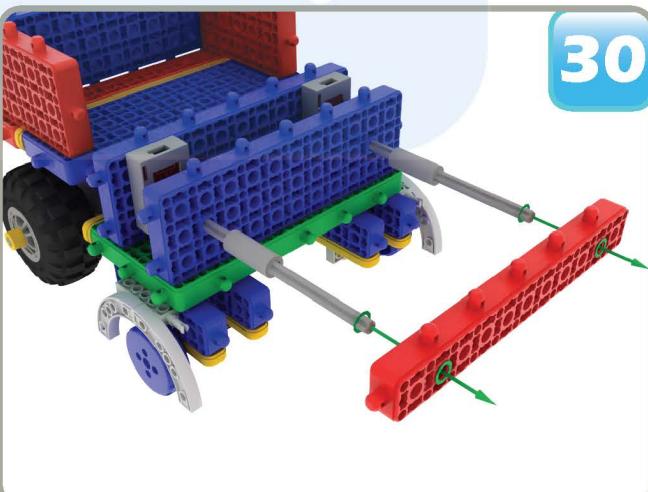


26

27

28

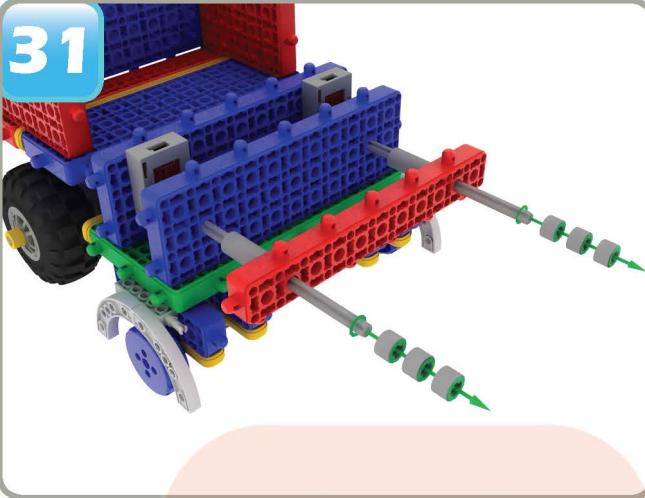
30



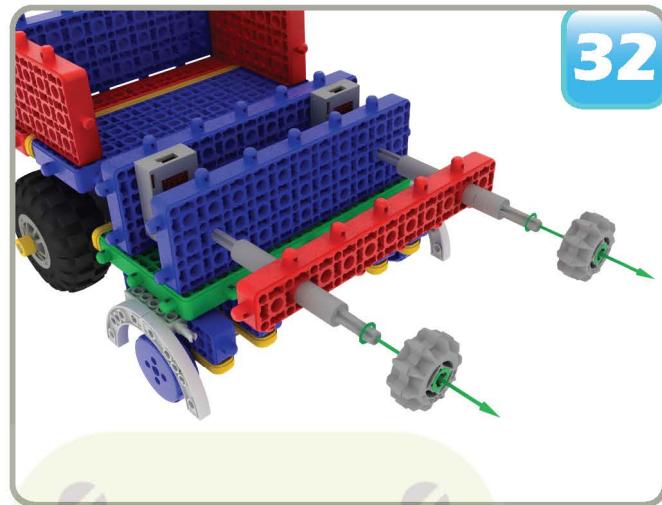
×1

S-Shaft

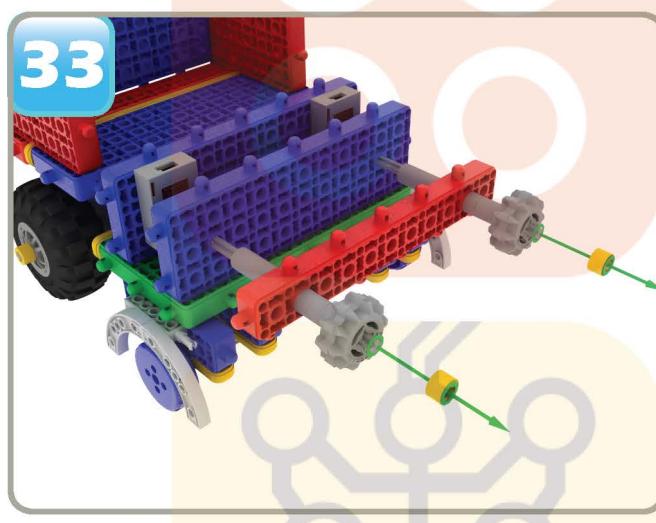
1:1



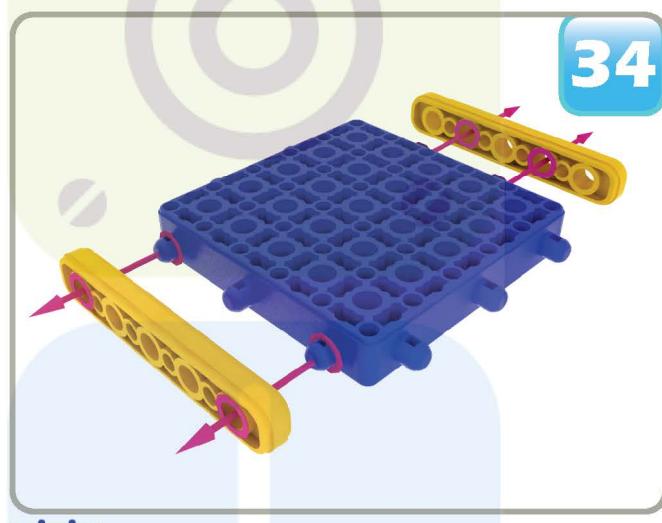
⊕ x6



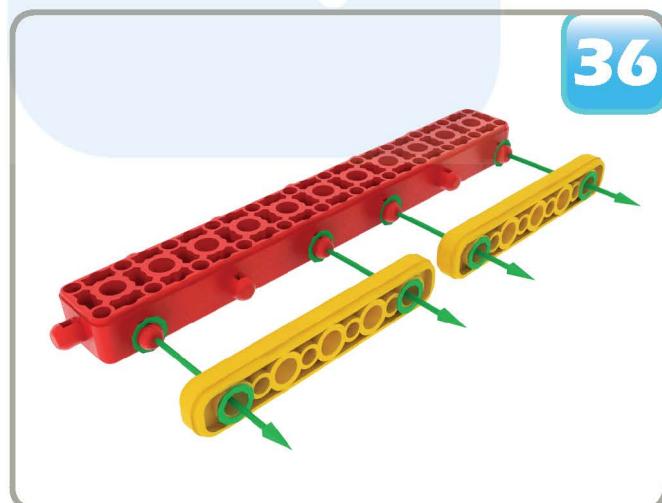
⊖ x2



⊕ x2

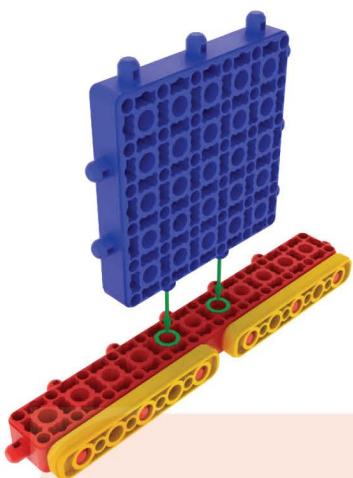


⊕ x1 ⊕ x2



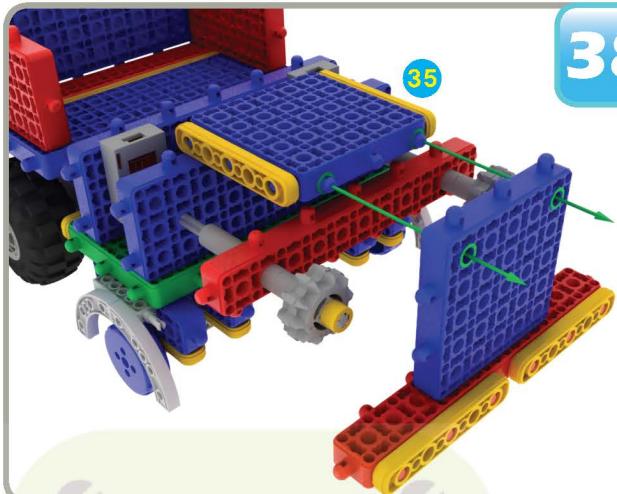
⊕ x1 ⊕ x2

37

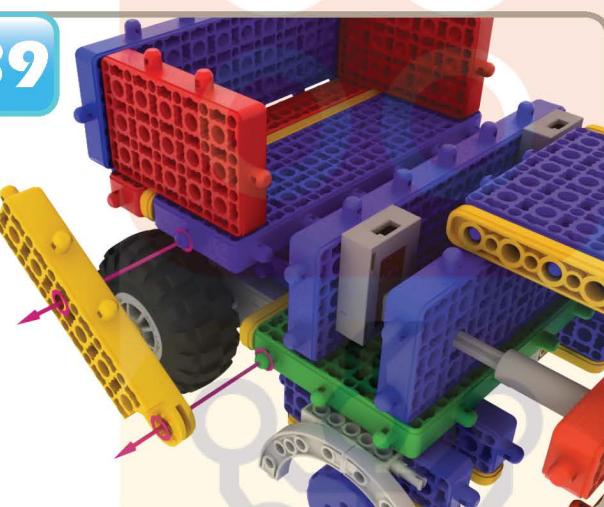


× 1

38

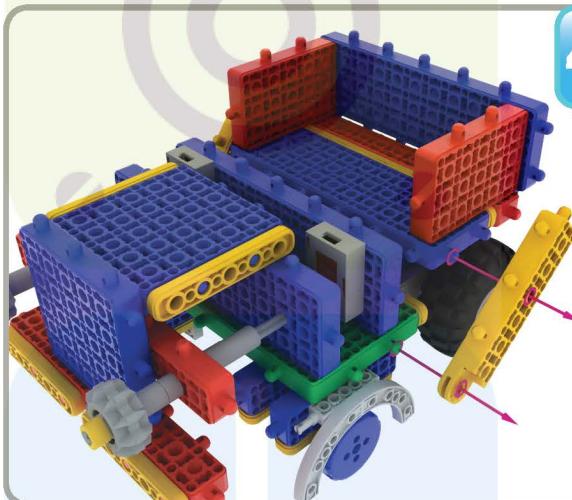


39



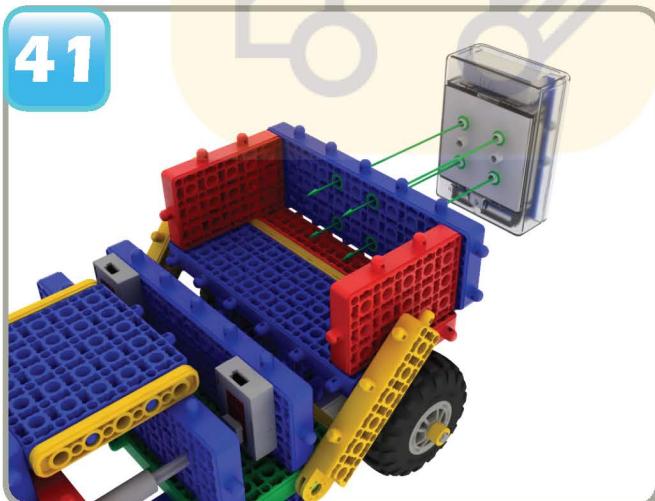
× 1

40



× 1

41



× 1

OK

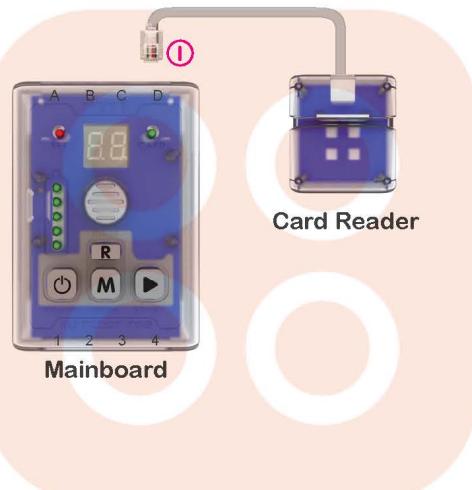




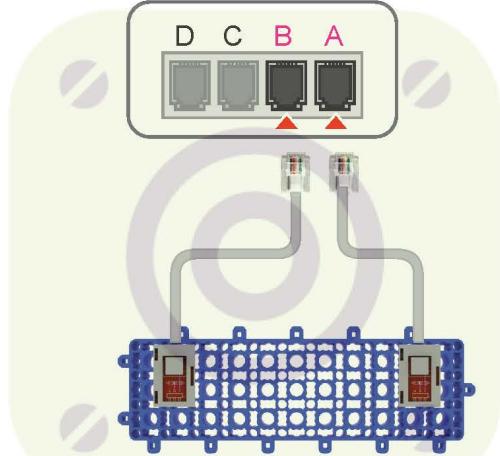
Make robot move

Connect mainboard / touch sensor

- ① Connect card reader to connector D.



- ② Connect 2 pcs of touch sensors to connector A, B.

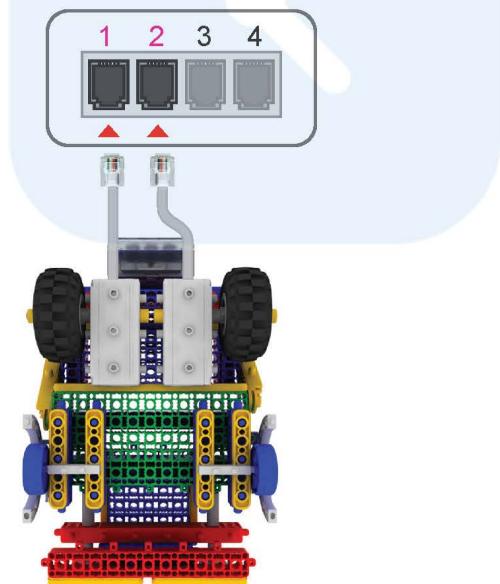


Connect DC motor

- ① Connect DC motor to connector 1, 2.



- ② Connect left DC motor to connector 1.
Connect right DC motor to connector 2.



Learn how to operate the mainboard



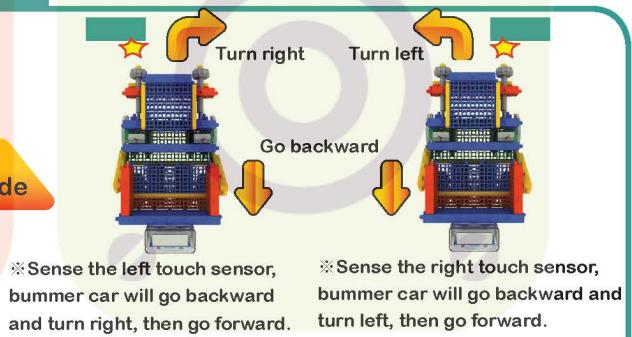
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Bumper Car move

★ Multiple Card-011



Action mode



★ Learn how to use program cards.

① P-025



② P-002



③ P-010



④ P-004



⑤ P-010



⑥ P-026



⑦ P-002



⑧ P-010



⑨ P-003



⑩ P-010



⑪ P-028



⑫ P-001



⑬ P-024





Crab



Part List



x1



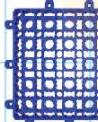
x2



x4



x6



x1



x8



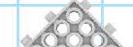
x3



x2



x4



x4

x2



x2

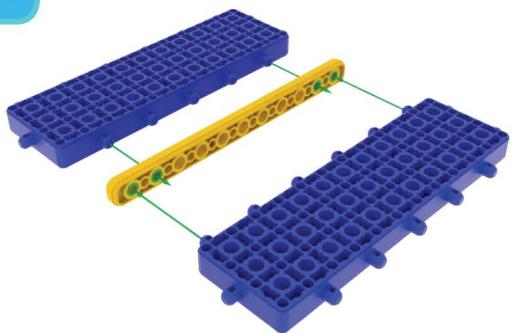
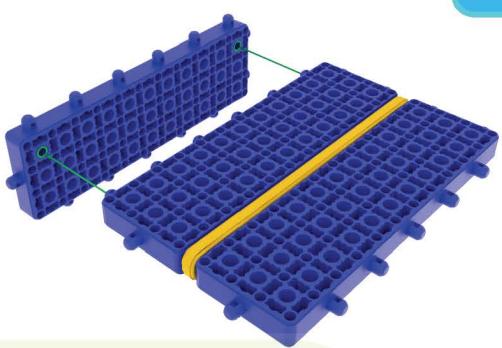
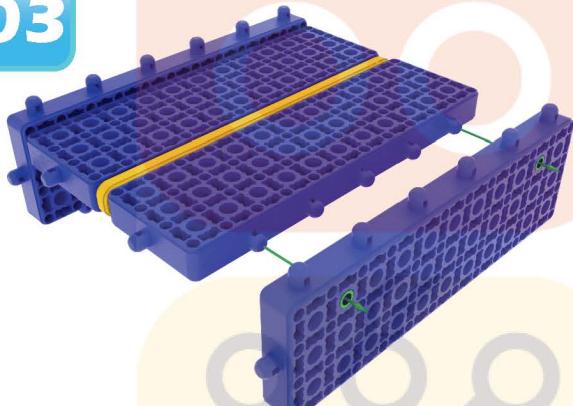
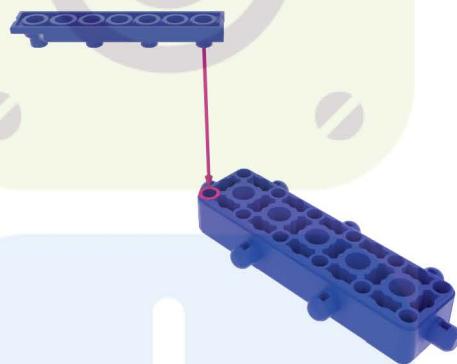


x1

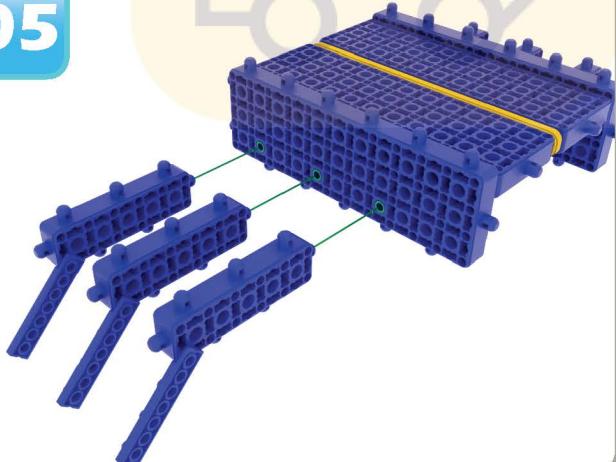
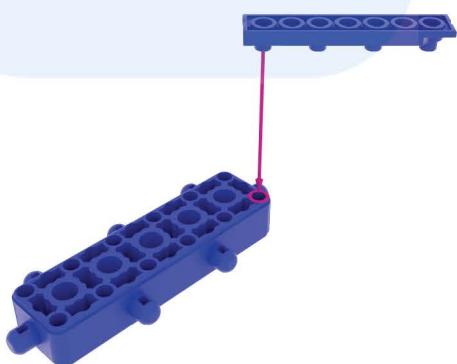
x1

ooooo x2

oooooooo x8

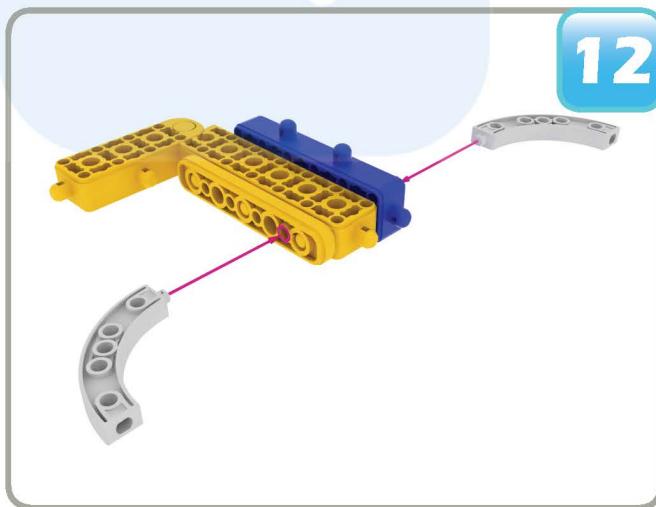
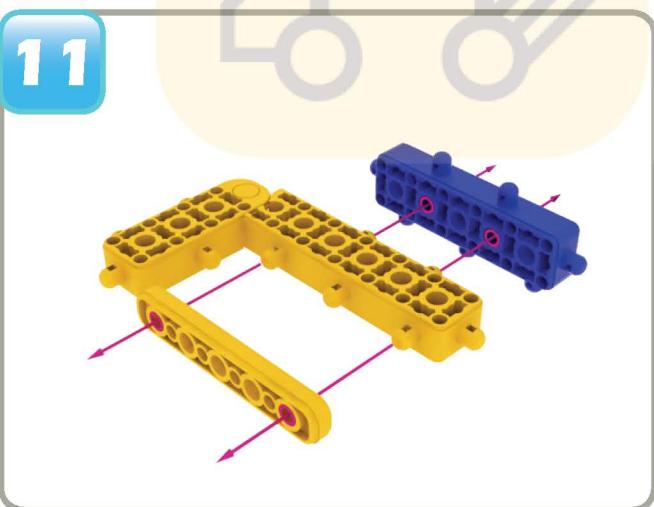
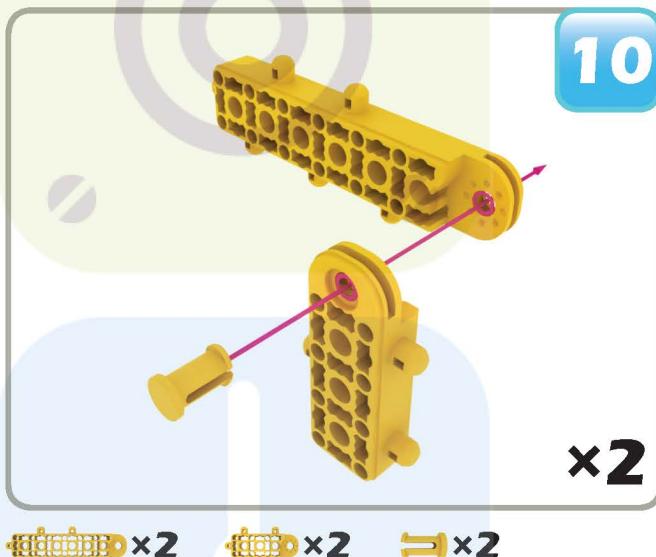
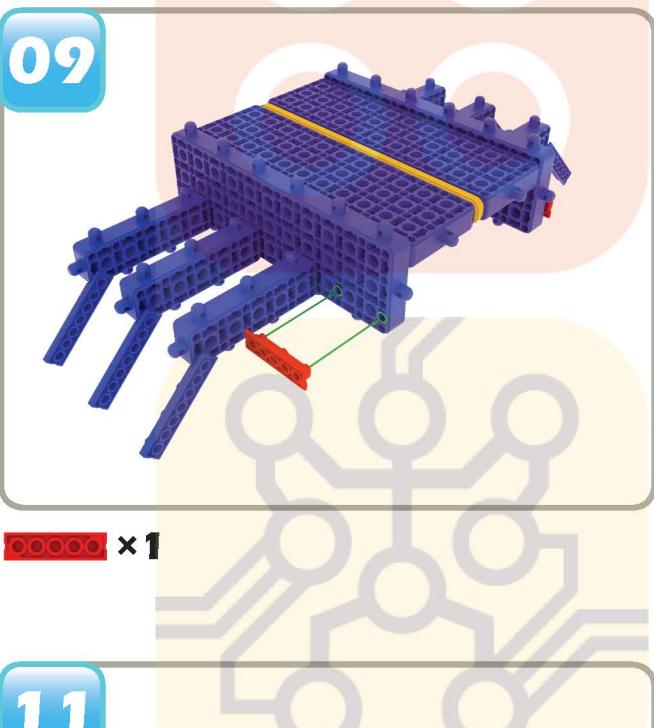
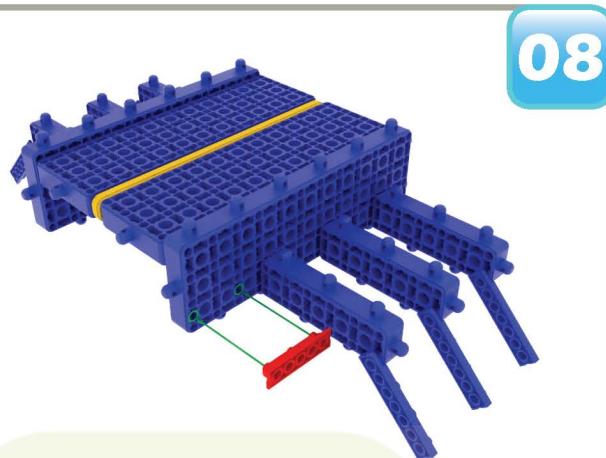
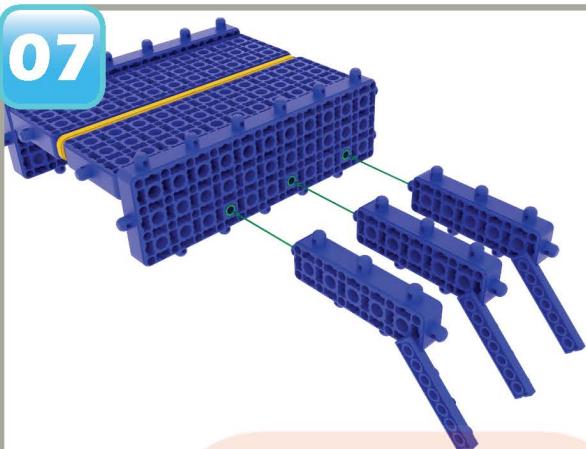
01**02** × 2 × 1**03** × 1**04**

× 3

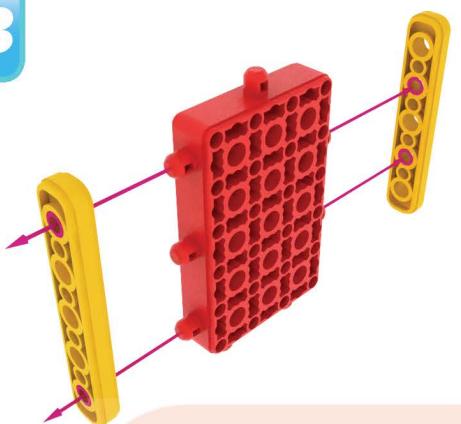
 × 3  × 3**05****06**

× 3

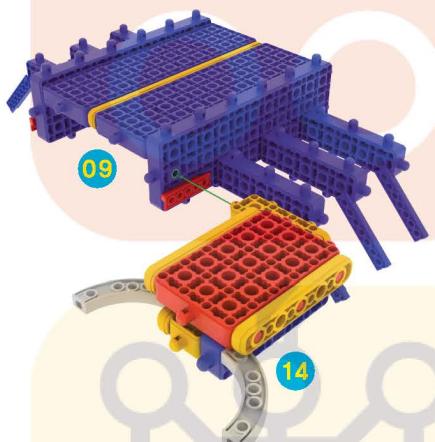
 × 3  × 3



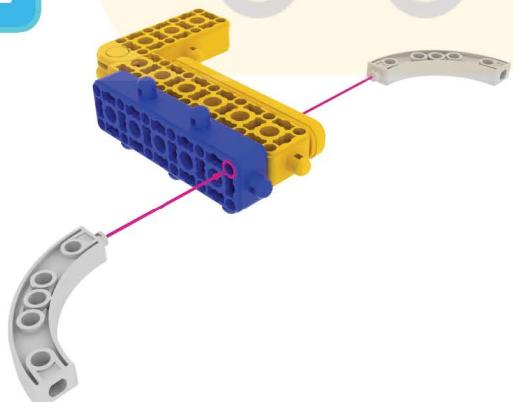
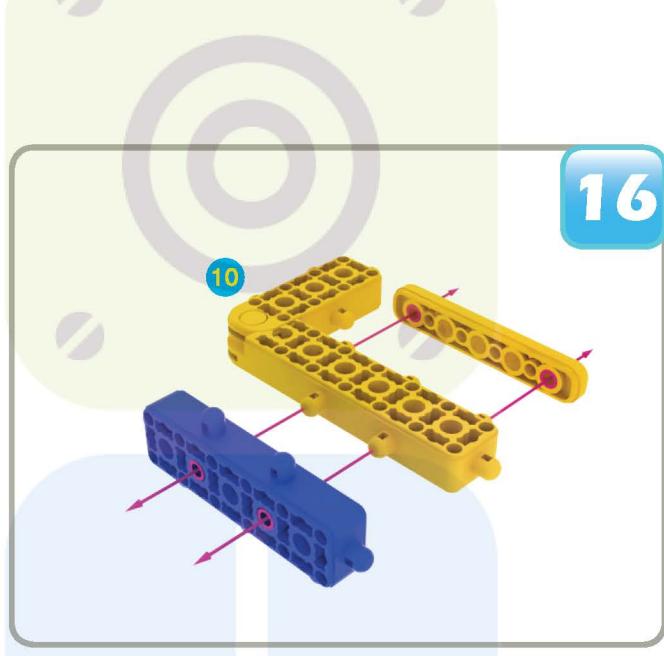
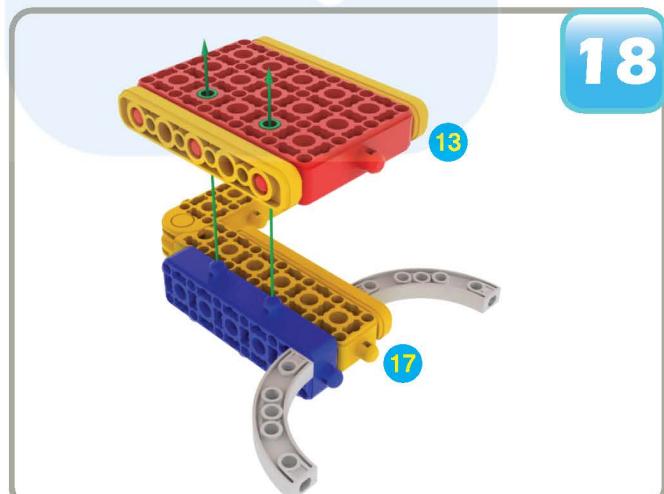
13

 $\times 2$
 $\times 2$  $\times 4$

15



17

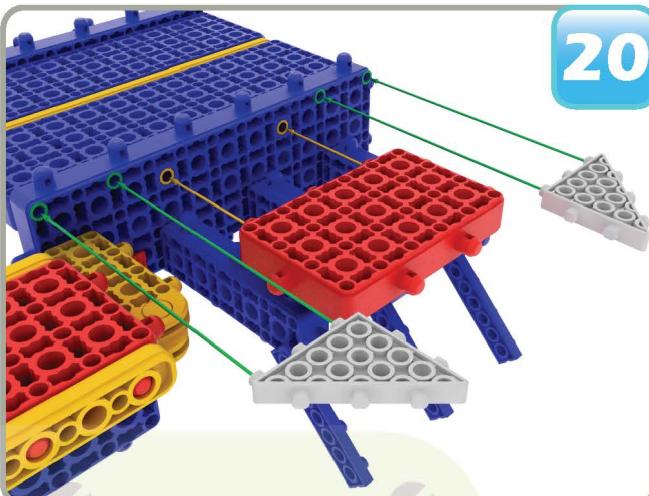
 $\times 2$ 
 $\times 1$  $\times 1$


19



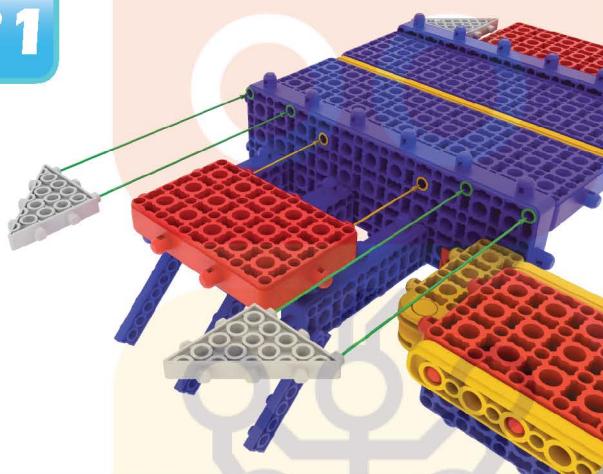
15

20



×1 ×2

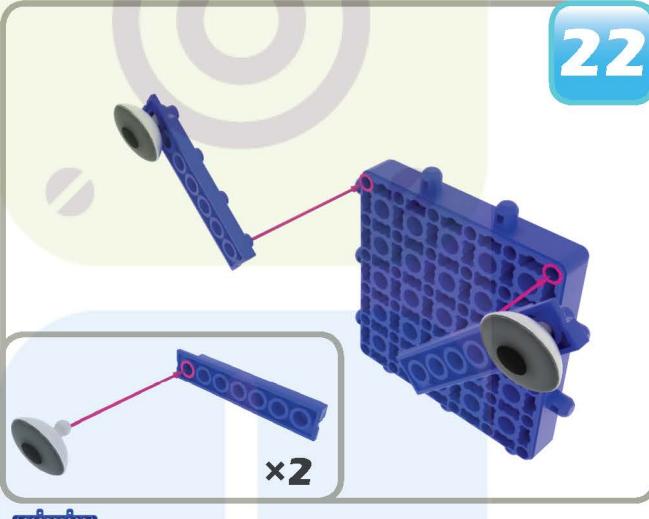
21



×1

×2

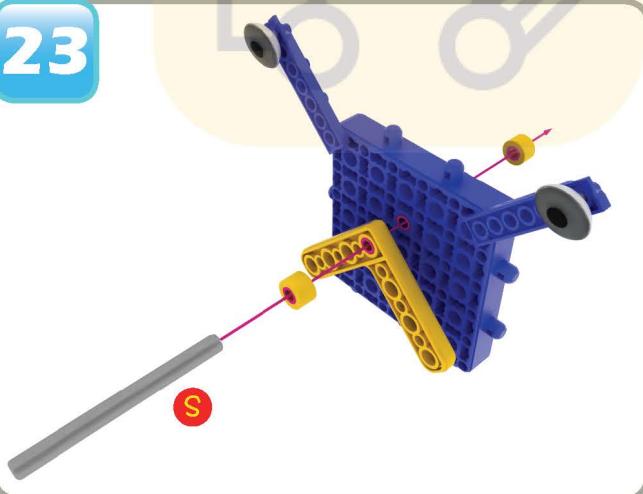
22



×2

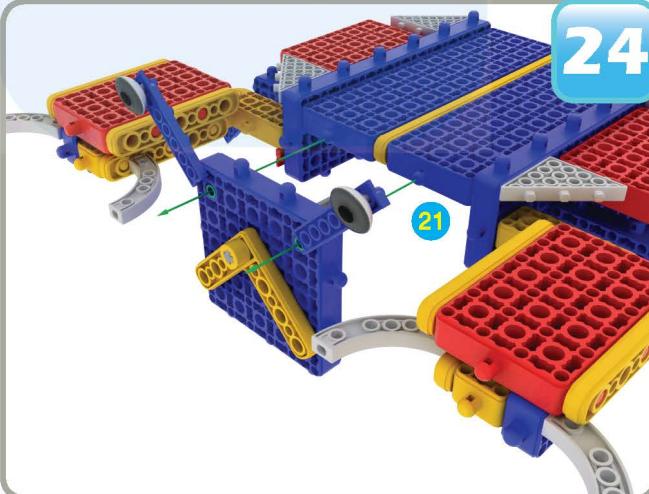
×1 ×2 ×2

23



×1 ×2 S-Shaft ×1

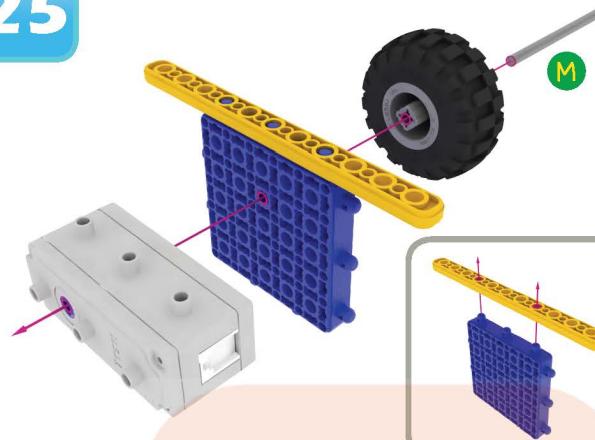
24



21

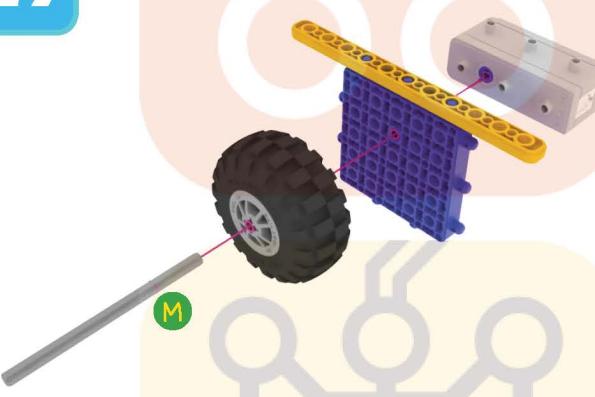
1:1

25



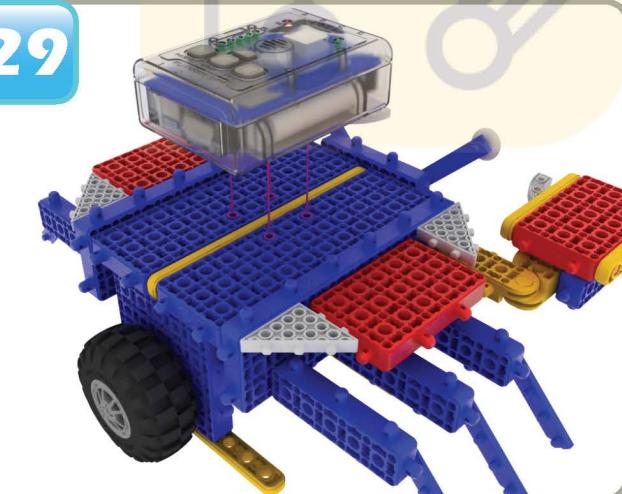
× 1 × 1 × 1
M-Shaft × 1 × 1

27



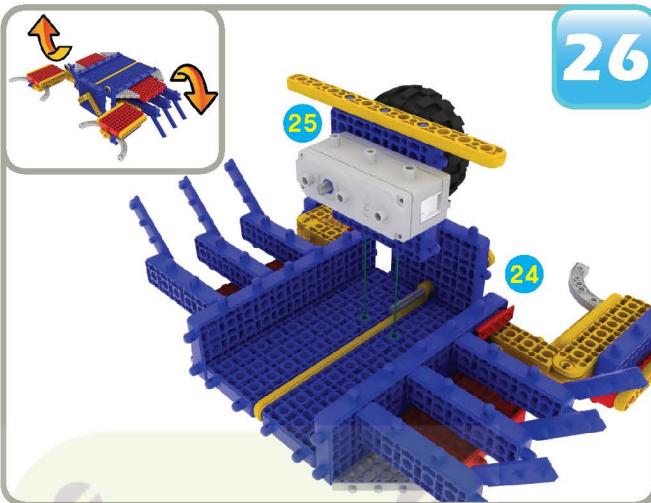
× 1 × 1 × 1
M-Shaft × 1 × 1

29



× 1

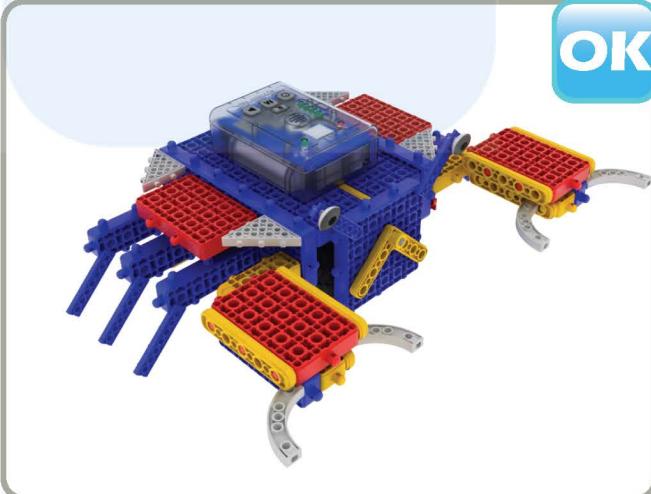
26



28



OK



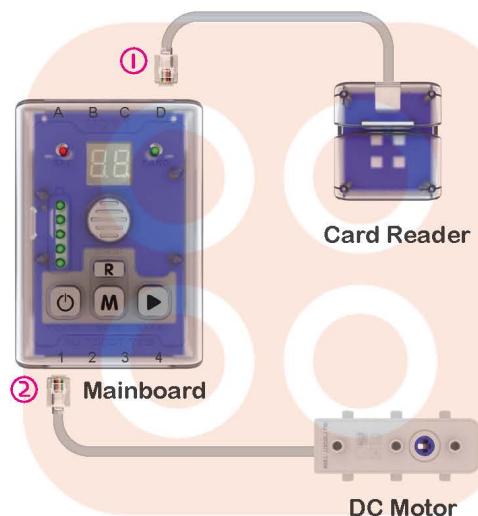
M-Shaft

1:1



Make robot move

Connect mainboard



① Connect Card Reader to connector D.



② Connect DC motor to connector 1.



Learn how to operate the mainboard



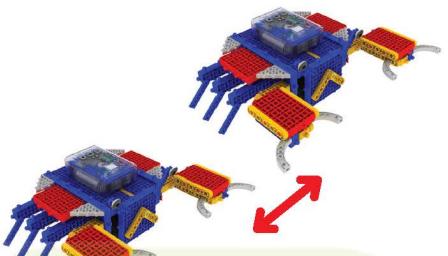
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Clab move !

★Multiple Card-012



Action mode



▶ Press " Play ",the crab will move left and right.

Please use the program card programming

① P-001



② P-011



③ P-002



④ P-011



⑤ P-024





Wheels and shaft

The wheel is a device using axis rotation to move .

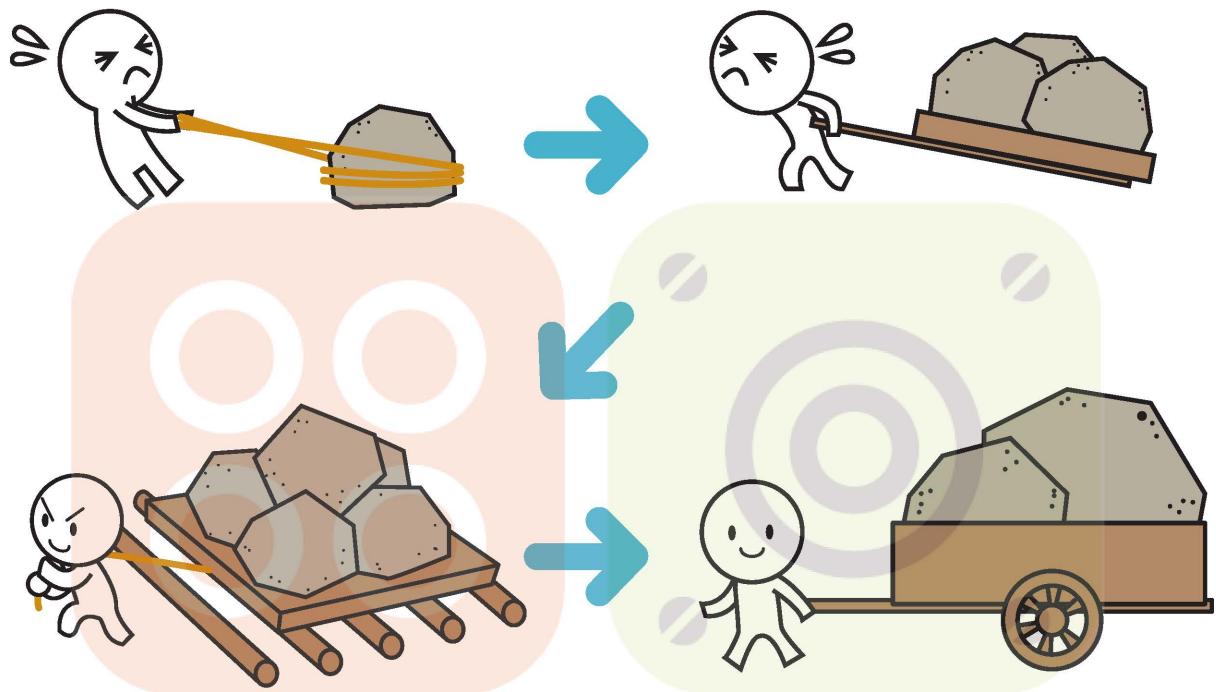


Find out things with wheels and shaft around us.





Who invented the round wheels?
Observe carefully the development of the wheel.



Compare these two pictures.

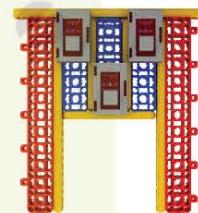


Shaft used to transfer the force .





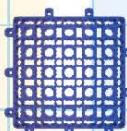
Serving-Bot



Part List



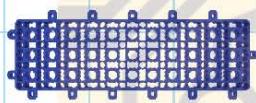
x1



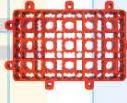
x4



x1



x1



x4



x2



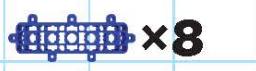
x2



x1



x2



x8



x4



x2



x2



x2



x1



x2



x8



x1



x3



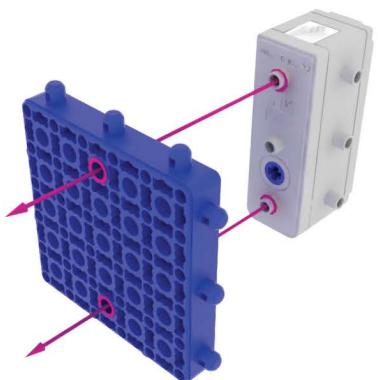
x2



x1

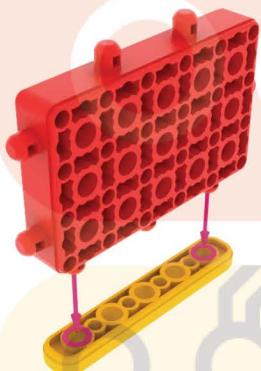
x2

01



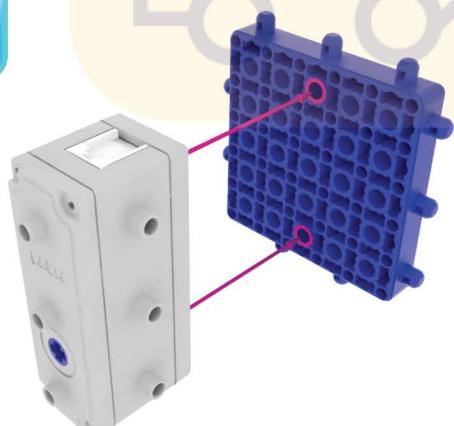
× 1 × 1

03



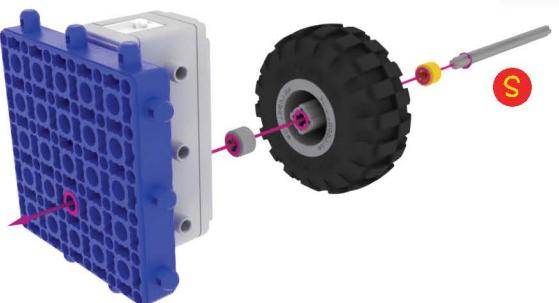
× 1 × 1

05



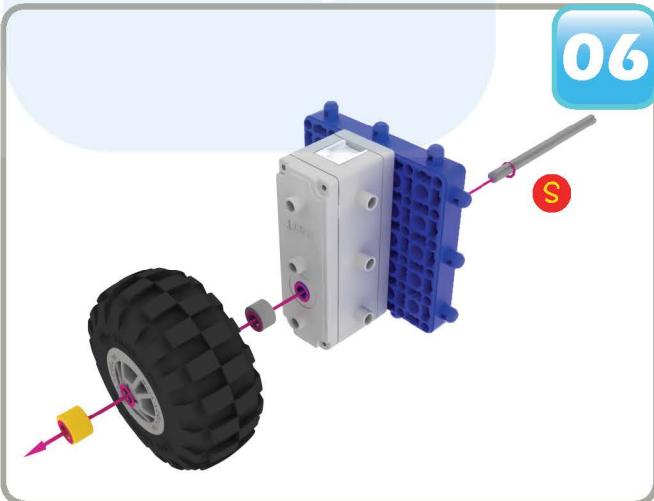
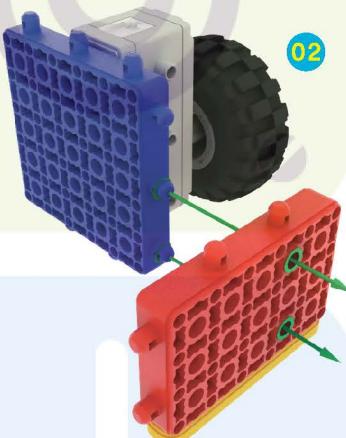
× 1 × 1

02



× 1 × 1 × 1 × 1

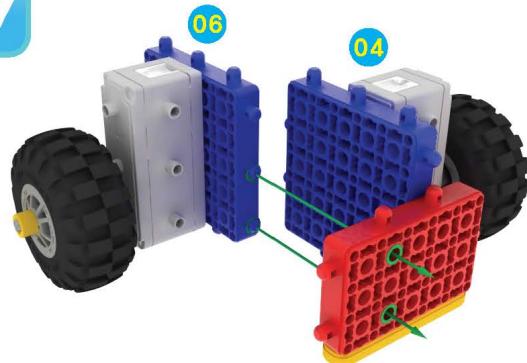
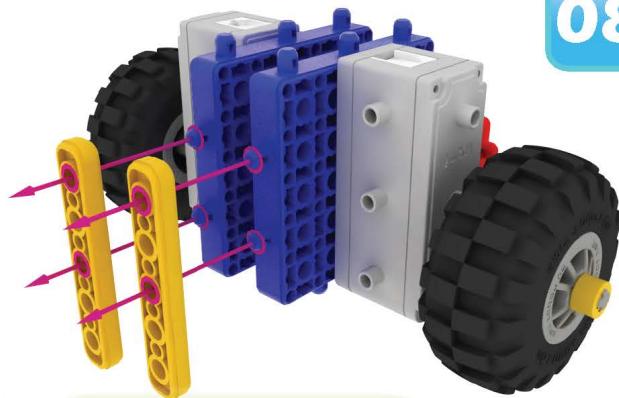
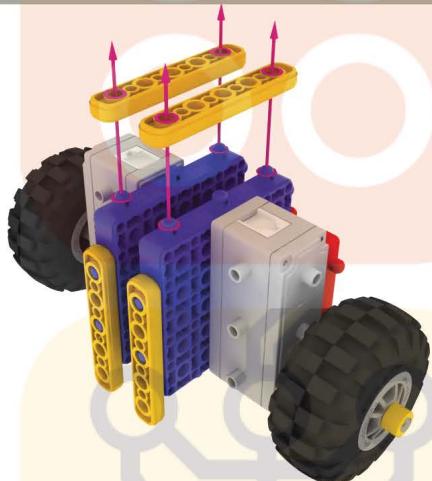
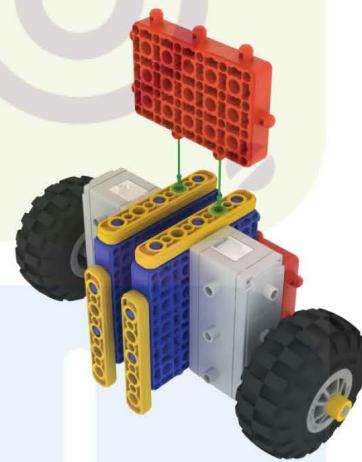
04



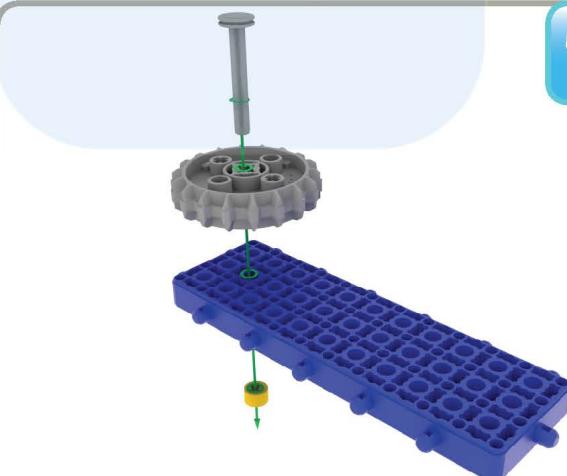
× 1 × 1 × 1 × 1

S-Shaft

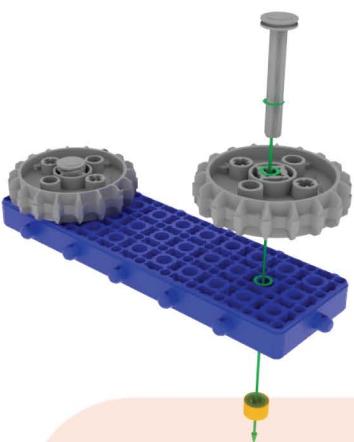
1:1

07

08

09

10

x2
11

*Connect the cables of motor.


x1
x1
12

x1 **x1** **x1** **x1**

13



×1 — ×1 ×1

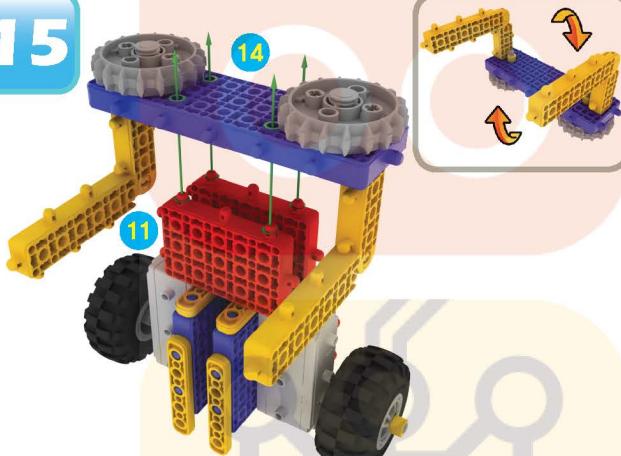
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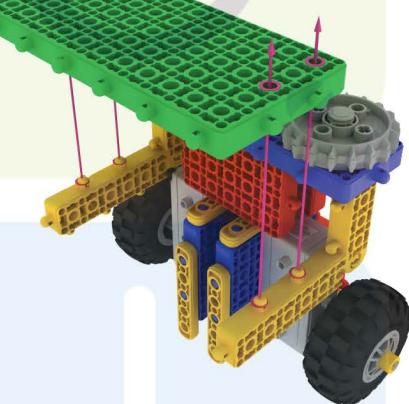
×2

×2 ×2 ×2

15

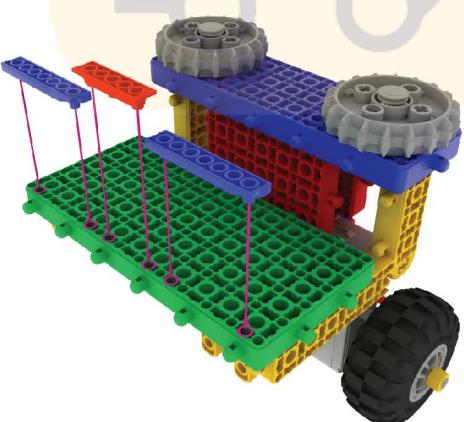


16



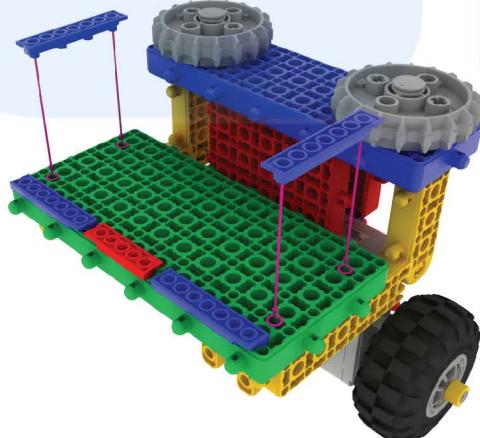
×1

17



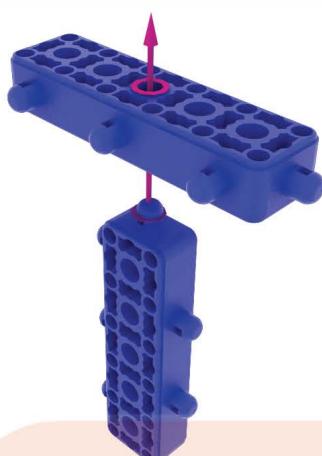
×2 ×1

18



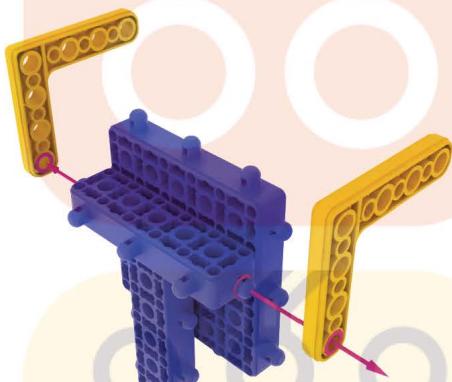
×2

19



 ×2

21



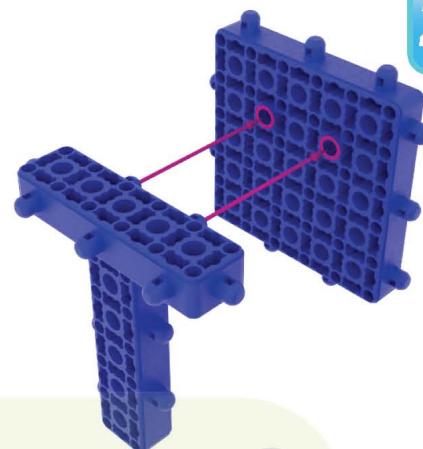
 ×2

23



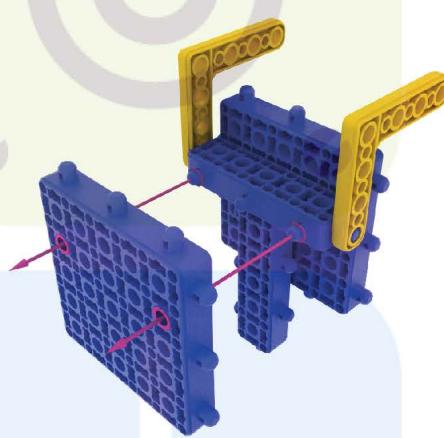
 ×1  ×1

20



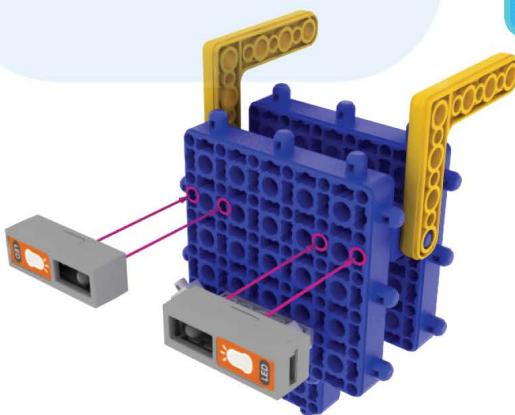
 ×1

22



 ×1

24



 ×2

25

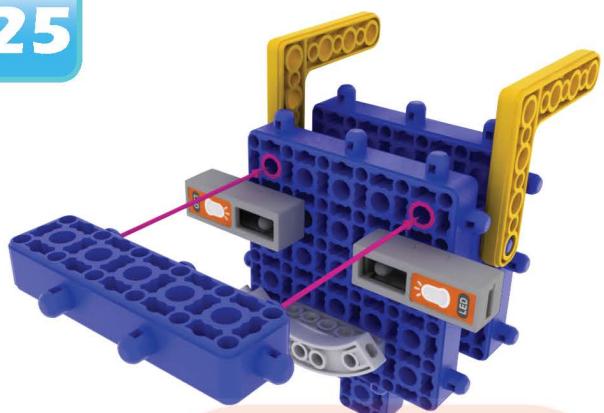


plate × 1

26



25

18

27

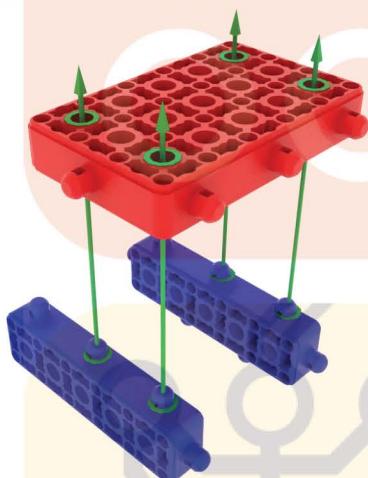
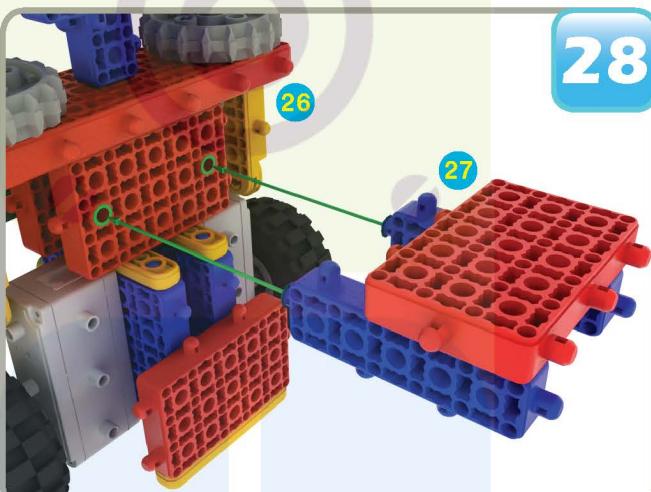


plate × 1 plate × 2

28



26

27

29



hub × 1

30

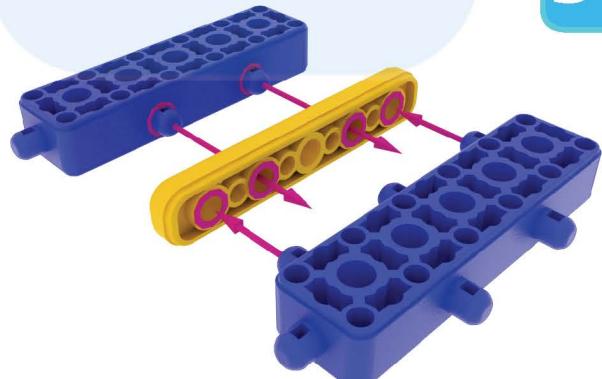
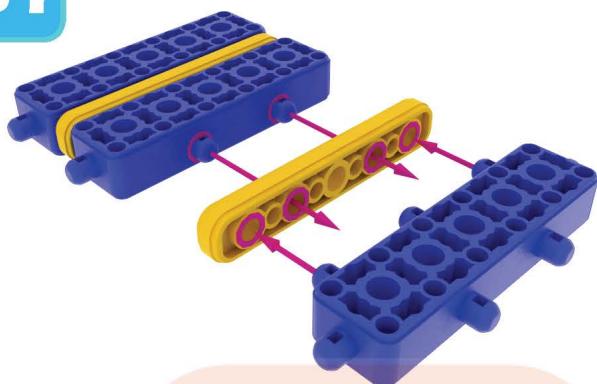


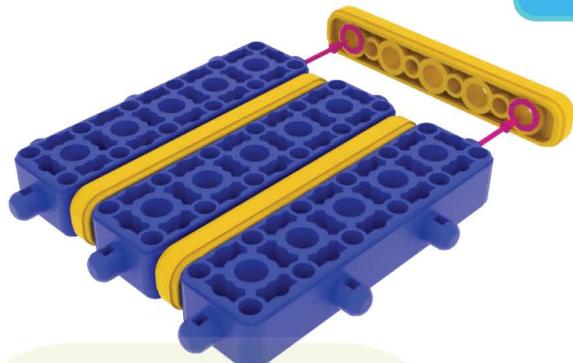
plate × 2 connector × 1

31



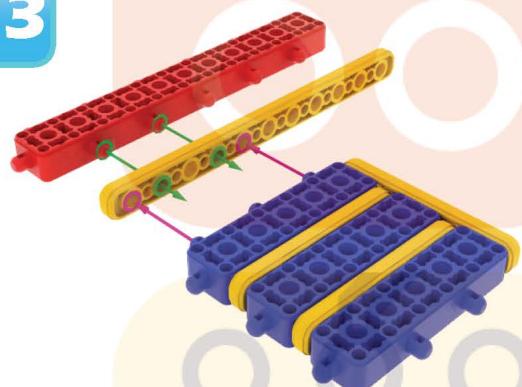
— × 1 — × 1

32



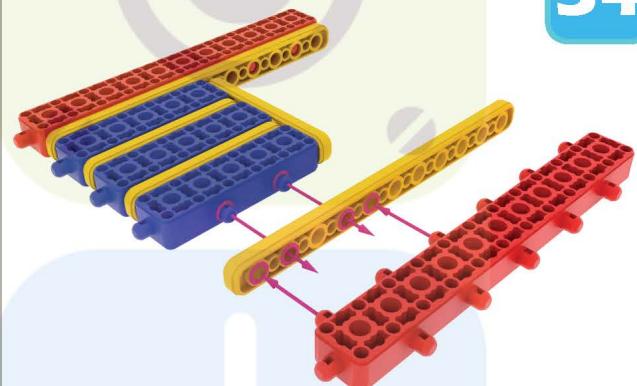
— × 1

33



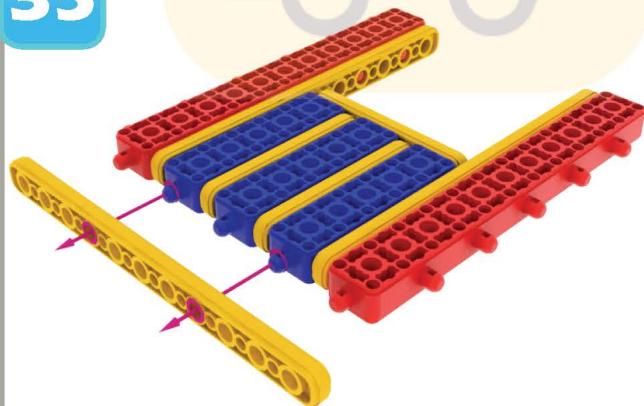
— × 1 — × 1

34



— × 1 — × 1

35



— × 1

OK

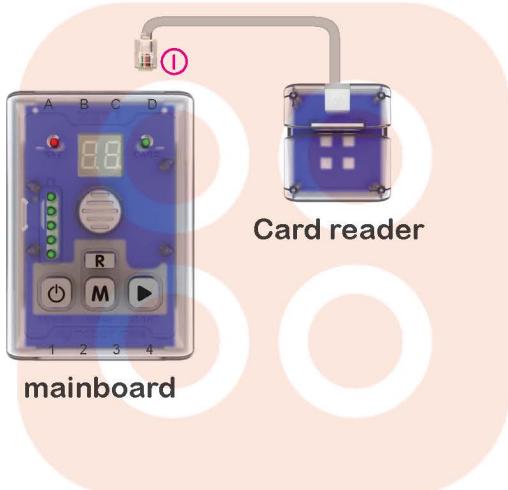
— × 3



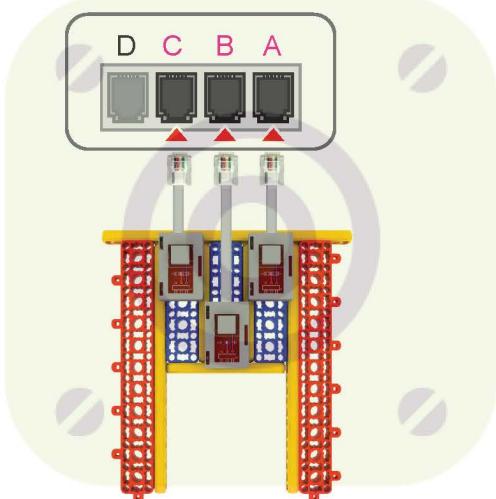
Make robot move

Connect mainboard / touch sensor

- ① Connect card reader to connector D.



- ② Connect 3 pcs of touch sensors to connector A, B, C.

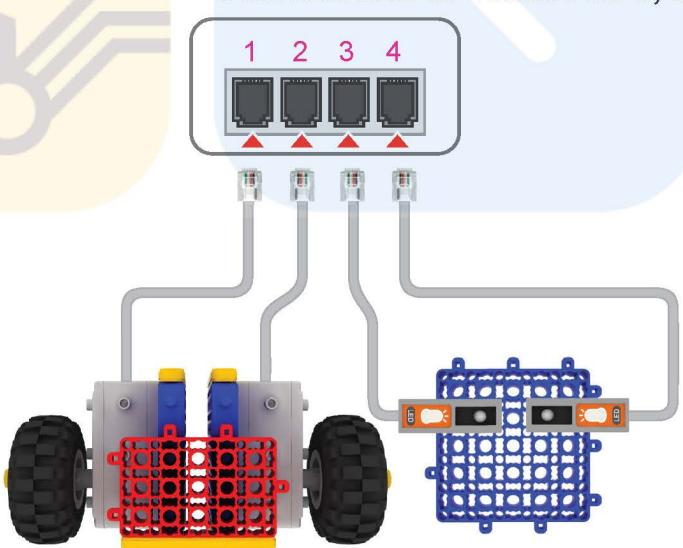


Connect DC motor

- ① Connect 2 pcs of DC motors to connector 1,2.



- ② Connect 2 pcs of DC motors to connector 1,2.
Connect LED to connector 3,4.



Learn how to operate the mainboard



1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

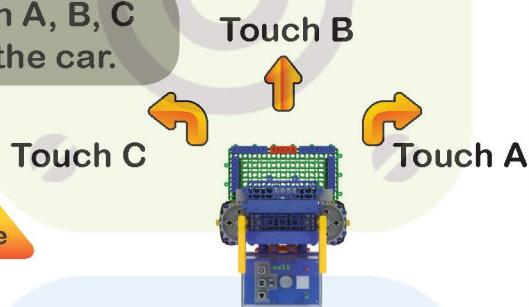
Let Serving-Bot move

★ Multiple Card-013



Press touch A, B, C
to control the car.

Action mode



* Every time press touch
sensors, the LED will light on.

★ Learn how to use program cards.

① P-026



② P-001



③ P-025



④ P-003



⑤ P-027



⑥ P-004



⑦ P-028



⑧ P-009

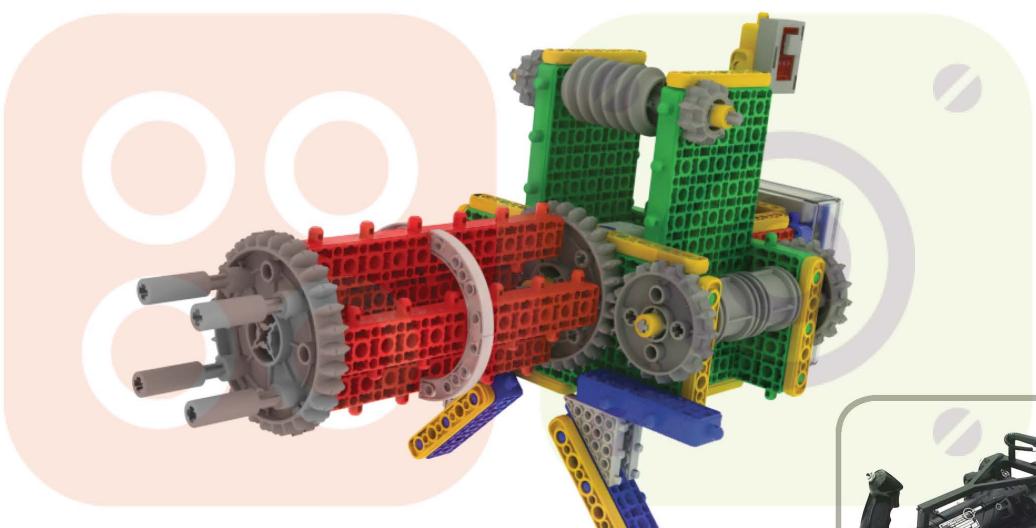


⑨ P-024





Gatling-Gun



Part List

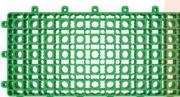
| | | | |
|-------------|-----|-----|-----|
| × 8 | × 1 | × 2 | × 7 |
| × 1 | × 4 | × 4 | × 6 |
| × 1 | × 4 | × 1 | × 2 |
| × 2 | | × 1 | × 2 |
| × 4 | × 2 | × 1 | × 2 |
| × 4 | × 1 | × 4 | × 2 |
| L-Shaft × 2 | | × 4 | × 4 |
| M-Shaft × 1 | | | |
| | | | |
| | | | |

M-Shaft

01



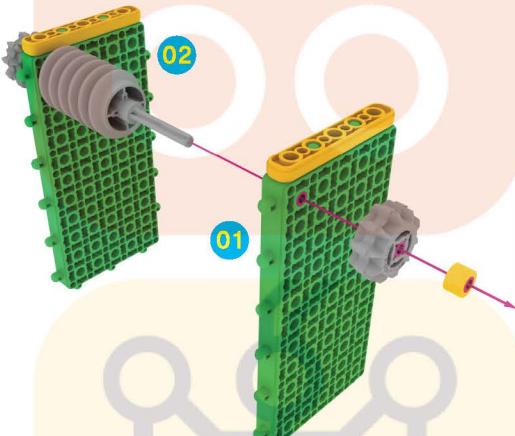
×2



×2



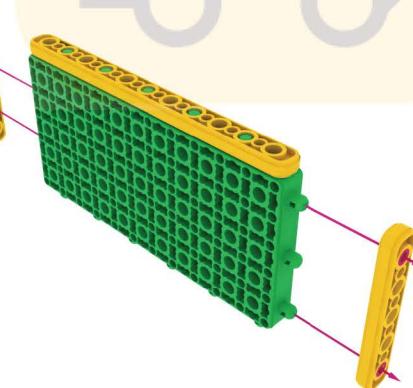
03



×1 **×1**

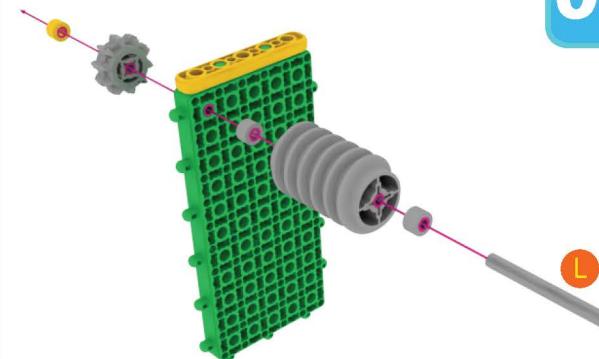
L-Shaft

05



×2

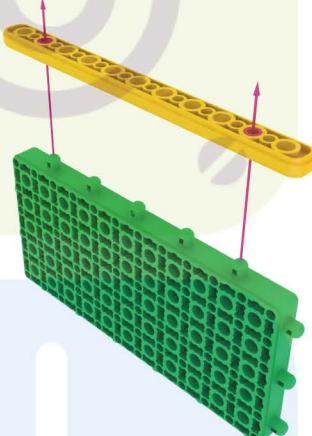
02



×1 **×1** **×1** **×2**

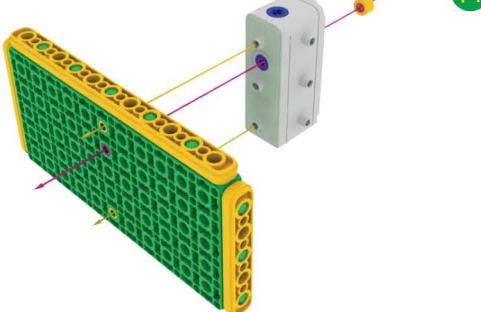
L-Shaft **×1**

04



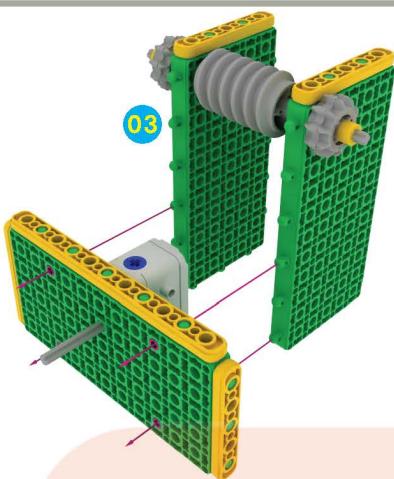
×1 **×1**

06

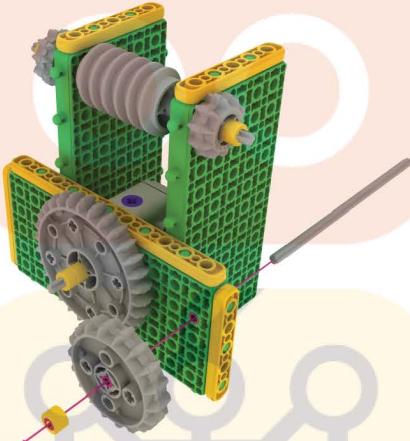


×1 **×1** **M-Shaft** **×1**

07

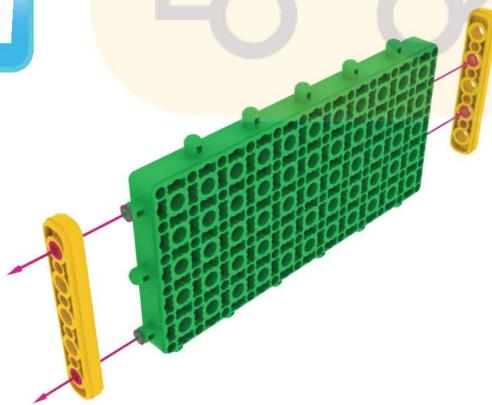


09



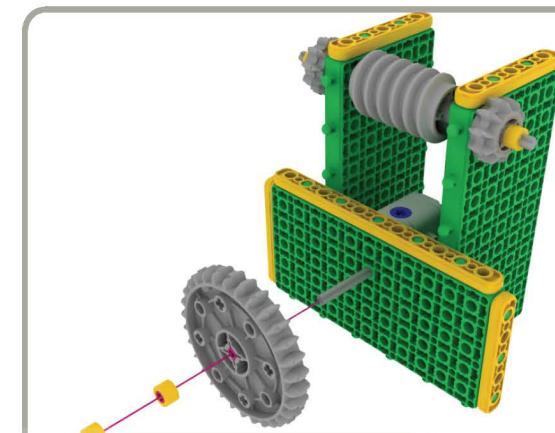
×1 ×1 L-Shaft ×1

11



×1 ×2

08



×1 ×2

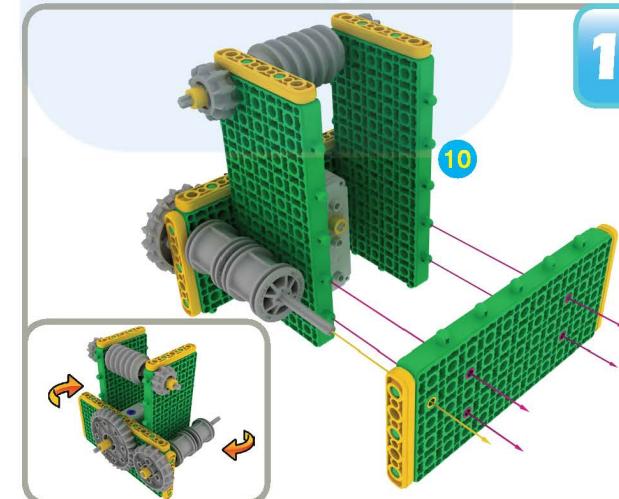
10



×2

L-Shaft

12

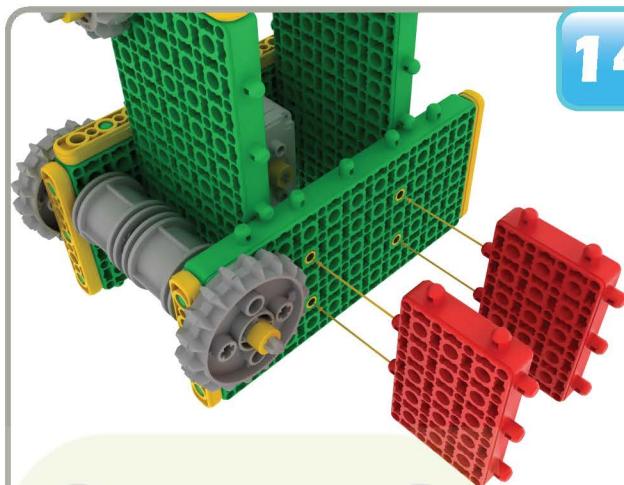


13



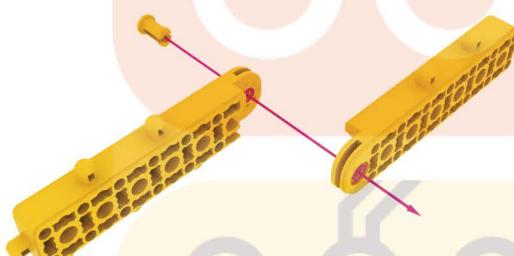
● ×1 ○ ×1

14



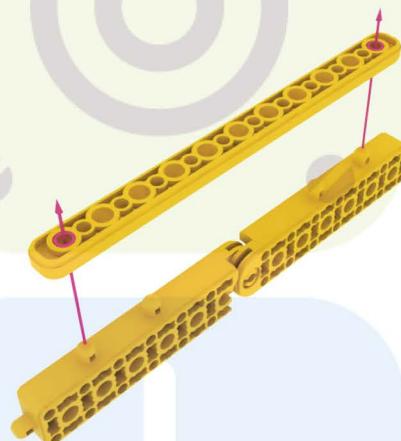
■ ×2

15



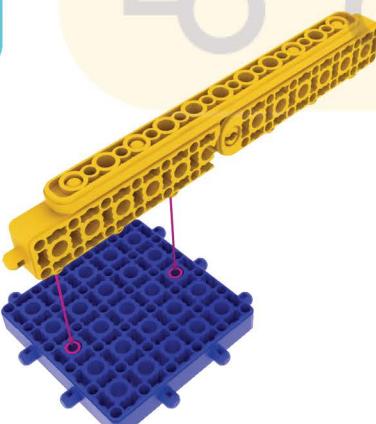
— ×1 — ×1 — ×1

16



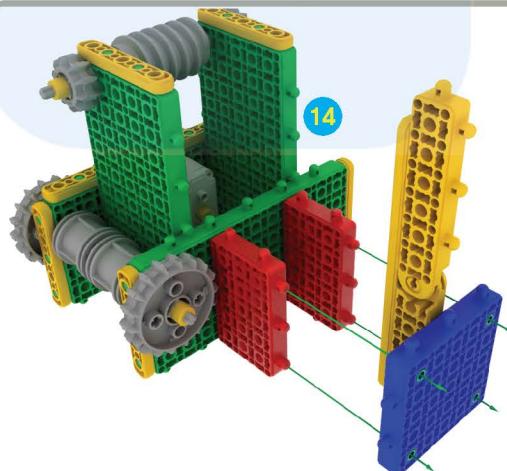
— ×1

17



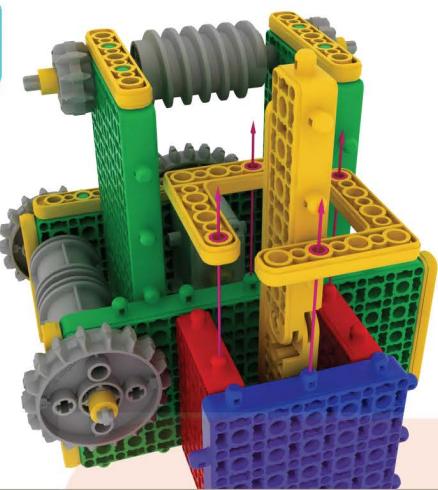
■ ×1

18

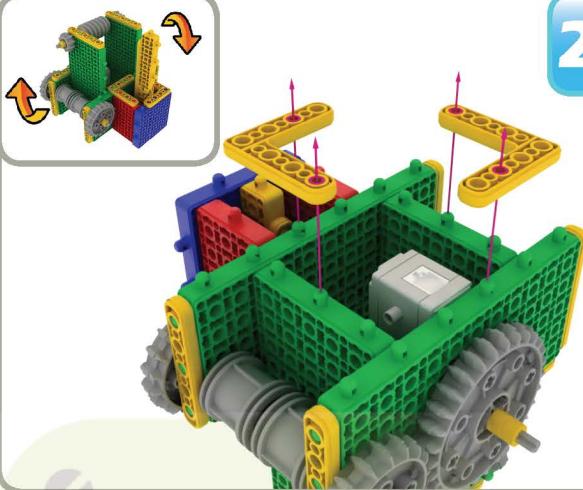


14

19

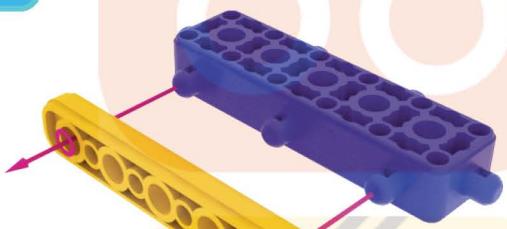


20



L ×2

21



×2

•×2 •×2

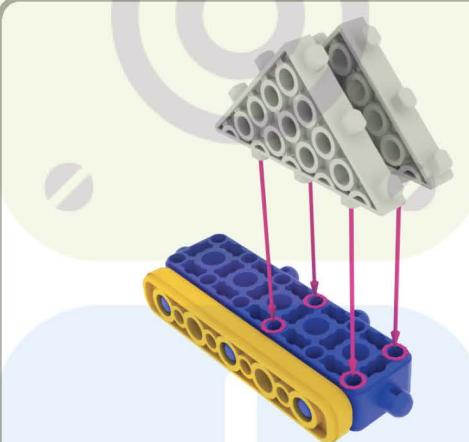
23



•×1

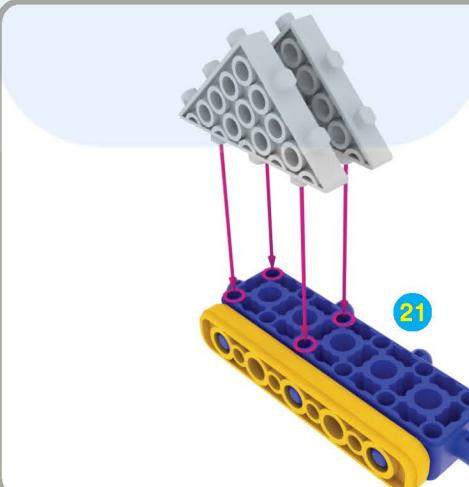
L ×2

22



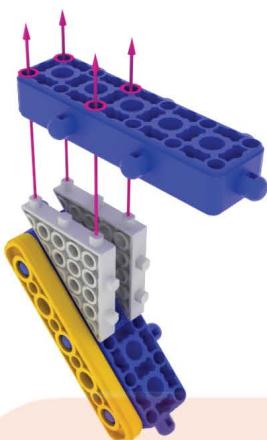
△ ×2

24



△ ×2

25



Technic Beam 1x8
x1

27



Technic Beam 1x8
x2

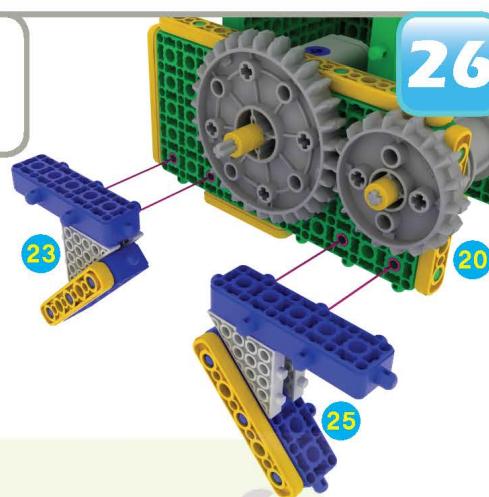
29



Technic Beam End Cap
x2



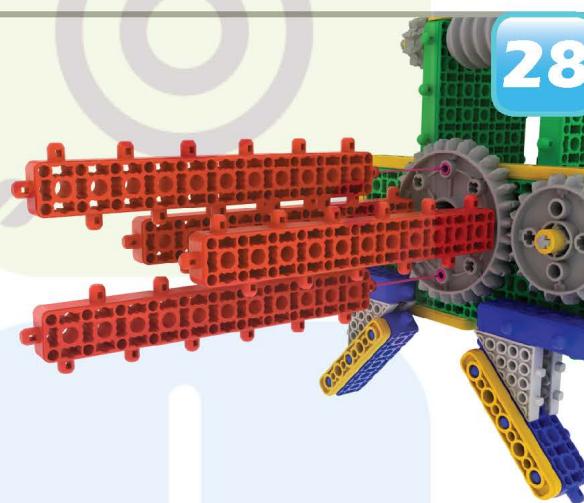
26



Technic Beam 1x8
x1

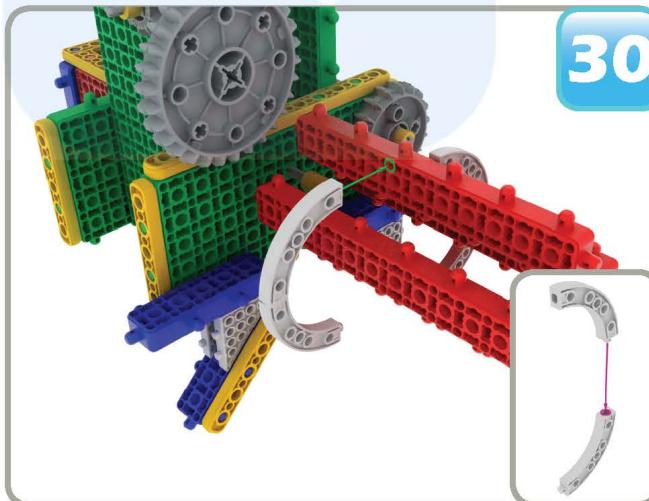
Technic Beam End Cap
x1

28



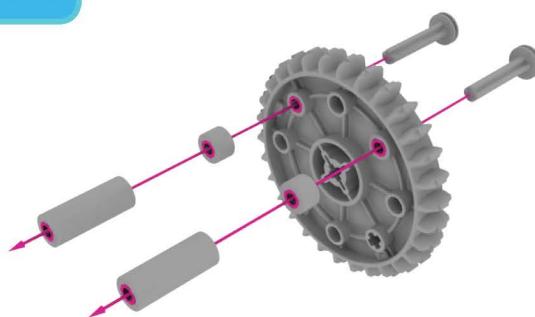
Technic Beam 1x8
x2

30



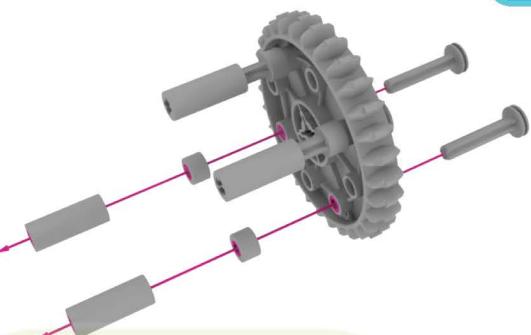
Technic Beam End Cap
x2

31



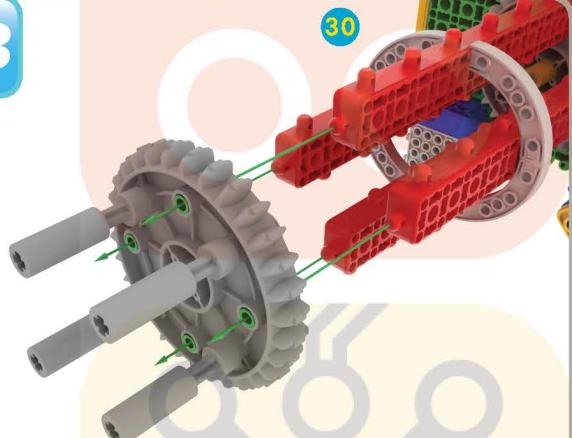
×1 ×2 ×2 ×2

32



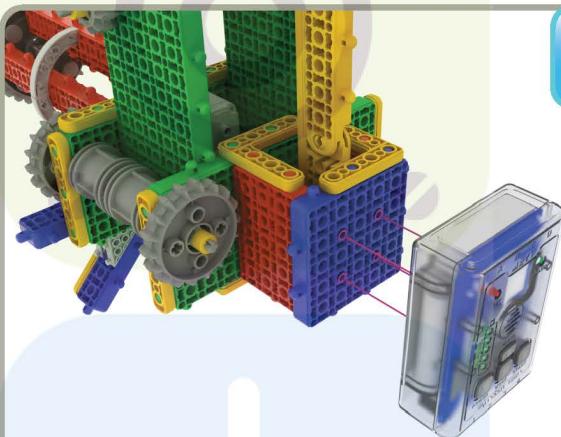
×2 ×2 ×2

33



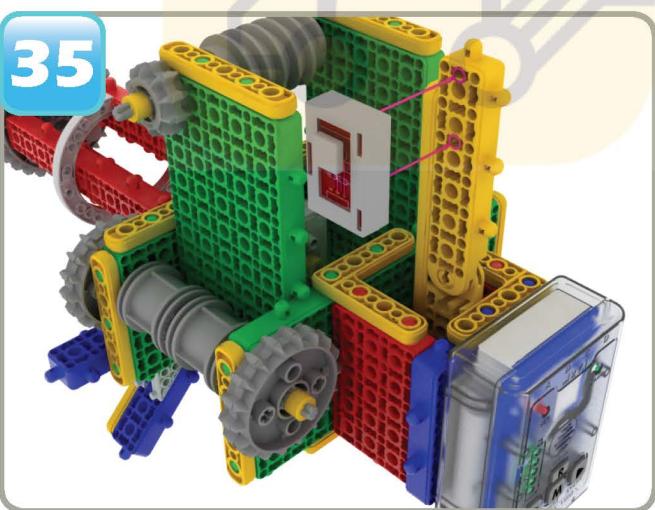
30

34



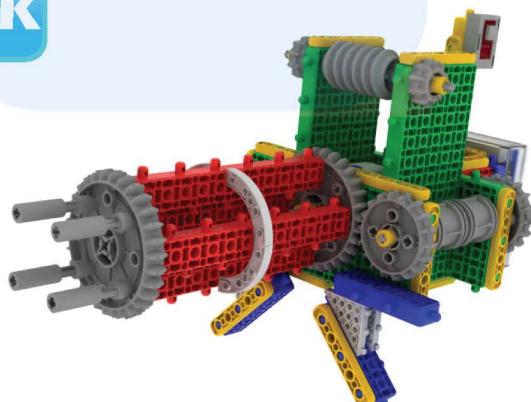
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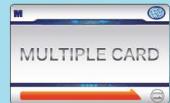
35



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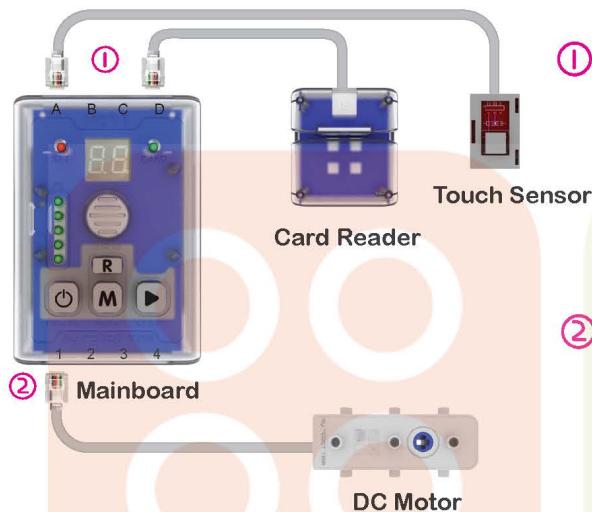
OK



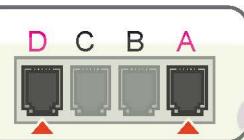


Make robot move

Connect mainboard



① Connect Card Reader to connector D.
Connect Touch Sensor to connector A.



② Connect DC motor to connector 1.



Learn how to operate the mainboard



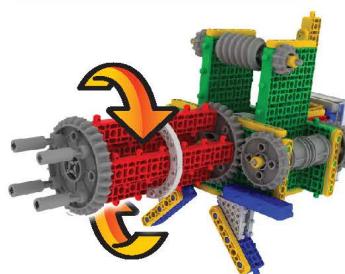
1. Confirm the connection of motor and card reader.
2. Press "Power" button.
3. Press "Mode" button.
4. Wipe cards as orders and then press "Mode" button.
5. Pull off card reader from mainboard.
6. Press "Play" to make the robot move.

Let Gatling-Gun move!

★Multiple Card-002



Action mode



Press touch sensor, the Gatlin-Gun will move on.

*Try to make your own program with what you learn.



If sense the sensor ?
(IF-IN1)



Motor will go forward.
(FRONT)



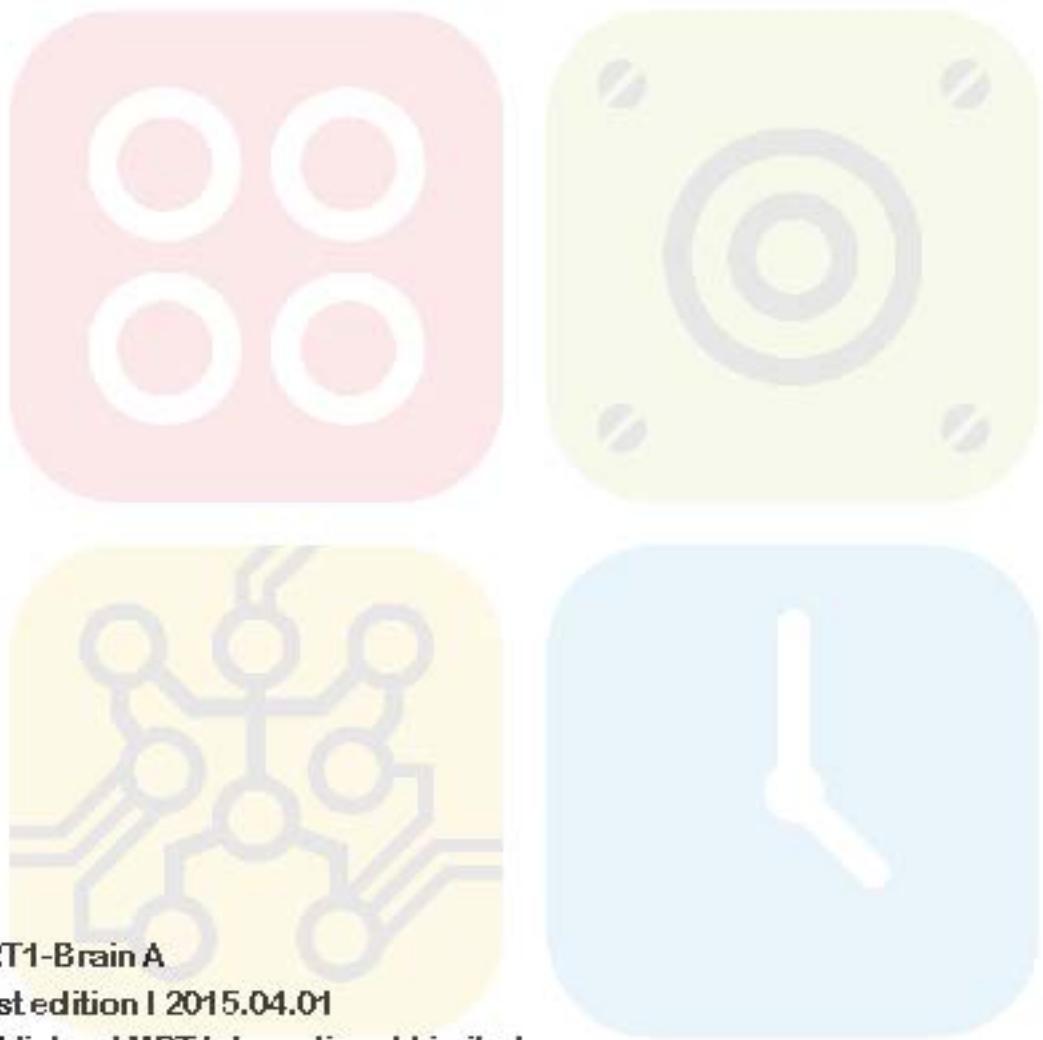
If can't sense the sensor ?
(IF-NOT)



Motor will stop.
(STOP)



Repeat



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