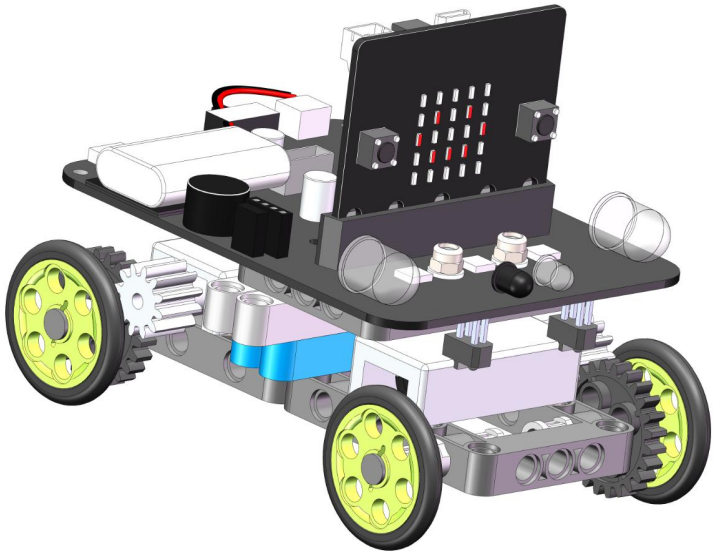
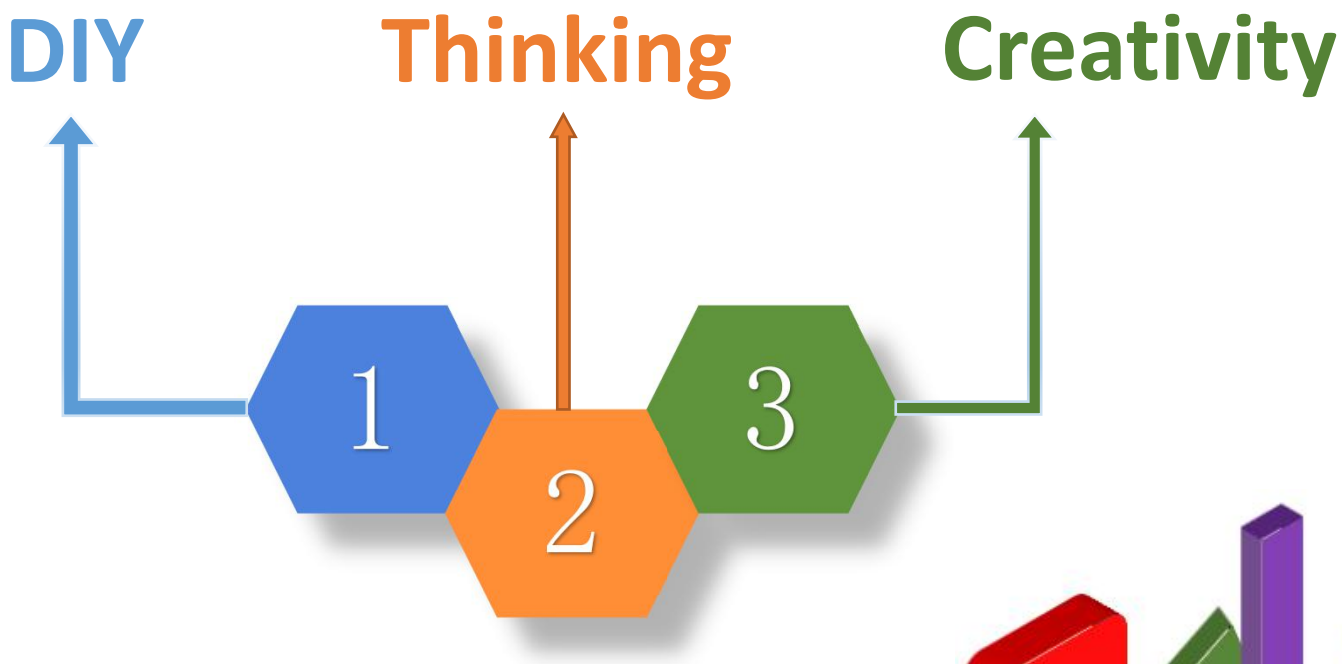
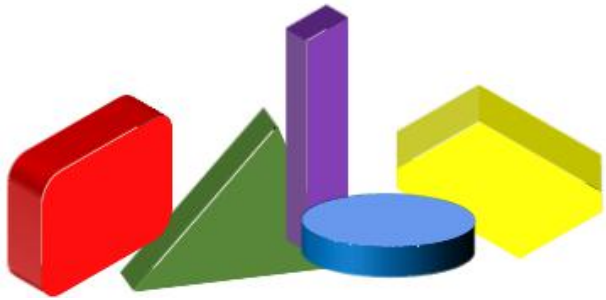
Yahboom Building:bit blocks

No.1 Mini car

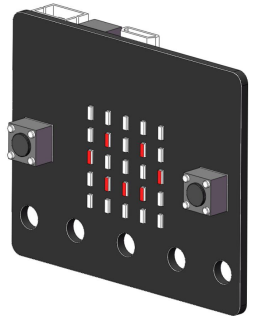
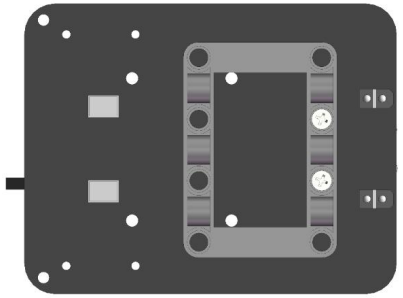
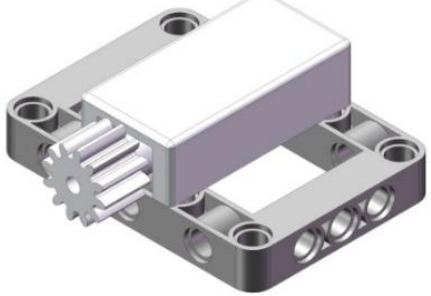
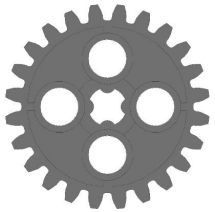
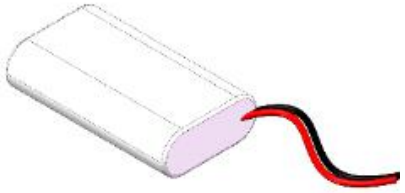
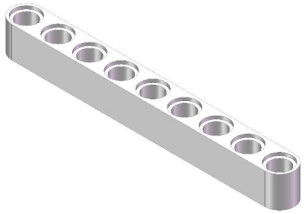
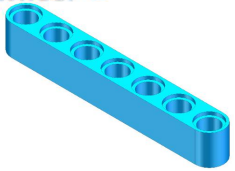



DIY
Thinking
Creativity
1
2
3

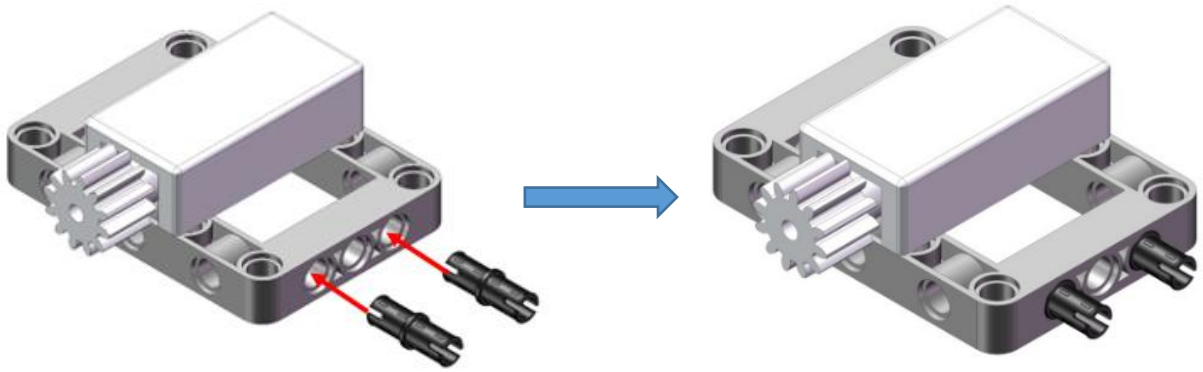


DIY: This section is mainly to teach you to assemble mini car with building blocks.

Prepare the following blocks and we will assemble a cute building block mini car.

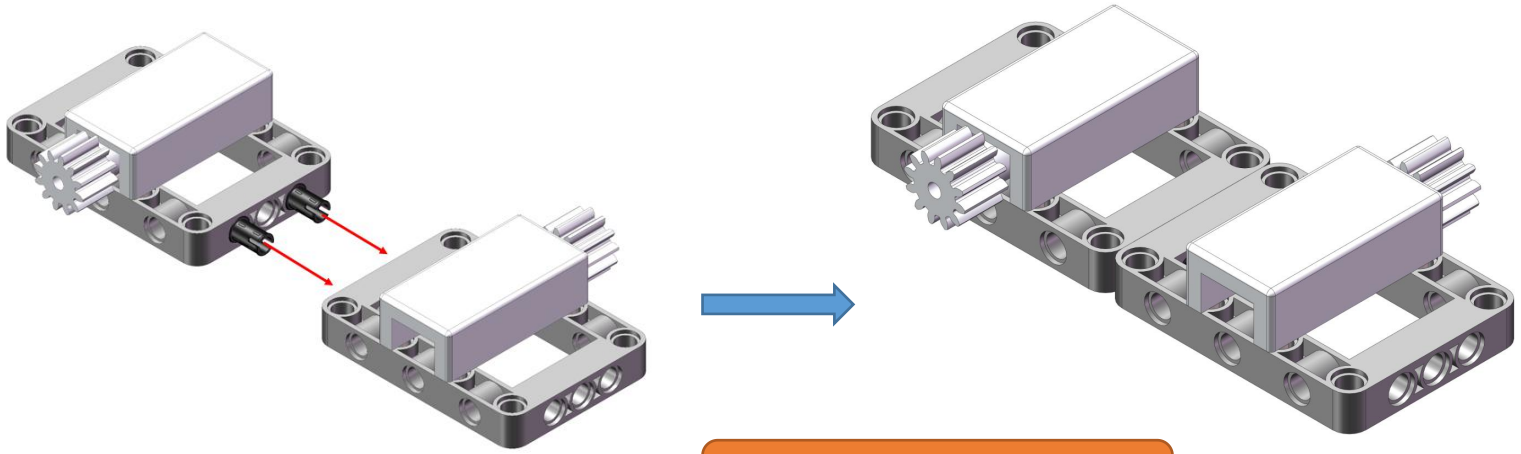
 Micro:bit*1	 Micro:bit expansion board*1	 Motor module*2	 24 toothed wheel*2	 Rubber ring+24 pulley*4
 1x4 Shaft cutoff *4	 Battery*1	 1x9 hole arm*	 1x7 hole arm*2	 1x3 bolt building block*4
 1x1 Bushing building block*6	 1/2 Bushing building block*4	 1x2 Frictional pin building block*8		

Step 1: Find a motor module and two 1x2 friction pin building blocks for assembly.



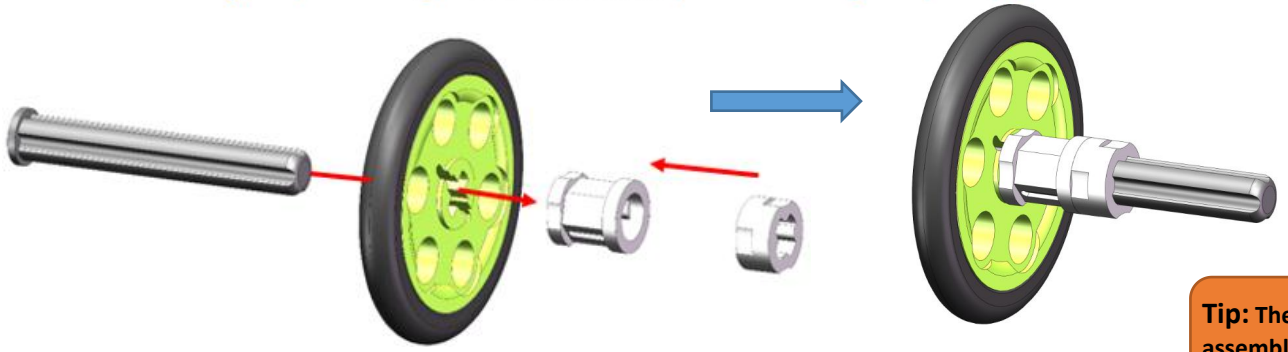
Tip: The function of the motor is to turn the wheel of the car. We need to use two motor modules .

Step 2: Combine the two motor modules that have been assembled.



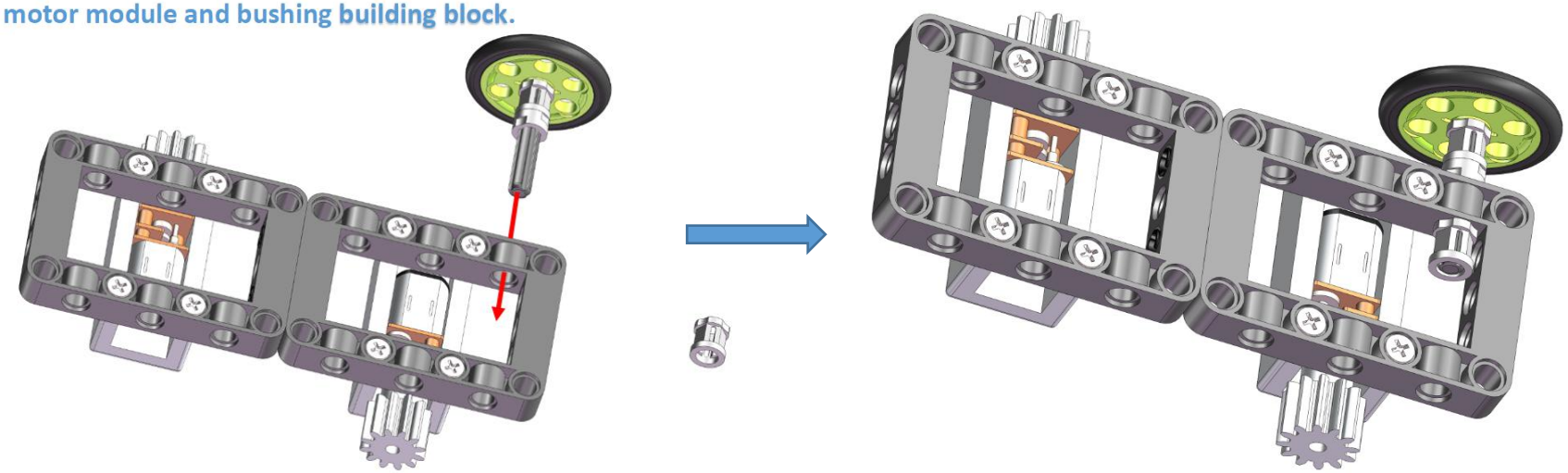
Tip: Please pay attention to the direction of the two motor modules.

Step 3: Find a 1x1 bushing, a 1/2 bushing, a 1x4 shaft cutoff, a rubber ring +24 pulleys, and assemble them.

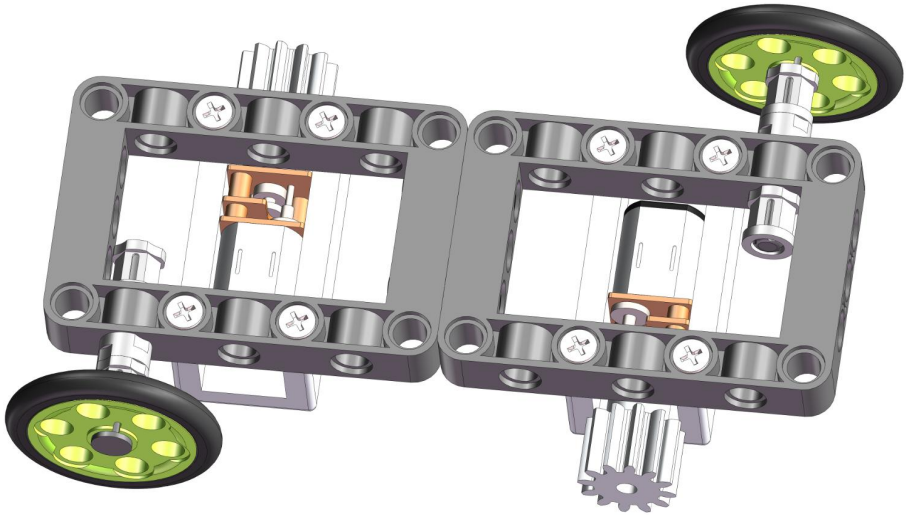


Tip: There are two wheels in this way of assembly, Please do not forget the other one.

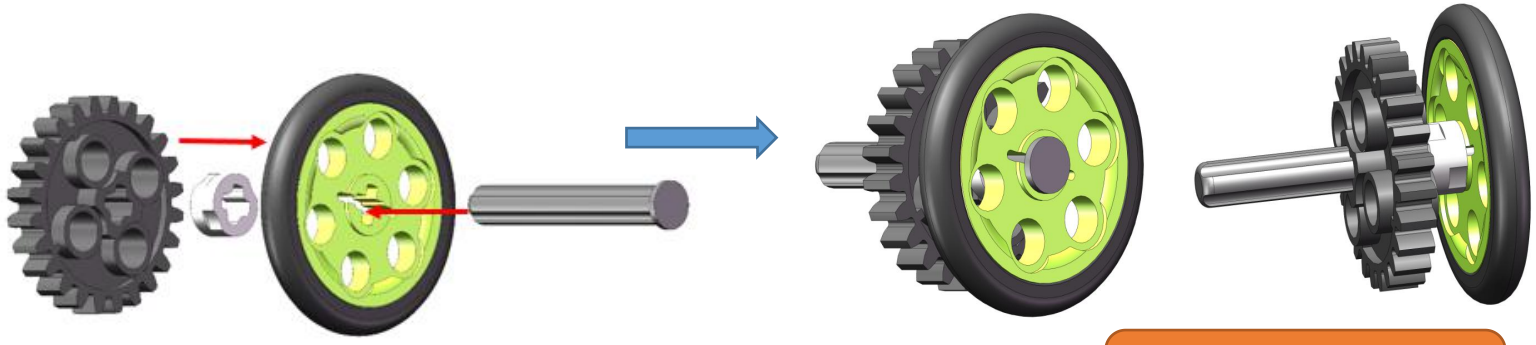
Step 4: Continue to find a 1x1 bushing, and then pass the 1x4 shaft of the wheel through the motor module and bushing building block.



Step 5: Assemble the diagonally facing wheels in the same way.

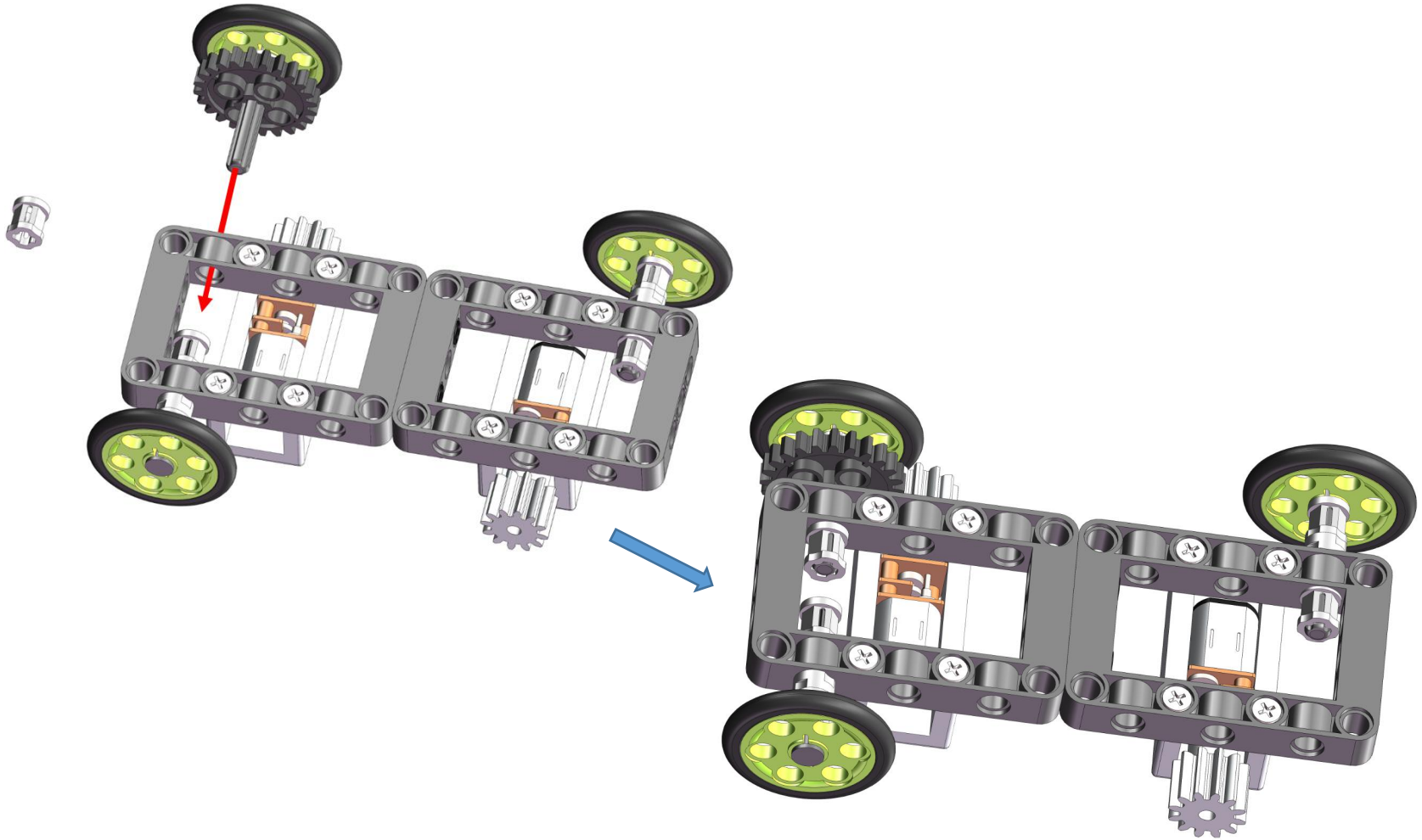


Step 6: Continue to find 1/2 bushings, rubber ring wheels, 1x4 shaft with cut-off, and 24-toothed wheel and assemble them.

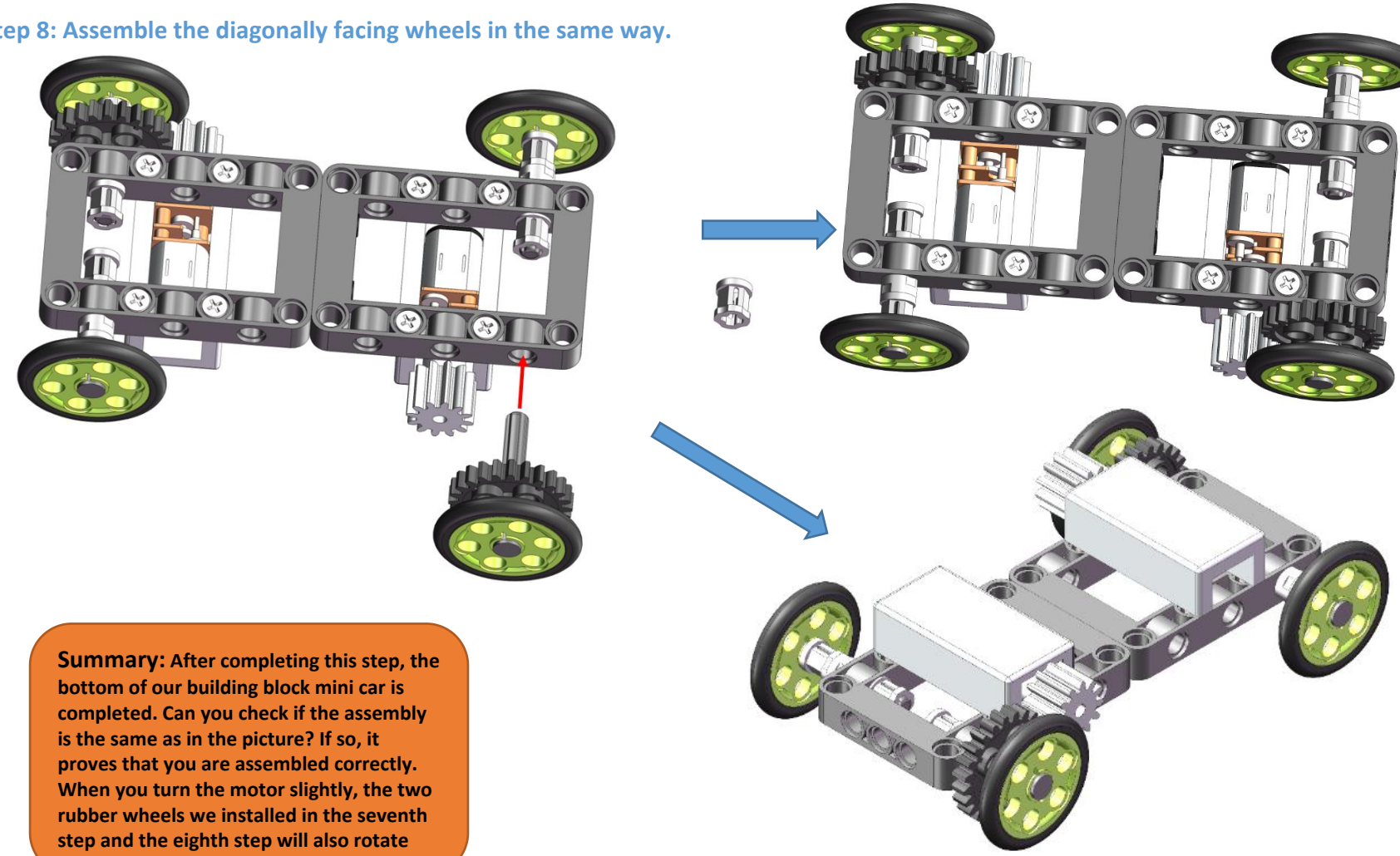


Tip: There are two wheels in this assembly method, please don't forget the other one.

Step 7: Continue to find a bushing and then pass the 1*4 shaft of the wheel through the motor module and bushing.

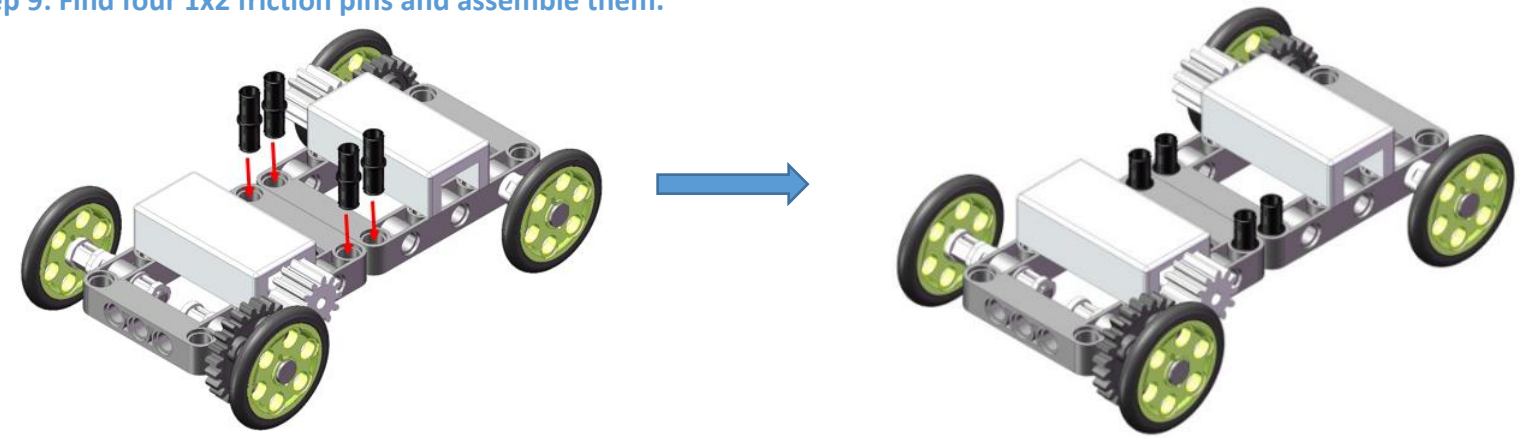


Step 8: Assemble the diagonally facing wheels in the same way.

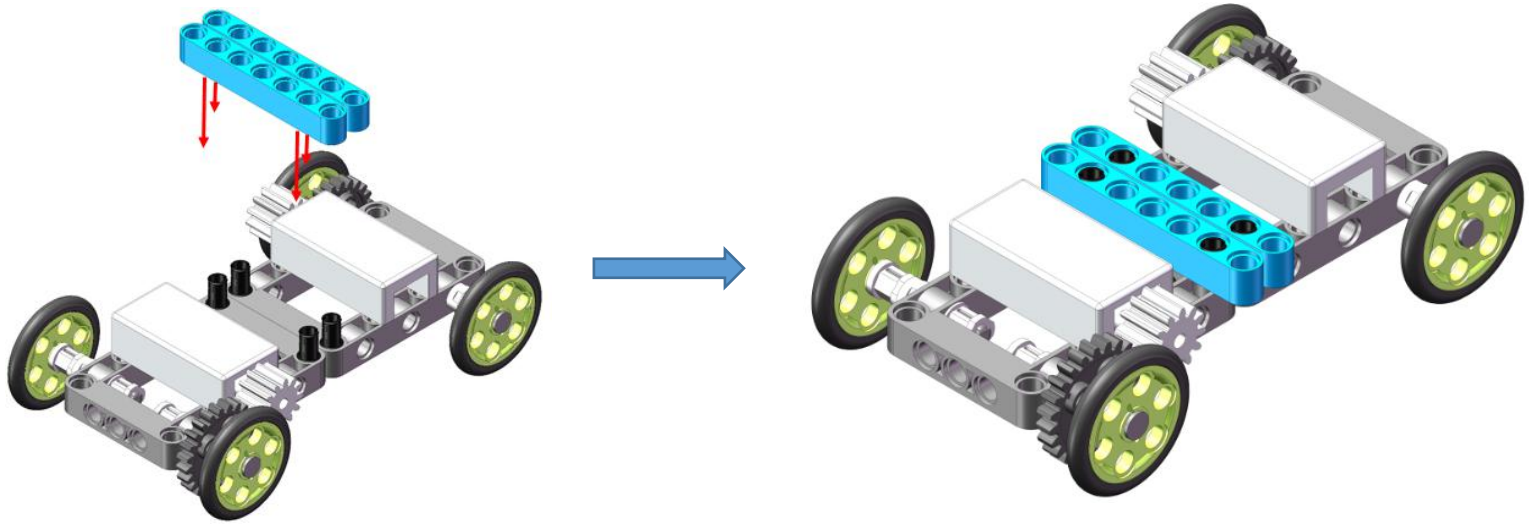


Summary: After completing this step, the bottom of our building block mini car is completed. Can you check if the assembly is the same as in the picture? If so, it proves that you are assembled correctly. When you turn the motor slightly, the two rubber wheels we installed in the seventh step and the eighth step will also rotate together.

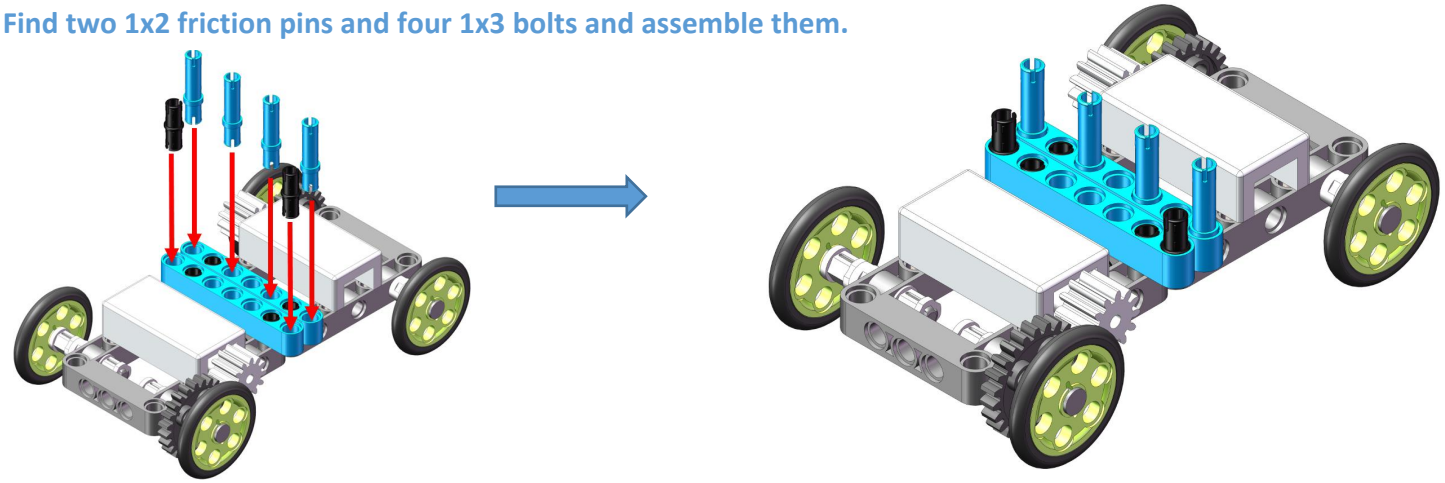
Step 9: Find four 1x2 friction pins and assemble them.



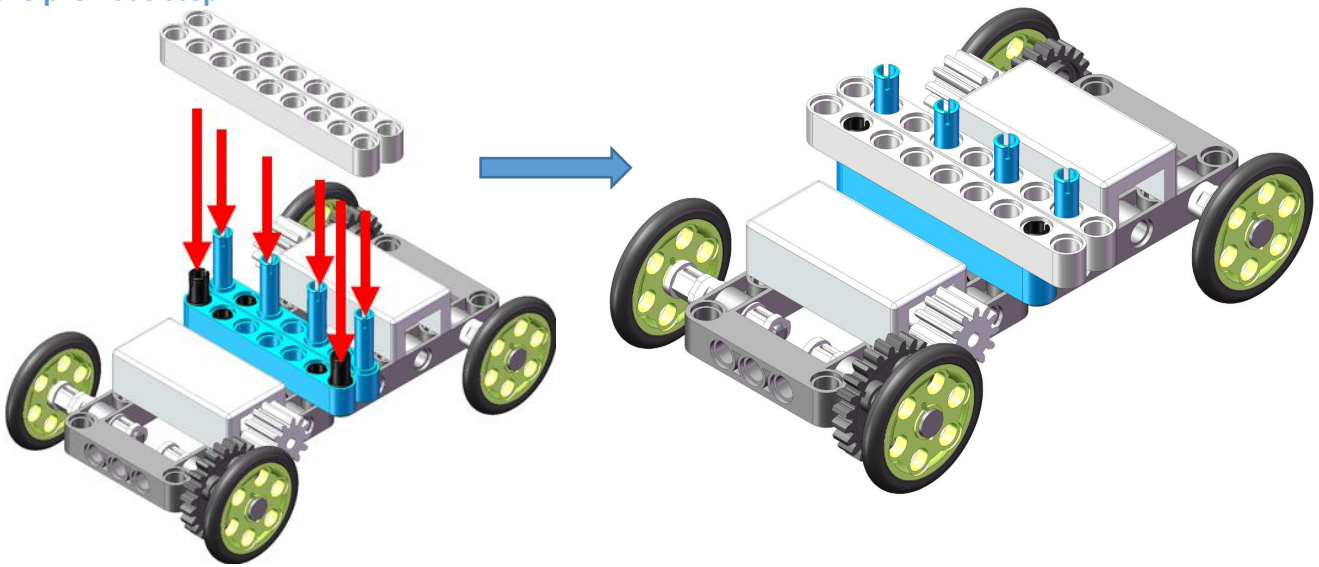
Step 10: Locate the two 1x7 hole arms and insert them into the four black 1x2 friction pins that have been assembled in the previous step.



Step 11: Find two 1x2 friction pins and four 1x3 bolts and assemble them.

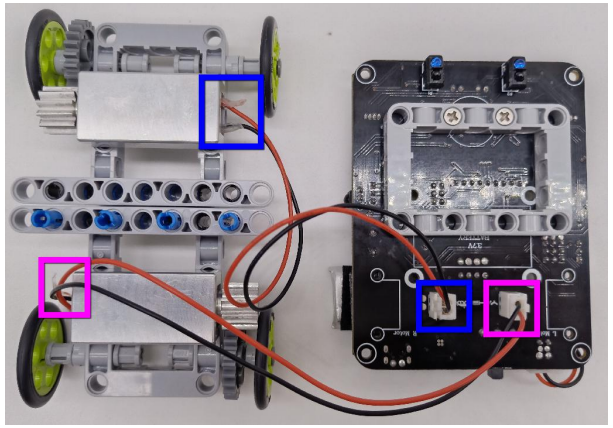


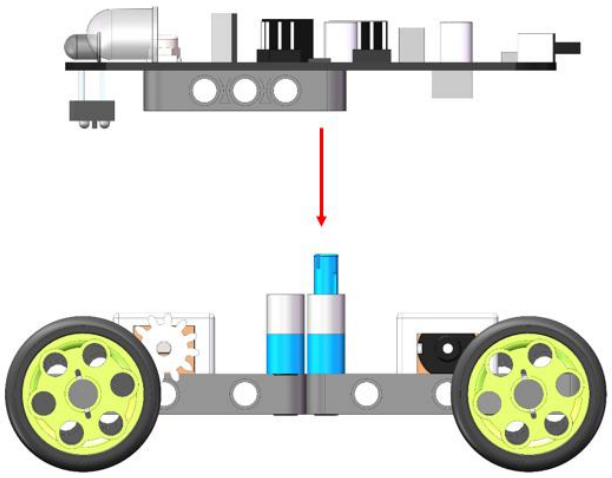
Step 12: Locate the two 1x9 hole arms and insert them into the 1x2 friction pins and the 1x3 bolts that have been assembled in the previous step.

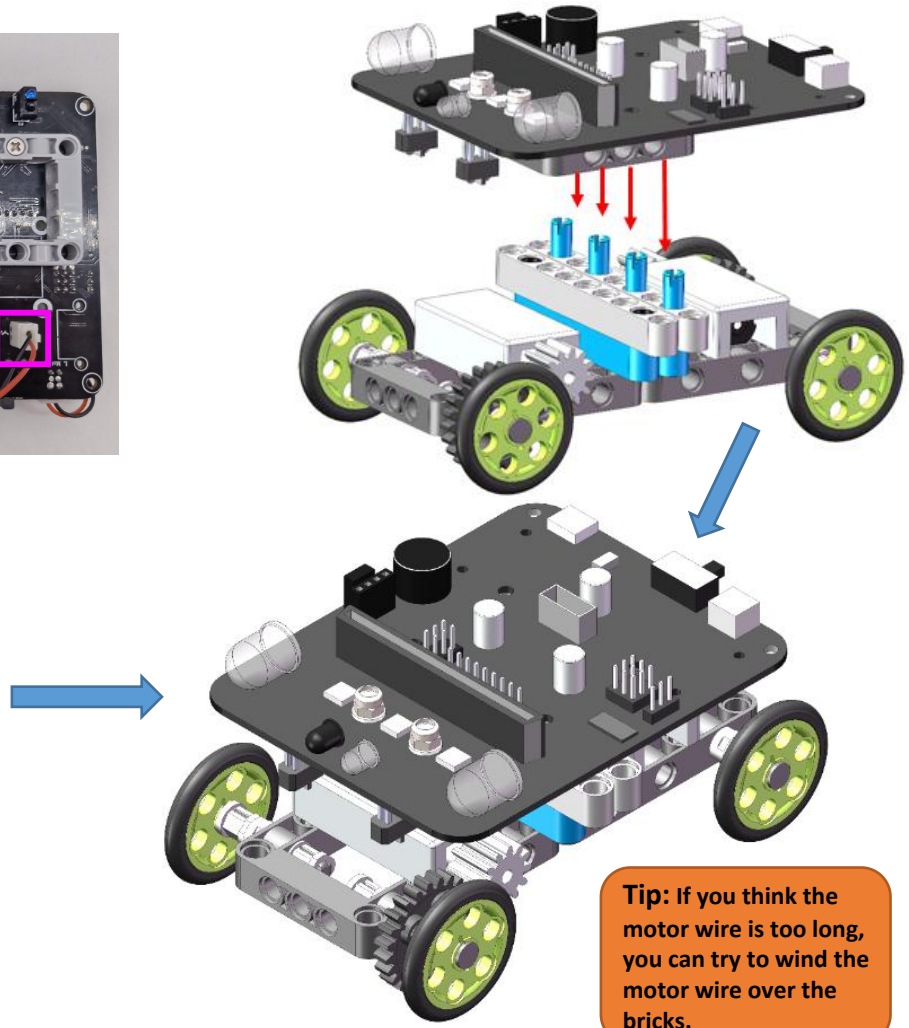


Tip: Look carefully at each picture in the installation step, and the shape of each brick. Then count the holes above the blocks. When assembling the blocks, make sure that each block is inserted into the correct hole. Otherwise, the shape will not be correct.

Step 13: Locate the micro:bit expansion board, connect the wiring of the two motors to the micro:bit expansion board, and assemble the expansion board.

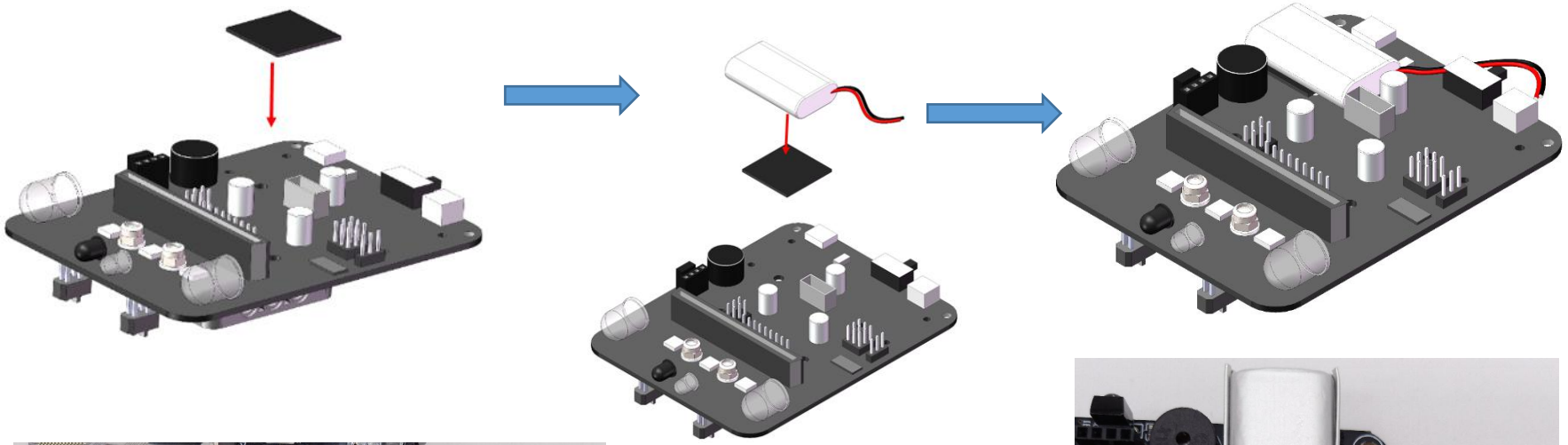


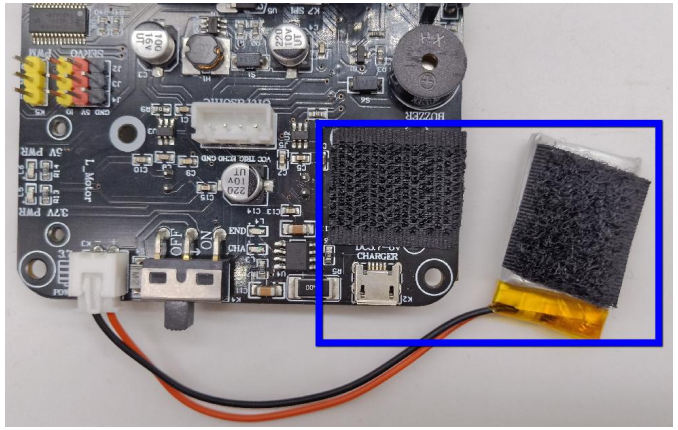




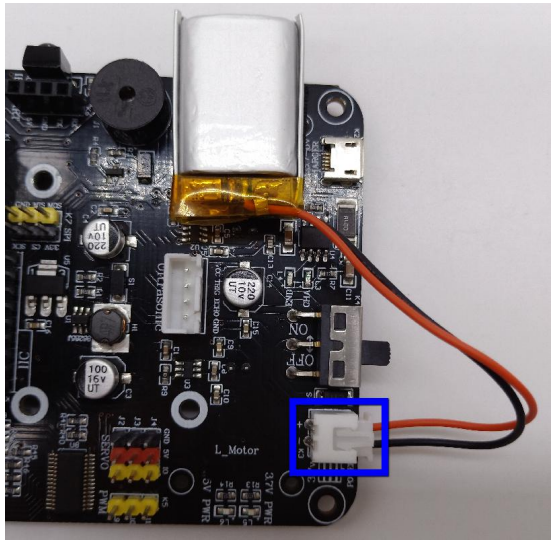
Tip: If you think the motor wire is too long, you can try to wind the motor wire over the bricks.

Step 14: Find the Velcro and micro:bit expansion board, remove the protective film on the back of the Velcro, and attach the two Velcro stickers to the lower right corner of the micro:bit expansion board and one side of the battery.

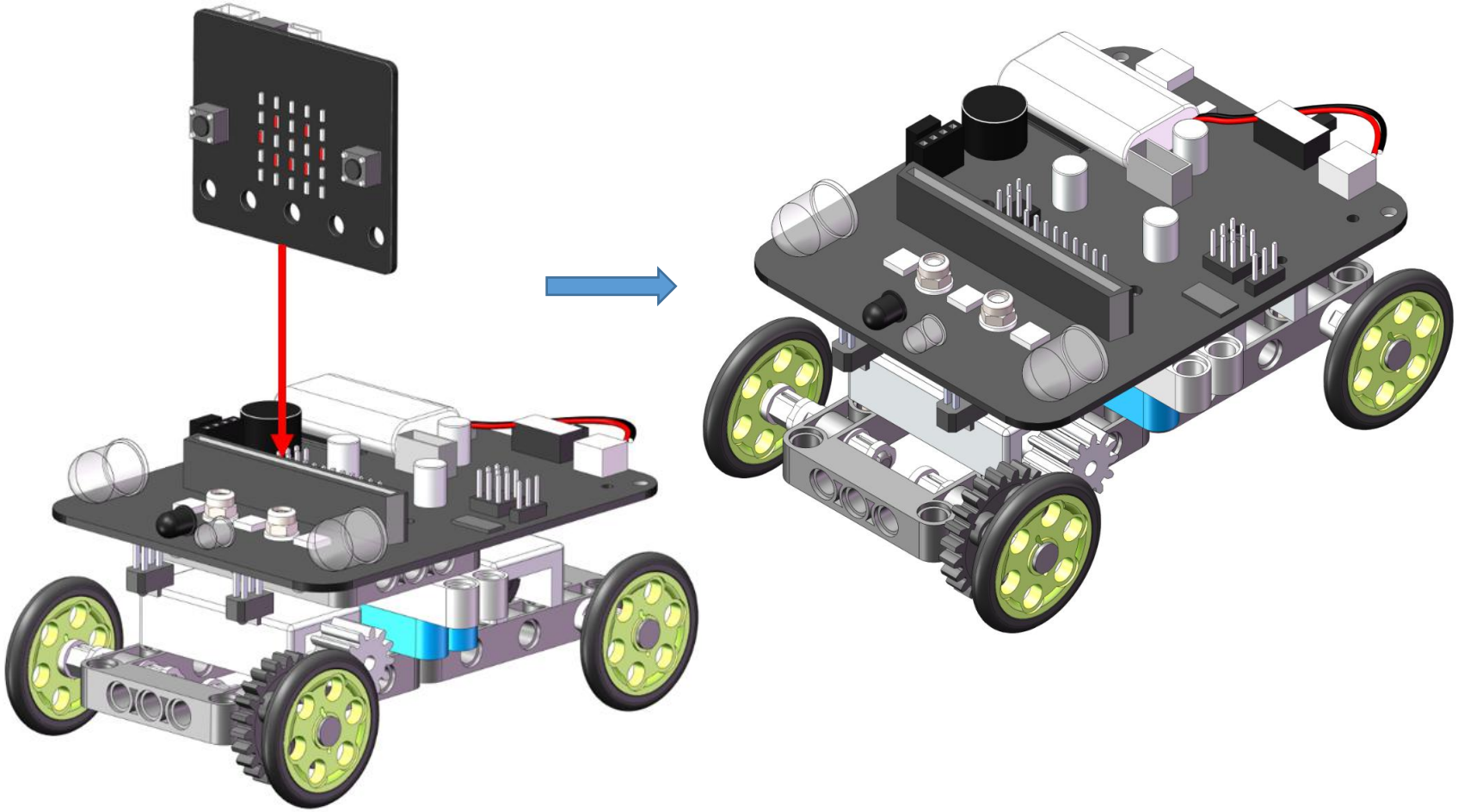




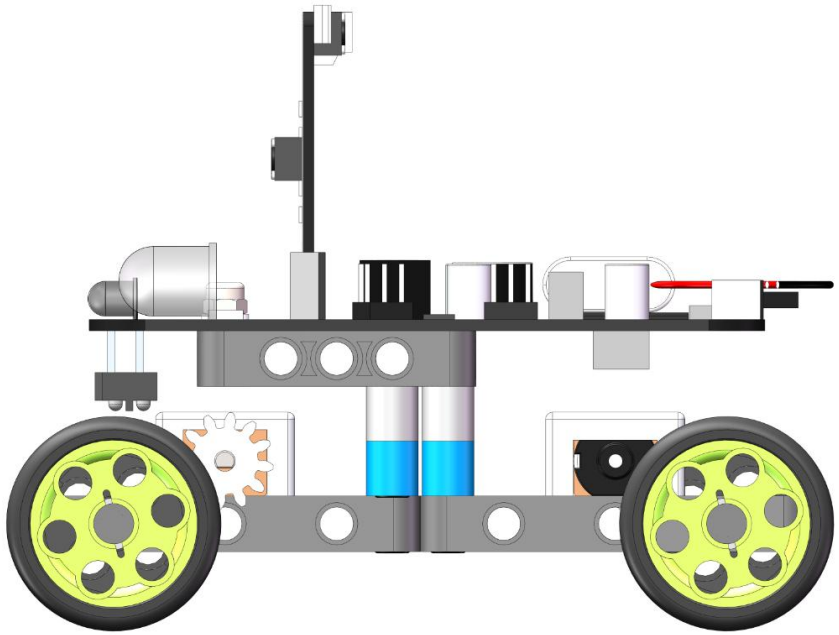
Tip: The socket for battery wiring, we use anti-reverse design. Just plug the battery cable into the socket.

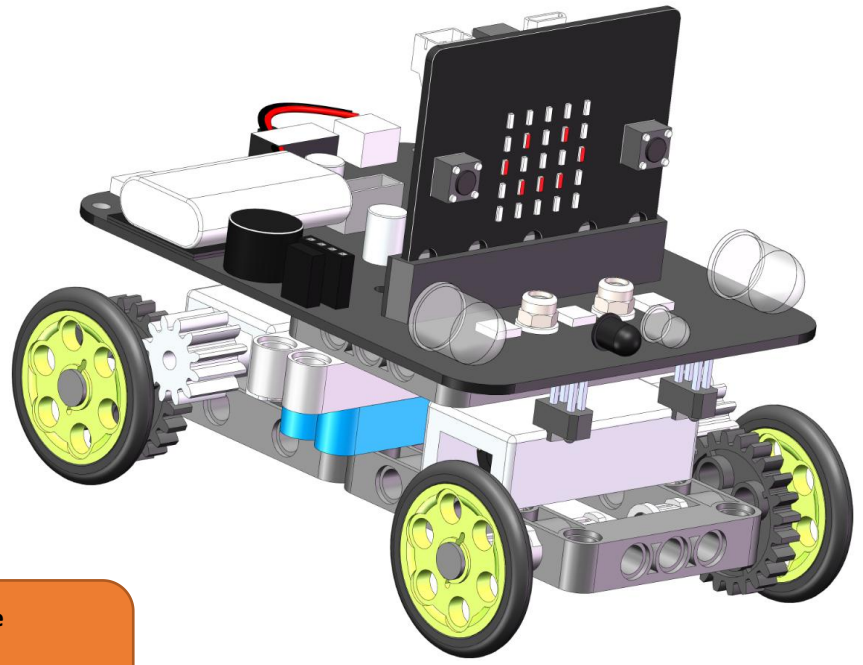


Step 15: Find the micro:bit and insert it correctly into the micro:bit expansion board.



Finished.





Summary: When the mini car is assembled here, we will show you the assembled building blocks from two different angles.
The process of assembling it yourself must be very interesting. I believe that everyone will be very happy to see the mini car they have assembled. Then you have to think about it, how can you make the car move?

Thinking: This part is mainly to teach you how to use graphical programming to control the mini car.

Preparation

- USB cable *1
- Mini car *1

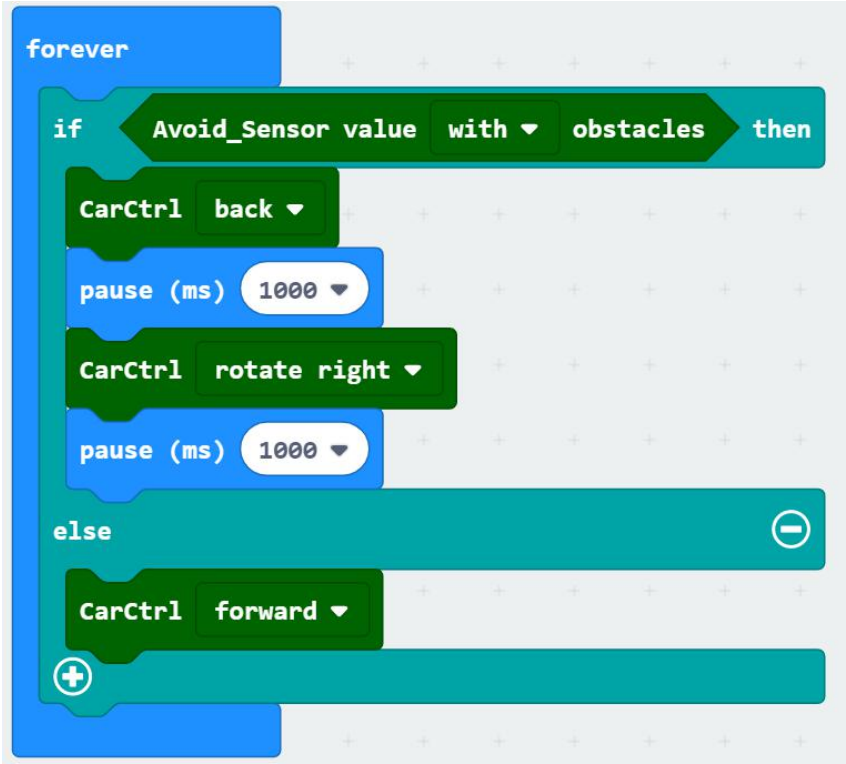
Studying Blocks

Block	Instruction
	The code inside is executed after booting.
	The program pauses for 100 milliseconds and the time can be modified by itself.

Block	Instruction
	If true then execute. If it is false, it will not be executed.
	The infrared sensor detects if there is an obstacle in front.
	The car's motion state selection: forward, back, turn left , turn right , rotate left, rotate right and stop.

Programming

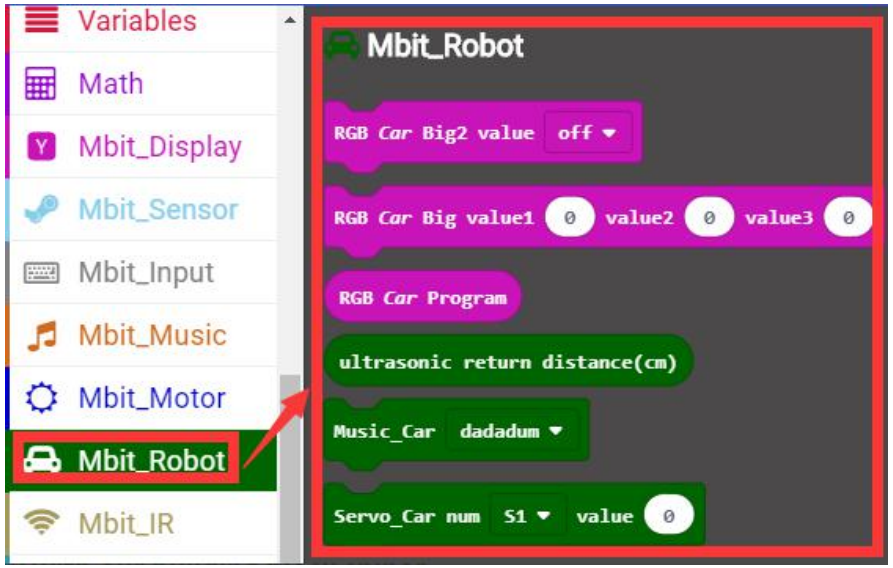
The program of this course is shown in the figure below. After downloading the program, turn on the power switch of the mini car, the mini car will run forward. If you encounter obstacles, it will back for 1 second, then rotate right for 1 second, and finally straight.

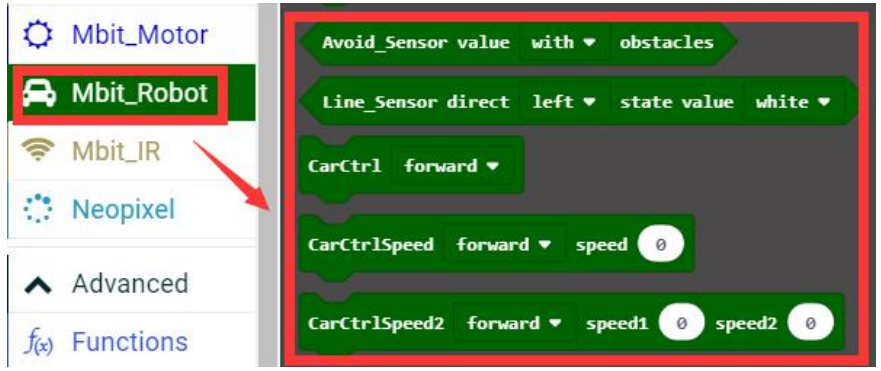


This experimental program file has been provided, you can download and use it directly according to the steps in "Instruction".

Program path: Building bit starter kit\2. Experimental course\A.Mini car\2.Mini car Infrared obstacle avoidance\Mini-car-Infrared-obstacle-avoidance.hex.

We have packaged the blocks as shown in the two figures below for this mini car.





If you see these blocks, you can definitely think of more gameplay, so don't hesitate to try it bravely.
Drag these blocks and play with our building block mini car!!!

On our official website, we also provides other tutorial: Mini car Infrared remote control, Mini car bit handle remote control.
Official website learning website: www.yahboom.net/study/Building_bit