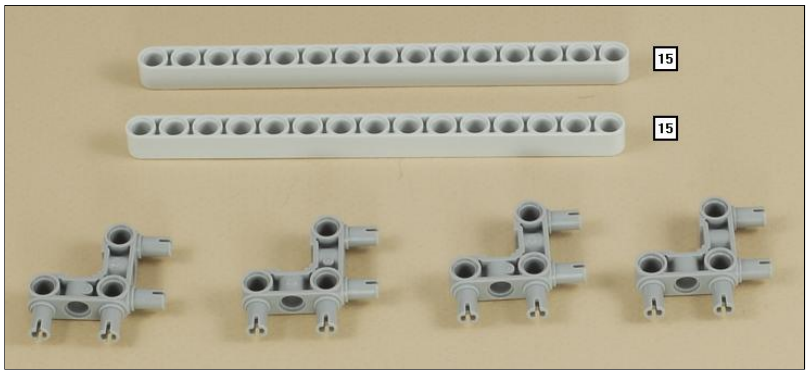
4x4 Chassis

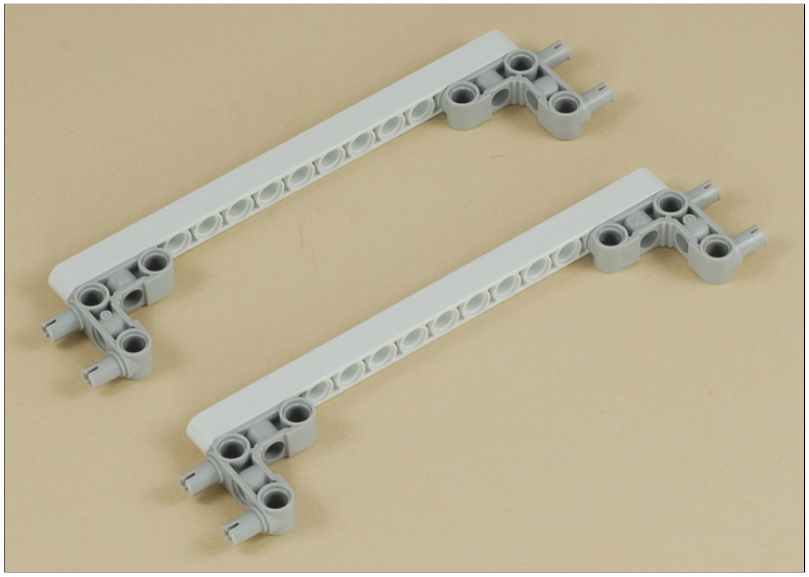
Building:

Designed for **NXT 1.0** (8527, or 9797 + 9695/9648)

Building Instructions

1





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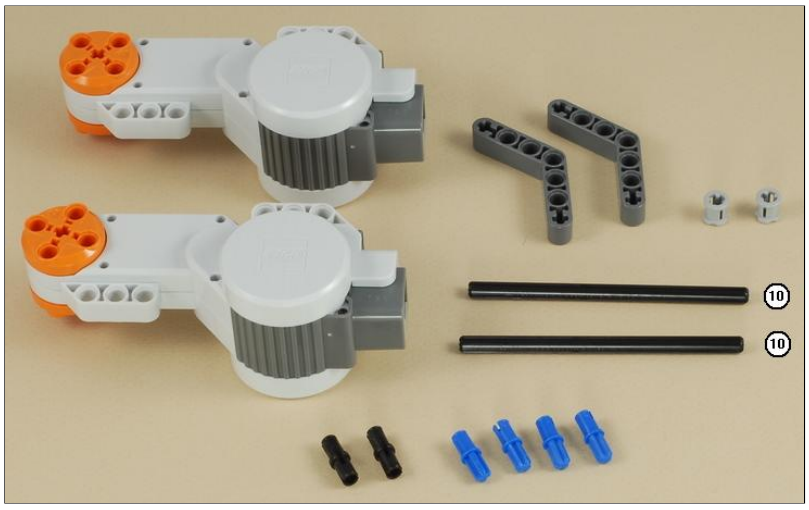

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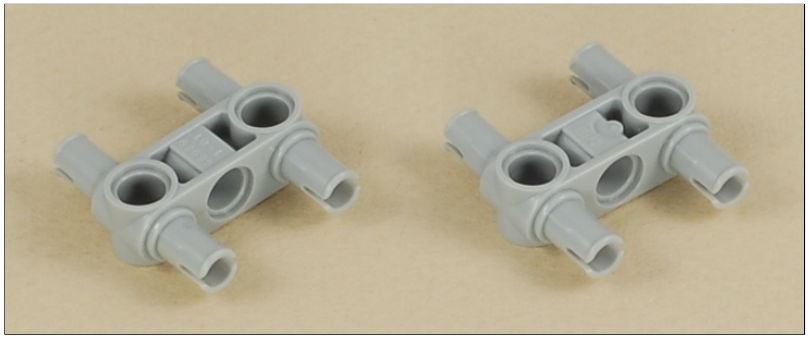

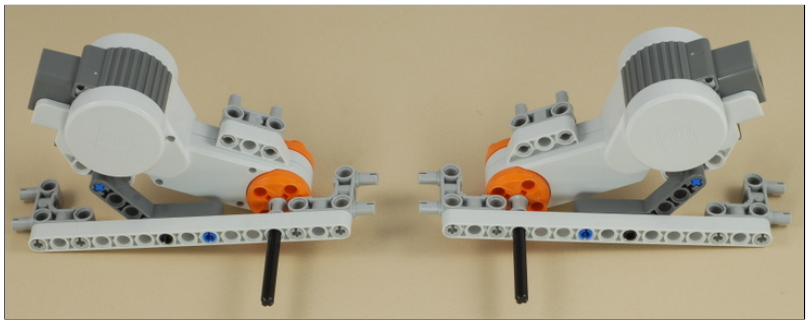

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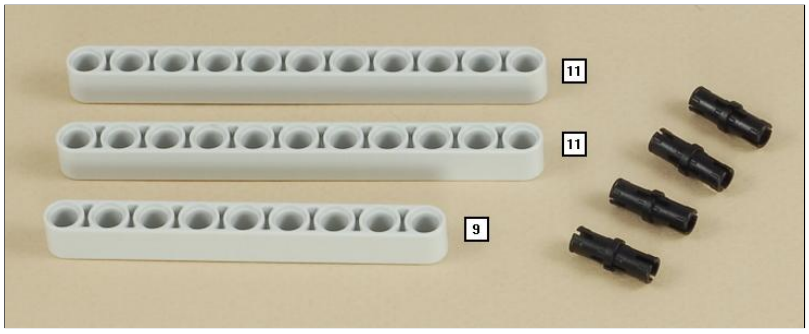

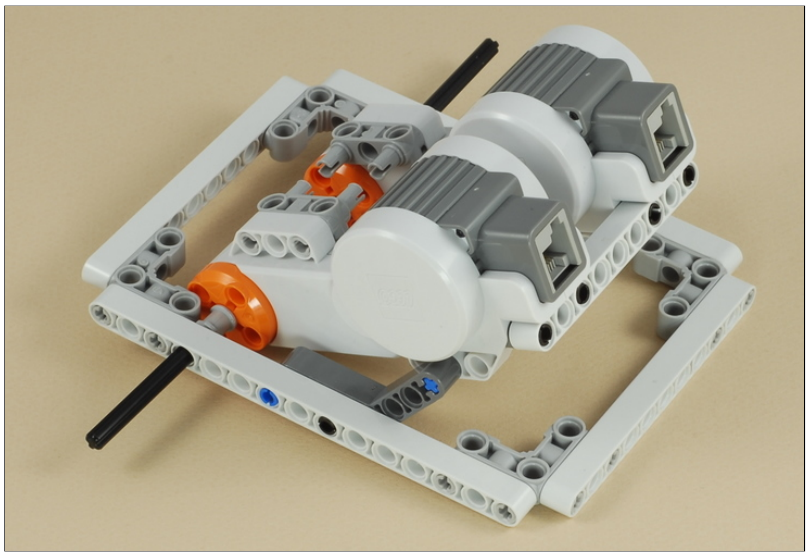

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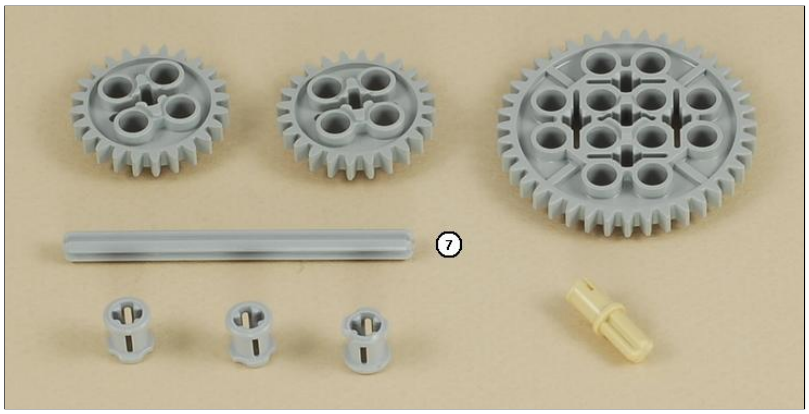
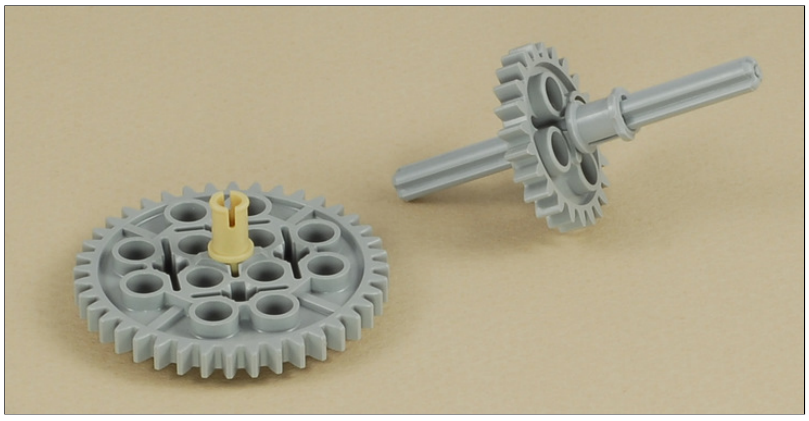
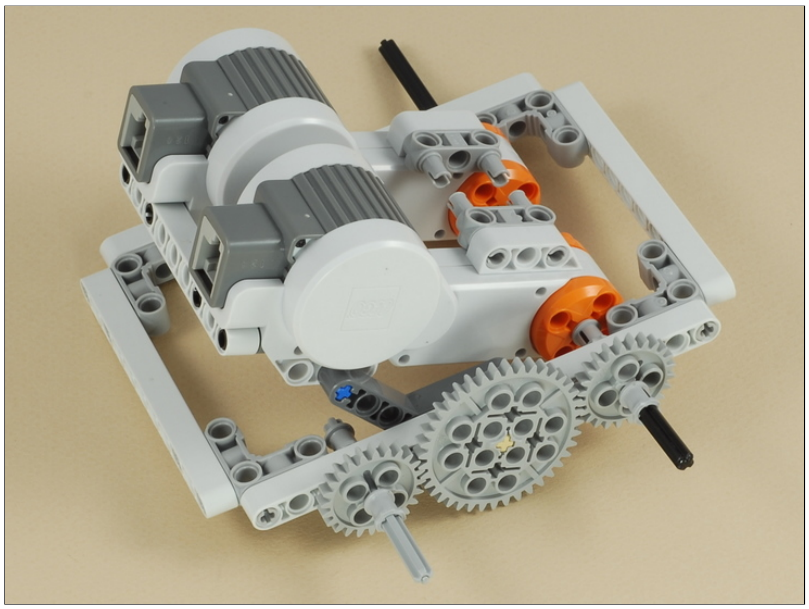
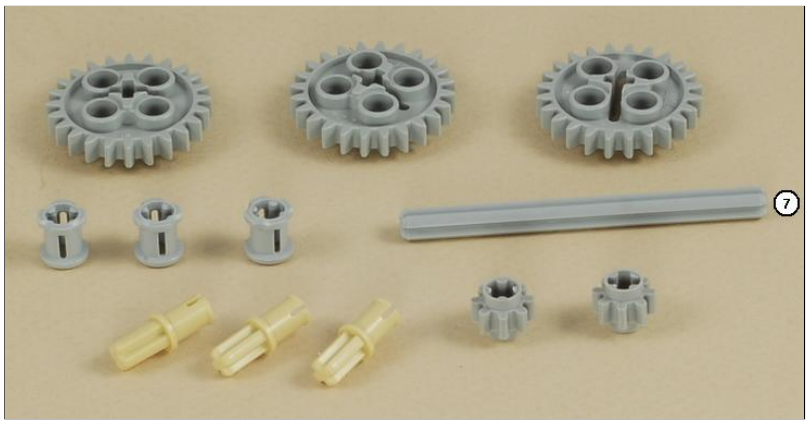


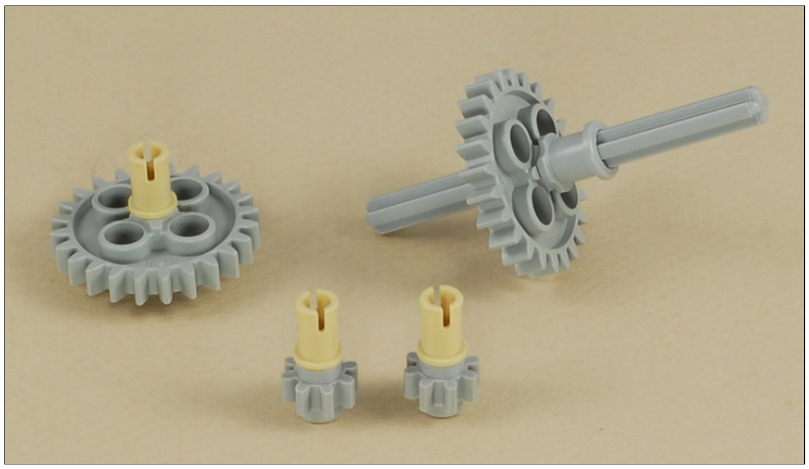


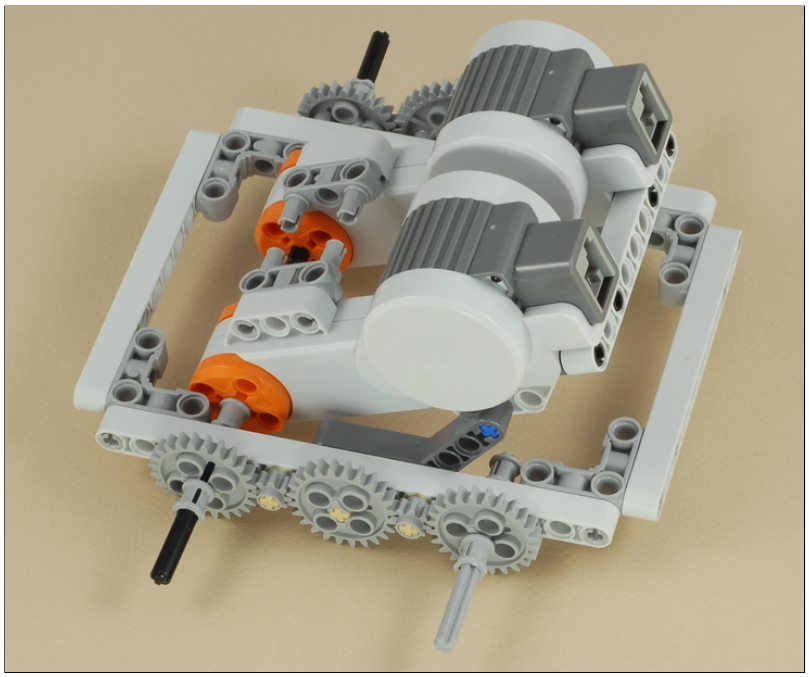


6

The NXT set includes only one large 40 tooth gear that we used in step 5, so we need to use a set of smaller gears on the other side of the chassis, but the effect is the same, which is to force the front and rear wheels on one side to both be driven at the same speed and in the same direction by the motor on that side.







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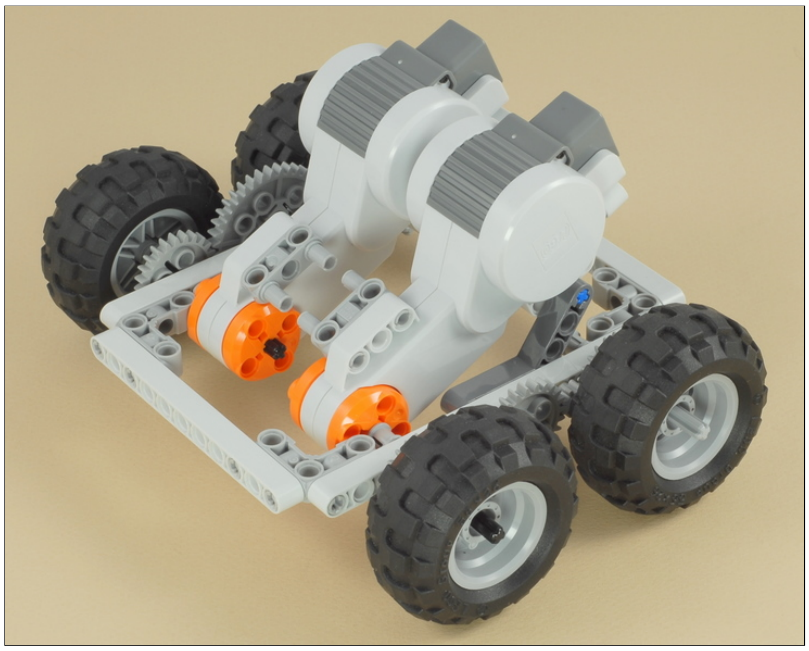

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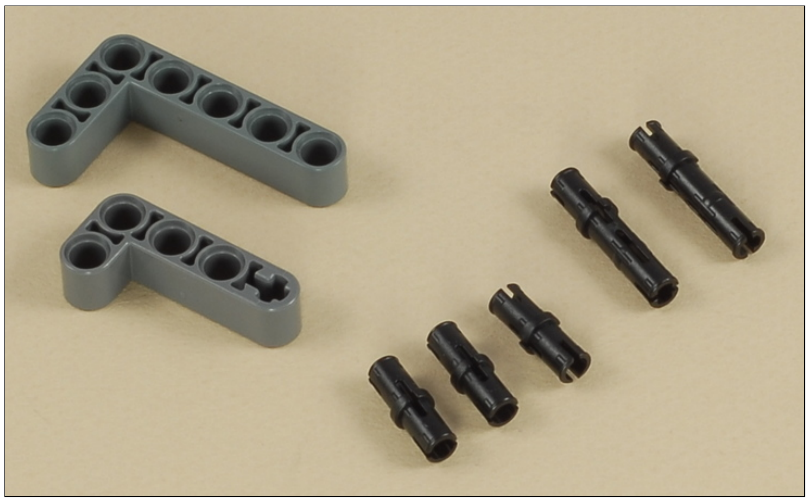
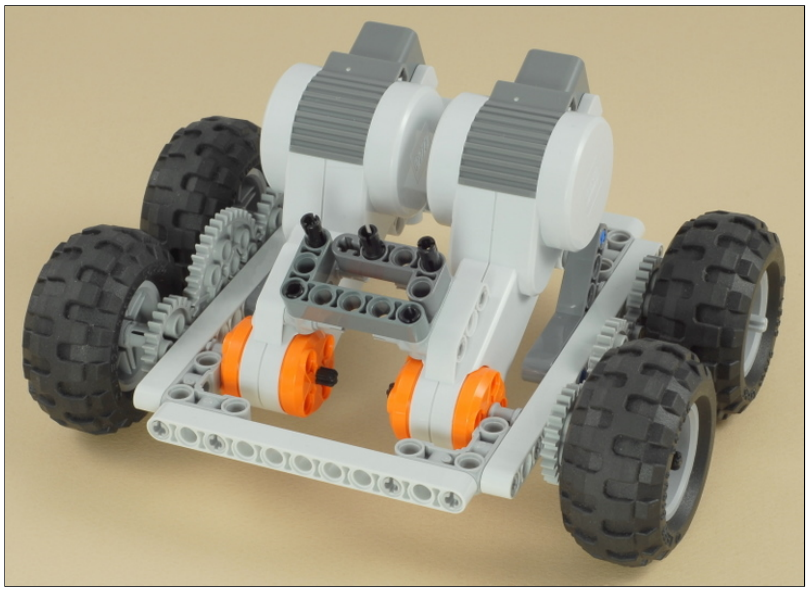
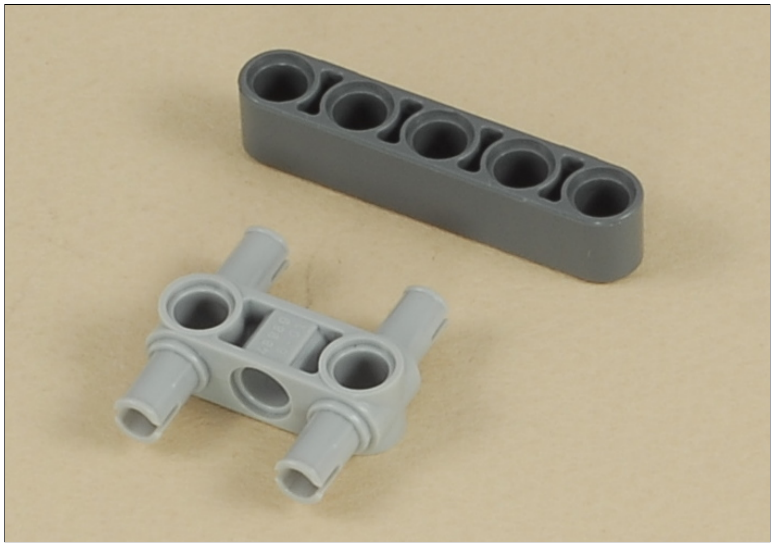
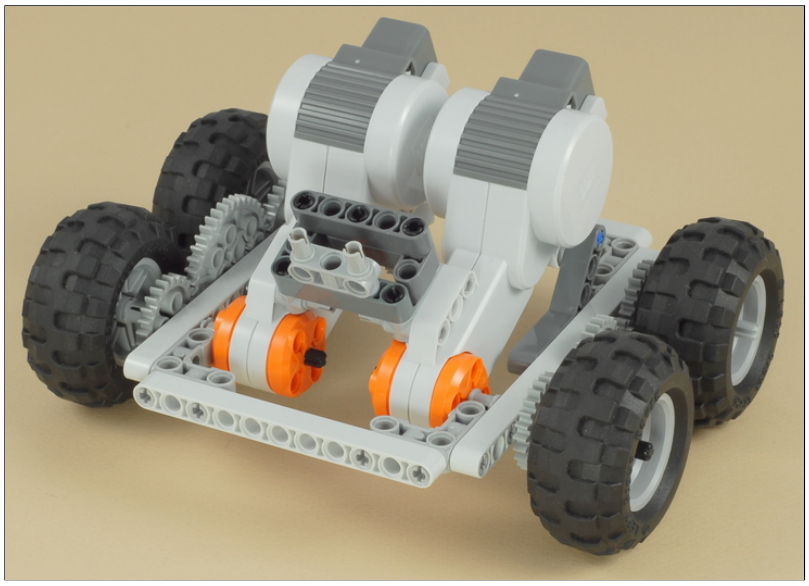




9

The parts in this step provide some attachment points for things that can be added to the chassis.





The 4x4 Chassis is a base that can be used for other projects. To continue building one of the projects that uses this chassis, click the link below.

4x4 Car with 3 Button Remote
4x4 Car with Joystick Control

4x4 Car with Joystick Control

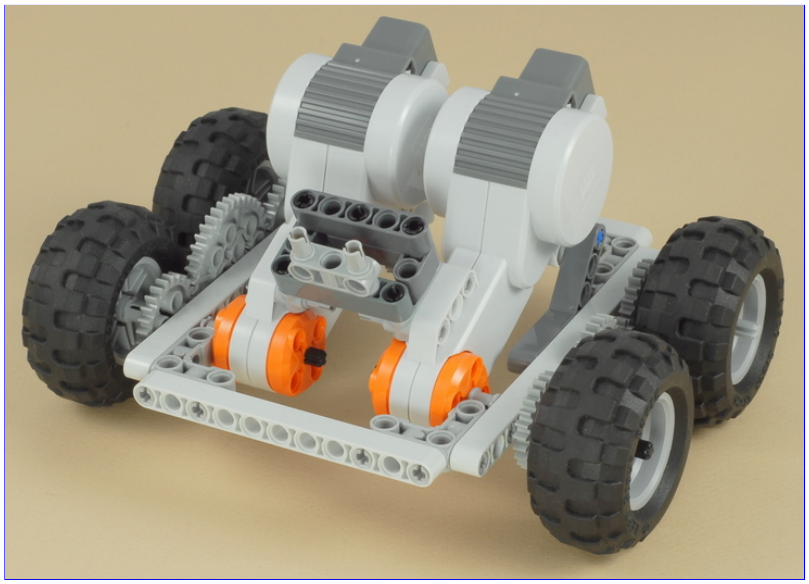
Building:
Program:

Designed for **NXT 1.0** (8527, or 9797 + 9695/9648)

Building Instructions

1-9

Start by building the 4x4 Chassis. Click the picture for building instructions.



Building Instructions

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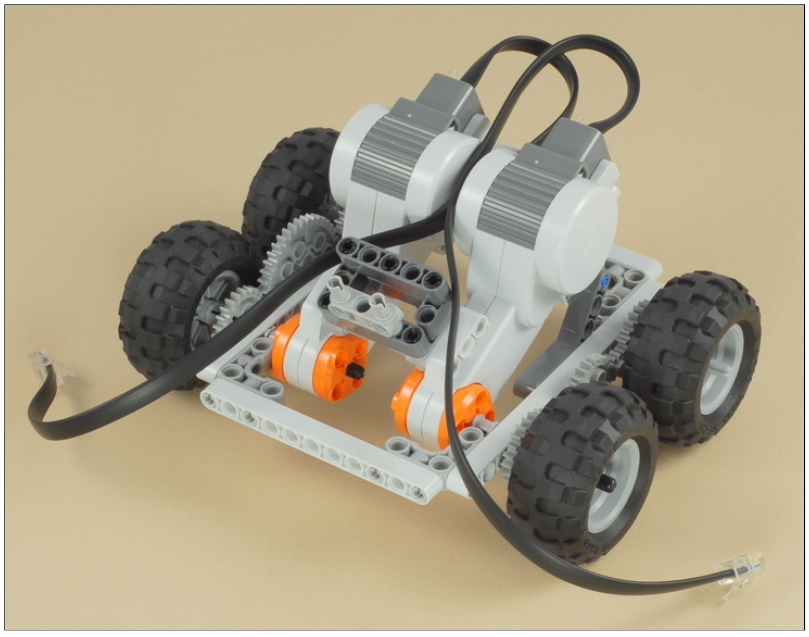
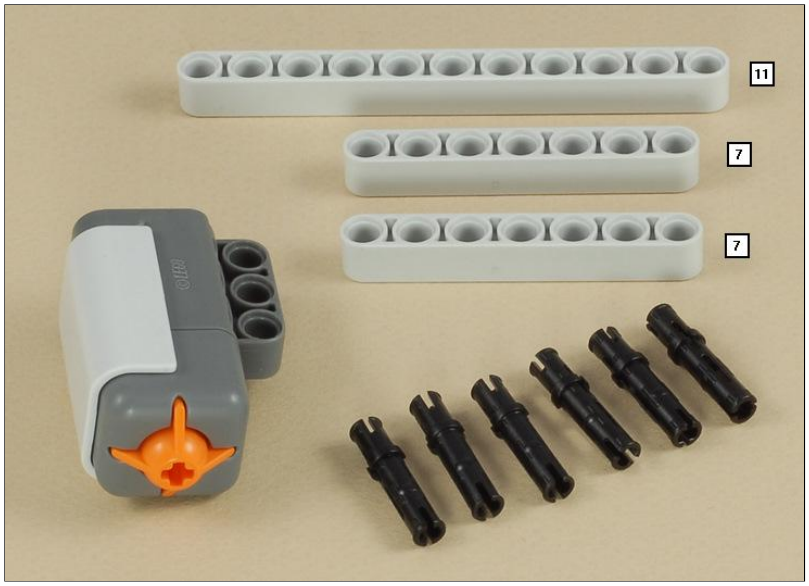
Attach two medium length wires (save the longest wires for the joystick control) to the motors and route them through the chassis as shown.



11

After attaching the NXT, connect the motor wires to ports **B** and **C** on the NXT. Make sure that the wires do not cross (tug on them to test which is which, since they are hard to see). When looking at the NXT brick right side up, The left side wire should stay on the left side of the car and be connected to **B**, and the right side wire should stay on the right side and be connected to **C**.

12



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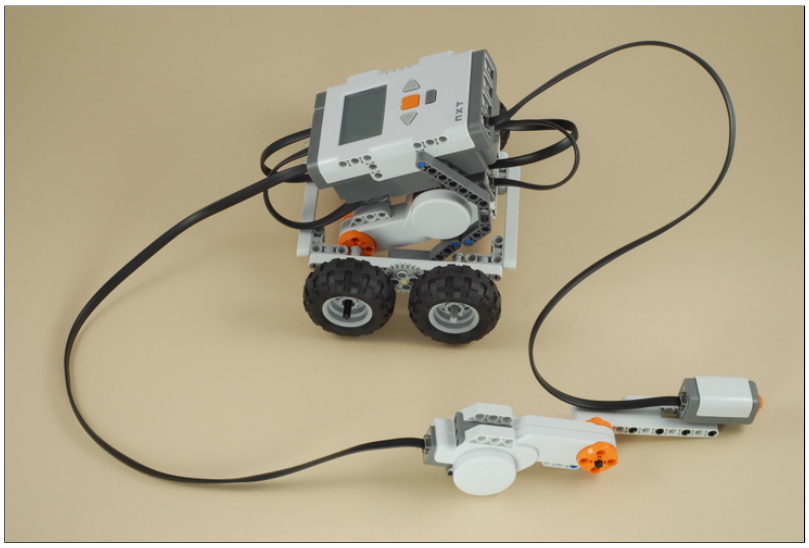
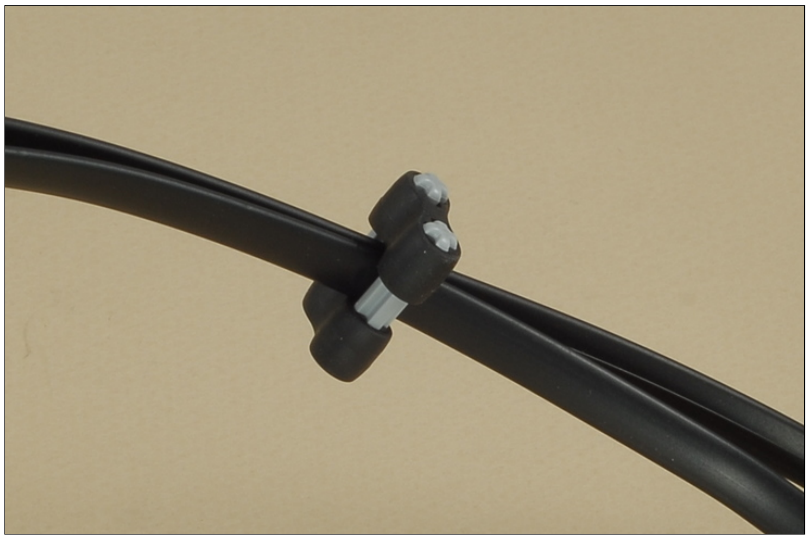
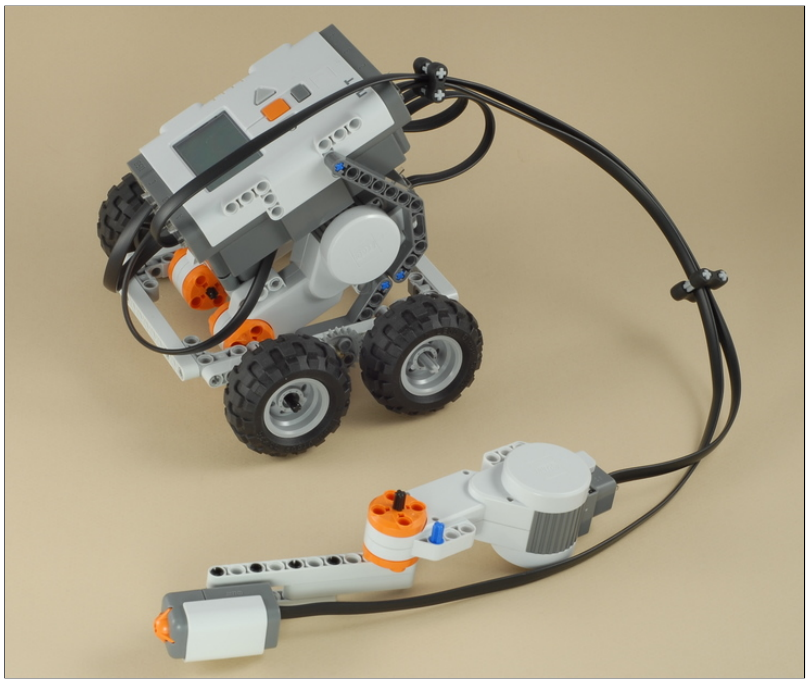
Use the two longest wires in the kit to connect port **A** on the NXT to the motor part of the joystick and port **1** on the NXT to the button part of the joystick.



15

Build two wire clips and use them to bundle the two joystick control wires into a single cable.





4x4 Car with Joystick Control Programming

Use the program Joystick Drive for your 4x4 Car with Joystick Control.

How to Drive Using the Joystick Control

1. Hold the motor part of the joystick in your left hand **with the blue peg facing you**, and hold the lever part of the joystick with your right hand, with your right thumb on the touch sensor button.
2. When you first run the Joystick Drive program, the NXT will ask you to center the joystick (move the lever part straight up) and press the sensor button. This is done to determine which direction is straight on the joystick.
3. After you press the touch sensor for the first time, the NXT will display "Drive!", and you are now in control. To turn the drive motors on, hold down the touch sensor button with your thumb. While the button is held down, you can steer left and right with the lever part of the joystick. The farther you tilt the joystick, the tighter the car will turn. Release the button to stop.
4. A special case is added to back up. Pivot the joystick lever all the way down next to the motor part and the press the button to back up straight in reverse.


Go Straight


Turn Left


Turn Right


Back up

Challenge

Lay out an obstacle course for your 4x4 and see how accurately you can drive through it. The 4x4 will have pretty good traction climbing over small obstacles, but this makes it more challenging to drive!