

12

Formula EV3: a racing robot

Now that you've learned how to program the EV3 to control motors and sensors, you can begin making more sophisticated robots, such as autonomous vehicles, robotic animals, and complex machines. This chapter presents the *Formula EV3 Race Car*, shown in Figure 12-1.

Unlike the EXPLOR3R you built earlier, the race car uses three motors. Two Large Motors in the rear make the car drive, while the Medium Motor lets you steer the front wheels. Think

of the rear motors as the car's engine and the motor in the front as the car's steering wheel.

Once you've built the race car, you'll create several My Blocks to make it easy to program the car to drive and steer. Then you'll combine these blocks in one program that lets you control the car remotely and another program that makes the robot drive around autonomously and avoid obstacles. Finally, you'll be challenged to add more functionality to the design and to make it race faster using gears.



Figure 12-1: The Formula EV3 Race Car

building the Formula EV3 Race Car

Build the race car by following the instructions on the subsequent pages. Before you start building, select the pieces you'll need to complete the robot, shown in Figure 12-2.

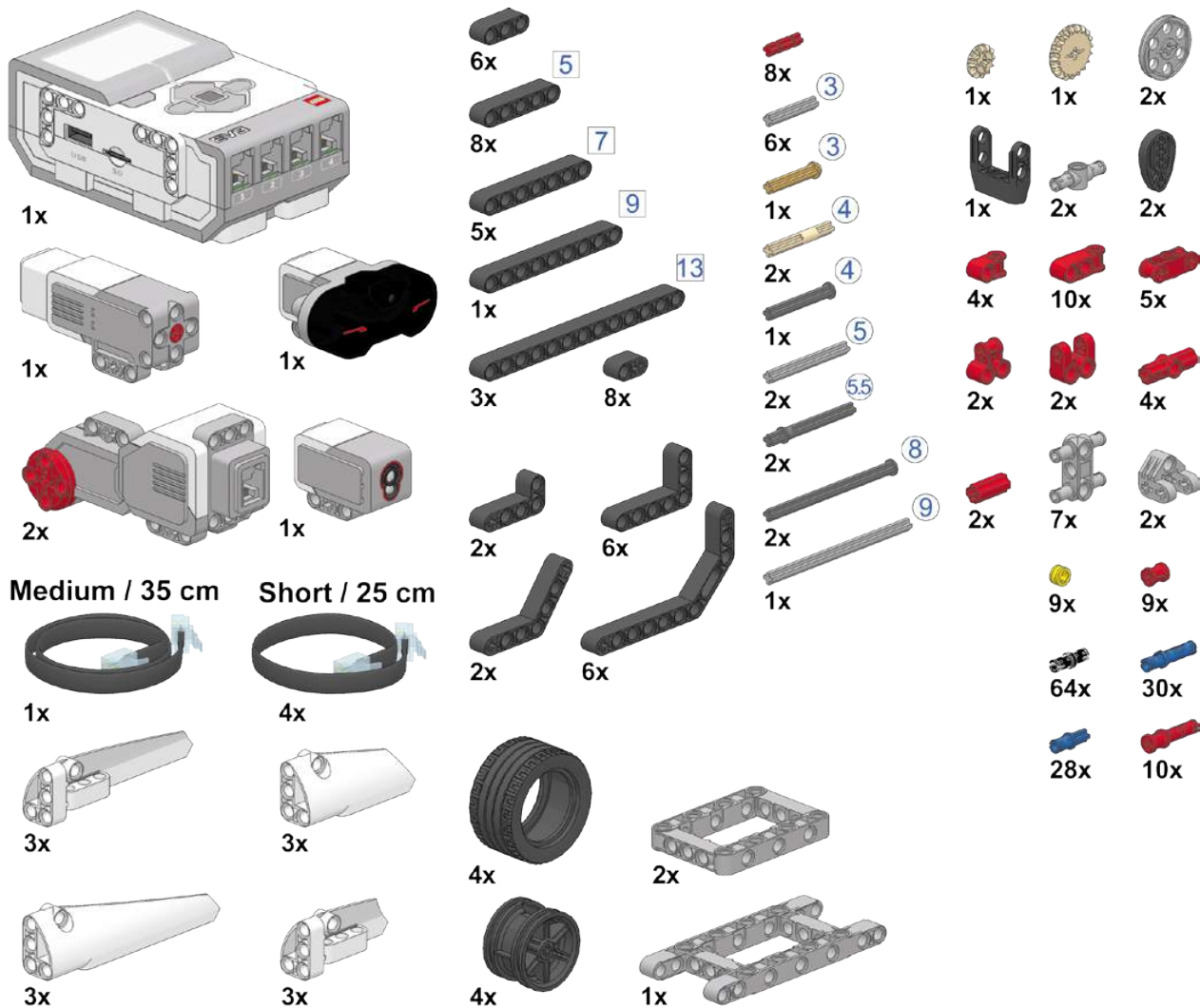
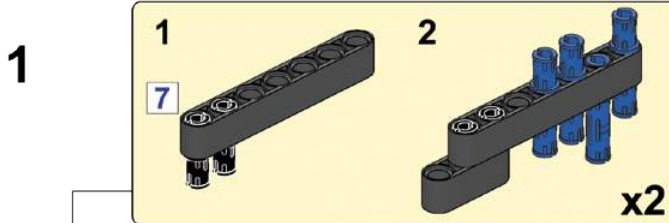
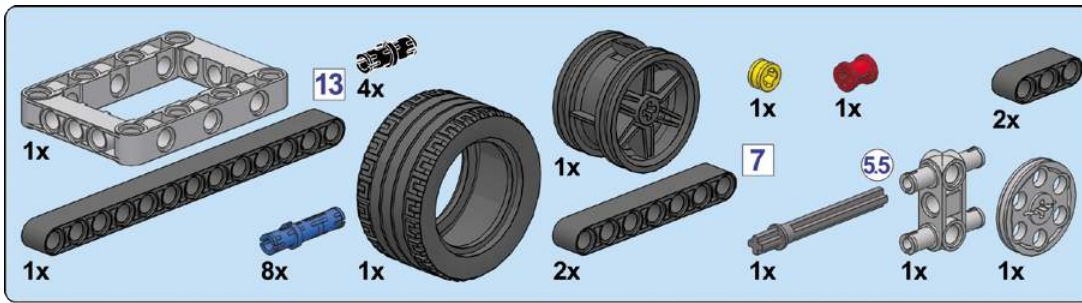
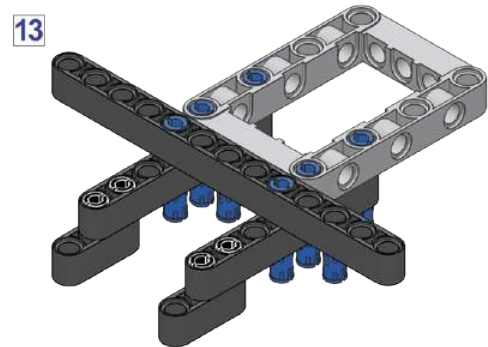


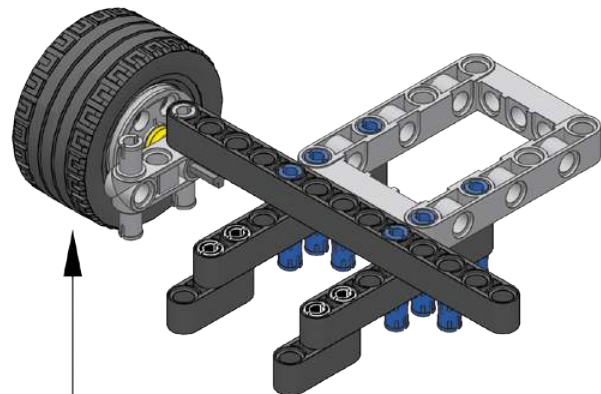
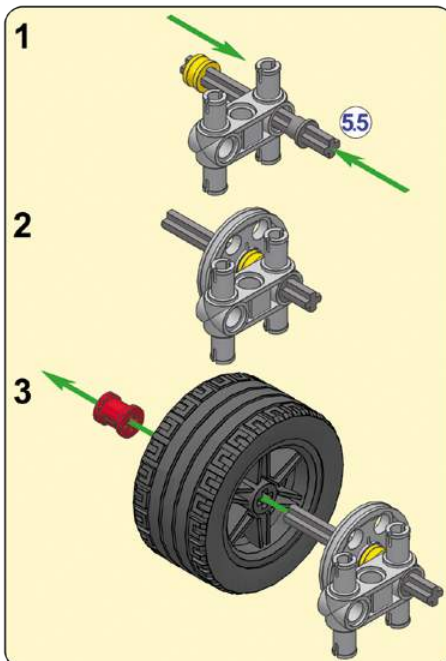
Figure 12-2: The pieces needed to build the Formula EV3 Race Car

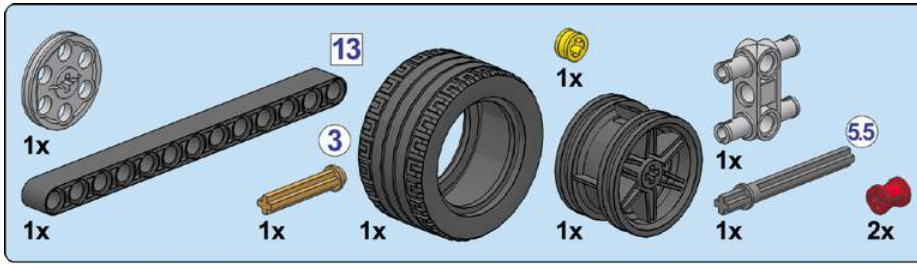


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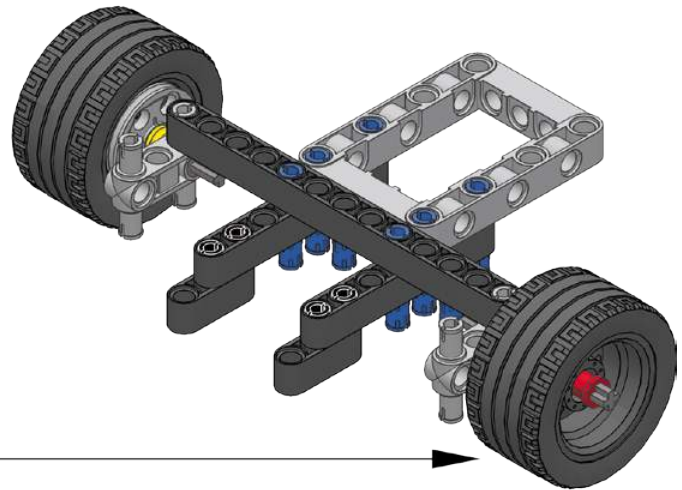
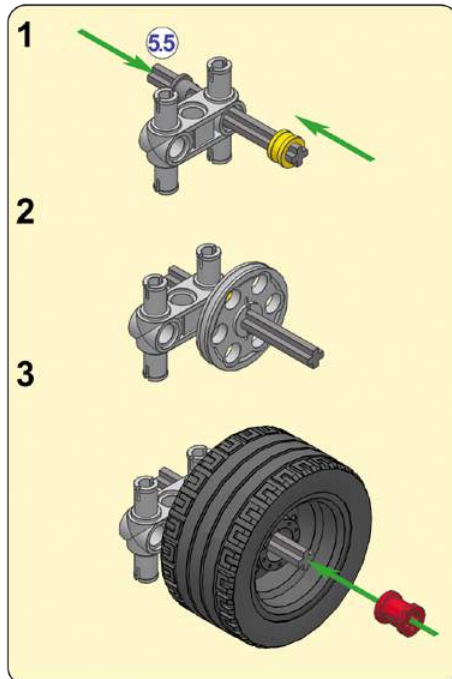


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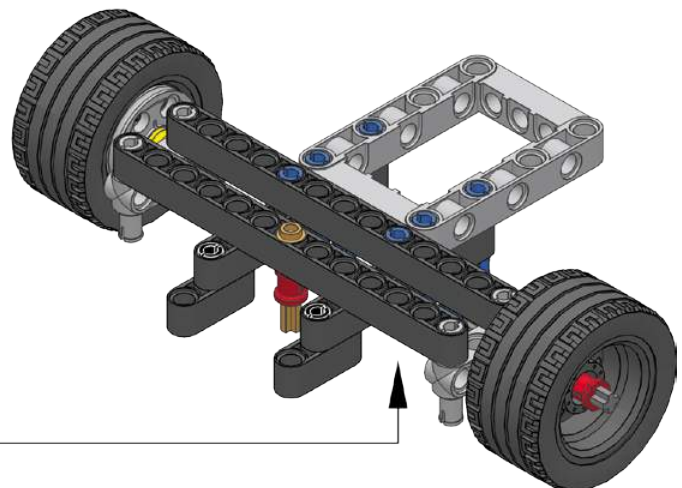
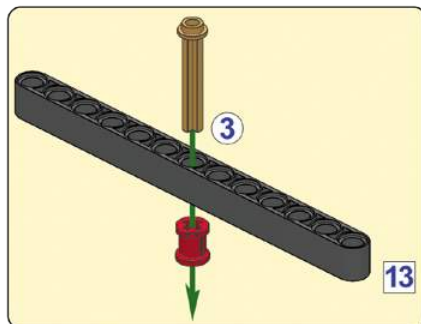


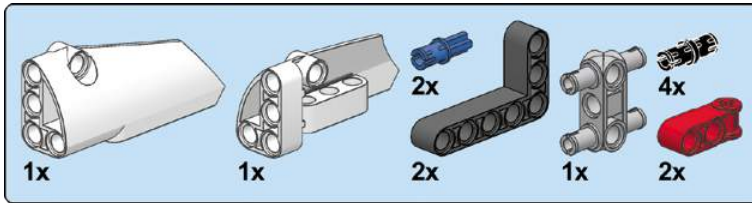


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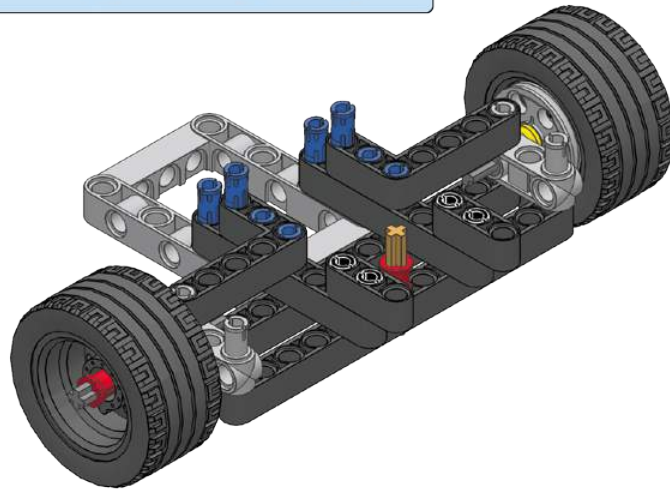


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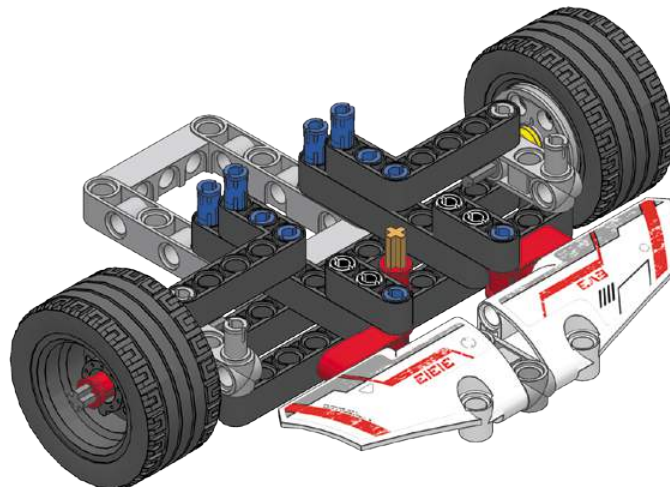
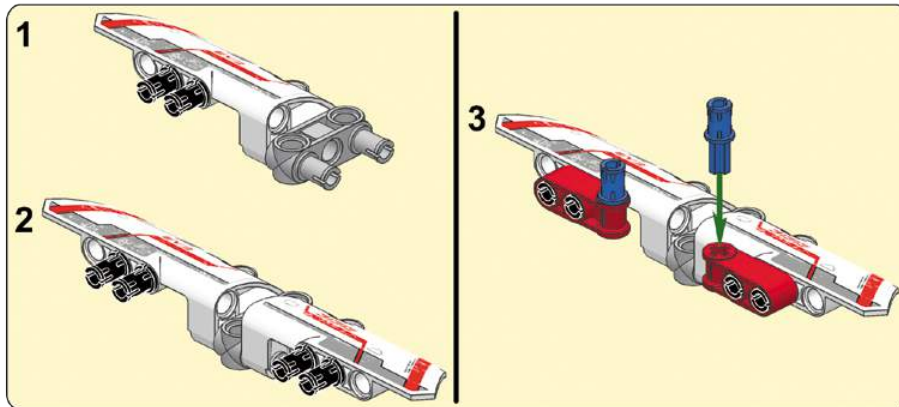


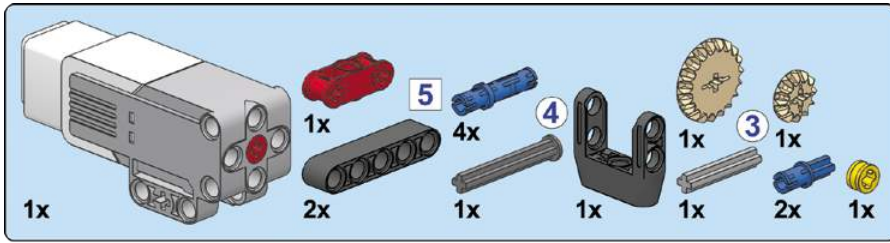


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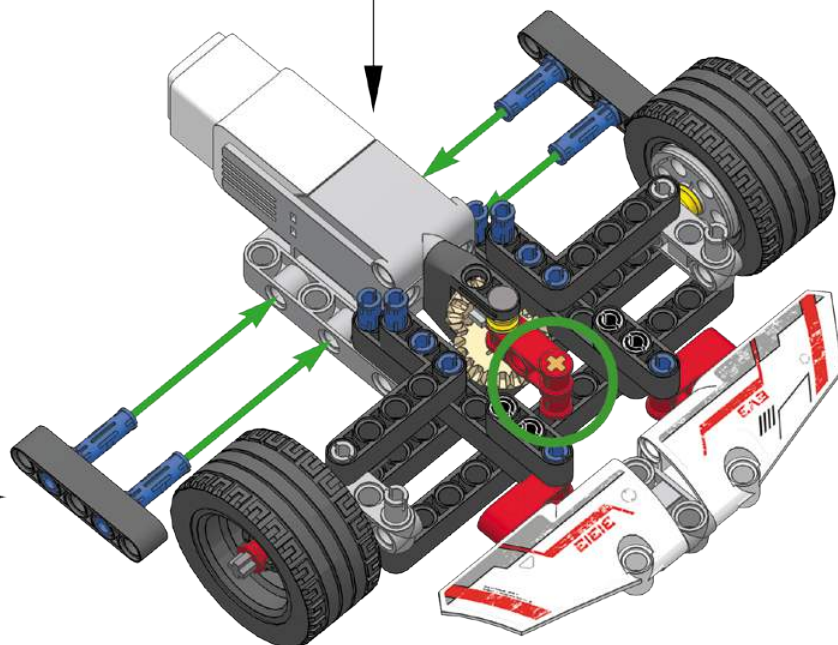
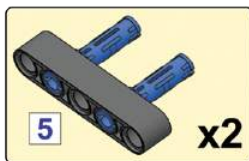
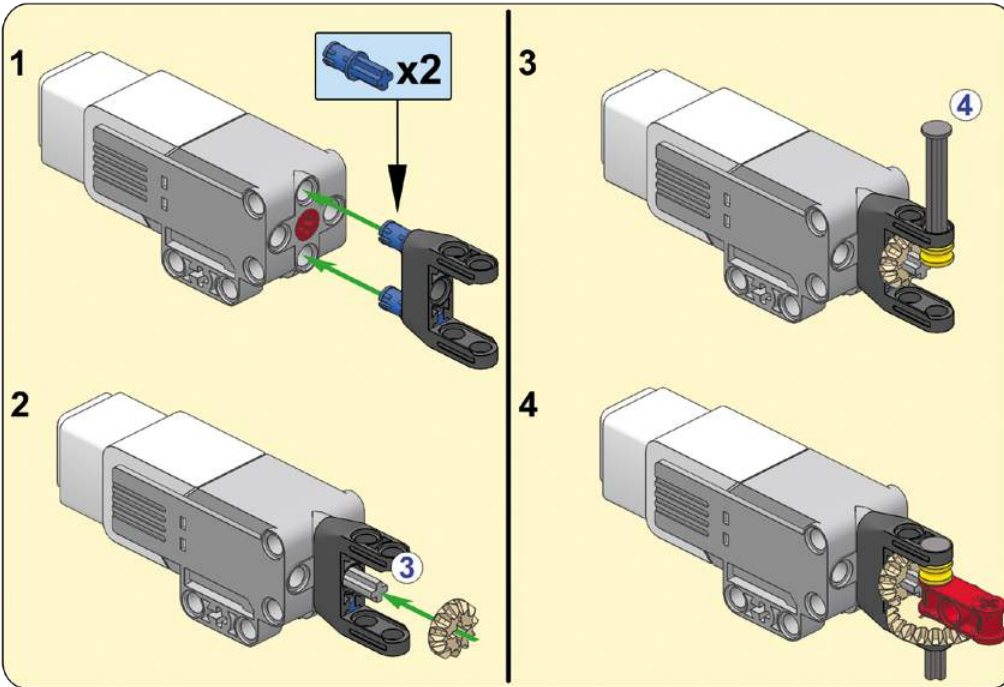


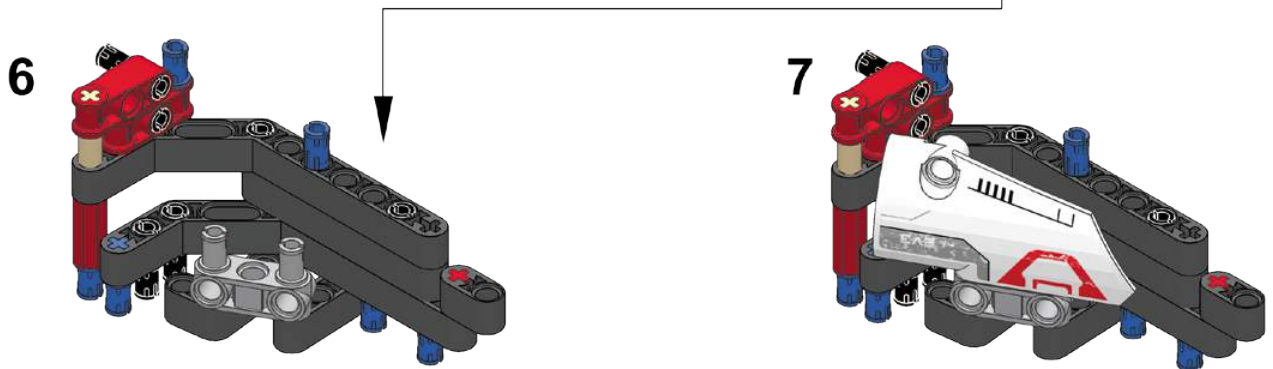
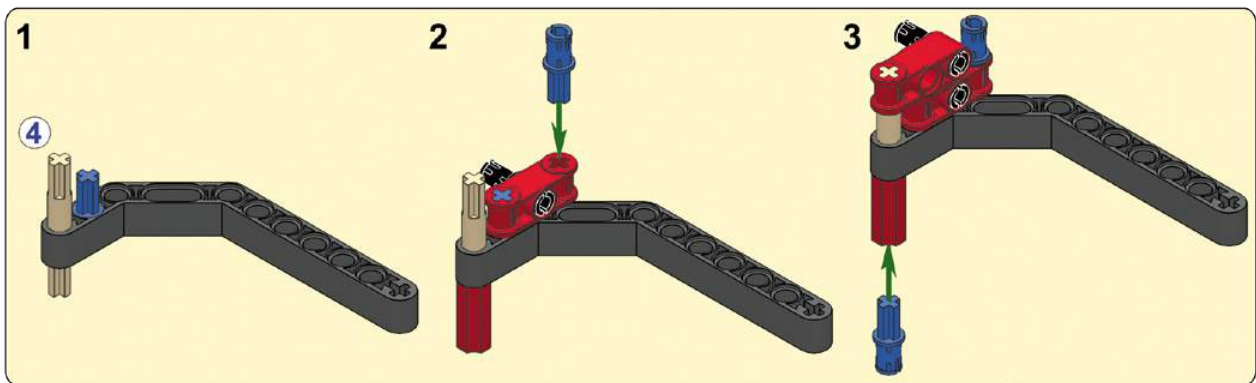
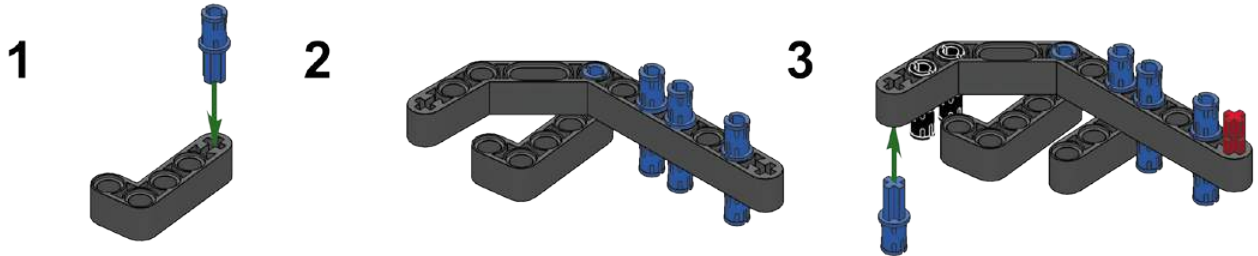
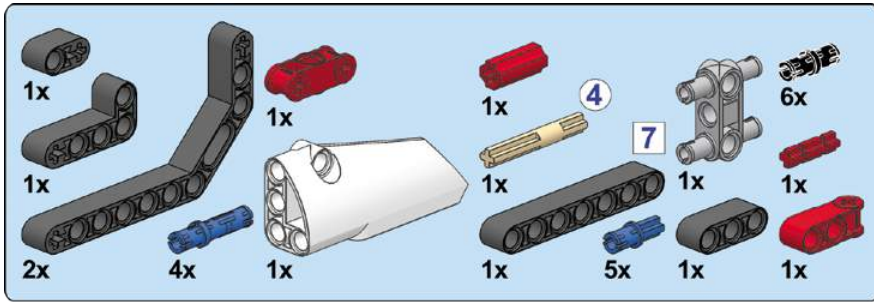
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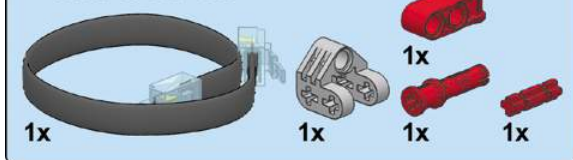


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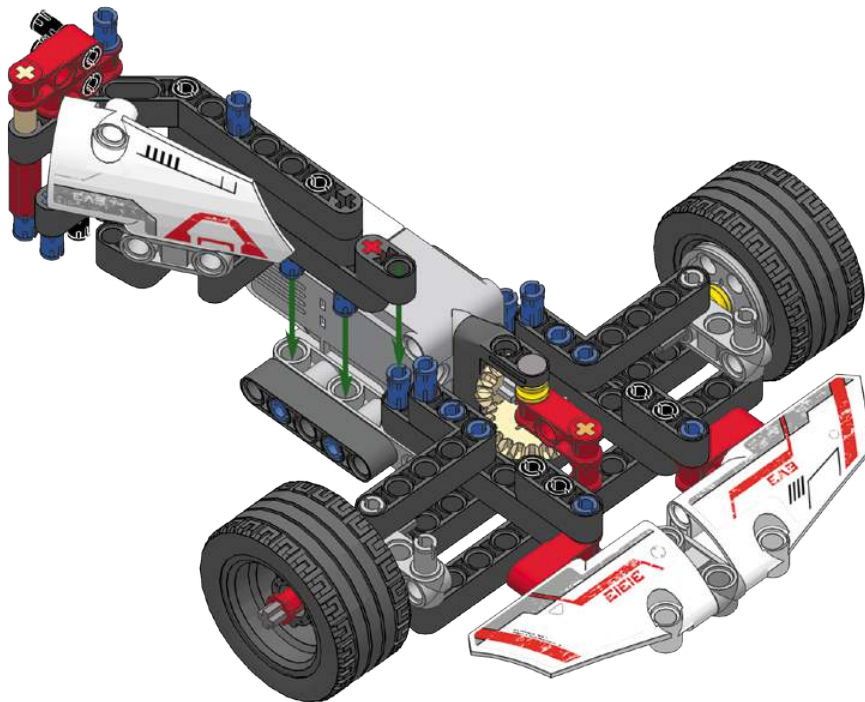




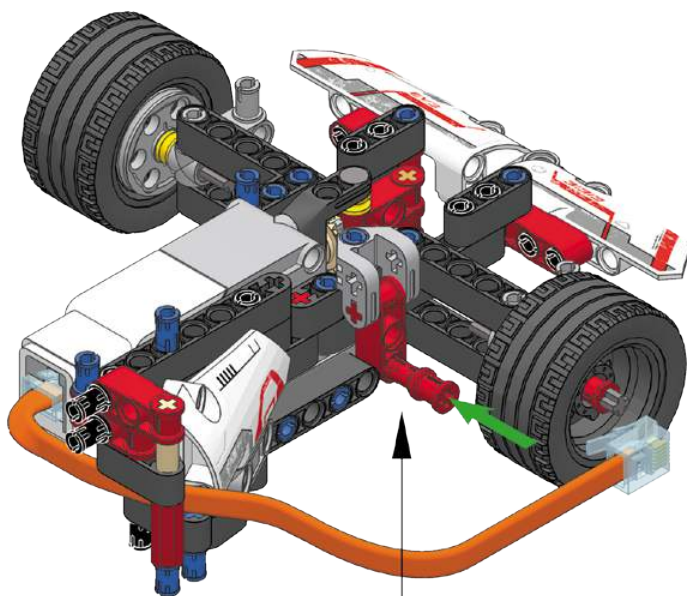
Short / 25 cm



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