

The Dragster Drivetrain

Before you start, make sure you have the right parts available. Set these parts on a table, and put all other parts away for now.



1 - Brain	6 thin washers	2 - small gears	1 - 2x12 beam
2 - Short smart cables	11 - Rubber washers	2 - medium gears	3 - 2x6 beams
2 - Motors	28 - Spacer washers	2 - large gears	1 - 2x4 beam
2 - Big wheel hubs	4 - 4x standoff	6 - #2 shafts	1 - 1x6 beam
2 - Big tires	6 - 2x standoffs	2 - #1 shafts	4 triple connectors
2 - Small wheel hubs	8 - 2x5 black connectors	2 - 4x4 plate	handfull - single connectors
2 - small thin tires	2 - 1x1 black connector	4 - 2x16 beams	

The dragster drivetrain will consist of two sides that will be built separately and then attached together. If there are enough people helping with the build, then you could assign each side to a couple kids. The two sides are not identical and are not mirror images of each other.

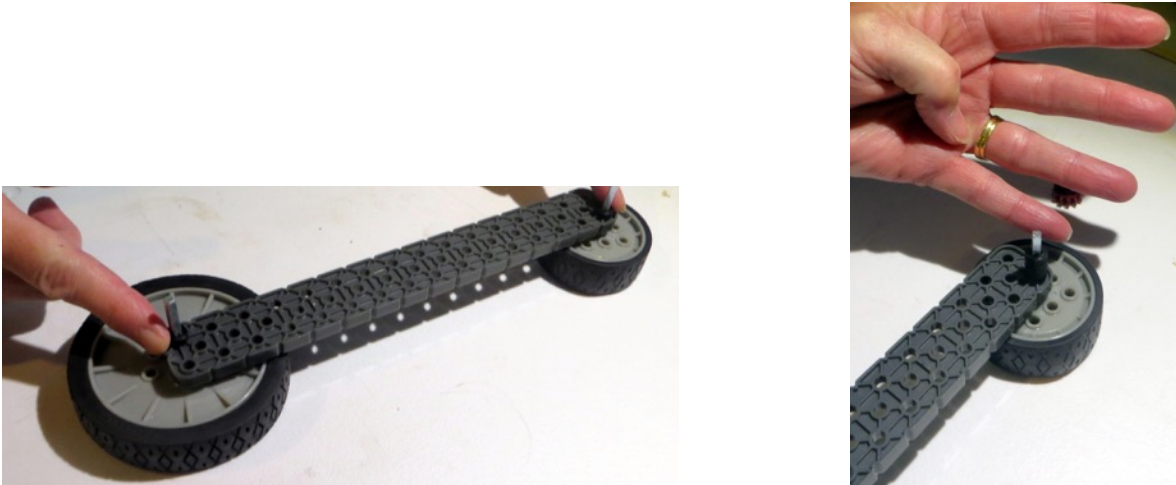
Left Drivetrain

Step 1. Build wheels. Supplies: 1 large wheel, 1 large tire, 1 small wheel, 1 small thin tire, 2 rubber washers, (2) #2 shafts, 2 spacer.

1 Rubber washer inside each wheel, 1 spacers outside each wheel.

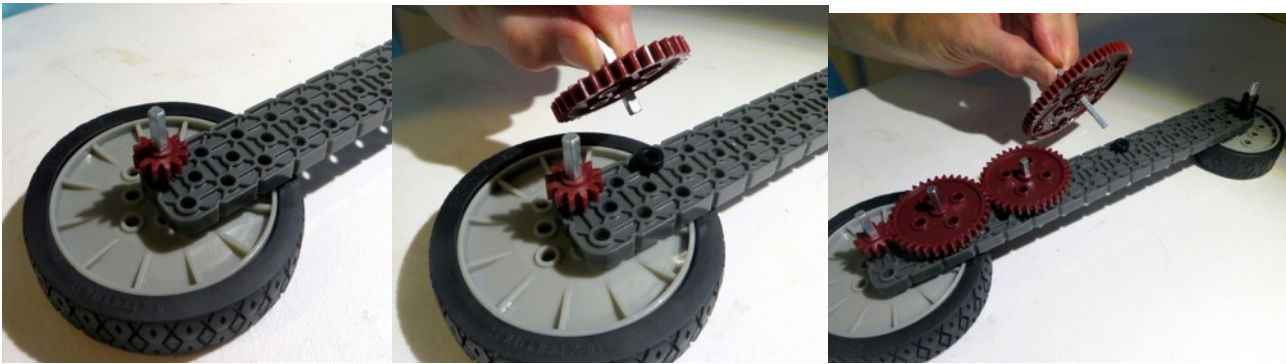


Step 2. Attach wheels. (1) 2x16 beam, 4 spacers on small wheel, 1 spacer on large wheel

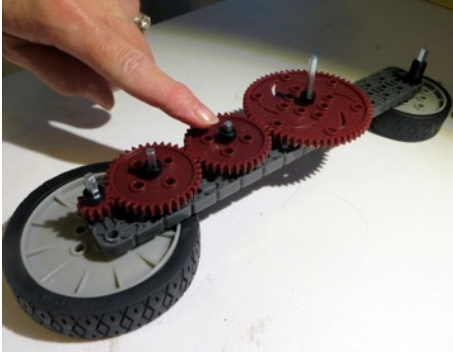


Step 3 Gear assembly. 1 small gear, 2 medium gears, 1 large gear, 7 spacers washers, 2 #1 shafts, 1 #2 shaft.

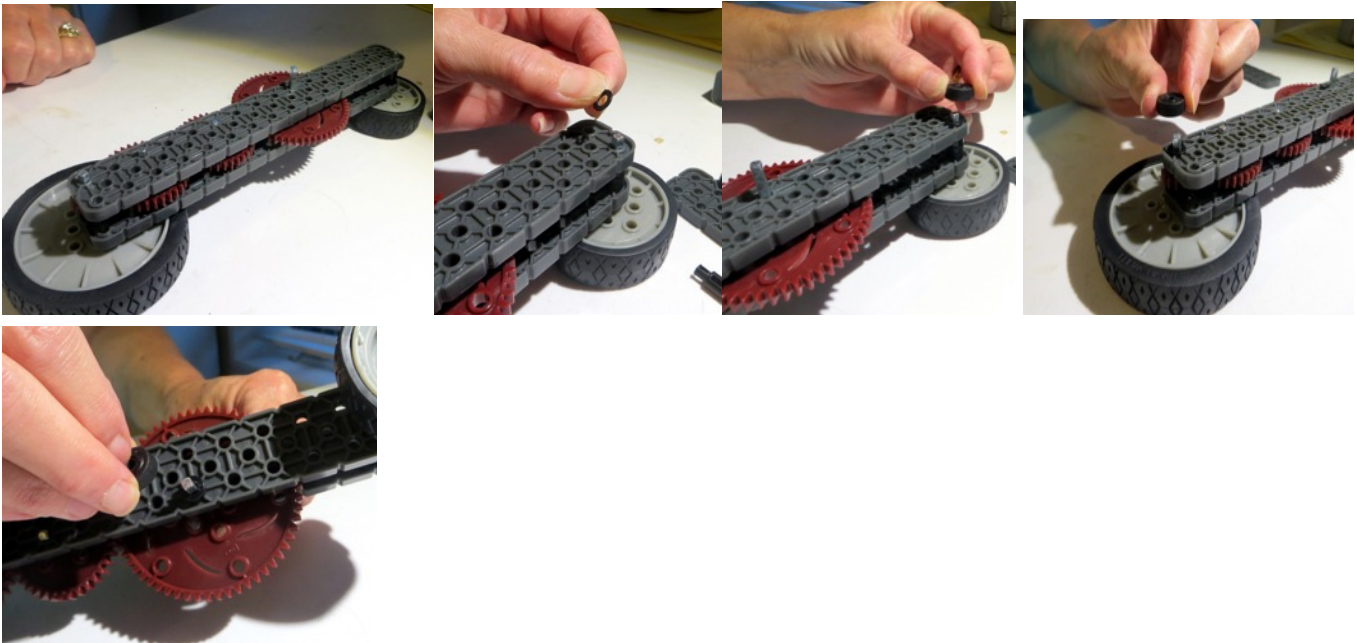
Push the #1 shafts through the medium size gear and then push the #2 shaft through the large gear. Place spacer washers on the beam then slide the shaft through the spacer and into the hole.



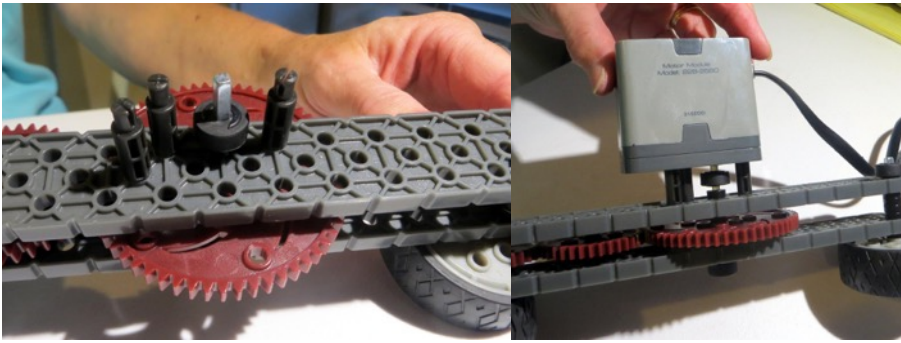
Place spacer washers on top of each gear.



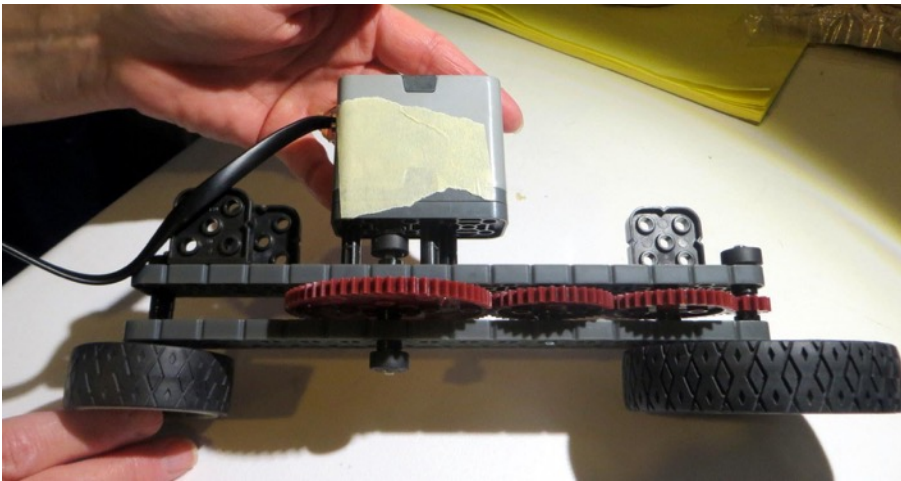
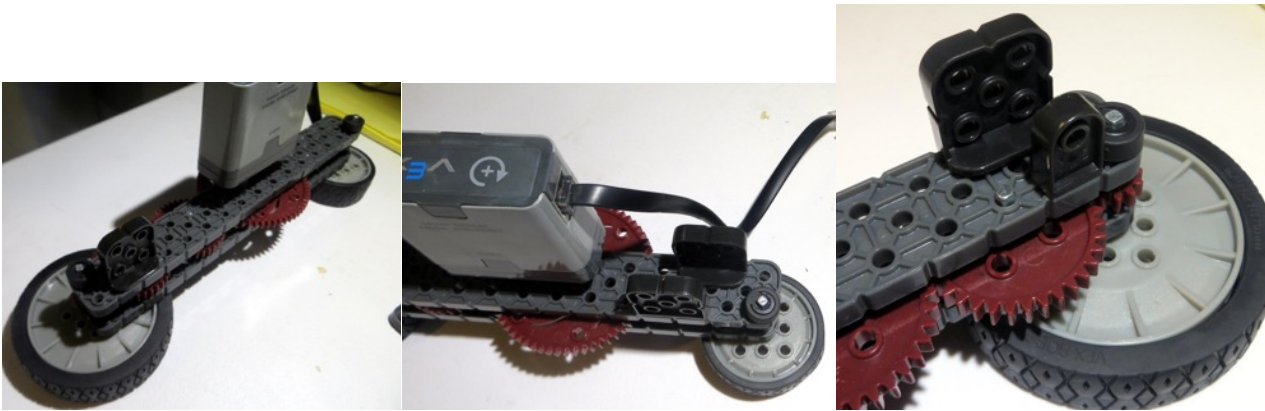
Step 4. Gear sandwich. (1) 2x16 beam, (3) thin washers, (3) rubber washers



Step 5. Motor mount. (3) #2 standoffs, (1) motor, (1) short smart cable,



Step 6. Left support connectors. (2) 5x2 black brackets, (1) 1x1 black bracket, (6) normal connectors



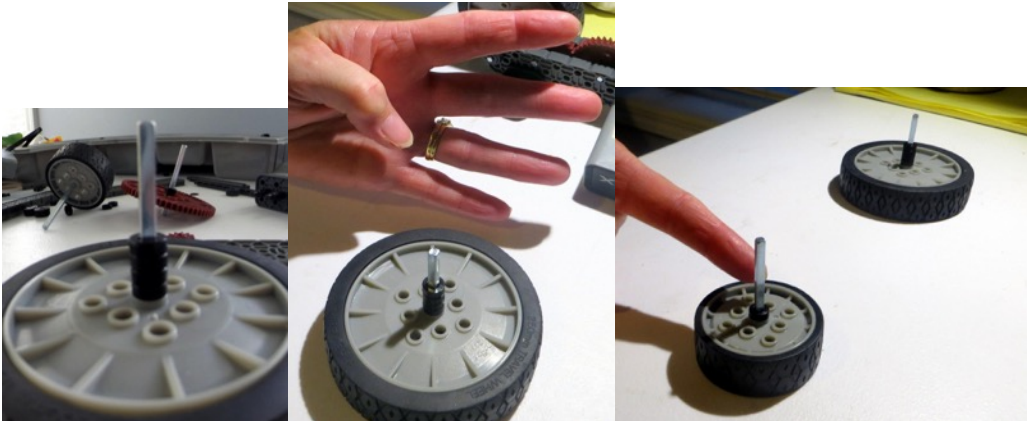
The Right Drivetrain

Step 1. Build wheels. Supplies: (1) large wheel, (1) large tire, (1) small wheel, (1) small thin tire, (2) rubber washers, (2) #2 shafts, (5) spacer washers.

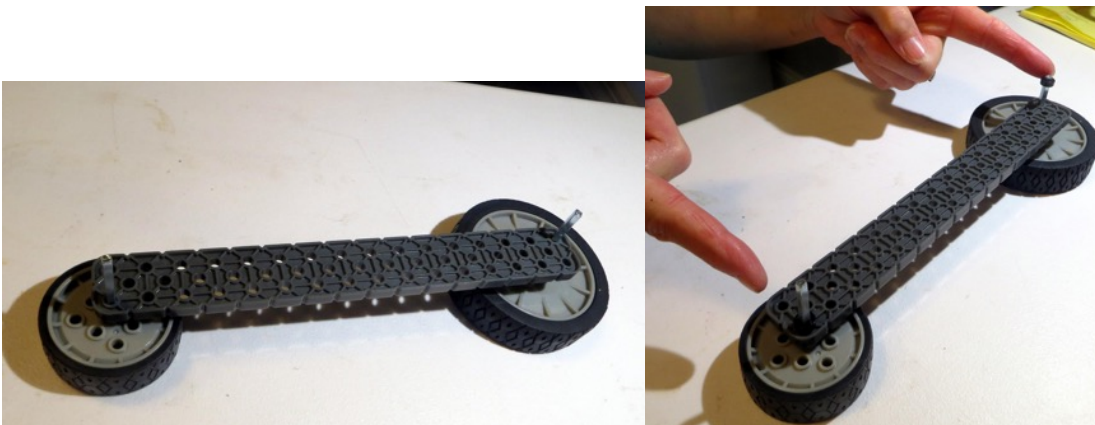
Push shafts through wheels, put rubber washer on shaft on the concave side of the wheel.



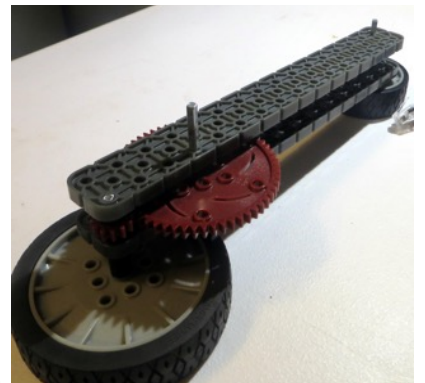
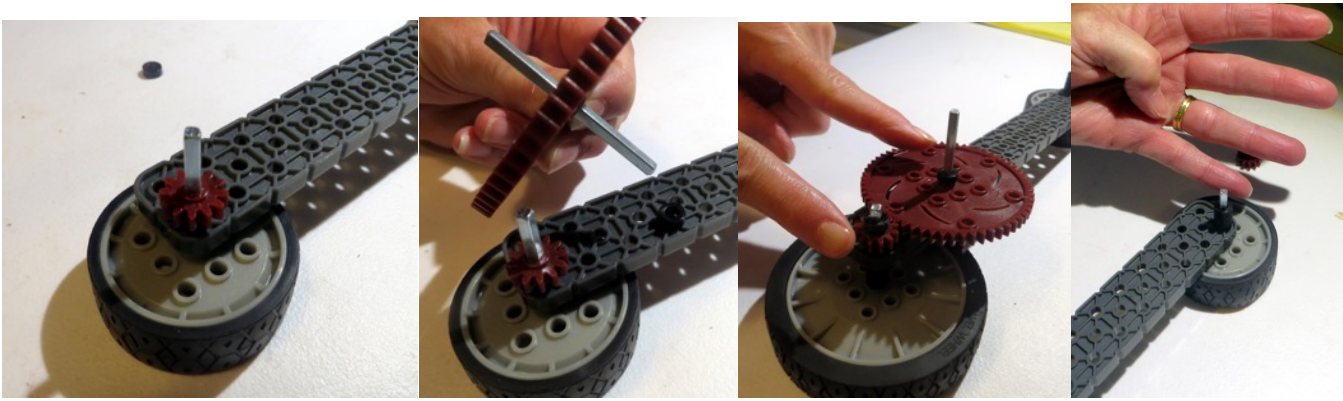
Put 4 spacers on the other side of the big wheel, and 1 spacer washer on the small wheel.



Step 2. Attach wheels. (1) 2x16 beam (2) spacer washers



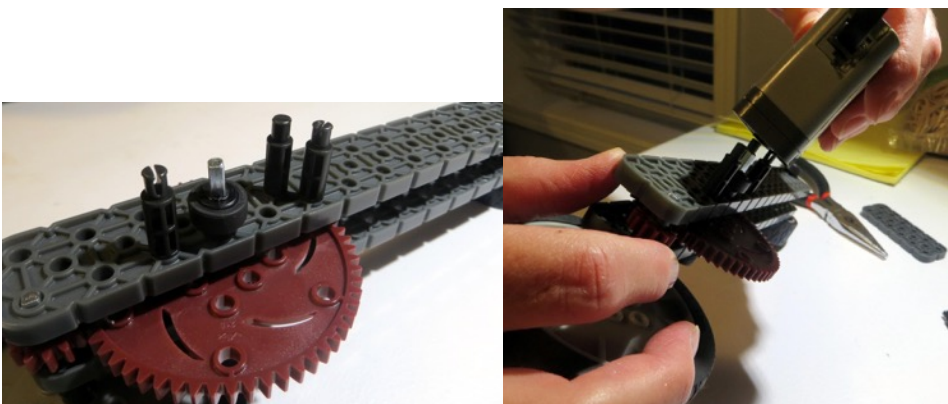
Step 3 Gear assembly. (1) small gear, (1) large gear, (7) spacer washers, (1) #2 shaft,



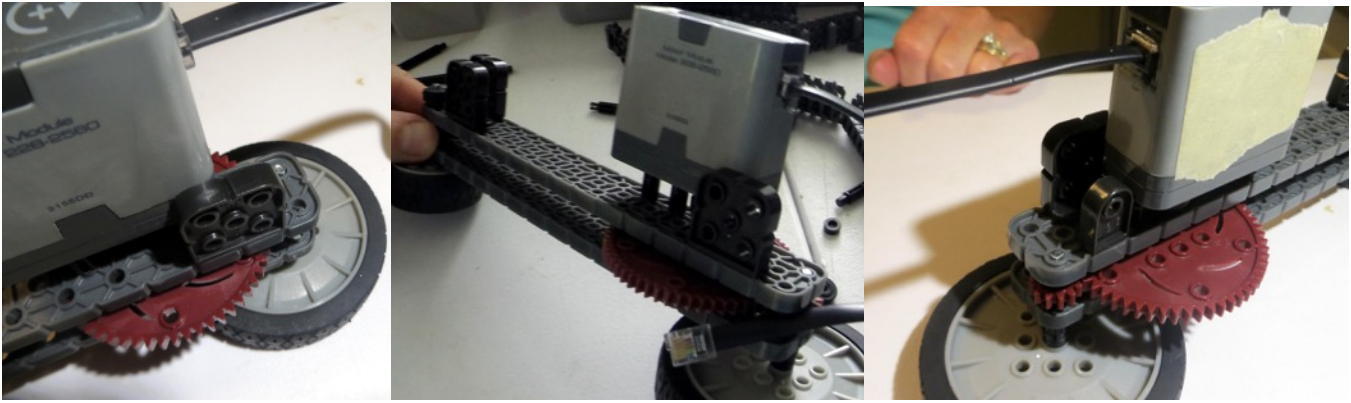
Step 4. Gear sandwich. (1) 2x16 beams, (2) thin washers, (2) rubber washers.



Step 5. Motor mount. (3) 2x standoffs, (1) motor, (1) smart cable

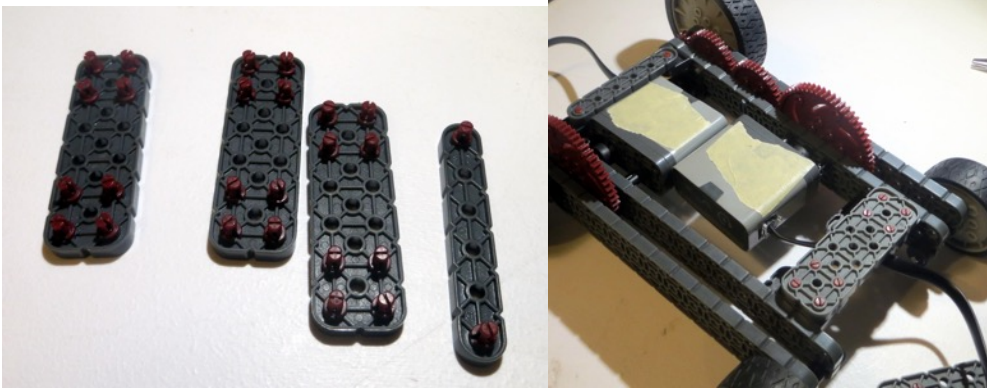


Step 6. Support connectors. (3) 5x2 black connectors (1) 1x1 black connector

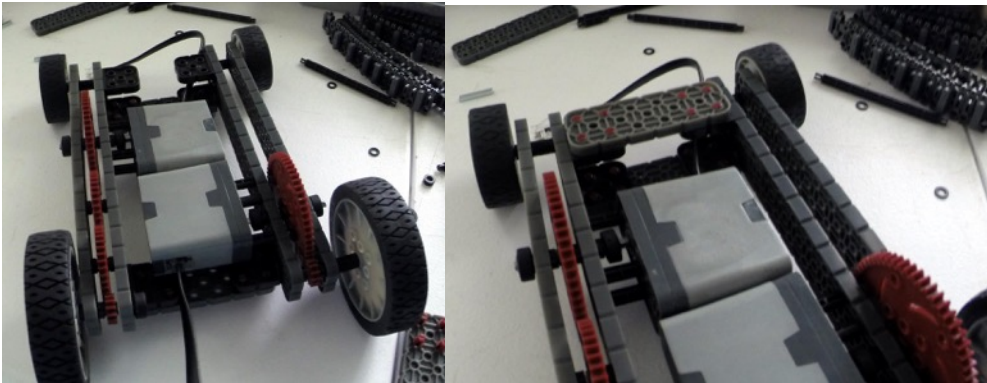


Connecting Left and Right Drivetrains

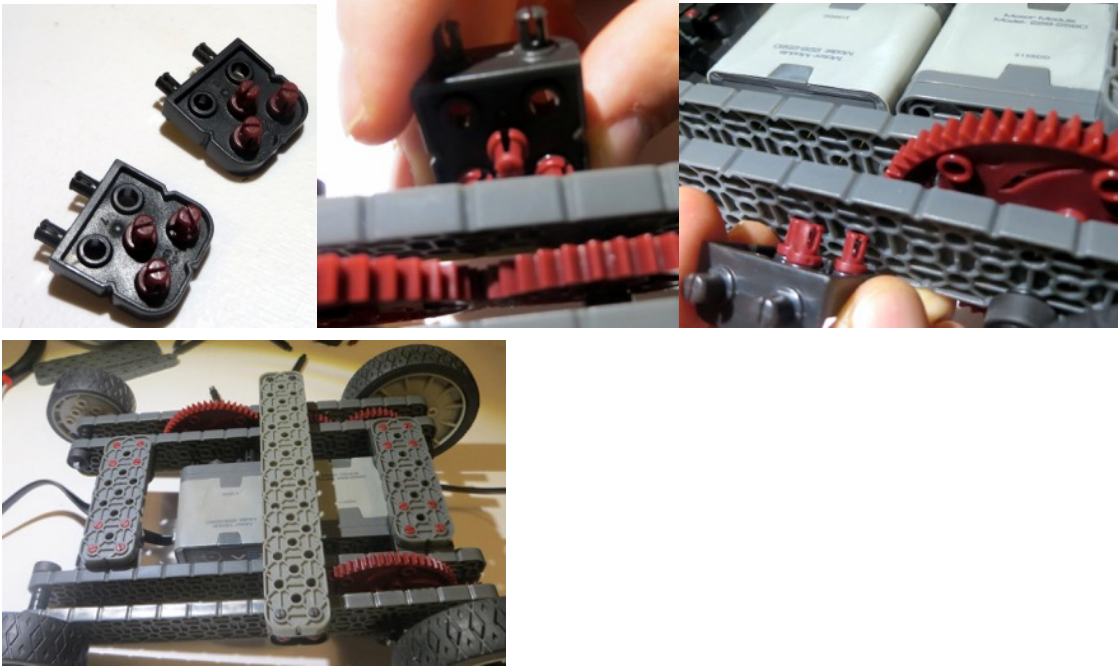
Step 1. Attach Cross supports. Supplies (3) 2x6 beams, (1) 1x6 beam, (26) 1x1 connectors
Attach the small beam and one of the larger beams across the top.



Flip the robot over, and connect the other two supports



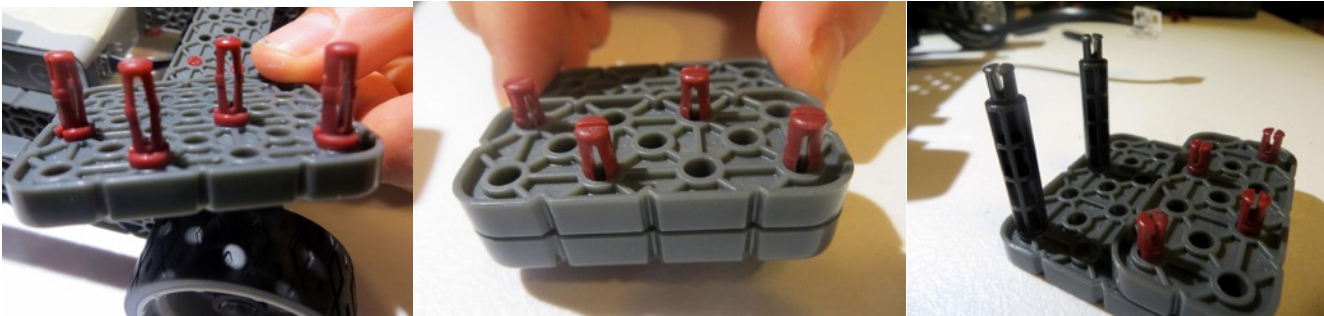
Step 2. Add extra brace. (1) 2x12 beam, (2) 2x5 bracket, (6) connectors



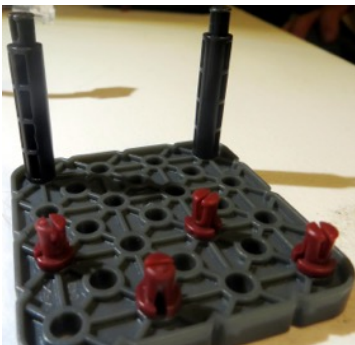
Hooking Up The Brain

Step 1. Attach supports to chassis. (2) 4x4 plate, (1) 2x4 beam, (4) triple connectors connectors, (4) single connectors (4) 4x standoffs

Step 1. Build 1st support. (1) 4x4 plate, (1) 2x4 beam, (4) triple connector pins, (2) 4x standoffs
Place the 4 triple connectors into a 4x4 plate, then place the 2x4 beam on top of it, the insert the two standoffs



Step 2. Build 2nd support. (1) 4x4 plate, (4) normal connector pins, (2) 4x standoffs



Step 3. Connect supports to brain, and connect brain & supports to the robot



Step 4 Attach wires to brain. Note ports: one side is port 7 the other side is 6.



Running the Robot

Step 1. Turn on brain, select driver control, select config. Verify settings
Go back to driver control, select Run. Use the joysticks to control the robot.

