Dragster Drivetrain Build Instructions

Before you start, make sure you have all needed parts. It may be helpful to have all the parts that you are going to need ready and separated from the rest of the kit. Refer to the Vex IQ Parts poster for actual sized.

20 or 30 - 1x1 Connector pegs

2 - 1x2 Connector pegs

1 - 2x2 connector peg

2 - 60 tooth gears

2 - 12 tooth gears

6 - Thin washers

6 - Thick washer/spacers

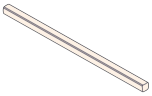
6 - Rubber shaft collar

2 - 250mm tires

2 - 160mm tires

1 - 4x Metal Shaft

1 - 6x Metal Shaft

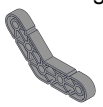


1 - 8x Metal shaft

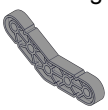
2 - 2x Motor Shaft

2 - shaft bushing

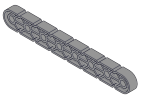
2 - 45 degree beams



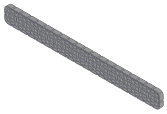
2 - 30 degree beams



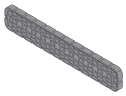
2 - 1x8 beam



2 - 2x20 beams



1 - 2x12 beam



2 - 2x8 beams

7 - 0.5x standoff

2 - 1x standoff

1 - 2x standoff

1 - Standoff connector

2 - 4x6 plates

2 - Small Chassis Corner Connector

2 - 1x1 Offset Corner Connector

2 - 1x2 Corner Connector

2 - 2x3 corner connector

2 - Smart Motors

2 - Smart Cables short

Robot Battery

Robot Brain

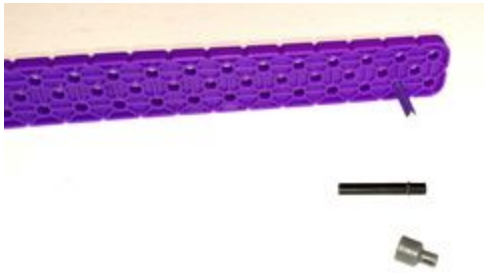
Controller (joystick)

Step 1

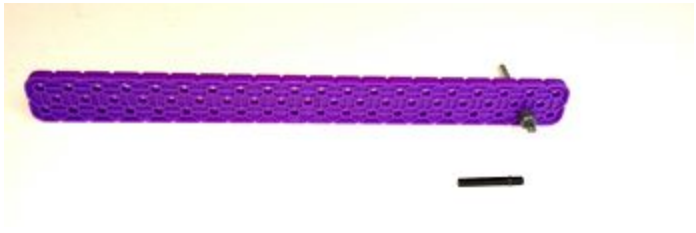
Parts needed: 1 - 2x20 beam, 1 - 2x motor shaft, 1- shaft bushing, 1 - 4x metal shaft

1

2. Insert metal shaft into the second hole in the bottom row

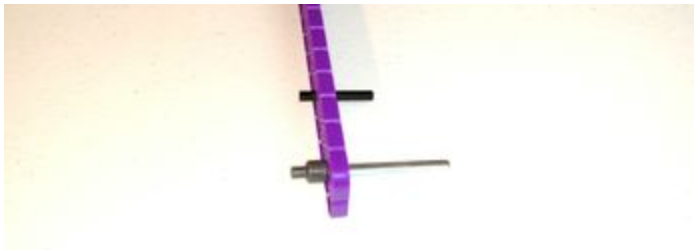


3. Attach bushing to metal shaft



4. Insert motor shaft into the 5th hole from the end, bottom row.

5. Side view



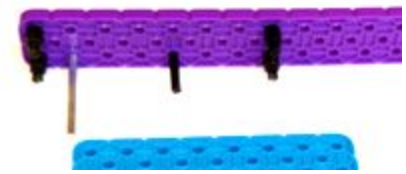
6. Outside view

Step 2

Parts needed: 1 - 2x8 beam, 4 - thin washers, 1 - 12 tooth gear, 1- 60 tooth gear, 4 - 0.5 standoffs

1. Layout parts needed

2. Insert into holes shown



3. Slide washers over shafts

4. Note shafts on washers

Step 2 cont.

5. Insert gears onto shafts as shown 	7. Attach 2x8 beam 
6. Slide thin washers over shafts 	8. View of inside 

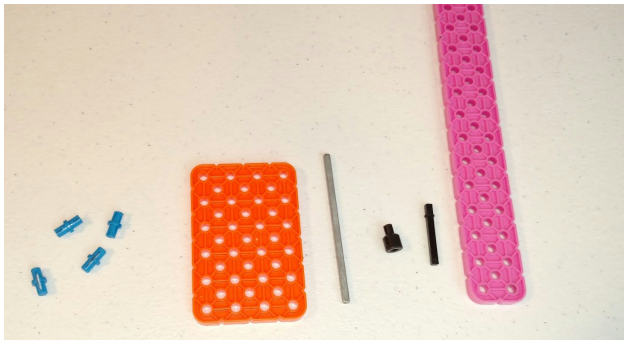
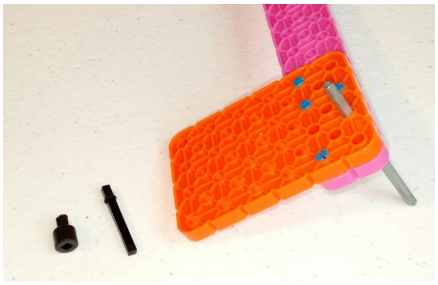
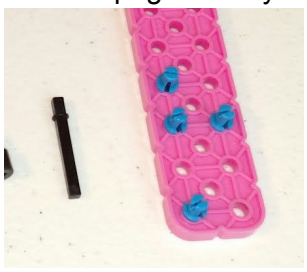
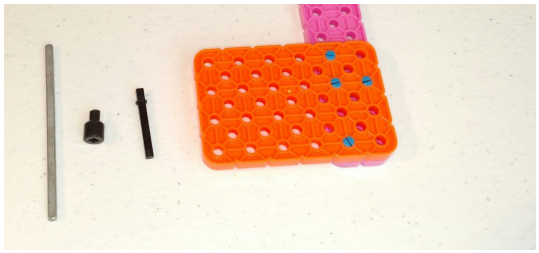
Step 3

Parts needed: 1 - motor, 1 - short smart cable, 4 - 1x1 pegs

1. Parts 	4. Attach motor to beam 
2. Insert pegs exactly as shown 	5. Outside view 
3. Insert smart cable in to motor 	

Step 4

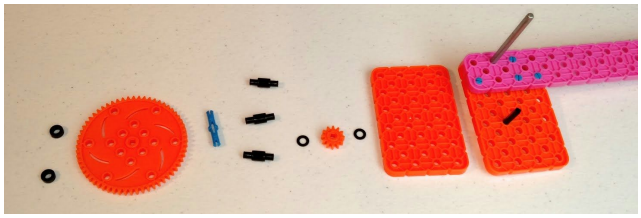
Parts needed: 4 - 1x1 pegs, 1 - 4x6 plate, 1 - 6x metal shaft, 1 - shaft bushing, 1 - 2x motor shaft, 1 - 2x20 beam

1. Parts 	4. Insert metal shaft into second hole in top row 
2. Insert pegs exactly as shown 	5. Attach shaft bushing to shaft 
3. Attach plate to beam 	6. Insert motor shaft into second hole in the 4th row down. 

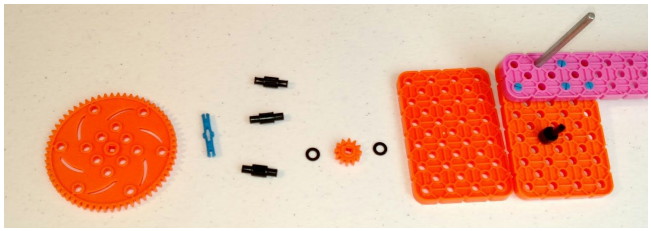
Step 5

Parts needed: 2 - thick washer/spacer, 1 - 60 tooth gear, 1 - 2x2 peg, 3 - 0.5 standoff, 2 - thin washer, 1 - 12 tooth gear, 1 - 4x6 plate

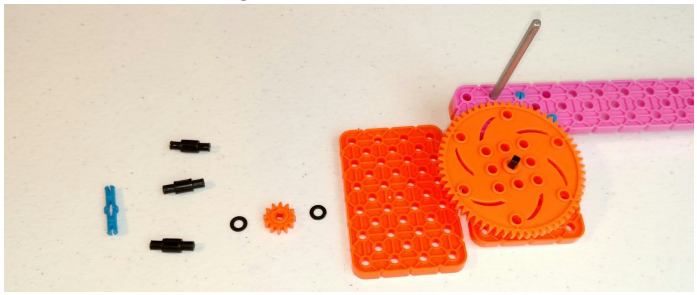
1. Parts



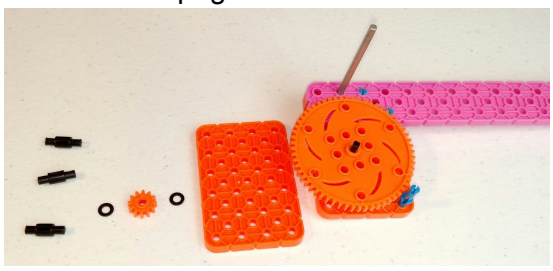
2. Place both spacer on plastic motor shaft



3. Place 60 tooth gear on motor shaft



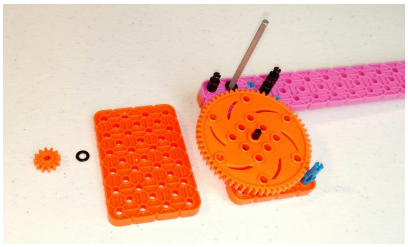
4. Place 2x2 peg in bottom corner of beam



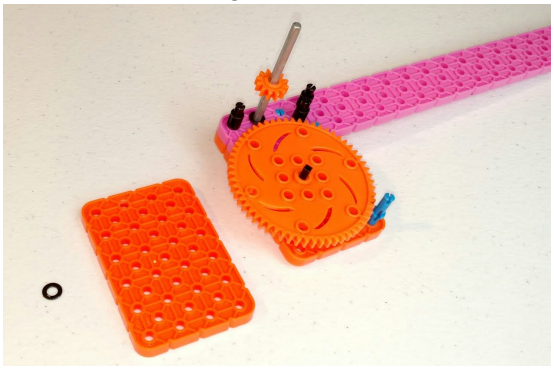
5. Place all three standoffs in 2x20 beam

6. Close up of stand off placements

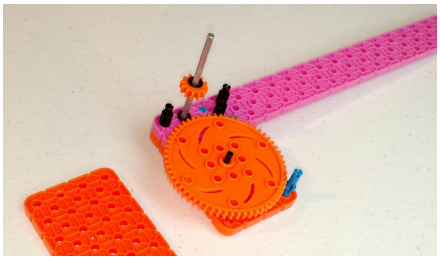
7. Place thin washer on metal shaft



8. Place 12 tooth gear on metal shaft



9. Place washer on top of 12 tooth gear

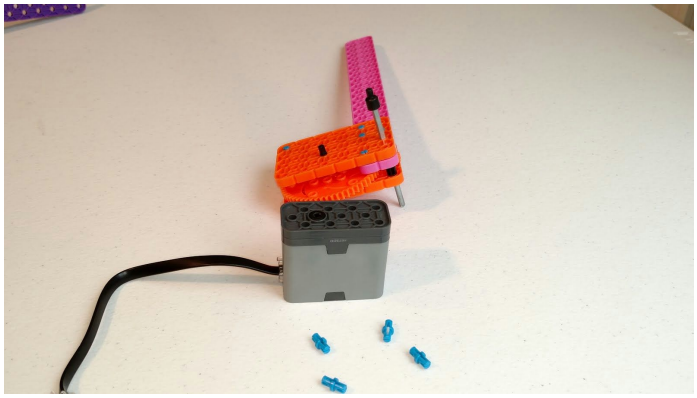


10. Attach plate to beam

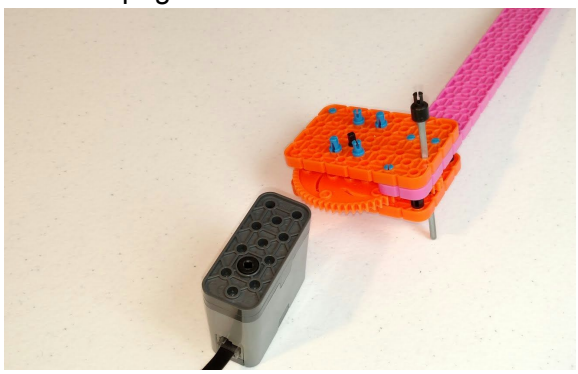
Step 6

Parts needed: 1 - motor, 1 - short smart cable, 4 - 1x1 pegs

1. Attach cable to motor

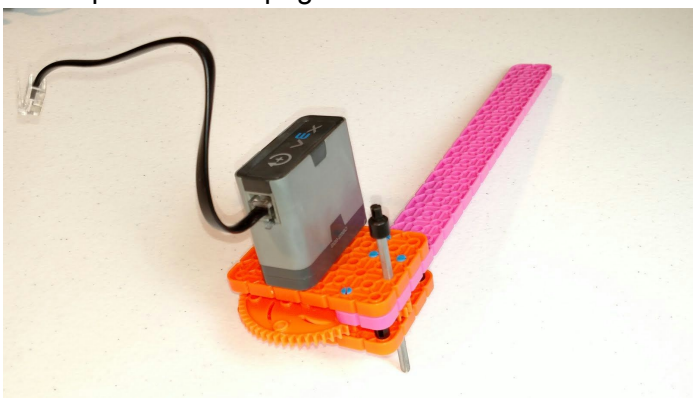


2. Insert pegs to attach motor

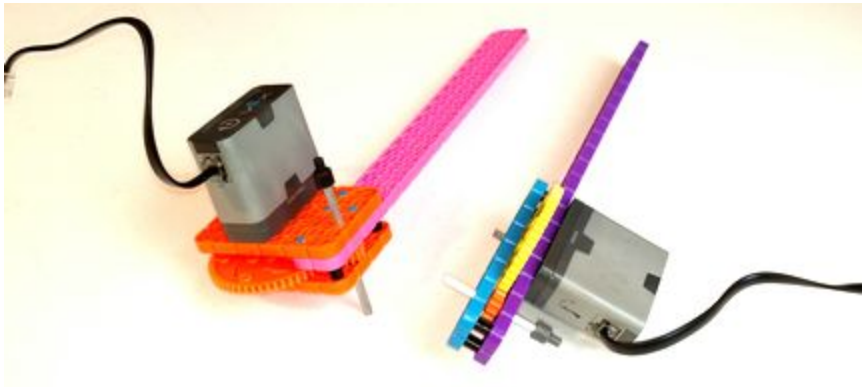


3. Placement of pegs is important

4. Snap motor onto pegs & shaft



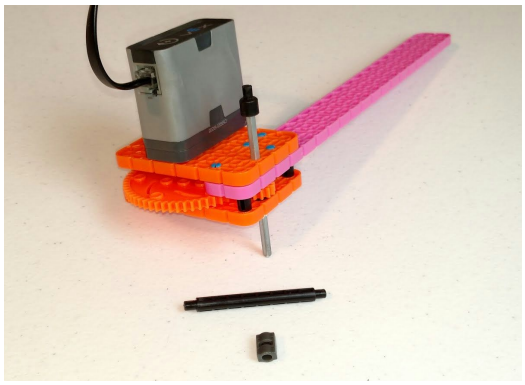
Now you have both left and right sides of the frame ready with motors attached.



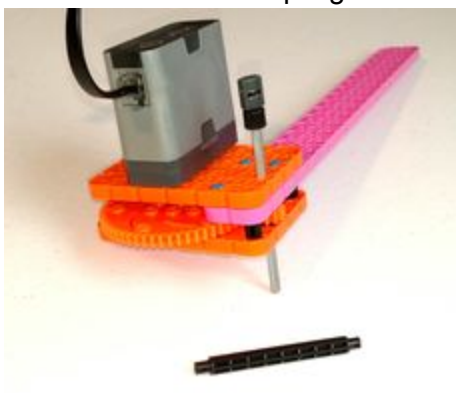
Step 7

Parts needed: 1 - 2x standoff, 1 - standoff connector

1. Parts & left side of frame



2. Attach standoff coupling to shaft bushing

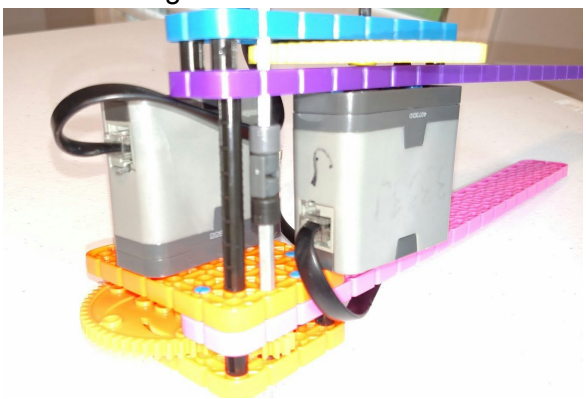


3. Attach standoff to plate in hole directly above

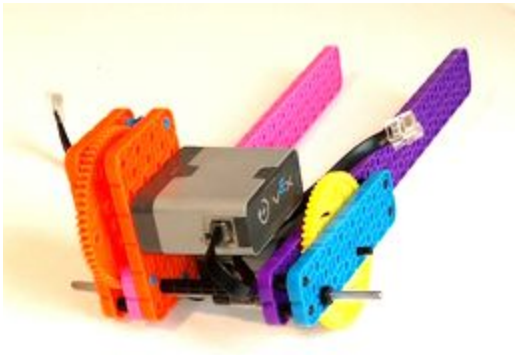
shaft

4. Place left side of frame above right

5. Connect right and left sides



6. Should look like this when connected

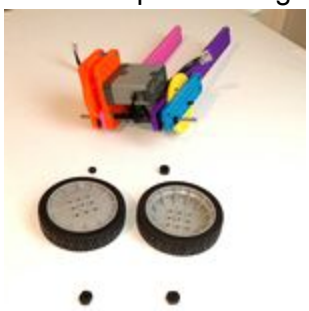


Step 10

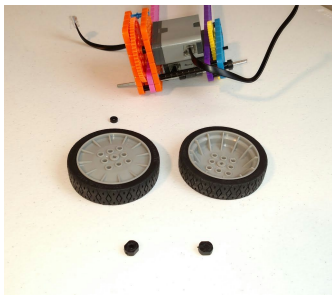
Parts needed: 2 - spacer/washers, 3 - rubber shaft collar, 2 big tires

1. Parts

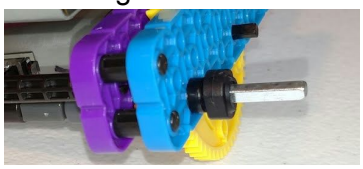
2. Insert spacer on right metal shaft



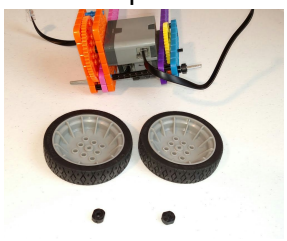
3. Insert rubber shaft color on right metal shaft



4. The right shaft should look like this

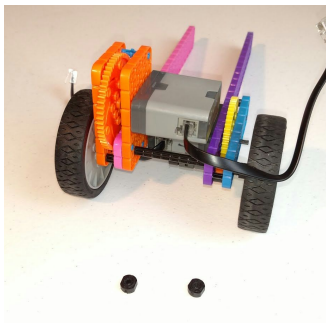


5. Insert spacer on left metal shaft



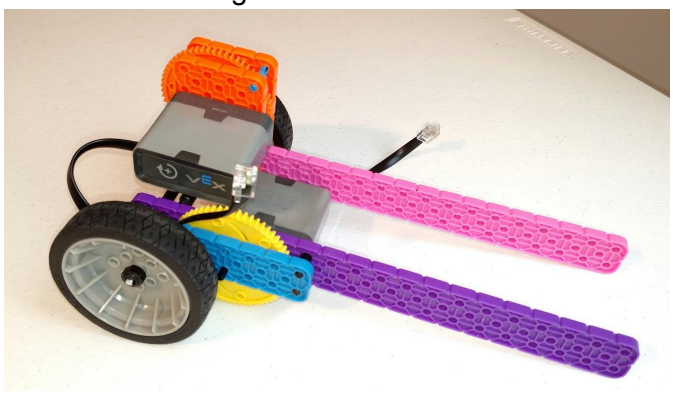
6. The left shaft should look like this

7. Attach wheels to shafts on both sides



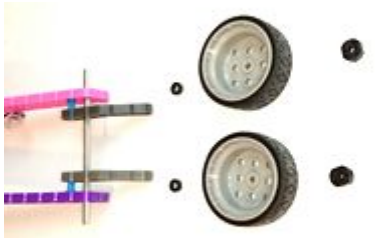
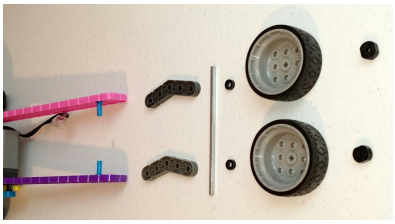
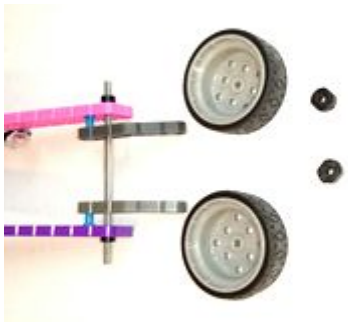
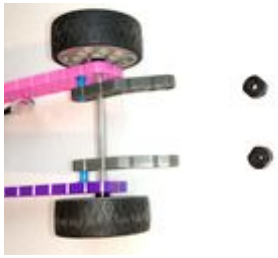
8. Attach rubber shaft collars on both sides

9. The whole thing should look like this now



Step 11

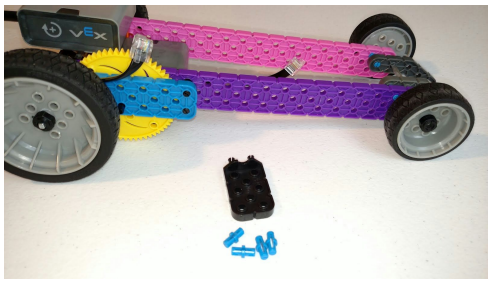
Parts needed: 2 - 1x2 pegs, 2 - 30 degree elbow beams, 1 - 6x shaft, 2 - spacer washers, 2 - small tires, 2 - rubber shaft collar

1. Parts 	5. insert shaft through first hole on top and second hole on each elbow 
2. Insert pets into second hole on top row 	6. Insert spacers on outside of shaft, both sides 
3. Pegs properly inserted 	7. Attach tires to shaft 
4. Attach elbow beams to pegs 	8. Attach rubber shaft collars outside of tires 

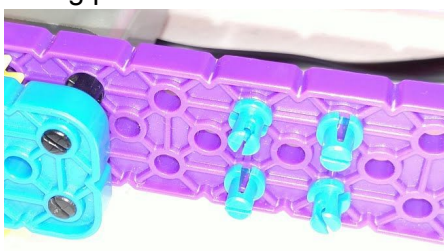
Step 12

Parts needed: 4 - 1x1 pegs, 1 - 2x3 corner connector

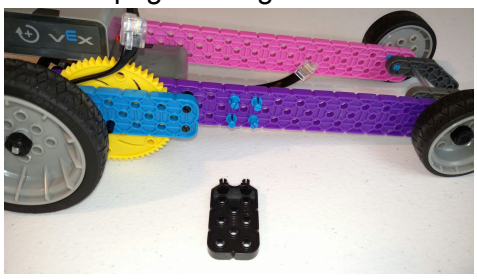
1. Parts



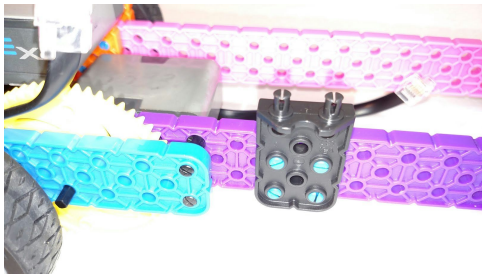
3. Peg placement



2. Insert pegs into right beam



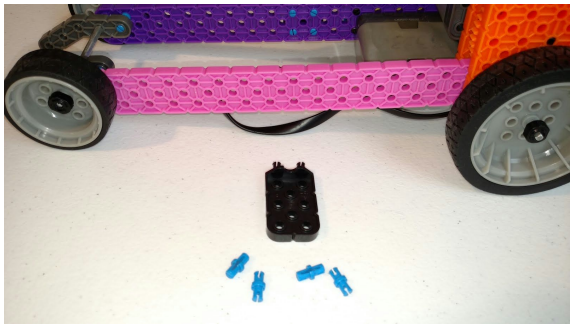
4. Attach corner connector



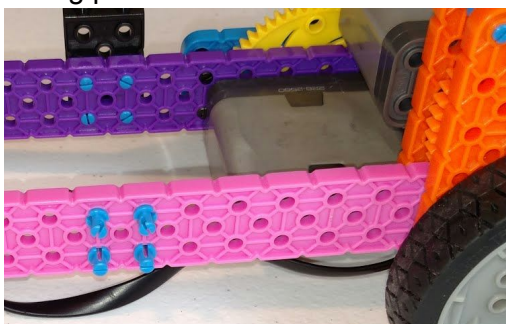
Step 13

Parts needed: 4 - 1x1 pegs, 1 - 2x3 corner connector

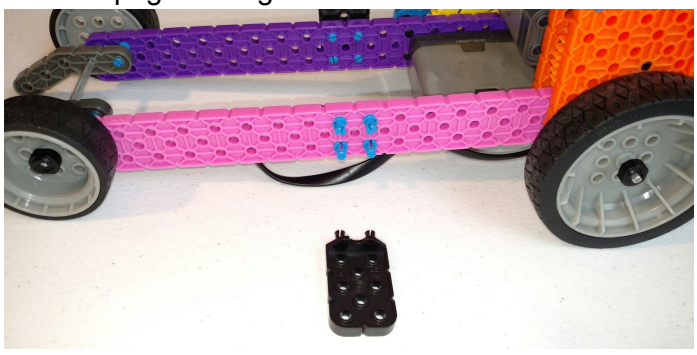
1. Parts



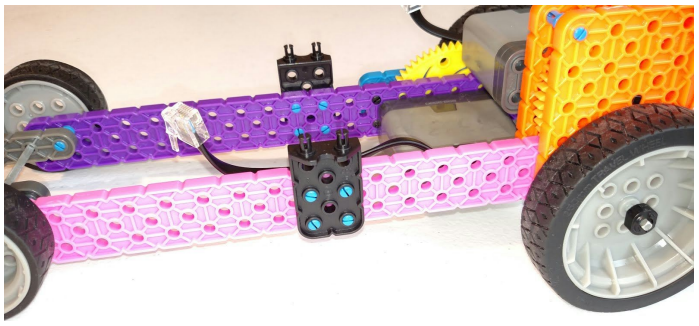
3. Peg placement



2. Insert pegs into right beam



4. Attach corner connector



Step 14

Parts needed: 1 - brain, 1 - battery, 2 - 1x2 corner connector

1. Parts

2. Attach battery to brain and corner connectors to 3rd and 4th holes on the right on both sides of the

brain

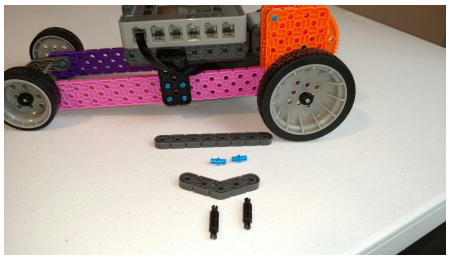
3. Attach the brain to the chassis

4. Connect the smart cables to the brain in ports 6 and 7.

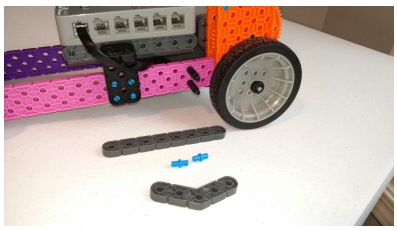
Step 15

Parts needed: 1 - 1x8 beam, 2 - 1x1 pegs, 1 - 45 degree elbow, 2 - 1x standoff

1. Parts

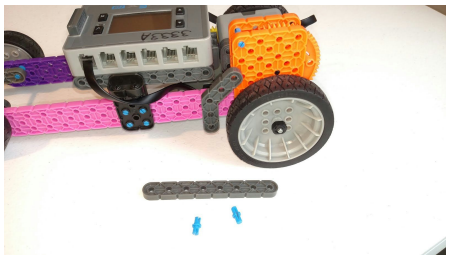


2. Attach standoffs to beam



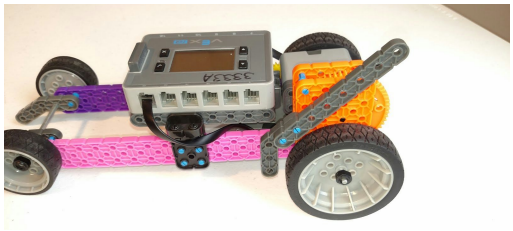
3. Note positions for standoofs

4. Attach elbow to standoffs



5. Attach pegs to elbow

6. Attach bean to elbow



Step 16

Parts needed: 1 - 2x12 beam, 2 - Small Corner Connector, 1 - 1x8 beam, 4 - 1x1 pegs, 1 - 45 degree elbow

1. Parts

2. Attach 2 begs to beam next to back wheel

3. Attach elbow to pegs

4. Close up of pegs and elbow attached

5. Attach two pegs to the end of the elbow

6. Attach 1x8 beam to the elbow

7. Attach corner connectors to the ends of beams on each side

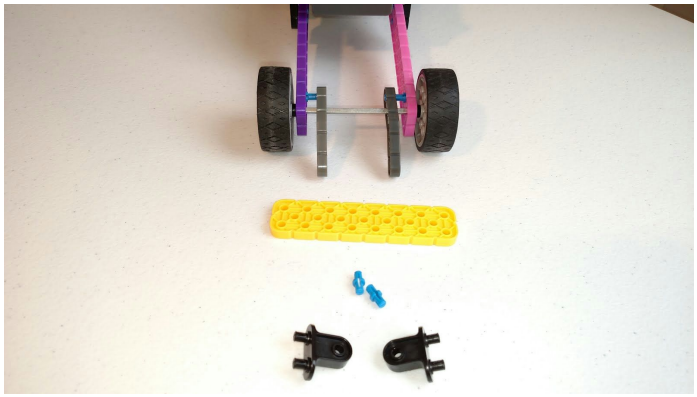
8. Close up corner connectors on beams

9. Attach 2x12 beam to corner connectors

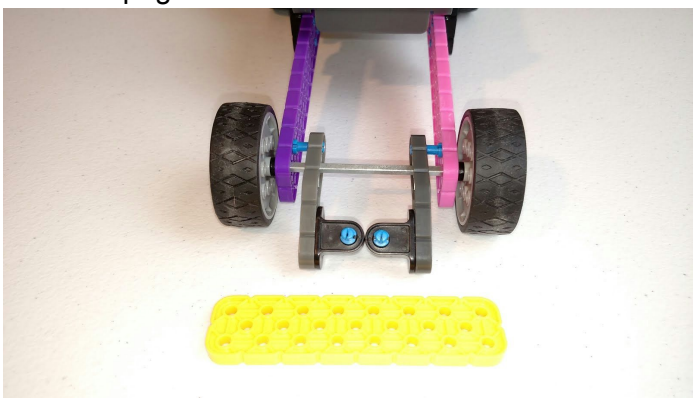
Step 16

Parts needed: 1 - 2x8 beam, 2 - 1x1 pegs, 2 - Offset corner connector

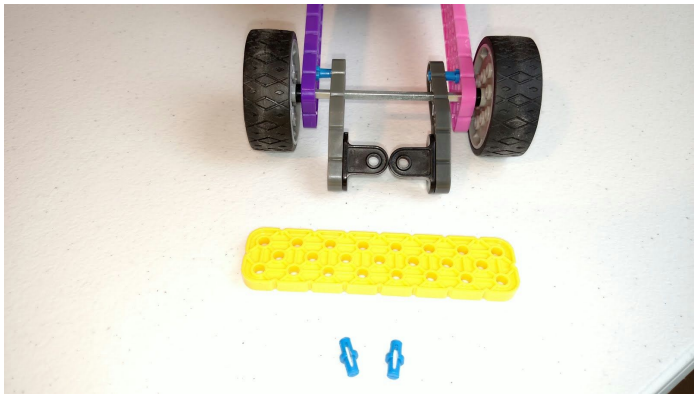
1. Parts



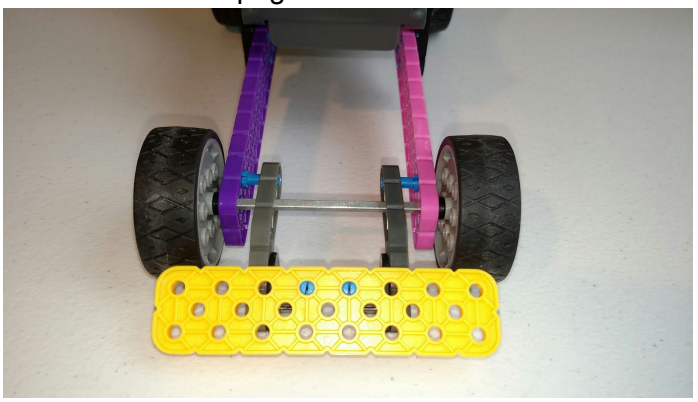
3. Attach pegs to offset connectors



2. Attach offset connectors to elbows on each side



4. Attach beam to pegs



Step 17

You are done building, but you need to test your robot. You should be able to use the Driver Control program that is built into the brain.