

Ferris Wheel




Alternate Motorization Kit

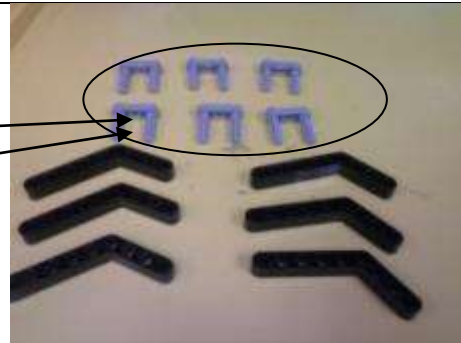


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THE WHEELS MODULE

Step 1



- six 1x9 bent beams (with axle holes on both ends)
- six 1x3 thin beams 
- twelve #3 axles.
- Insert the #3 axles into the ends of the 1x3 beams so that 2/3 of the axle is sticking out one side.

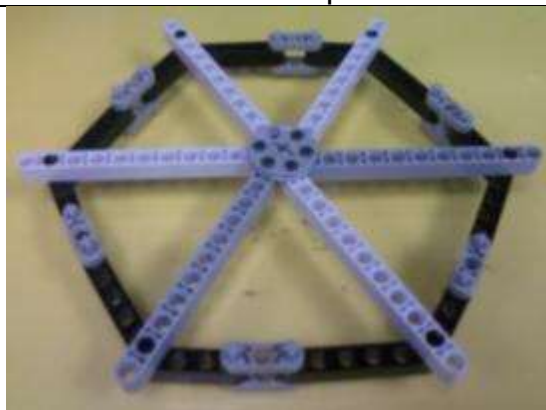
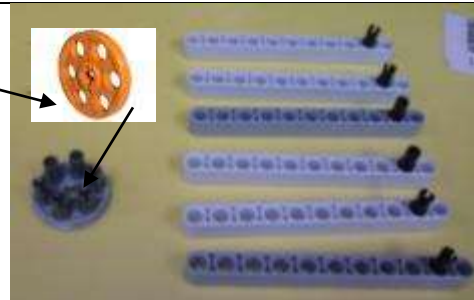


Step 2

- Attach the 1x9 bent beams onto the protruding axles to create a hexagon.
- Note!! The longer side of the 1x9 beam must be attached to the axle first to ensure that all of the beams are attached in the same way.
- Next find six more 1x3 thin plates and attach them to axles sticking out of the 1x9 beams.

Step 3

- Find a Technic Wedge Belt Wheel (Pulley) 
- Insert six dark 1 1/2 grey pins
- Then find six 1x11 beams and insert a black friction pin  into the hole one space from the right.
- Keep the side of the beam with the pin facing upright and attach the beams opposite end onto one of the pins of the Wedge belt wheel



Step 4

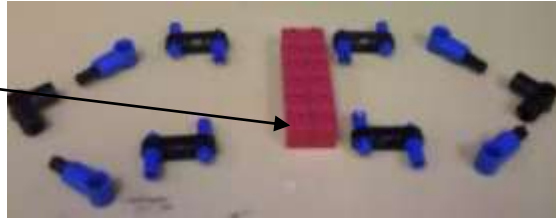
Take the bicycle wheels with the beams and attach it to your hexagon using the pins in the 1x11 beams. Insert those pins into the holes at the bend in the 1x9 beams.

Repeat steps 1-4 to create the second side of your Ferris wheel.

THE SEATS MODULE

The shape of the seats allows more room for extended creativity. The following is only a basic model. You are encouraged to create your own design for the seats.

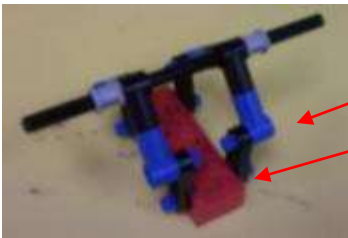
1. Take two 1x6 technic beams and attach them together with two friction pins inserted in the second to last hole on either end.



2. Then find four 1x3 thin beams and insert eight axle pins on their ends so that a pin sticks out of both ends of the beam.



3. Next find two right angled pin - Axle and Pin Connector Angled #6. Find four one sided axle connectors (#1 angles) Use four #2 axles to secure the axle connectors together so that the pin holes on all of them face up.



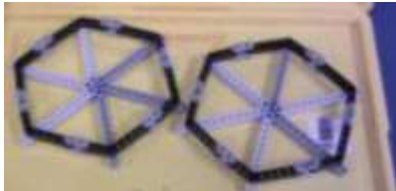
4. Connect the 1x3 thin beams into the holes of the one sided axle connectors.
5. Then attach the other ends of the 3x1 beams into the ends of the 6x1 technic bricks.
6. Take a #12 axle and push it through the pin holes of the right angles axle connectors.
7. Insert full bushings on both ends of it.


Repeat steps 1-7 two more times to create three Ferris wheel seats!!



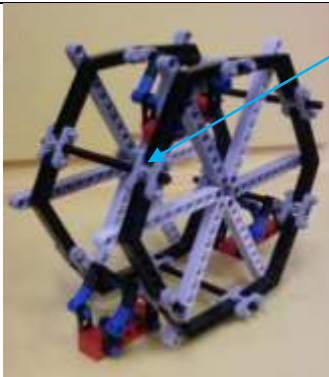
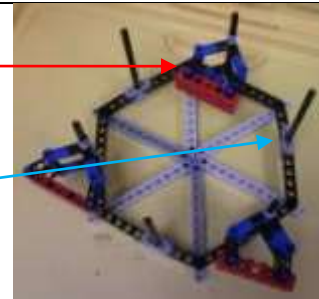
INTEGRATE THE SEATS AND WHEELS MODULES

You should now have two sides of the Ferris wheel and three seat.



Find three more #12  axles and twelve full bushings .



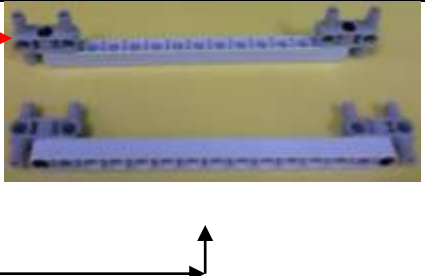

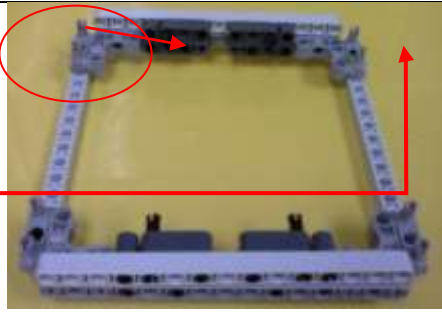

1. Insert the axles of the Ferris wheel seats through the 1x3 beams in the Ferris wheel sides.
2. Secure them in place by adding a bushing **between** the 1x3 thin beam.
3. Do the same with the other #12 axles and the bushings.

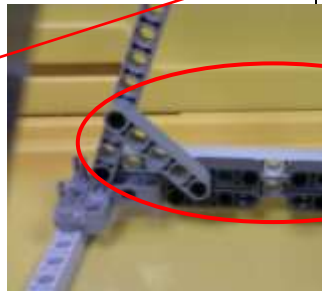
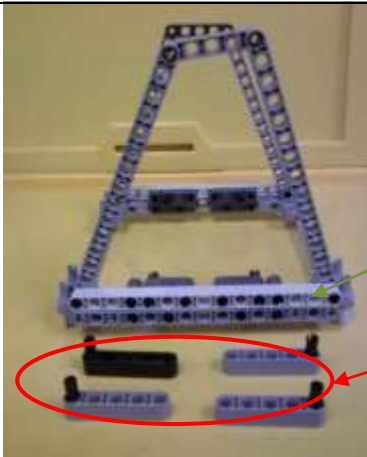


4. Add the other side of the Ferris wheel onto the axle and secure it in place using more bushing in between the 3x1 thin plates.

Note!! In order for the wheel to fit the beams on the wheel will need to face the same direction.

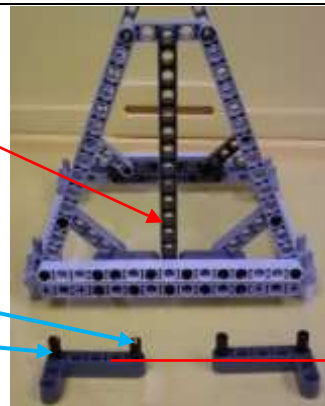
FERRIS WHEEL BASE

	<ol style="list-style-type: none"> 1. Find two 1x15 beams, four technic beam with snaps , four little L beams and eight friction pins. 2. Attach the square brackets on either end of the interior of the 15x1 beams. Use the pins to attach the little L beams so that they point up.
<ol style="list-style-type: none"> 3. Find two more 1x15 beam, four parallel beam snaps, and two friction pins. Attach two of the snaps on the far right of the beam as shown. 4. Attach the other two using the friction pins so that they also hang over the beam one space. 	
	<ol style="list-style-type: none"> 5. Find another 1x15 beam, two 1x3 beams, four friction pins and two long friction pins. 6. Attach two of the friction pins in the fourth hole from either side of the beam. 7. Add the long friction pins one more space. 8. Add the last pair of friction pins two holes in from the long friction pins. 9. Attach the 3x1 beams onto the most interior friction pins and the long friction pins. Repeat this step twice.
<ol style="list-style-type: none"> 10. Attach the beam with the parallel snaps onto the square brackets so that the beams are facing down and touch the table. 11. Then take the beams with the 3x1 beams and attach them to the outside of the little L beams. 	
	<ol style="list-style-type: none"> 12. Find two 1x15 beams, one 1x5 beam, and four friction pgs. Add the friction pins on either end of the 1x15 beams making sure that the pins stick out on opposite sides. Repeat this step twice.

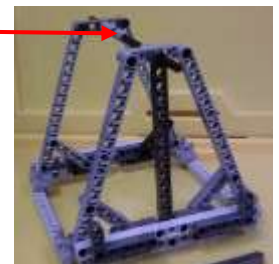


13. Attach the arms to the base on both ends of the 1x15 beam and on the side facing inside the base.
14. Then find four 1x5 beams and add friction pins on their ends.
15. Take the 1x5 beams and attach them to the base and the arms (fourth hole from the end) using the pins on the 1x5 beam and the long friction pins protruding from the 1x3 beams.

16. Take a 1x15 beam and add a friction pin to its end.
17. Attach it to the base with the pin so that its other end lines up with the 1x5 beam on the arm.
18. Then find two big L beams and add friction pegs at the end of their long side and at the vertex of their angles.
19. Attach them to the top 1x15 beam so that they point up and the vertical portions are as far to the sides as possible.



20. Find two #10 axles and put one bushing on one and three bushings on the other.
21. Slide them through the center of the 1x5 beams on the arms. Slide the bushings so that they are on the edge of the axle and touching the beam.
22. Then attach the axles with an axle connector.

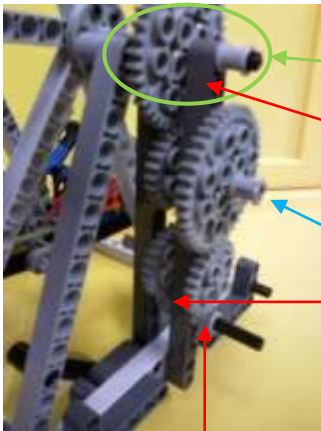


BUILD THE GEAR SYSTEM

Find the following components:

- One 8-tooth gear
- Three 24-tooth gear
- One #6 axles
- One friction pin

- Two 40-tooth gear
- Two #5 axles
- One 1x15 beam



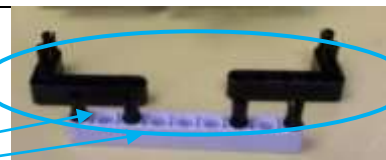
Focus on the composition on the left.

1. Slide a 40 tooth gear onto the axle on the side of the Ferris wheel where there is the vertical beam.
2. Then take your 1x15 beam and attach it over the gear and snapping onto the base. Then put a bushing on the end of the axle.
3. Complete the gear system.
 - Use #5 axles to attach three 24 tooth gears, a 40 tooth gear as shown here.
 - Use a #6 axle to connect the 8 tooth gear as shown in the picture. The 8-tooth gear is meshed right below the 24-tooth
 - Add a bushing on the outside of the vertical beam. This axle is the same one connected to the 8-tooth gear.
 - Make sure that it is only pushed as far back as to go through the second vertical beam.

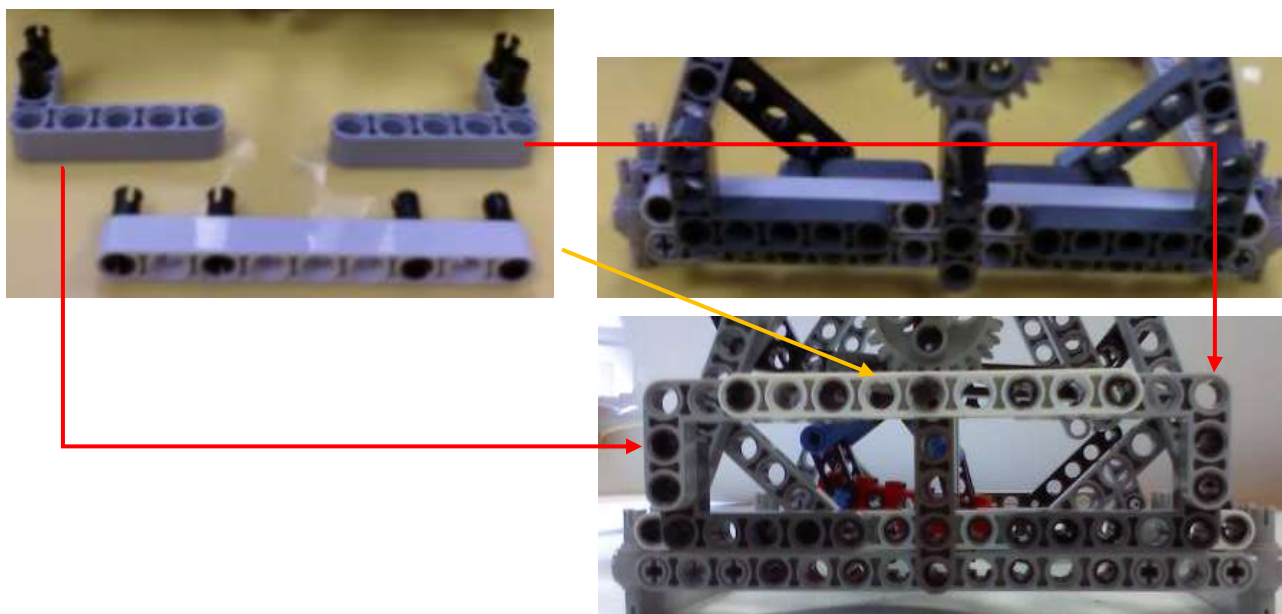
4. Find two big L beam, a 1x9 beam, and eight friction pins.

5. Add four of the pins in the vertical portion of the L beams.

6. Add the other four in the 1x9 beam as shown.



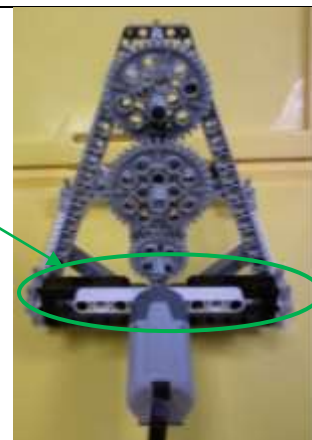
7. Attach the L beams into the L beams already on the base and the 1x9 beam onto them.



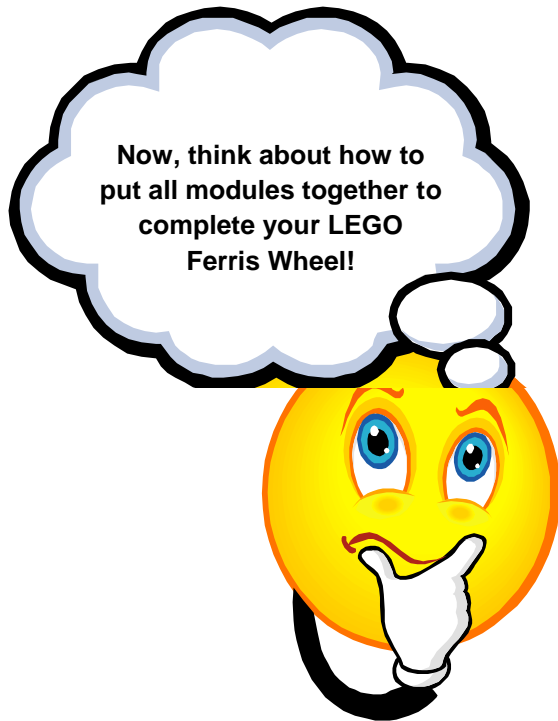
8. Attach the L beams into the L beams already on the base and the 1x9 beam onto them.

9. Make sure the #6 axle goes through the 1x9 beam.

10. Take two friction pins and insert them into a technic motor. Then attach the motor making sure that it meshes with the protruding axle.












FERRIS WHEEL FINAL INTEGRATION!!!



Parts List

Piece Name	ID #	# needed	Piece Name	ID #	# needed
Friction Peg	4459	33	#8 gear	W970620	1
axle/peg	43093	12	#24 gear	W970625	3
half stud peg	32002	12	#40 gear	W970627	2
#2 Axle	32062	12	beam snap	W991404	4
#3 Axle	4519	24	right angle beam snap	W991404	4
#5 Axle	32073	2			
#6 Axle	3706	1			
#12 Axle	3708	6			
Full Bushing	970016-1	19	axle connector #1	32013	12
bike wheel	4185	2	right angle axle connector #6	32014	6
thin 3x1 liftarm	6632	36	#3 hole beam	32523	4
			#5 hole beam	32316	4
			7 hole beam	32524	6
1x9 bent beam	6629	12	9 hole beam	40490	1
small L beam	32140	4	11 hole beam	32525	12
big L beam	W991404	4	15 hole beam	32278	12

Parts with somewhat odd names: (included in the table above)

<p>36X </p> <p>6632: Liftarm 1 x 3 Thin 36x</p>	<p>2X </p> <p>4185: Wedge Belt Wheel (Pulley)</p>	<p>12X </p> <p>32013: Axle and Pin Connector Angled #1</p>	<p>6X </p> <p>32014: Axle and Pin Connector Angled #6</p>	<p>12X </p> <p>6629: Liftarm 1 x 9 Bent (6 - 4) Thick</p>	<p>6X </p> <p>32140: Liftarm 2 x 4 L- Shape Thick</p>
<p>4X </p> <p>32526: Liftarm 3 x 5 L-Shape Thick</p>	<p>4X </p> <p>W991404 Technic beam with Snaps</p>	<p>4X </p> <p>W991404 Technic beam with Snaps</p>			