



HOW TO BUILD A LANDROIDS FIRST LEGO League Table

(Sectional, Transportable, Easy storage)
Updated: 10/6/08



A. Material List (\$130 ±)	Quantity
32" x 80" flat doors 1-3/8" HC (hollow core)	3
2x4 x 8' kiln dried, find the straightest ones you can	5
3/8" dowel	16
1/4 - 20 x 50 mm screws	14
1/4 - 20 threaded inserts	14
Wood glue	1 bottle
Clamps	lots
1" Blue Tape	1 roll

- B. **Tool List**
- Table Saw
 - Circular Saw
 - Plunge Router with edge guide
 - 3/8" up-cut spiral bits
 - Hand drill (1/4" and 3/8" bits)
 - Surface planer
 - Joiner
 - Ruler



C. **Instructions:**

1. **Cut the doors down to 48" long:**

- Measure each door to 48" long (x 32" wide), from the end with the manufacturer's sticker, trim off the side that has **no** sticker. (This is to avoid the door lock reinforcement area).
- Tape the cut line with blue tape. Redraw the cut line on the tape.
- Make two shallow (3/4") cuts from both side of the door to prevent blow out.
- When join up, they will make the 48" x 96" table surface.



2. Build a strip to fill the core gap of the newly cut edge:

- Confirm the exact dimension needed to fill in the side of each individual door section. It should be approximately 1" x 1-1/8" x 30-1/8".
- Cut a 31" section from an 8-foot long 2x4.
- Joint and flatten the 2x4 down to roughly 3-1/2" x 1-1/8" x 31"
- Then rip the 2x4 into three 1" strips.
- Trim down the length until the strips fit the core gap of the door.



3. Glue in the strips:

- Push back the cardboard cores of the door, clean the existing glue marks.
- Glue in the strips, clamp overnight.
- The tape that you had at the cut seam earlier will prevent the glue from smearing the surface of the doors.



4. Making inter-connecting dowels to join the door sections:

- Line up the door panels, mark which side will face up on all three panels.
- Starting from the un-cut 48" long end of the door, measure and mark 6", 18", 30" and 42" point along the 48" long edge. (Build a jig for these measurements for consistency is recommended).
- Mark the intersecting cross hair line at the half width height of the edge. This will mark the drill points.
- Set up a plunge router with an edge guide and a 3/8" spiral up cut bit.
- Each door panel is shimmed from the floor until it is flushed with the top of the workbench. This creates a large flat surface for the router to ride on.
- Drill four 3/8" size holes at least 3/4" deep along the marked points of the edge.
- If using a hand drill, make sure the holes are perfectly perpendicular.



5. Set the dowels:

- Test fit the doors with 3/8" dowels. Make sure the doors join up flat and level.
- Once everything checks out, glue in the dowels along both edges of the middle section.

6. Create the table borders:

- Joint and flatten remaining 2x4 slightly to remove the surface roughness. Don't forget to remove the end wax on the 2x4.
- Cut two 8-foot long 2x4 down to 50-1/2" long.
- Cut one 8-foot long 2x4 in half.

7. Join up the table borders:

- Create a dove tail joint with one 50-1/2" long piece and the 48" long piece of 2x4.
- The joint size should be roughly 2".
- The final piece should be roughly 96-1/2". This will provide 1/2" of room to make final adjustment.



8. Fitting the Table:

- Assemble the three door panels as the play table surface.
- Position and clamp the newly created border in place.
- Measure, mark and carefully trim off the excess length on all boarder pieces so the boarder fits perfectly around the perimeter of the doors.
- There is only approximately 1" of solid wood around the side of the door panels for the rails to mount on, position as much possible of the 2x4 boarder on to the solid wood part of the door panels.
- Clamp the boarder in place around the table.



9. Connect the Boarder with Table:

- Flip the table over, start from one end of the long edge of the table, measure and mark drill-hole locations at 6", 38", 58", 90".
- Along the short sides of the table, measure and mark drill-hole locations at 24" from one end.
- Set up a plunge router with an edge guide to make sure the holes are perfectly perpendicular to the surface.
- Used a 1/4" spiral up-cut bit and drill the holes for the fastener at the marked locations. Make sure drill deep enough into the 2x4 boarder.
- Remove the 2x4 border and enlarge the holes with 5/16" bit to make room for the threaded inserts.

10. Connect the Border Pieces:

- Once drilled and mounted all border, create screw holes to tie the short rails to the long rails at the corners.
- From the top of the long border at the corner, measure downward along the height of the border, mark off $\frac{3}{4}$ ", $1\text{-}\frac{3}{4}$ ", and $2\text{-}\frac{3}{4}$ " inch, centered on the width of the short border.
- Drill three $\frac{1}{4}$ " diameter holes. Enlarge the center hole on the short border to mount a threaded insert.
- Enlarge the two outer holes on the short and the long border to $\frac{3}{8}$ ".
- Glue two $\frac{3}{8}$ " dowels on the short rails.



11. Surface Finishing:

- Disassemble the table
- Paint the inside of the rails with flat black paint.
- Finish the door panels with clear finish.
- Finish the outer side of the boarder with any color or finishing desired.



12. Create Table Support:

- Use a pair of saw horse as support for the table.

Optional for additional support:

- Joint one piece of the 2x4 flat on one edge.
- Rip it into two 1x4s and flatten it.
- Cut them down to approximately 6-foot long and mount them on to the expanding sides of the saw horse.
- This will create a 3' x 6' rectangle support for the table.

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