

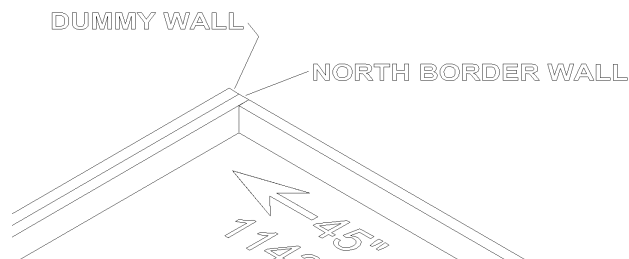
FIRST® LEGO® League Table Construction

The Robot Game takes place on a specially designed table, so you may want to build one to practice on if you don't already have access to one. With safety, weight, height, and cost in mind, a simple design is offered here, but as long as your surface is smooth, and your border walls are sized and located properly, how you build the understructure is up to you. The construction is simple, but does require some wood-working skills.

At a tournament, two tables are placed back to back, but you only operate on one table, so you only need to build one table to practice on. We'll call your practice table a "half-table."

Most challenges have a "shared" mission model, which rests partly on your table, and partly on the other team's table. So in addition to building your table, you'll need to build a tiny portion of a second table, so both halves of the shared model are supported. We'll call this added section the "dummy section."

Here are the instructions for building one "half-table," plus a dummy section:



Materials

Material	Quantity
Field Setup Kit (mission model LEGO elements, mat, CD, Dual Lock™)	1
sanded plywood (or other very smooth board) 96" X 48" X at least 3/8" (2438mm X 1219mm X 10mm)	1
two-by-three, 8' (2438mm) [actual cross-section = 1-1/2" X 2-1/2" (38mm X 64mm)]	6
flat black paint	1 pt. (1/2 L)
coarse drywall screws, 2-1/2" (64mm)	1/2 lb. (1/4 kg)
saw horses, about 24" (610mm) high and 36" (914mm) wide	2

Parts

Part	Make From	Dimensions	Paint	Quantity
table surface (A)	plywood	96" X 48" (2438mm X 1219mm)	no	1
long border wall (B)	two-by-three	96" (2438mm)	yes	3
short border wall (C)	two-by-three	45" (1143mm)	yes	2
stiffener (D)	two-by-three	48" (1219mm)	no	4
saw horse	purchase	H ≈ 24" W ≈ 36" (610mm) (914mm)	no	2

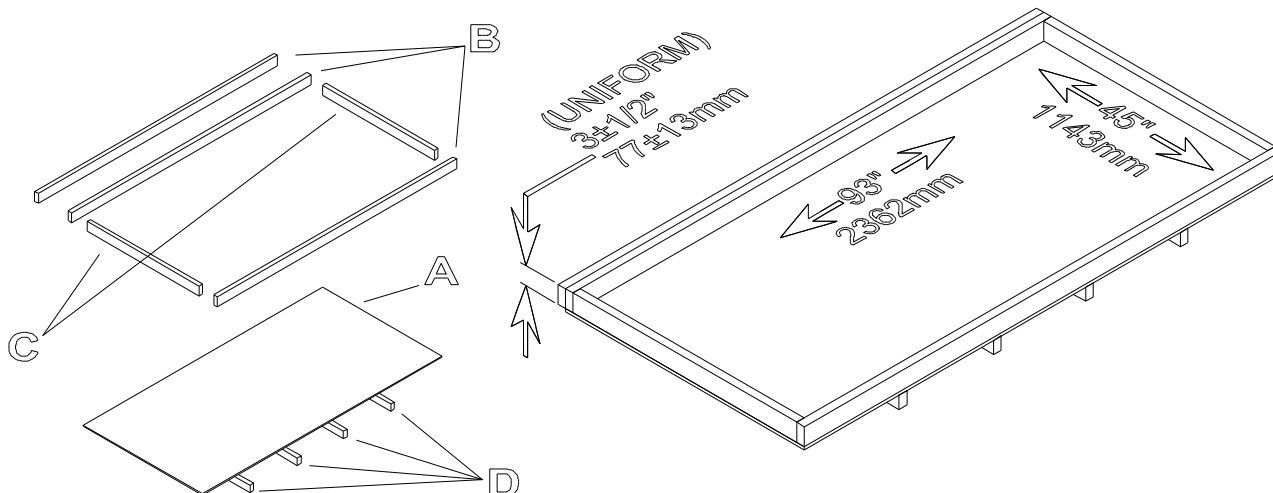
Assembly

Step 1 - Determine which face of the plywood (A) is least smooth, and consider that the bottom face. On the bottom face, locate, clamp, and screw on the stiffeners (D) (about every 18" or 457mm). Be sure screw head tops are flush. Sand any splinters.

Step 2 - On the top face of the plywood, locate, clamp, and screw on the border walls (B,C) around the top perimeter.

- The wall-to-wall dimensions must measure $93\pm 1/8"$ by $45\pm 1/8"$ ($2362\pm 3\text{mm}$ by $1143\pm 3\text{mm}$).
- The height of B and C must measure $3\pm 1/2"$ ($77\pm 13\text{mm}$). Note the use of the "plus or minus symbol." This means the maximum allowable height is three and a half inches (ninety millimeters) and the minimum height is two and a half inches (sixty-four millimeters).
- All border walls must be the same height as each other on any and all tables at a tournament.
- Border heights at a tournament may be different than those on your practice table.

Step 3 - With the help of another person, place this table top on short saw horses (or milk crates, or anything else short and solid).



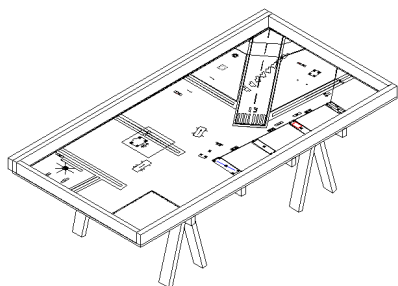
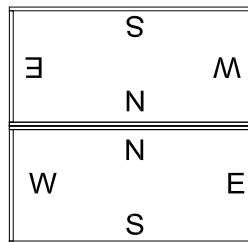
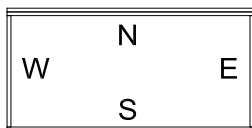
FIELD MAT PLACEMENT

Step 1 - Vacuum the table top. Even the tiniest particle under the mat can give the robot trouble. After vacuuming, run your hand over the surface and sand or file down any protruding imperfections you find. Then vacuum again.

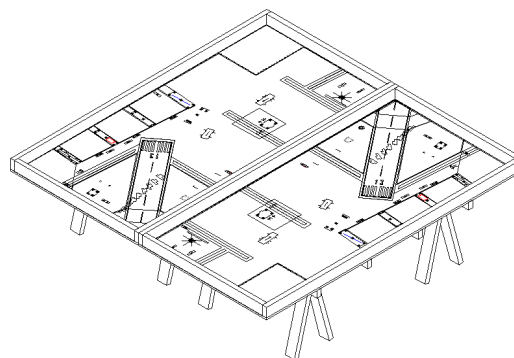
Step 2 - On the vacuumed surface (never unroll the mat in an area where it could pick up particles), unroll the mat so the image is up and its north edge is near the north/double border wall (note the location of the double wall in each table sketch below).

Step 3 - The mat is smaller than the playing surface by design. Slide and align it so that there is no gap between the south edge of the mat and the south border wall. Center the mat in the east-west direction (look for equal gaps at left and right).

Step 4 - With help from others, pull the mat at opposite ends and massage out any waviness away from the center and re-check the requirement of Step 3. It is expected that some waviness will persist, but that should relax over time. Some teams use a hair dryer to speed the relaxation of the waviness.



PRACTICE (“HALF TABLE”)



TOURNAMENT (“FULL TABLE”)

Step 5 - For a competition setup, the north edge of the two mats must be separated by $3\text{-}1/2 \pm 1/4$ ($90 \pm 6\text{mm}$). Note the use of the “plus or minus symbol.” After rounding, this means the maximum allowable separation is three and three quarter inches (ninety-five millimeters) and the minimum separation is three and a quarter inches (eighty three millimeters).