

## TABLE CONSTRUCTION

The Robot Game takes place on a specially designed table, so you'll need 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 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. Since a tournament setup has a double wall at the interactive area where the two tables meet, practice tables need an extra wall of type **B** on the corresponding side. So here are the instructions for building one "half-table" including a double north wall:

### 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 3/8" or thicker = 2438mm X 1219mm X 10mm or thicker	1
two-by-four, 8' (actual cross-section = 1-1/2" by 3-1/2") = long board, 2438mm X 38mm X 89mm	4
two-by-three, 8' (actual cross-section = 1-1/2" by 2-1/2") = long board, 2438mm X 38mm X 64mm	2
flat black paint	1 pt. (half liter) or spray can
coarse drywall screws, 6 X 2-1/2" = coarse drywall screws, ~64mm long	1/2 lb. or 227g
saw horses, about 24" high and 36" wide = 610mm high and 914mm wide	2

### Parts

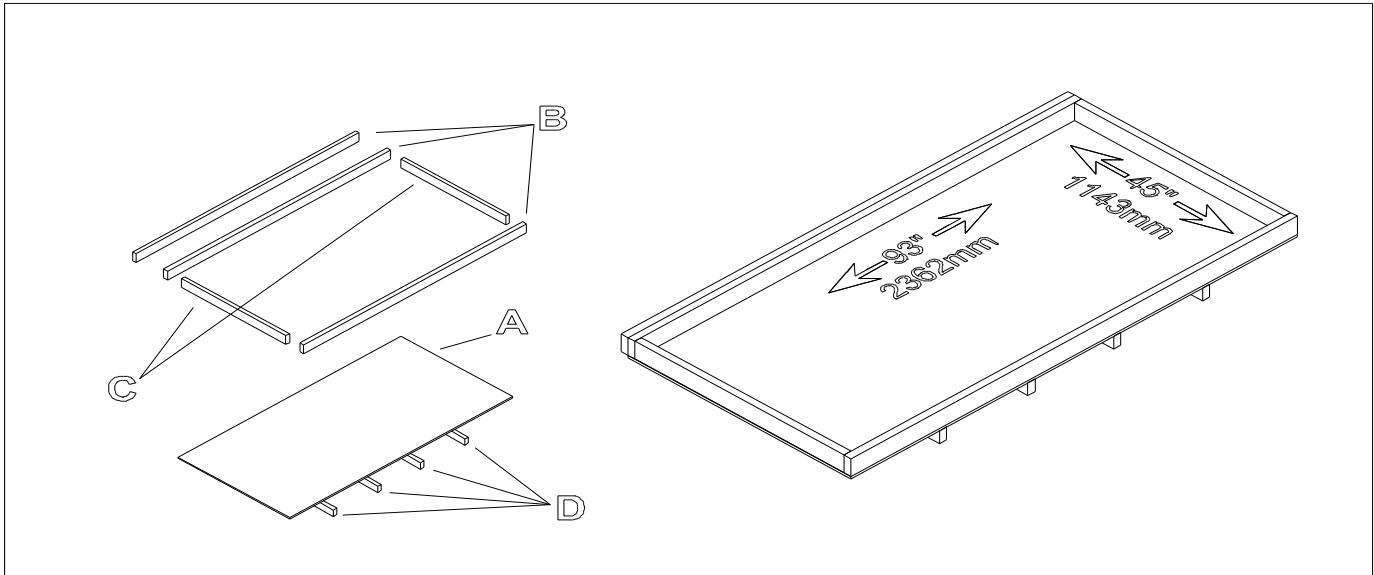
Part	Make From	Dimensions	Paint	Quantity
table surface ( <b>A</b> )	Plywood	96" X 48" 2438mm X 1219mm	no	1
long border wall ( <b>B</b> )	two-by-four long board	96" 2438mm	yes	3
short border wall ( <b>C</b> )	two-by-four	45" 1143mm	yes	2
stiffener ( <b>D</b> )	two-by-three	48" 1219mm	no	4
saw horse	purchase	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 inches). 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  $1143\pm 3\text{mm}$ ).

**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.

