

Beyond Botball 2008

Construction Parts List

Shopping list:

- 4 – 2 x 4 studs (93" long)
- 3 – 2 x 4 x 10'
- 4 – 4 x 4 pieces of 3/4" particle board
- 3 – 4 x 8 sheets of 1/8" masonite (fiber board)
- 3 – 1 x 2 x 8'
- box of 2-1/2" screws (suggest decking screws)
- 3/4" hex head wood screws (14 needed)
- wood glue
- 5 – 10' lengths of schedule 40 1" PVC pipe
- 10 – PVC corners
- 2 – PVC T's
- 1 – PVC connector
- black duct tape
- black 3/4" plastic (electrician's) tape

Tools:

- power saw
- electric drill
 - 1/8" drill bit
 - 1/2" drill bit (or countersink)
- screw driver
- hex head bit plus extension
- tape measure
- pencil
- razor knife (for trimming tape)
- Also suggested:
 - PVC pipe cutter
 - clamps
 - square
 - straight edge
 - rubber mallet

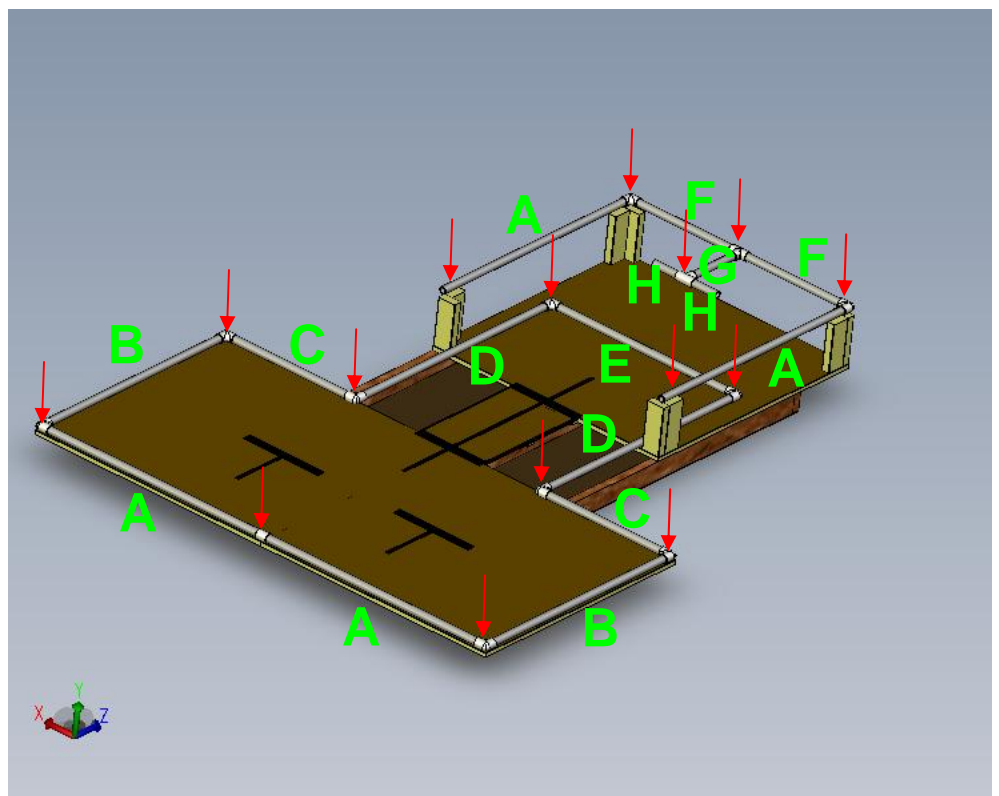
PVC is secured with screws at the points indicated (drill a 1/2" large access hole through upper PVC and a 1/8" pilot hole through lower) – secure with hex head screws

Cut parts:

- 4 – 93" 2 x 4 (for box frame)
- 2 – 48" 2 x 4 (box frame end caps)
- 8 – 9" 2 x 4 (for posts supporting upper level)
- 2 – 24.5" 2 x 4 (upper ramp support cleats)
- 3 – 14" 1 x 2 (bridge supports)
- 4 – 13" 1 x 2 (for ramp frames)
- 4 – 44.375" 1 x 2 (for ramp frames)
- 2 – 16" 1 x 2 (upper ramp supports)
- 4 – 4' x 4' 3/4" particle board (sub flooring)
- 1 – 4' x 8' masonite (lower floor)
- 2 – 4' x 4' masonite (cave floor, upper surface)
- 2 – 4' x 16" masonite (ramp surfaces)
- 1 – 2' x 14" masonite (bridge)

PVC pipe sections (16 in all)

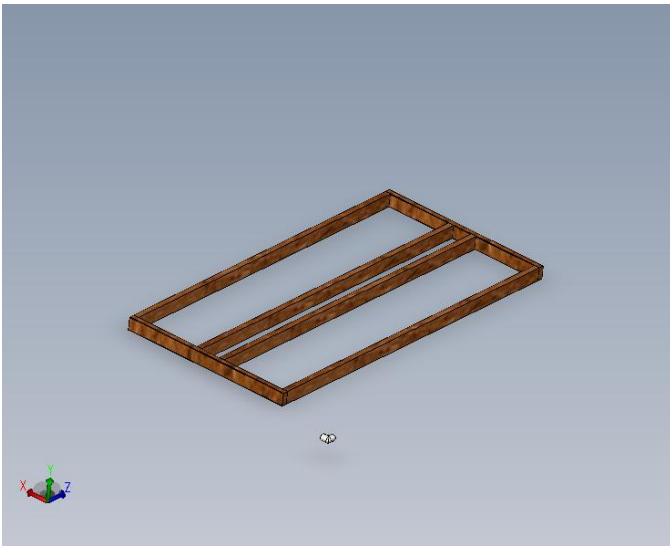
- 4 A – 46.5"
- 2 B – 45"
- 2 C – 26"
- 2 D – 48"
- 1 E – 38"
- 2 F – 21.75"
- 1 G – 12"
- 2 H – 6"



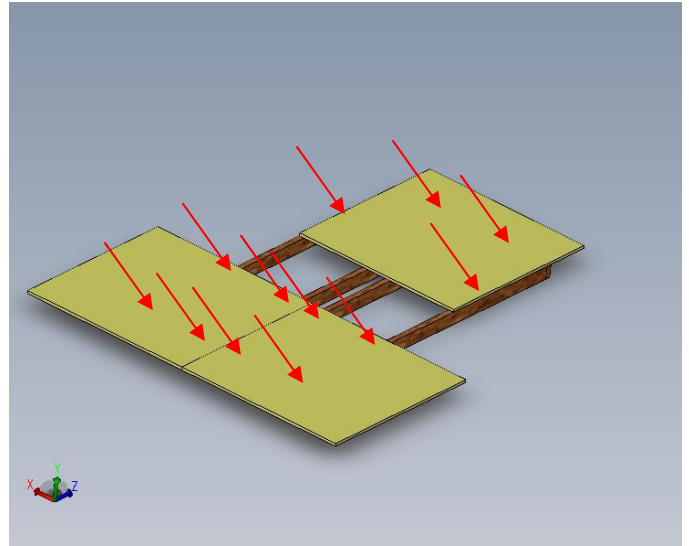
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Construction Steps

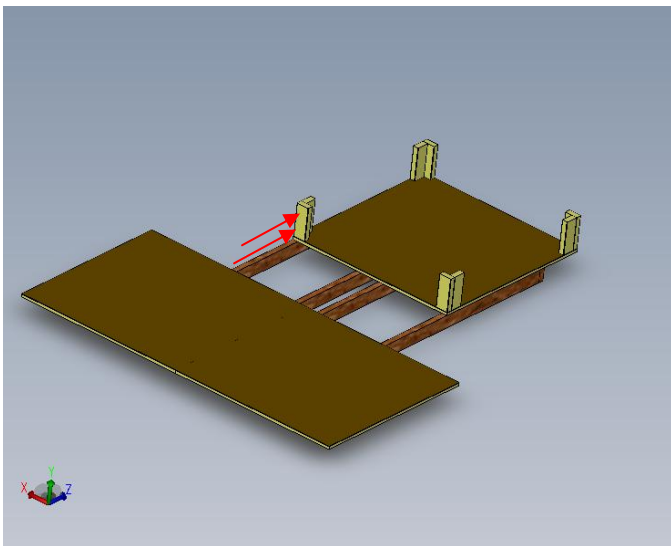
Step 1: Build box frame, secure 4' end caps to studs using 2-1/2" screws – suggest drilling pilot holes to prevent splitting



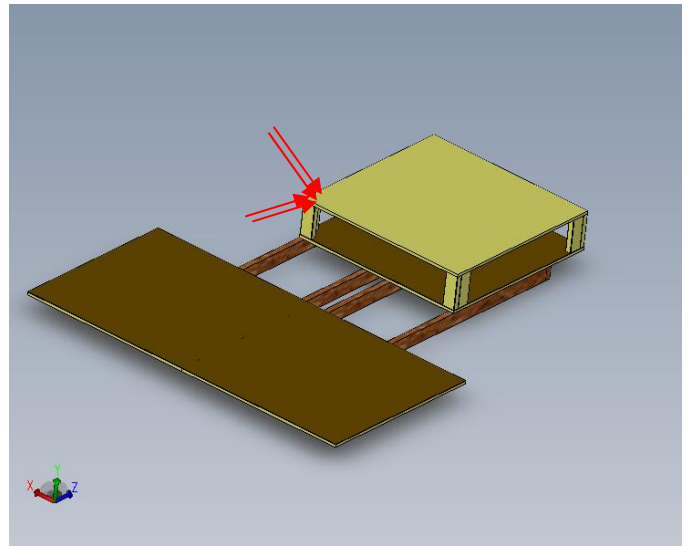
Step 2: Attach particle board subflooring – be sure to leave a 2' gap in the middle; arrows mark suggested screw points – predrill and countersink to minimize splitting and to be able to drive screw heads below subfloor surface



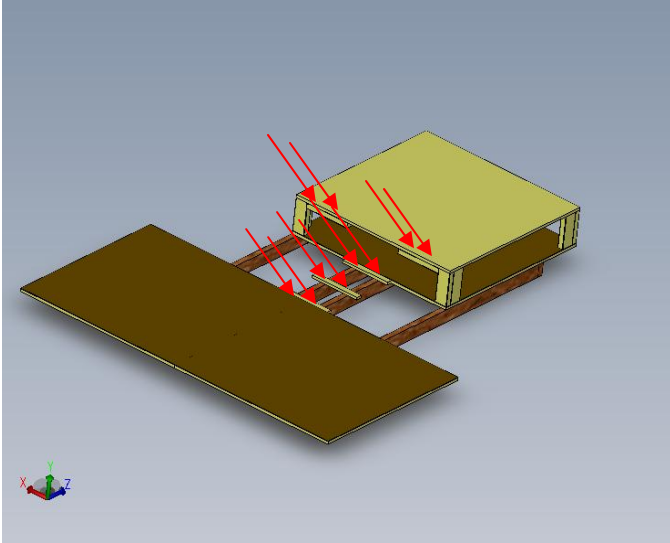
Step 3: Lay masonite in place, assemble support posts for upper level (2 screws each) and position them in place



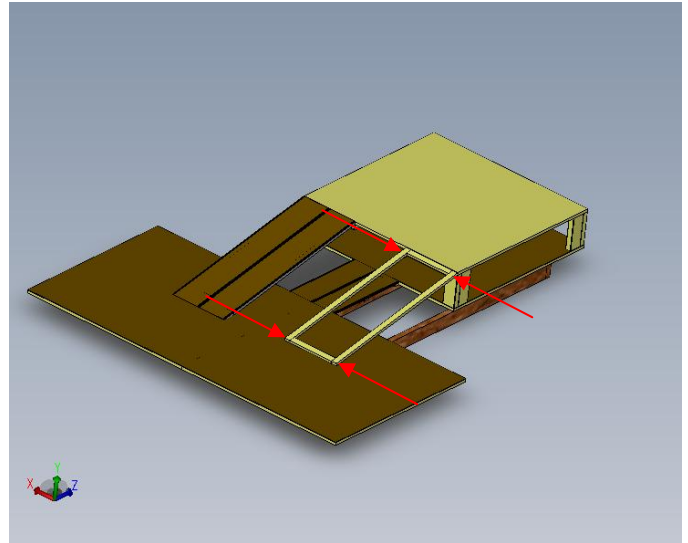
Step 4: Attach particle board subflooring to support posts as indicated (4 screws each, repeat for each corner). Same suggestions pertain regarding predrilling and countersinking.



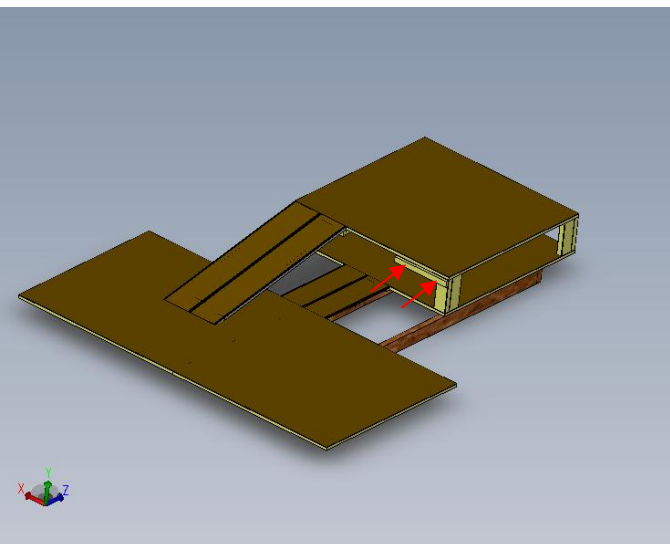
Step 5: Attach ramp support cleats to upper deck and install bridge supports. Suggest using a clamp to hold each cleat in position.



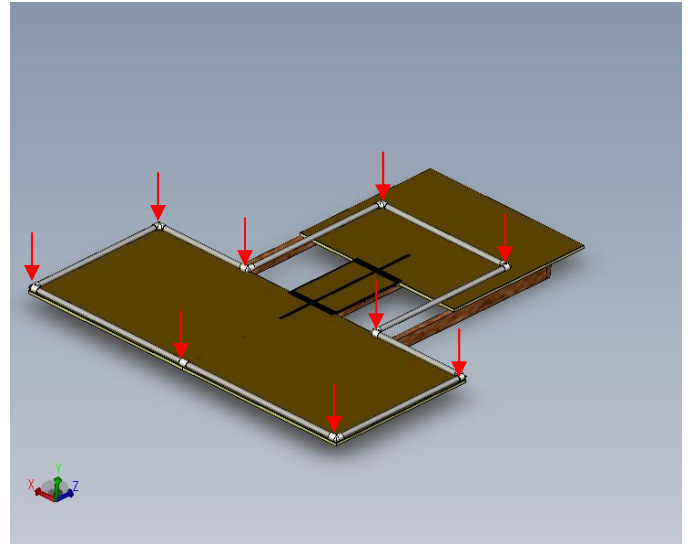
Step 6: Using 3/4" black plastic tape, tape the side edges of the bridge and ramp surfaces to form 3/8" side lines (i.e., the tape is wrapped to cover the cut edge of the masonite with 3/8" extending onto the surface). Add center lines to each. Frame the ramps; suggest gluing ramp surface to frame, clamp, then add screws for extra stability.



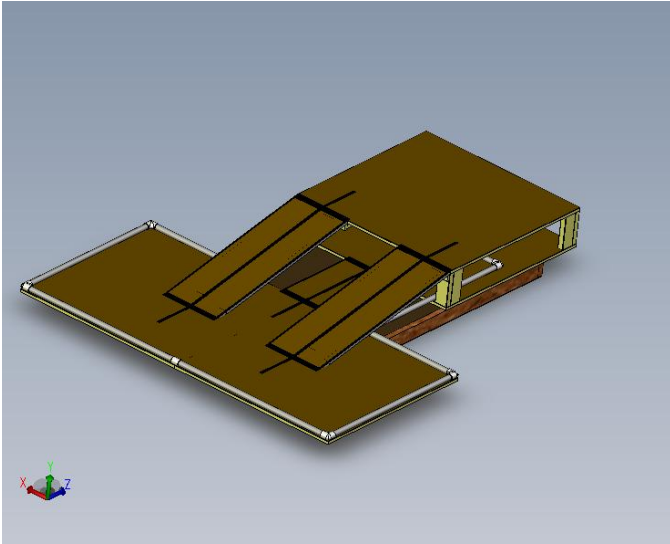
Step 7: Install the ramp support for each ramp. First put the surface for the upper deck in place and then position the support to get a smooth transition onto the ramp. Suggest using a clamp to hold the support in this position, then drill pilot holes, countersink, and install screws.



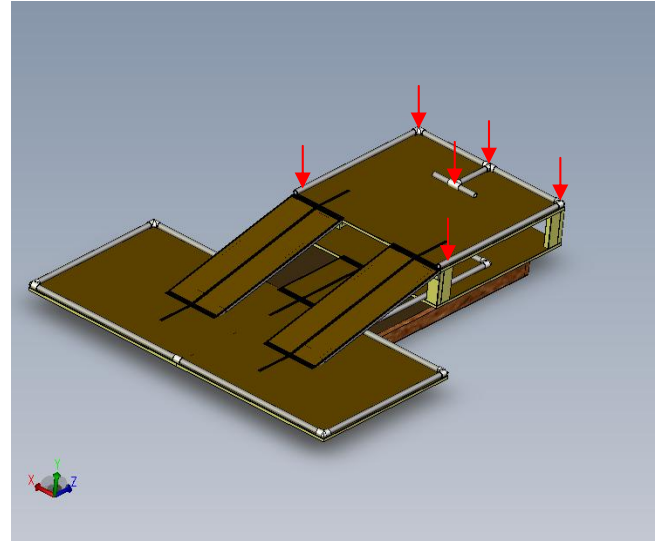
Step 8: Temporarily set aside upper deck and ramps. Install lower deck PVC, prepared as indicated earlier. Use black duct tape to secure bridge on each end, then use 3/4" black plastic tape to add 12" lead-in/lead-out lines on each end which extend the bridge's center line



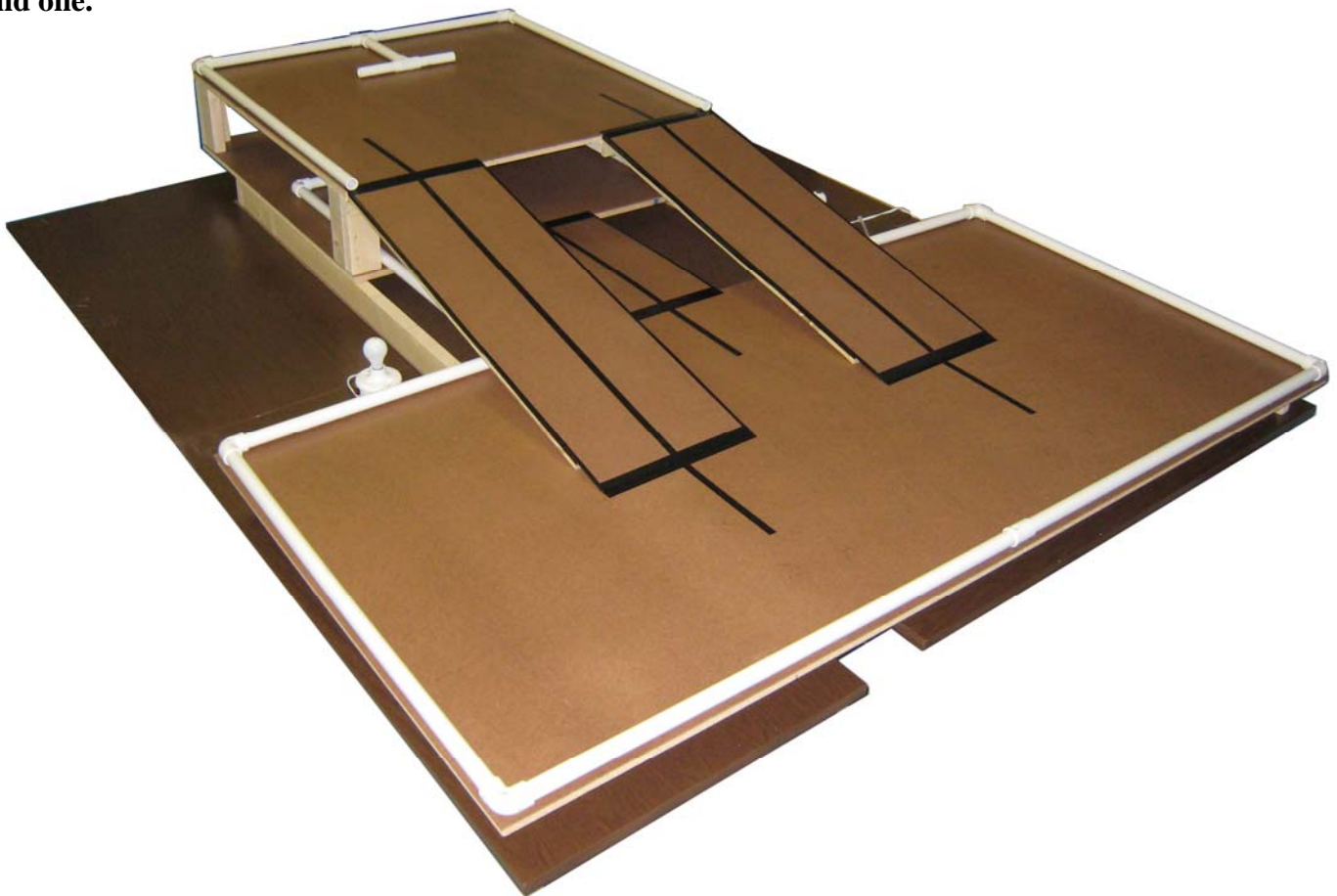
Step 9: Put upper deck back in place (with masonite surface) and attach ramps at each end using duct tape as shown. Using 3/4" black plastic tape install 12" lead-in/lead-out lines extending the center line for each ramp.



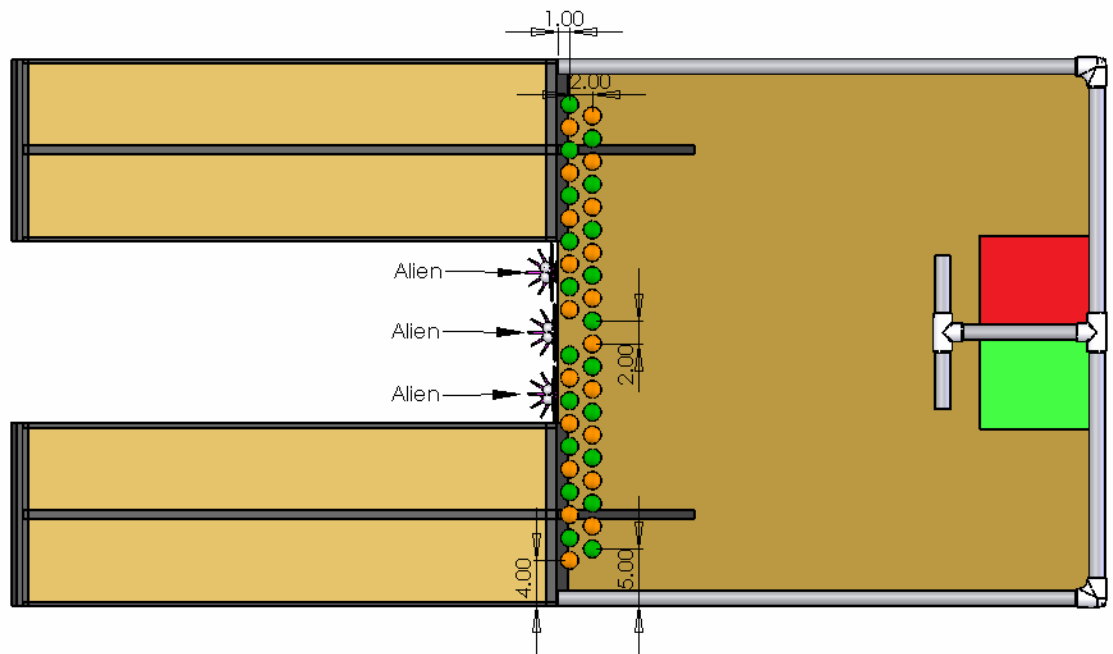
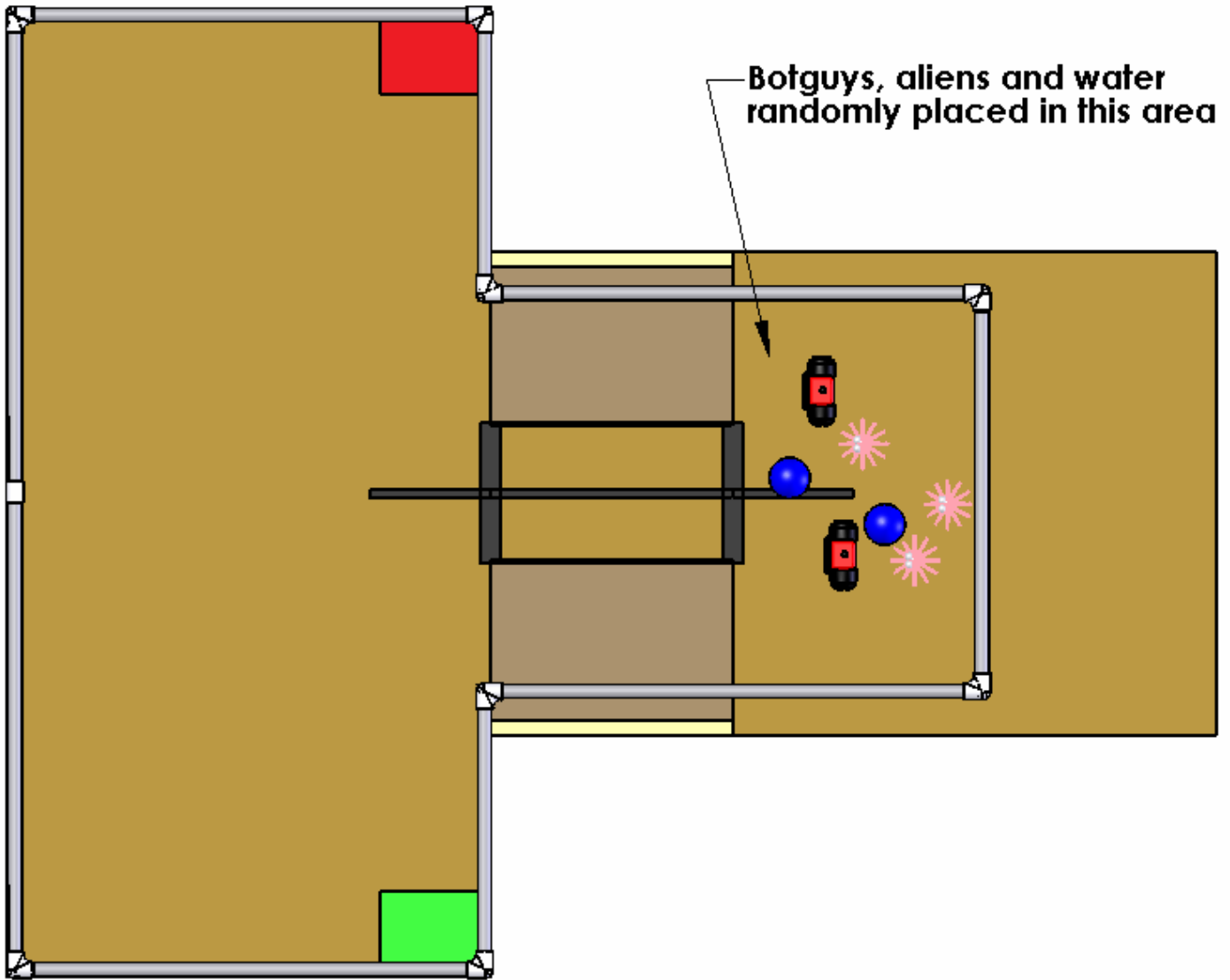
Step 10: Install the upper level PVC to conclude the construction.



And yes, we actually used these directions to build one.

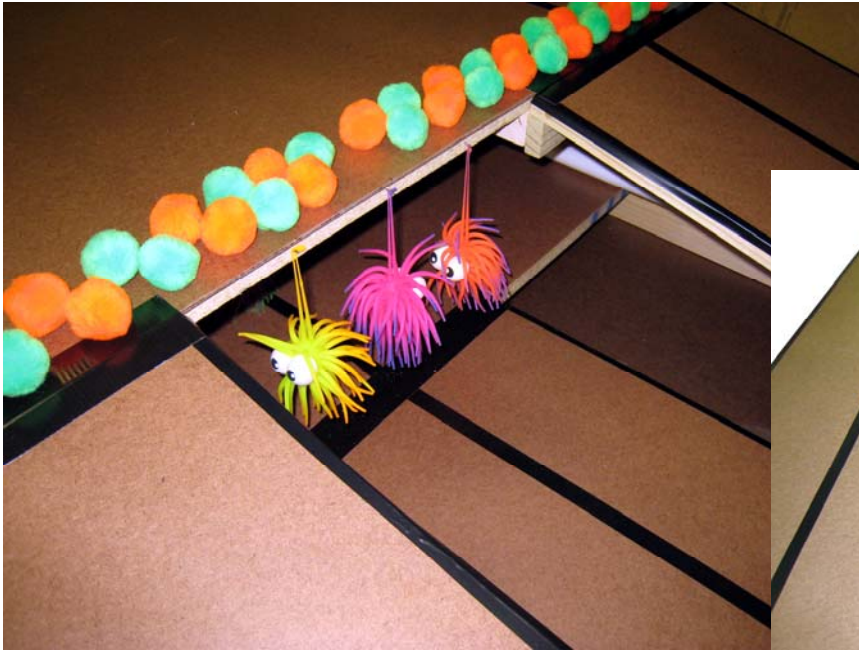


Beyond Botball 2008 Game Element Placement

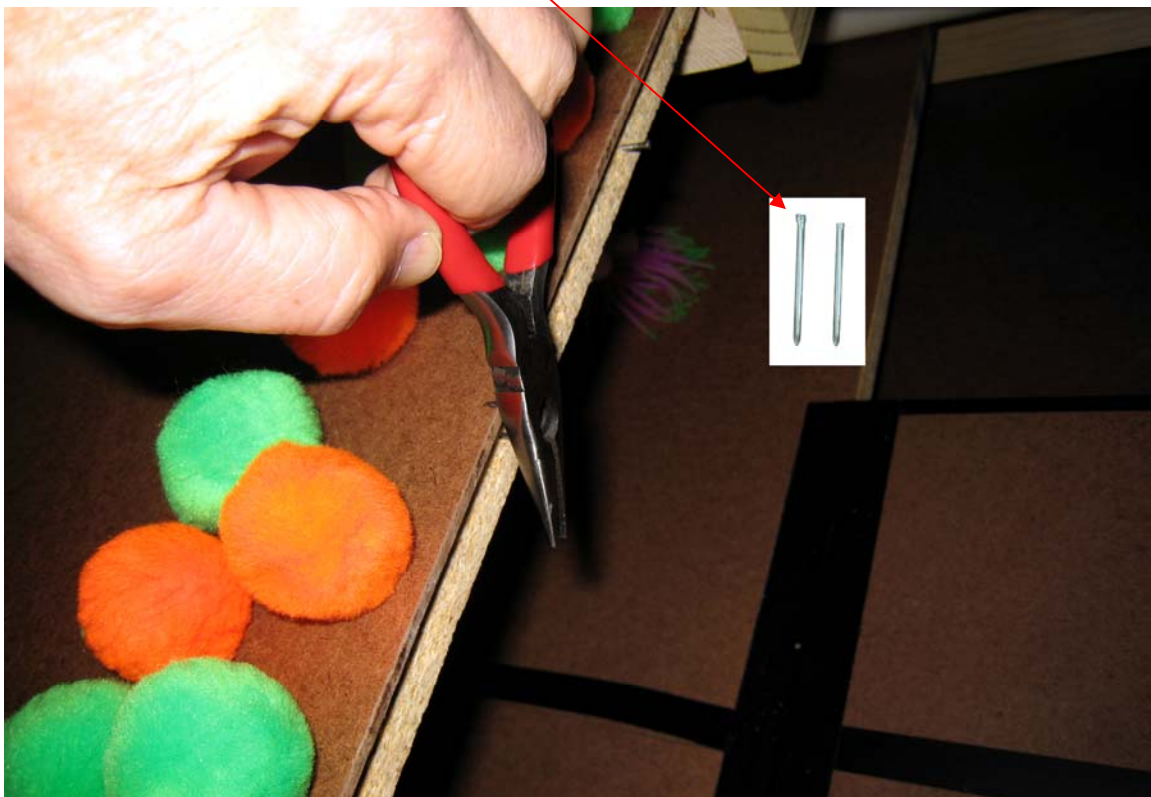


Aliens Guarding the Cave

Aliens hang from 1-1/4" finishing nails evenly spaced across the mouth of the cave (nails are 4" apart) – alien colors are random and they are likely to be moving or spinning on their hanger loops.



Drive in nails and clip off nail heads to leave a peg of about 1/4"



To place orange and green poms on the board make a jig from leftovers:

22" piece of 1x2

11 1-1/4" finishing nails

1. Hammer in the nails 2" apart (1" gap on each end):



2. Use to position poms in groups of 10:

