

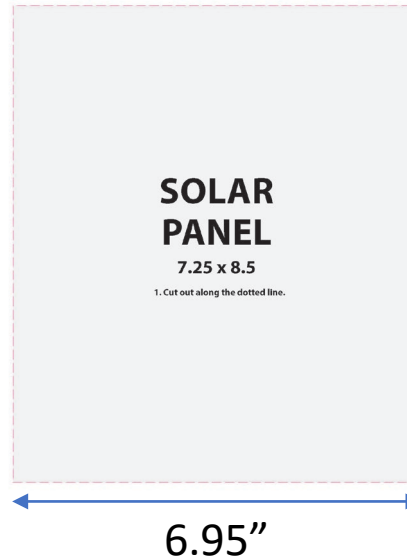
Building Hints for Plastic Sign- Lunar Lander, solar panels, shelves, drawers

1. Log in at www.kipr.org and go to the team homebase
2. Print out Solar Panel template first and use it to calibrate your printer settings. (Example on next slide)
3. Print all of the guide templates
 - Follow the instructions for assembling the guide templates
4. You will need scissors and or razor knife, scotch tape and some duct or Gaff tape
5. You will need #3 18" x 24" plastic signs or equivalent cardboard
6. For a base similar to what KIPR will use you need
 1. ~36" of a 2 x 6 board
 2. For the base also a ~16" piece of 1 x 4" board
 3. Alternatively at least 36" x 16" of $\frac{3}{4}$ " plywood or MDF board and cut wood templates out of it

Calibrating Your Printer Settings

- Most printers will print out documents at slightly different sizes. Selecting the “Actual” option for the size on prints does not guarantee that it will be correct.
- Print out the Solar Panel Template first. It’s cut dimensions should be 7.25 x 8.5 if correct.
- Find out what the difference is between the what printed out and what it should actually be. It will usually be less than expected.
- $\%Diff = \frac{Amount\ Off}{Corect\ Measurement} \times 100$
- Calculate the print percent using this formula:
- $Print\% = \frac{10000}{100 - \%Diff}$
- Use the print percent in your printer settings
- After reprinting confirm that the size is correct and use that percentage for all template prints.

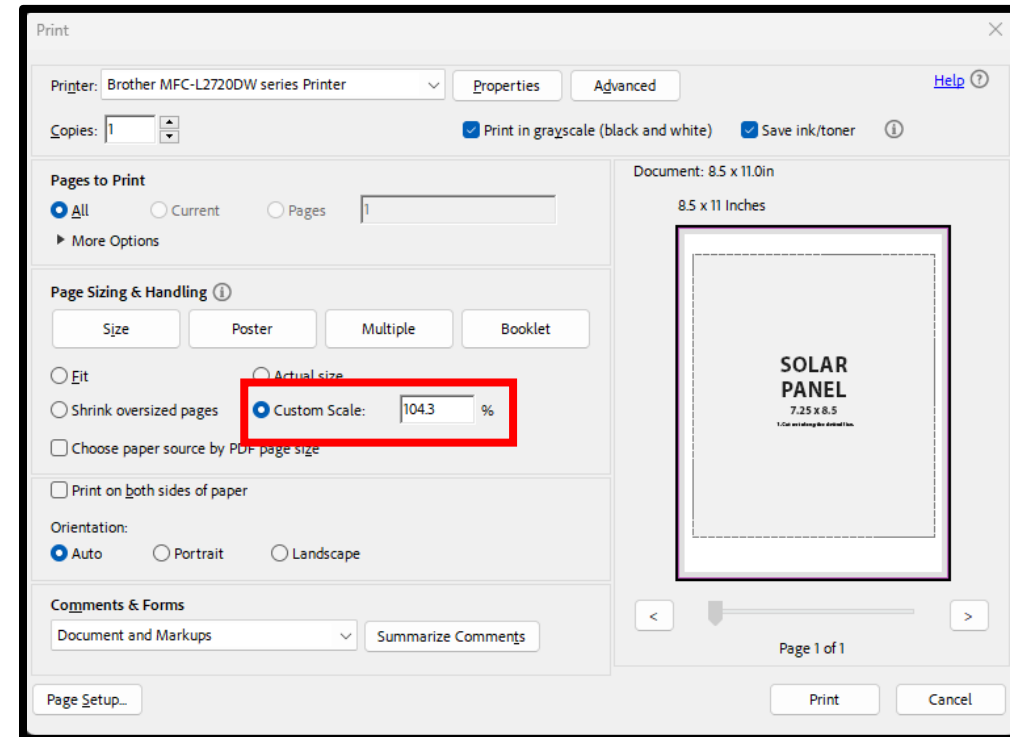
Example



Amount off = 0.3"

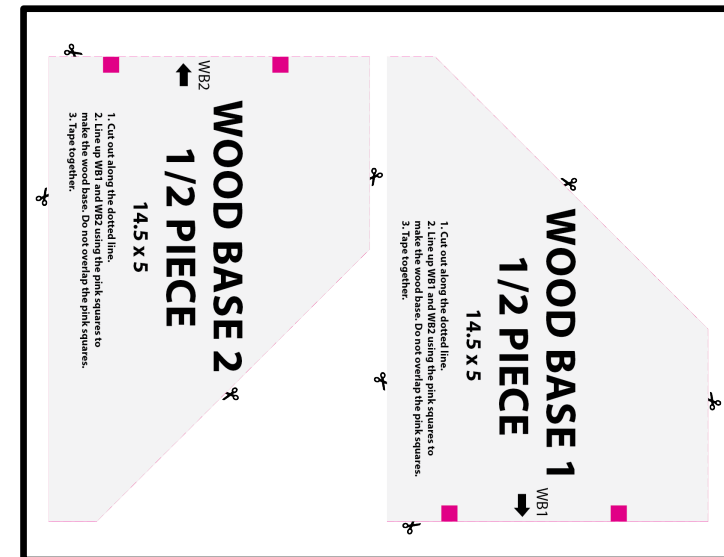
$$Diff\% = \frac{0.3}{7.25} \times 100 = 4.13\%$$

$$Print\% = \frac{10000}{100 - 4.13} = 104.3\%$$



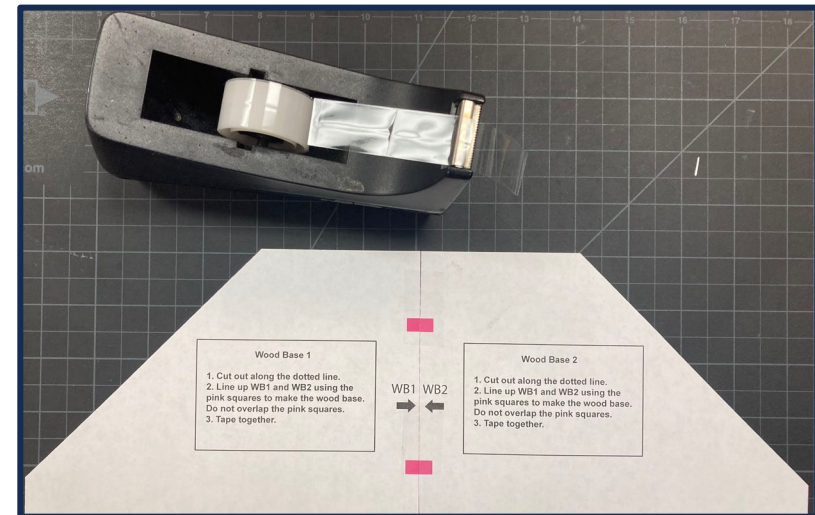
Base to mount Lunar Lander-Octagon to Table

- How you mount the base to the game table is up to you.
 - Tape it in place
 - Use plywood or other wood to mount to
- KIPR will use 2" x 6" x ~36" and 1" x 4" X ~16" to mount on our game tables
 - We have provided a guide to cut and build your own base if you choose to mount it as we will for our tables



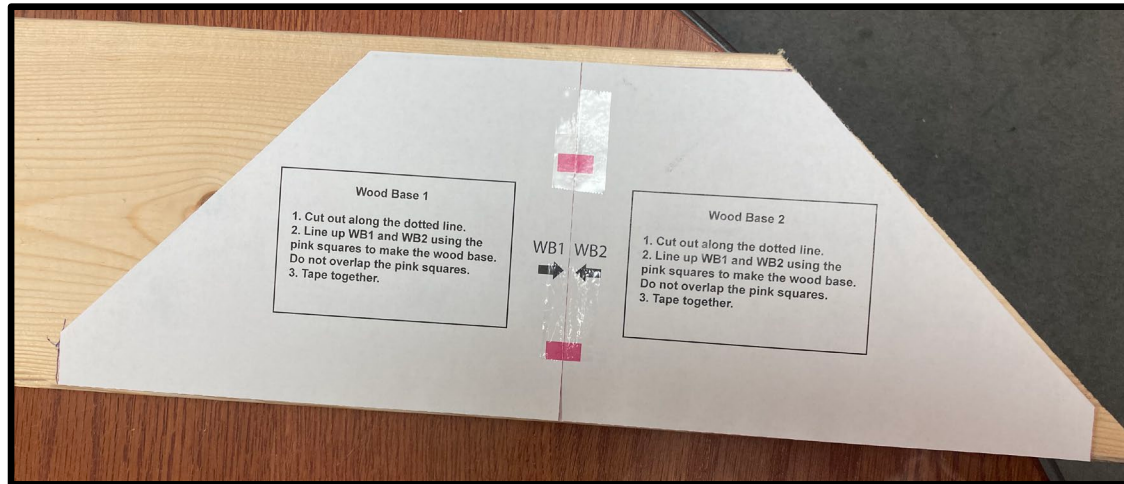
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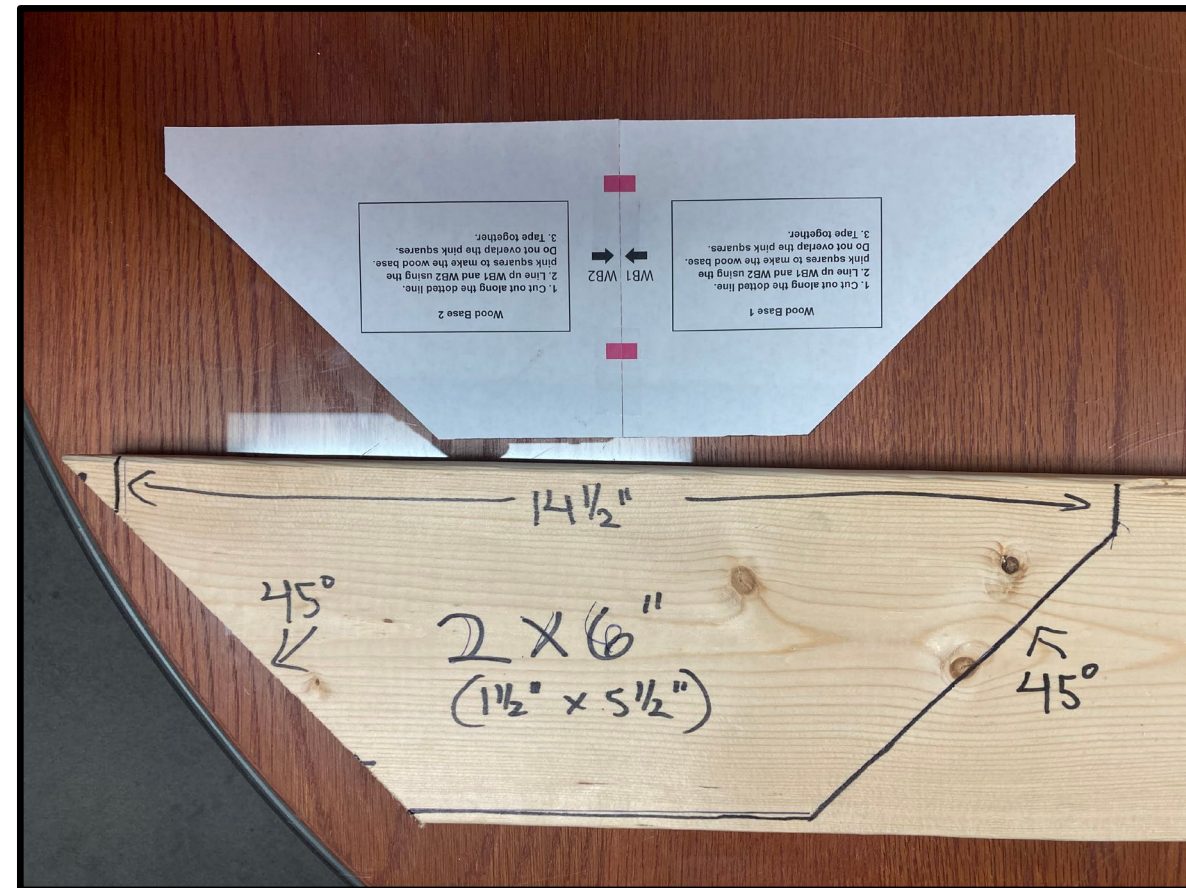


Base to mount Lunar Lander-Octagon to Table

- Place Guide onto 2" x 6" board (Board will actually be 1.5" x 5.5") and trace outline for #2 bases
- Cut out both bases using saw

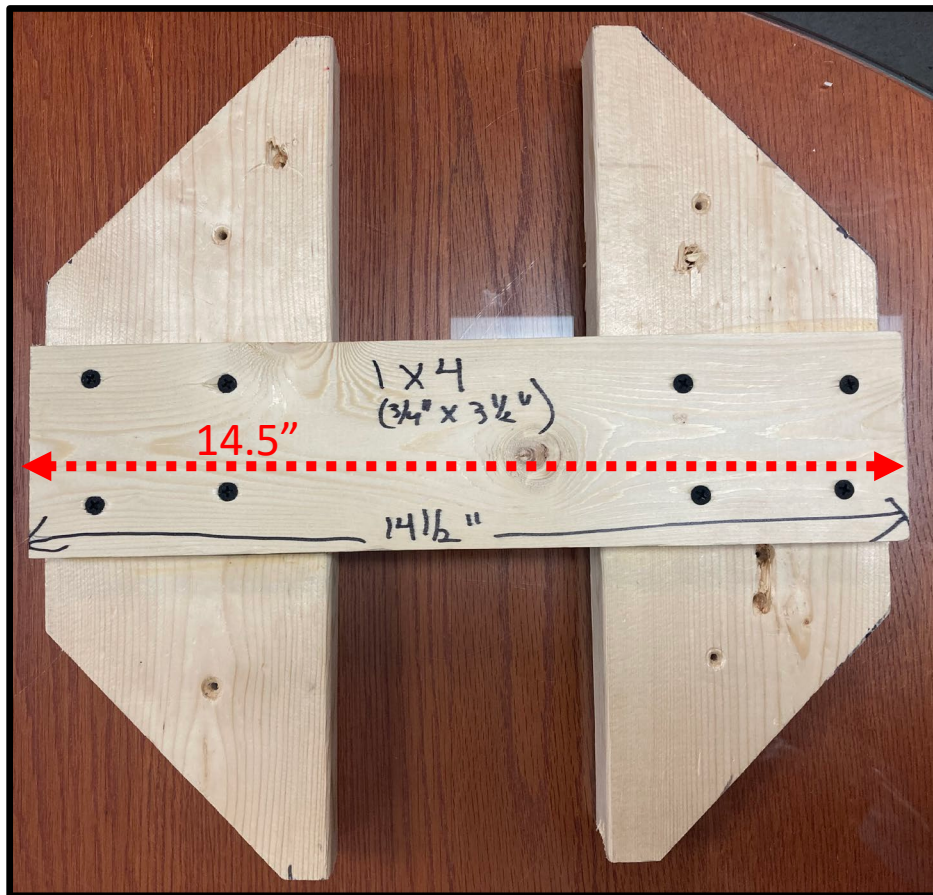


- Cut 1" x 4" (3/4" x 3.5") 14 1/2" long

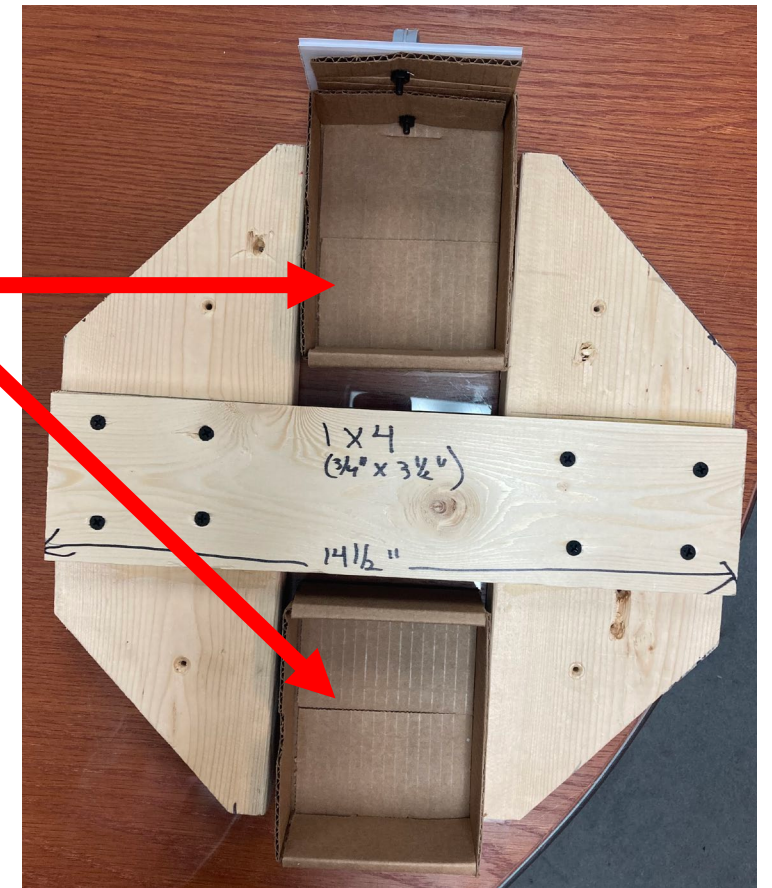


Base to mount Lunar Lander-Octagon to Table

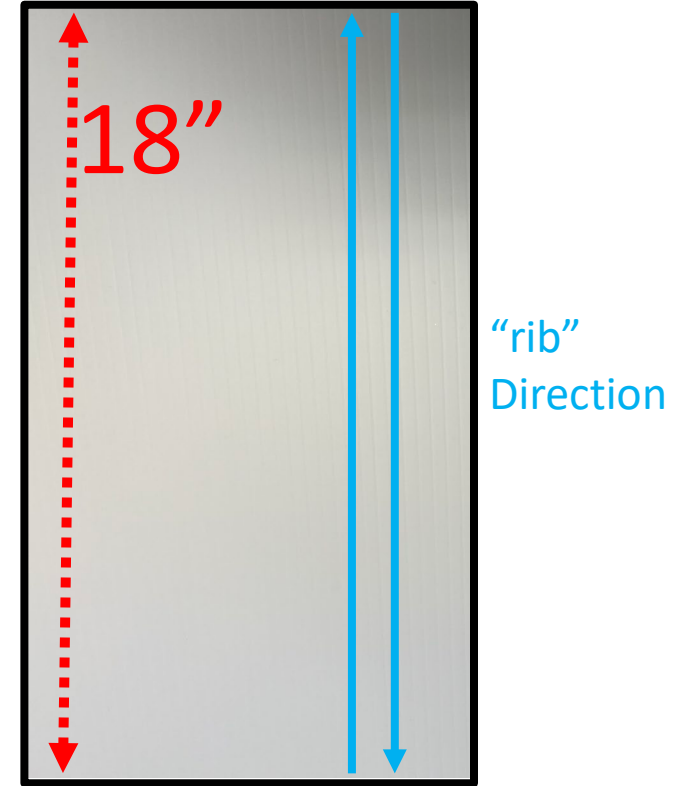
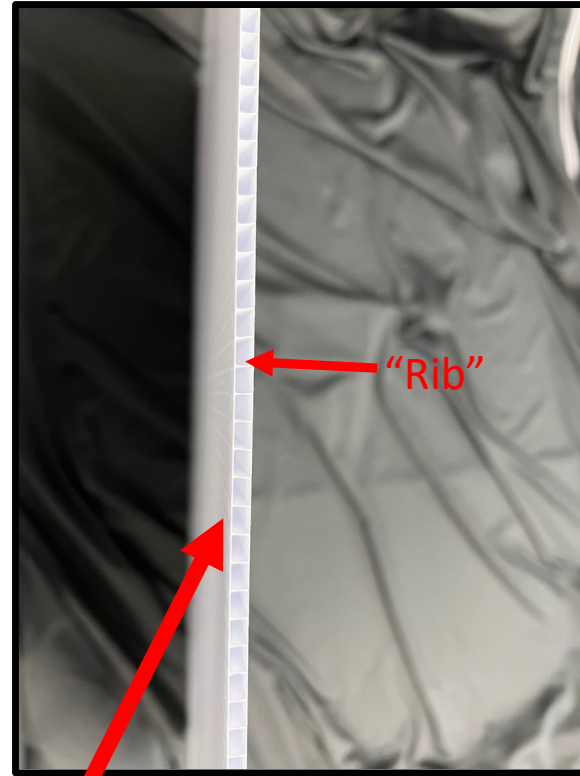
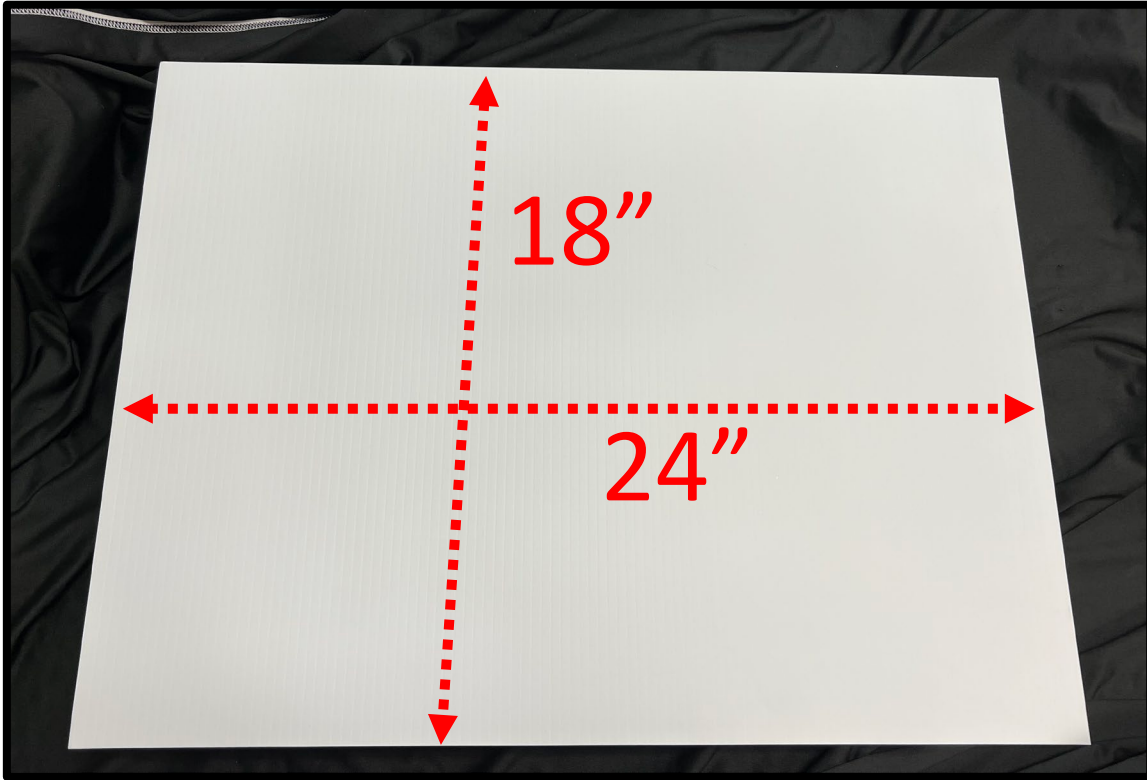
- Attach 1 x 4 x 14.5" board centered onto the top of both sides and screw into place. Set this aside and we will use it later



Boxes "drawers" should fit in-between sides and easily slide back and forth



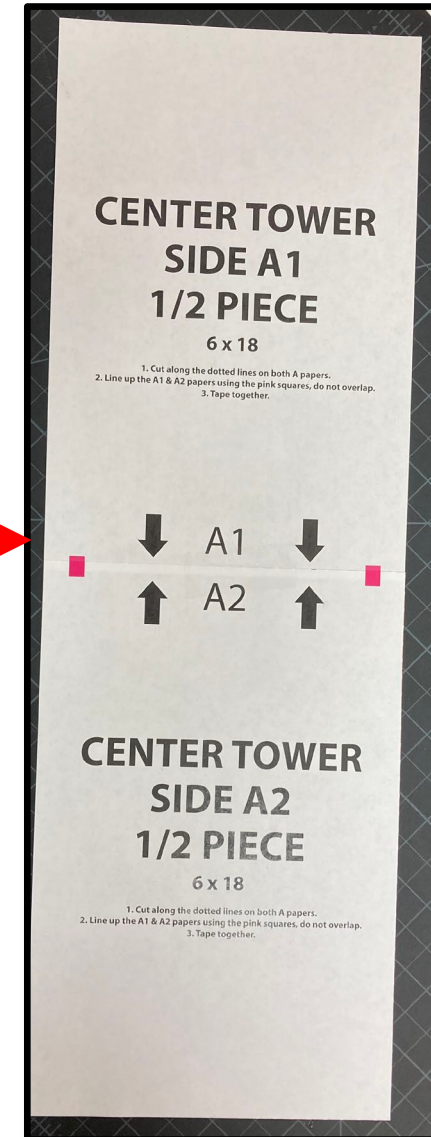
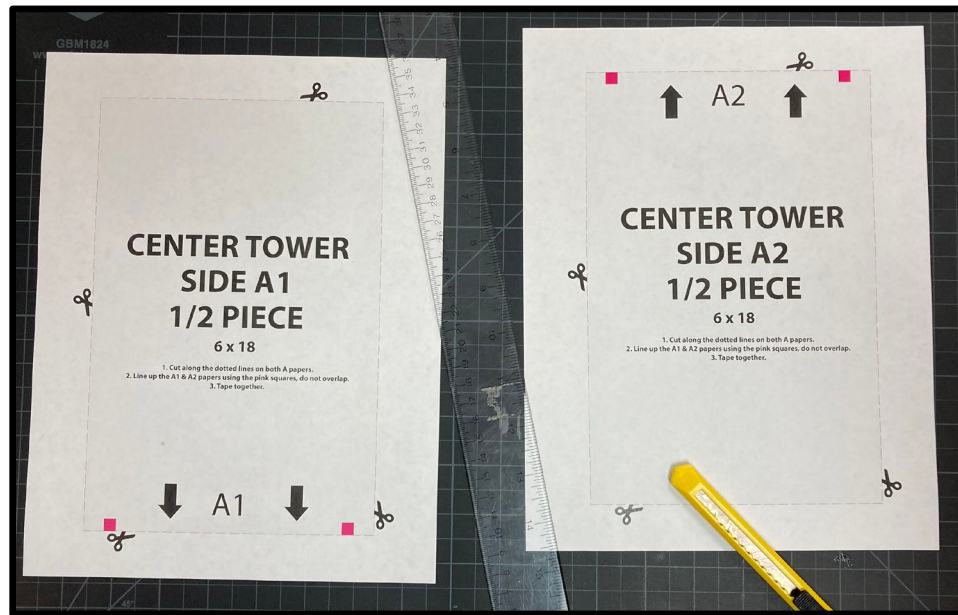
Building Hints for Selecting Signs for *“Lunar Lander-Octagon”*



1. You will need 3, 18" x 24" plastic corrugated plastic signs (You can use cardboard as well if that is available)
2. Find signs that the corrugation "ribs" runs in the direction of the short side of the sign.

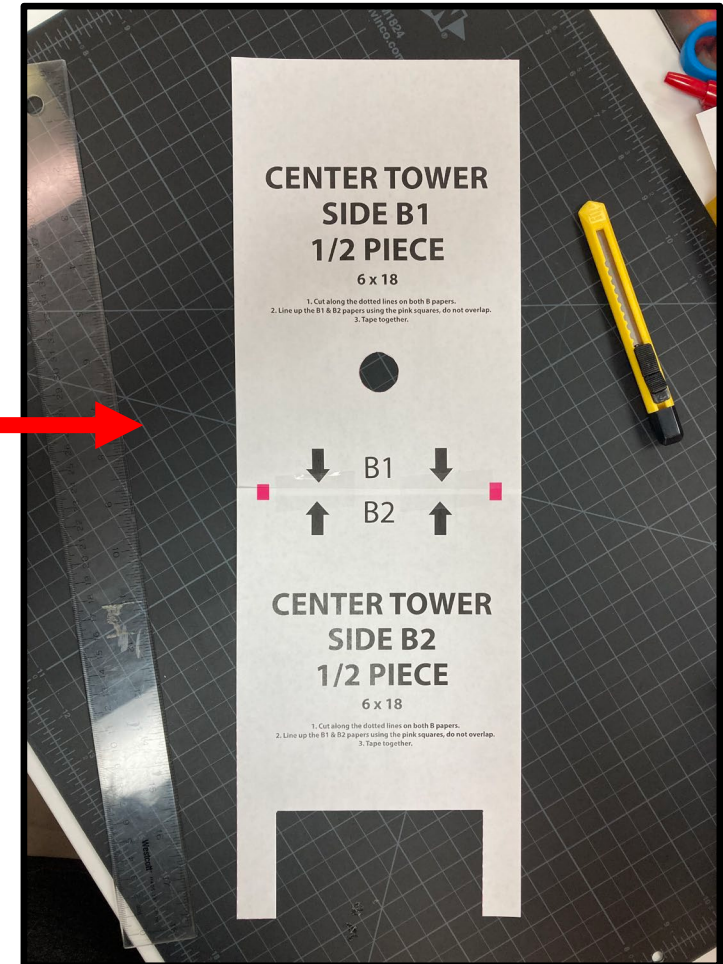
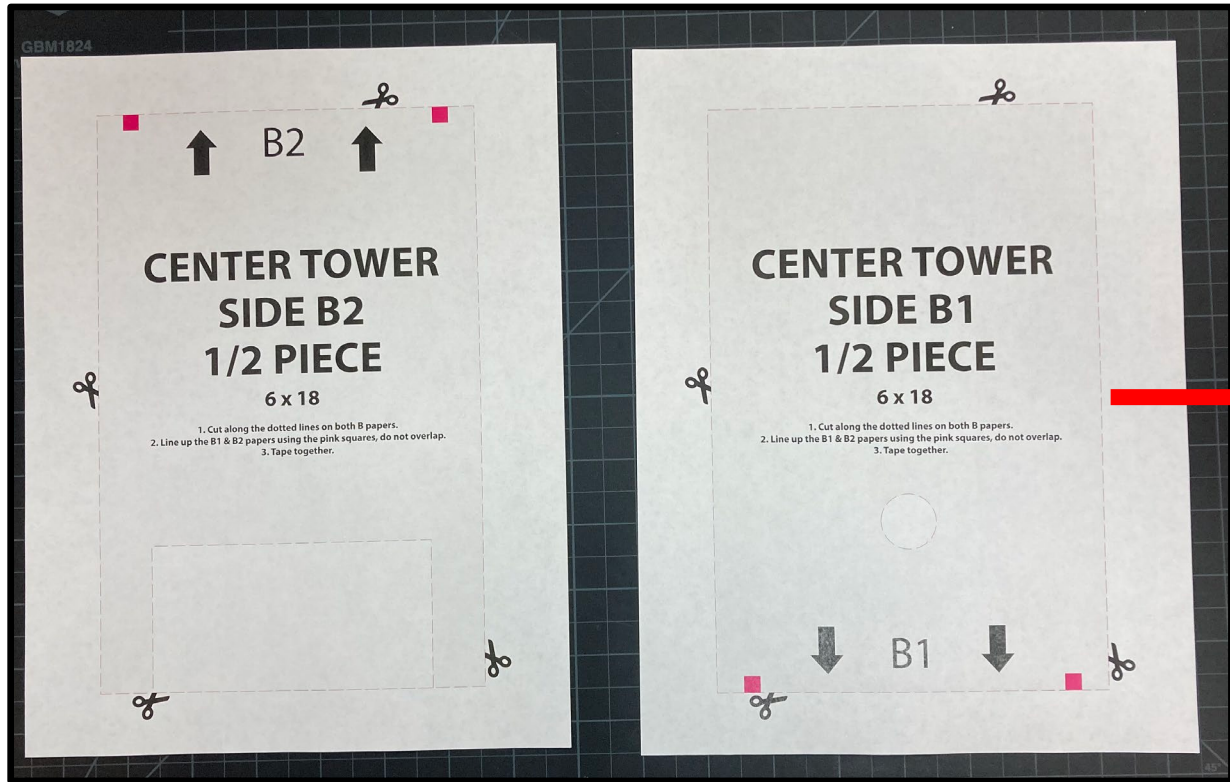
Building Hints for Selecting Signs for “*Lunar Lander-Octagon*”

1. Print and cut out all Center Tower Sides and then using scotch tape, tape together as per directions



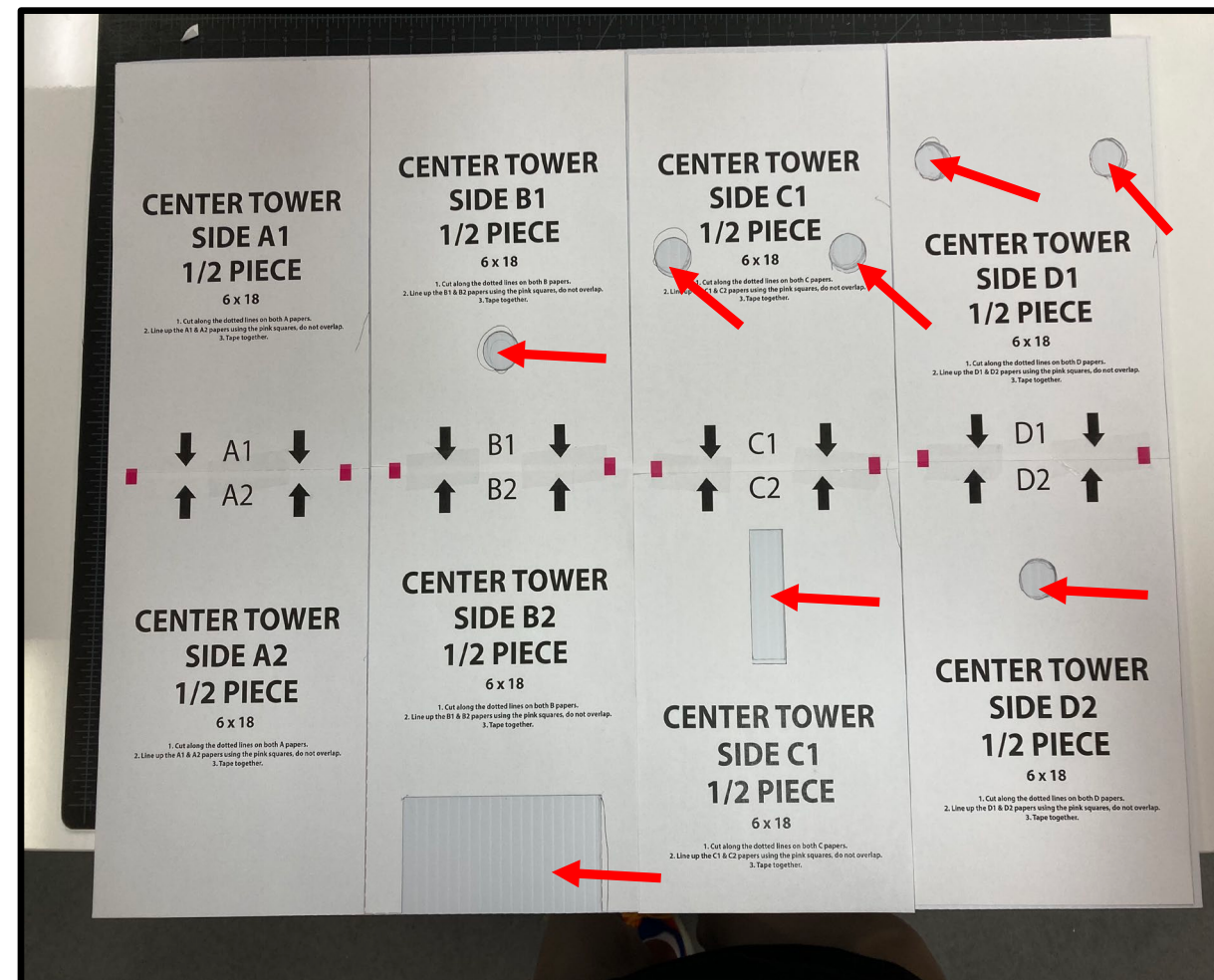
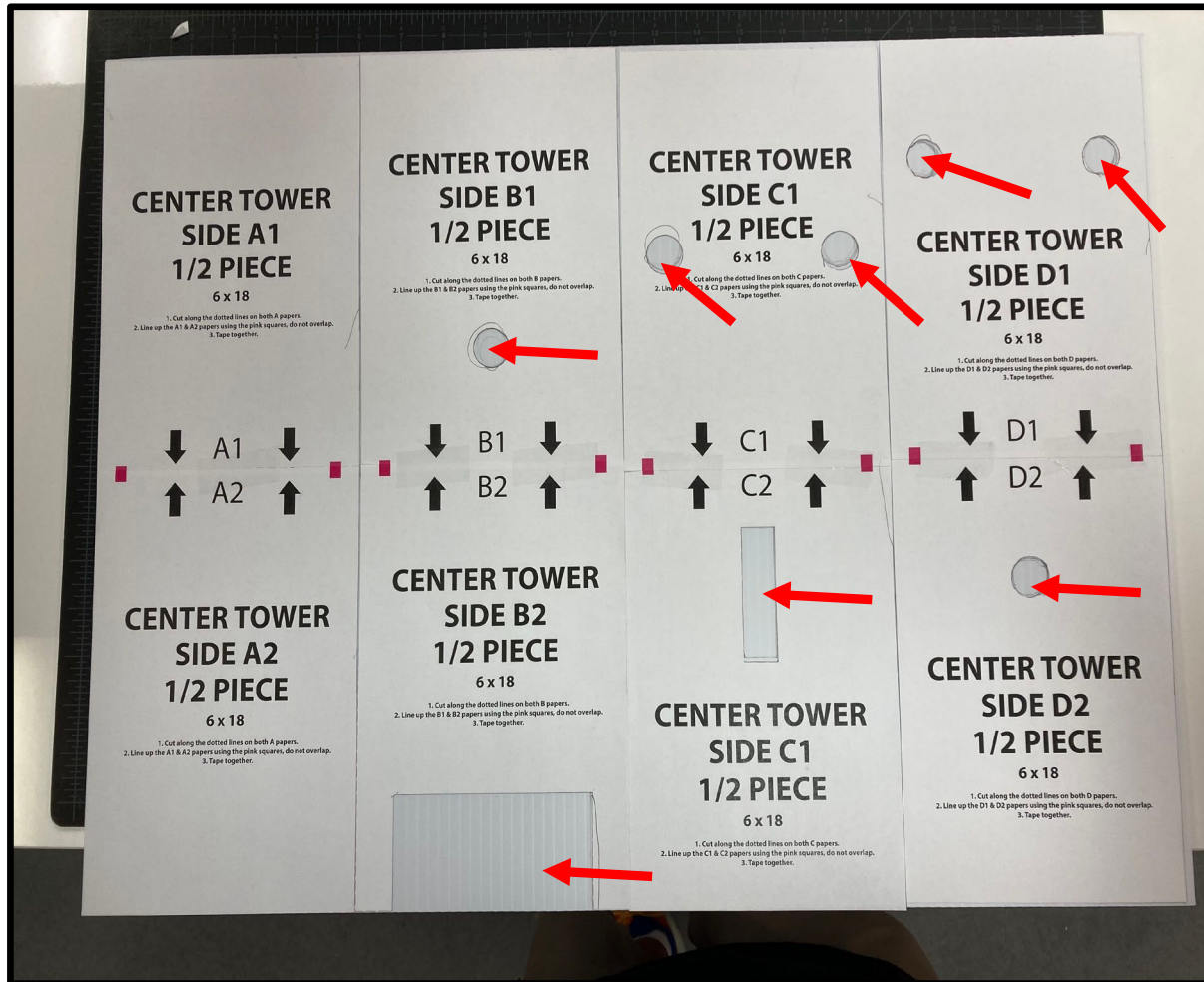
Building Hints for Selecting Signs for “*Lunar Lander-Octagon*”

1. Print and cut out Center Tower Sides and then tape together as per directions
2. Complete all sides



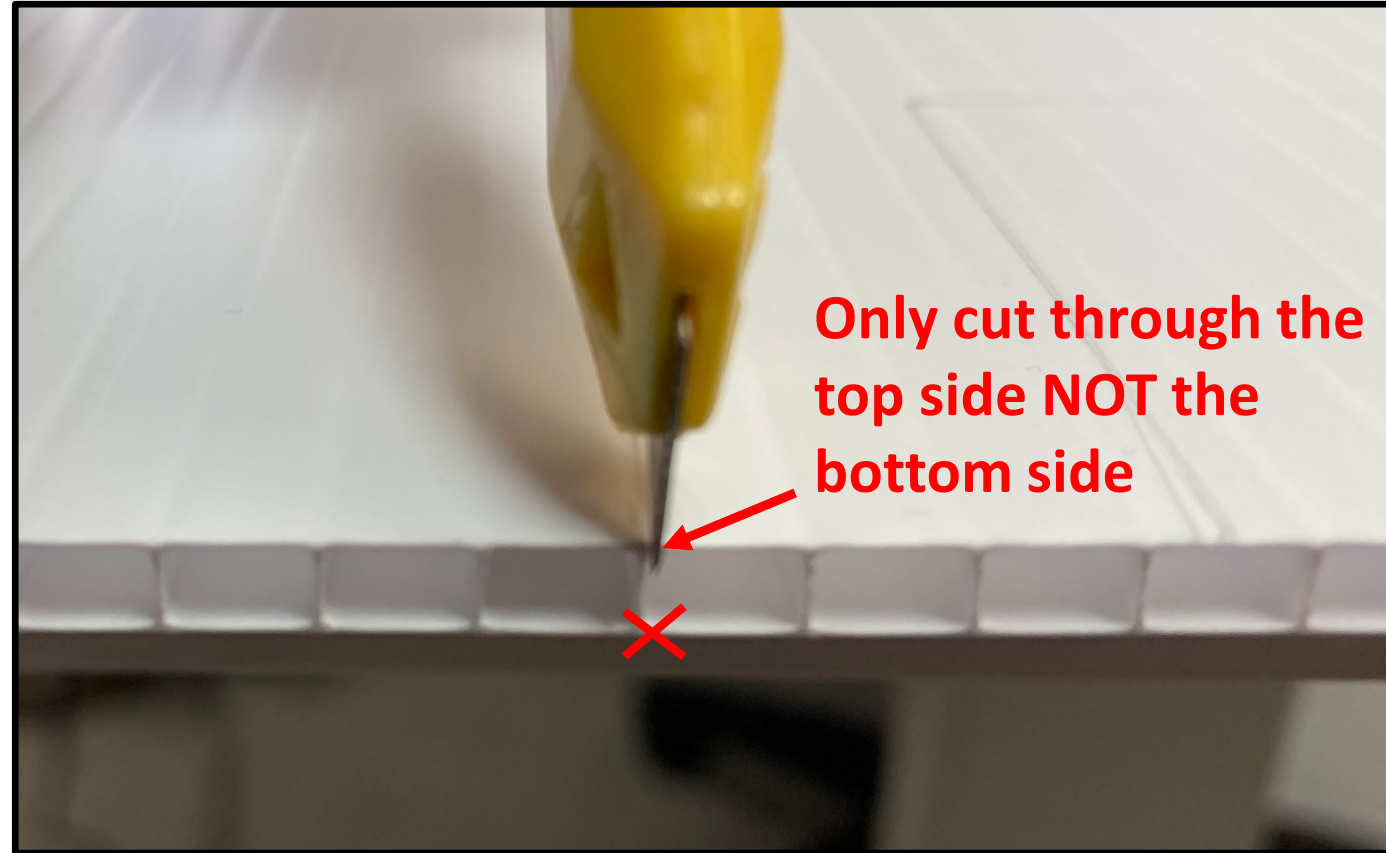
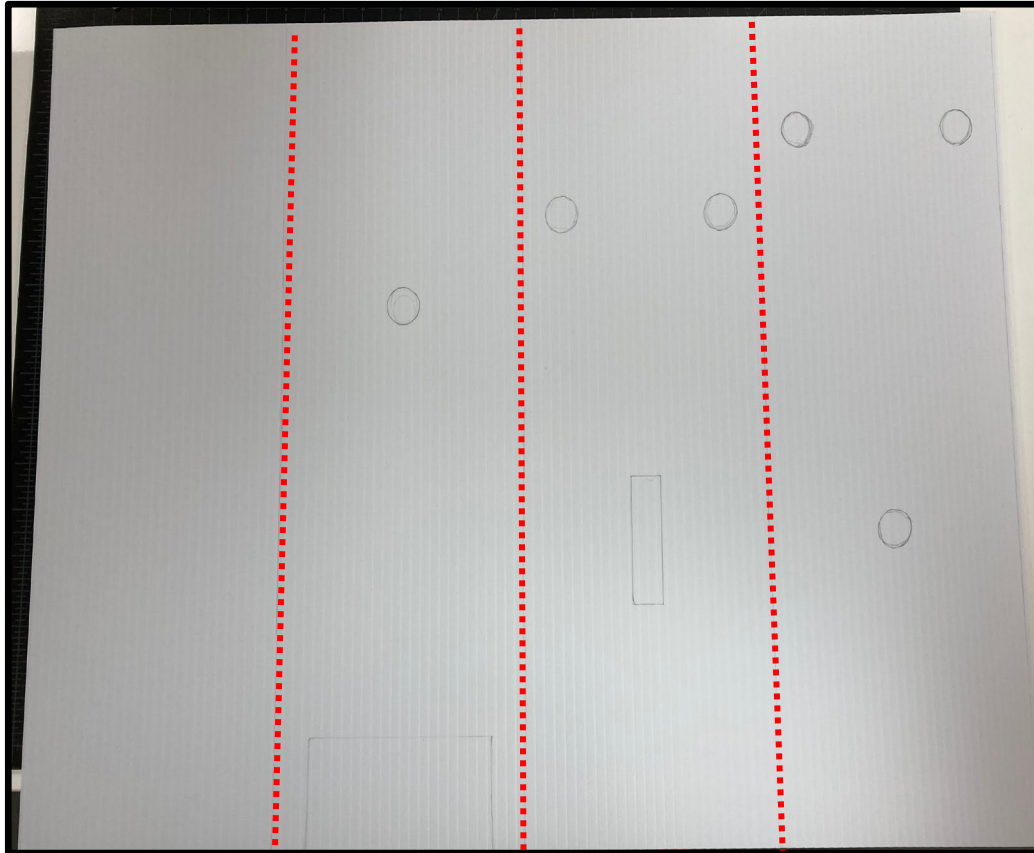
Building Hints for Selecting Signs for “Lunar Lander-Octagon”

1. Place guides onto 18” x 24” plastic sign or you could use cardboard
2. Mark all cut outs, INCLUDING the line between the sides
3. Repeat on another sign (you need to make 2 of these) DO NOT CUT YET



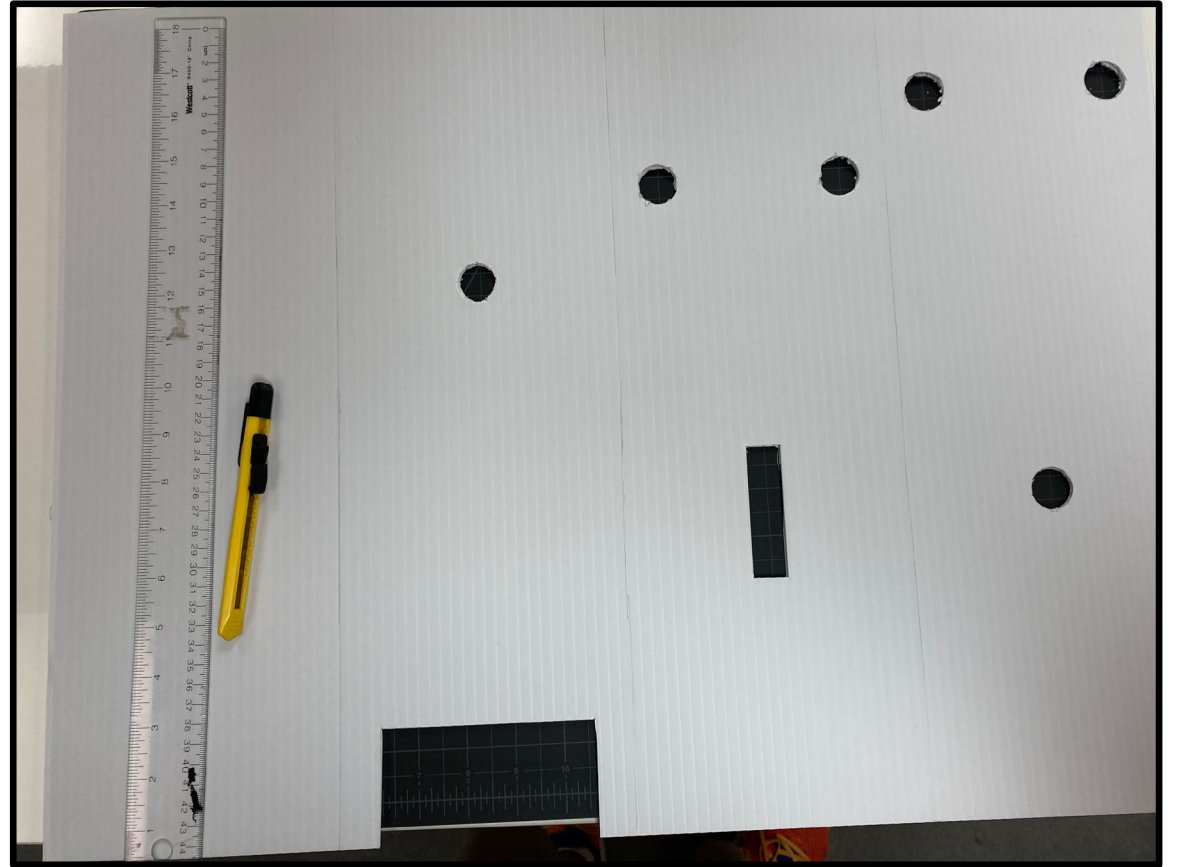
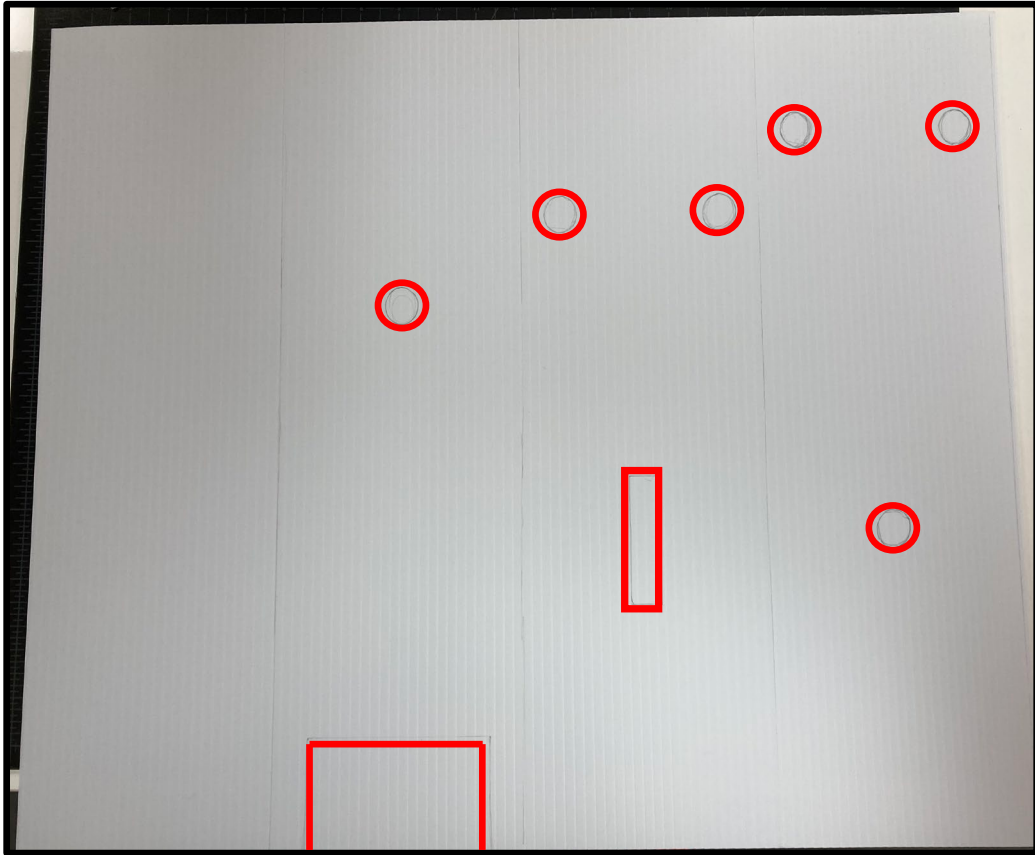
Building Hints for Selecting Signs *for “Lunar Lander-Octagon”*

1. ONLY CUTTING THROUGH ONE SIDE OF THE SIGN cut the long lines between the sides
2. Repeat for other sign (You need 2 of these)



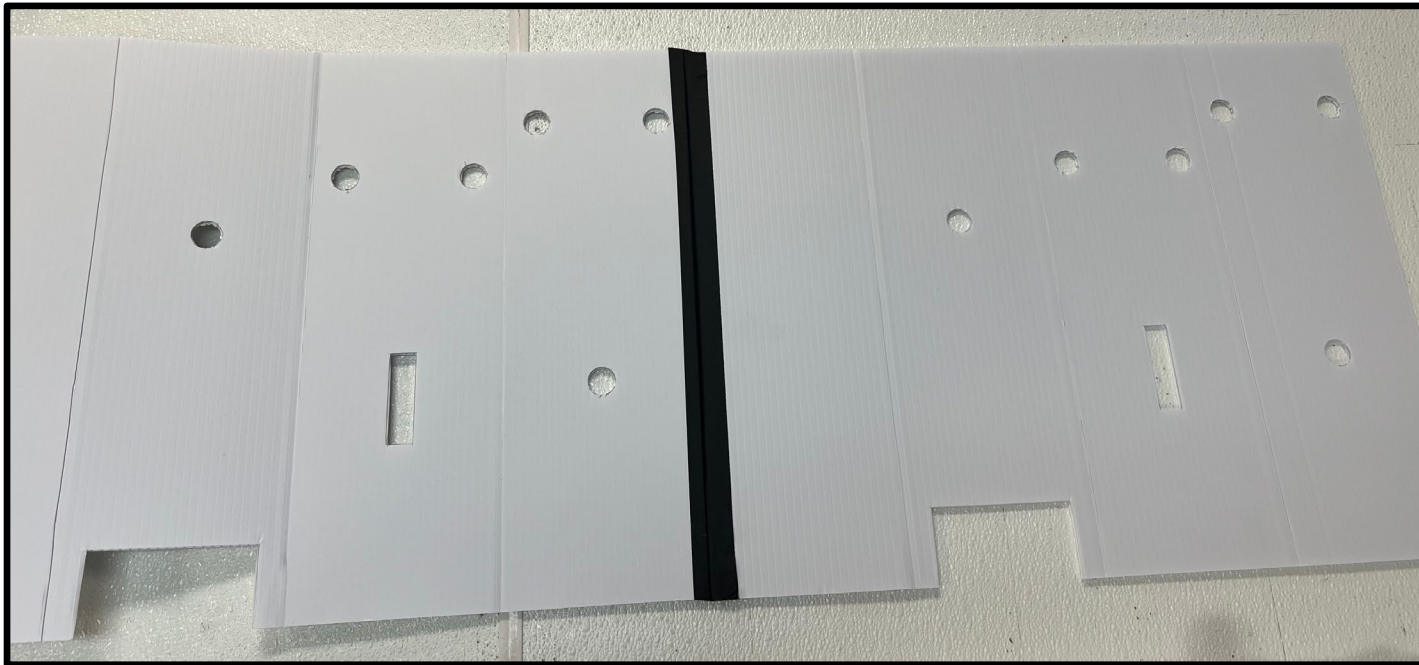
Building Hints for Selecting Signs *for “Lunar Lander-Octagon”*

1. Cutting ALL THE WAY THROUGH carefully cut out the other holes, and rectangles



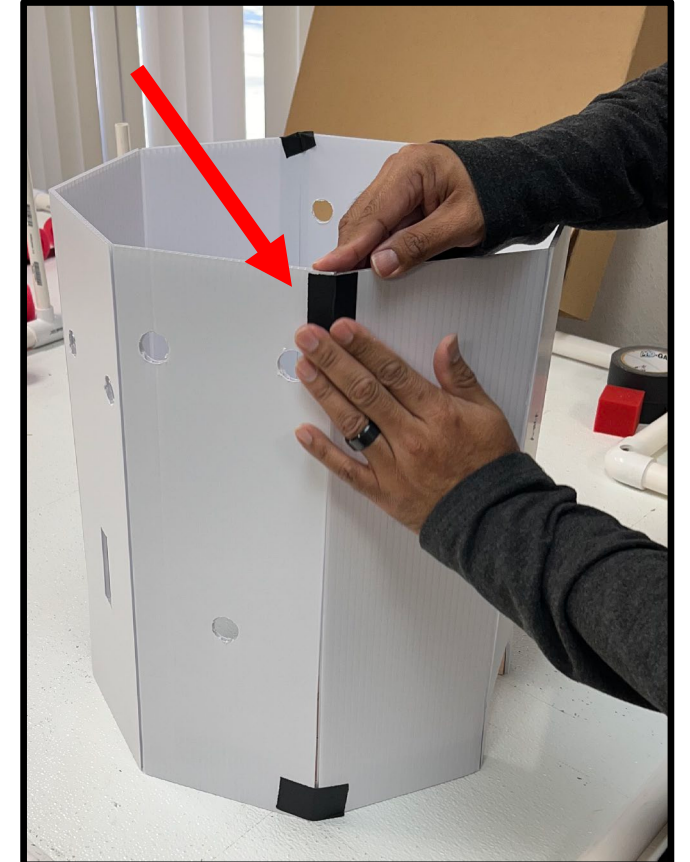
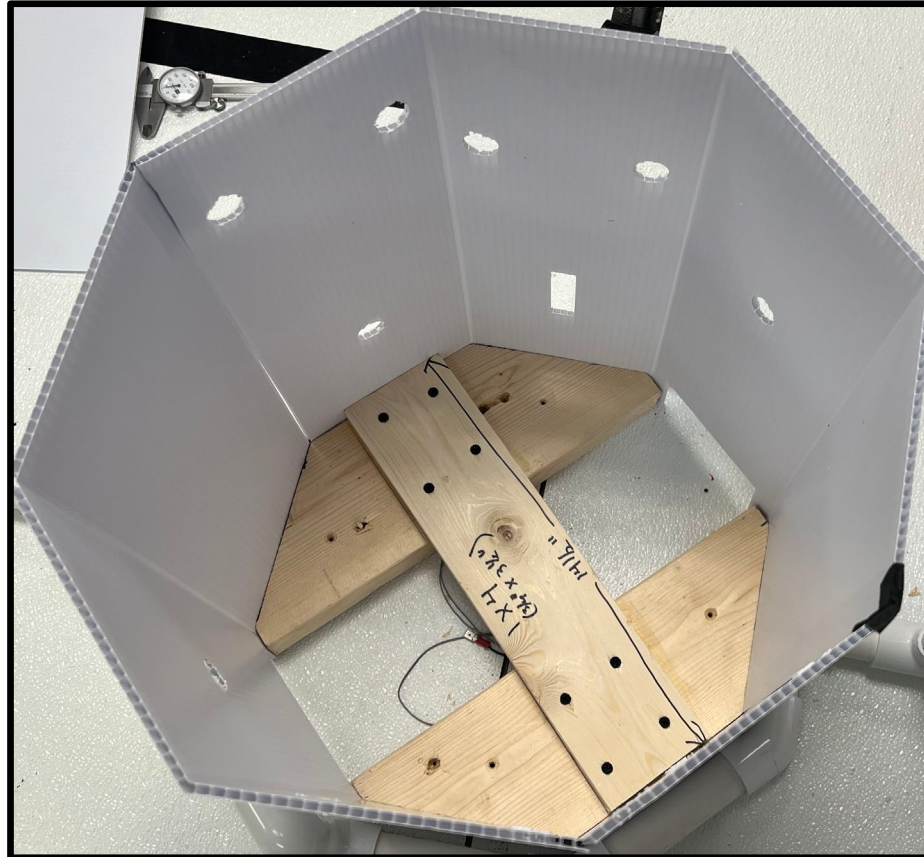
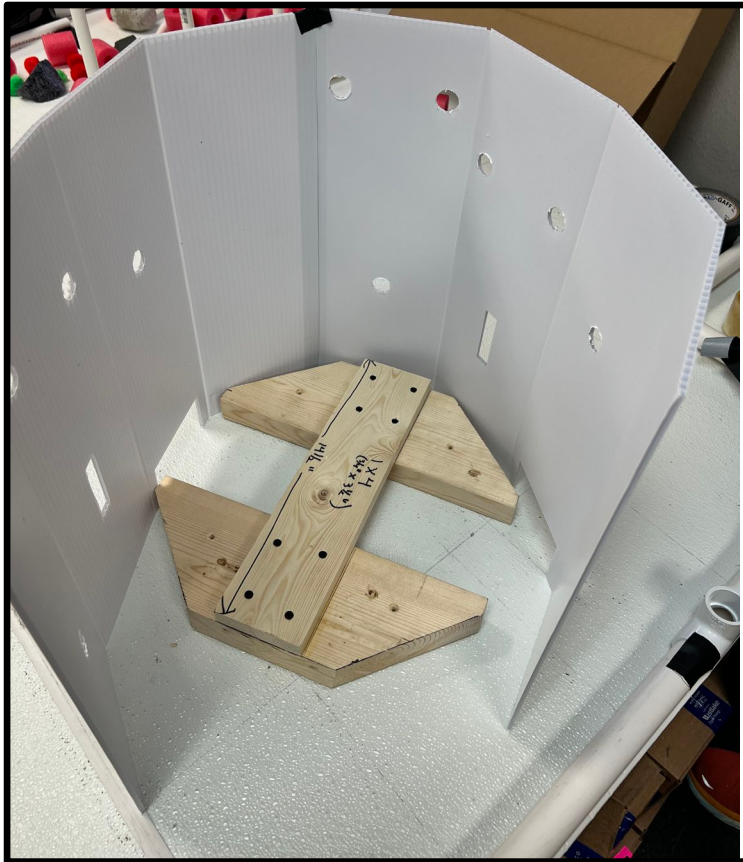
Building Hints for Selecting Signs *for “Lunar Lander-Octagon”*

1. Tape the two sides together as shown below. You can leave 1/16 -1/8” gap between the sides. KIPR uses black GAFF tape for tournament tables



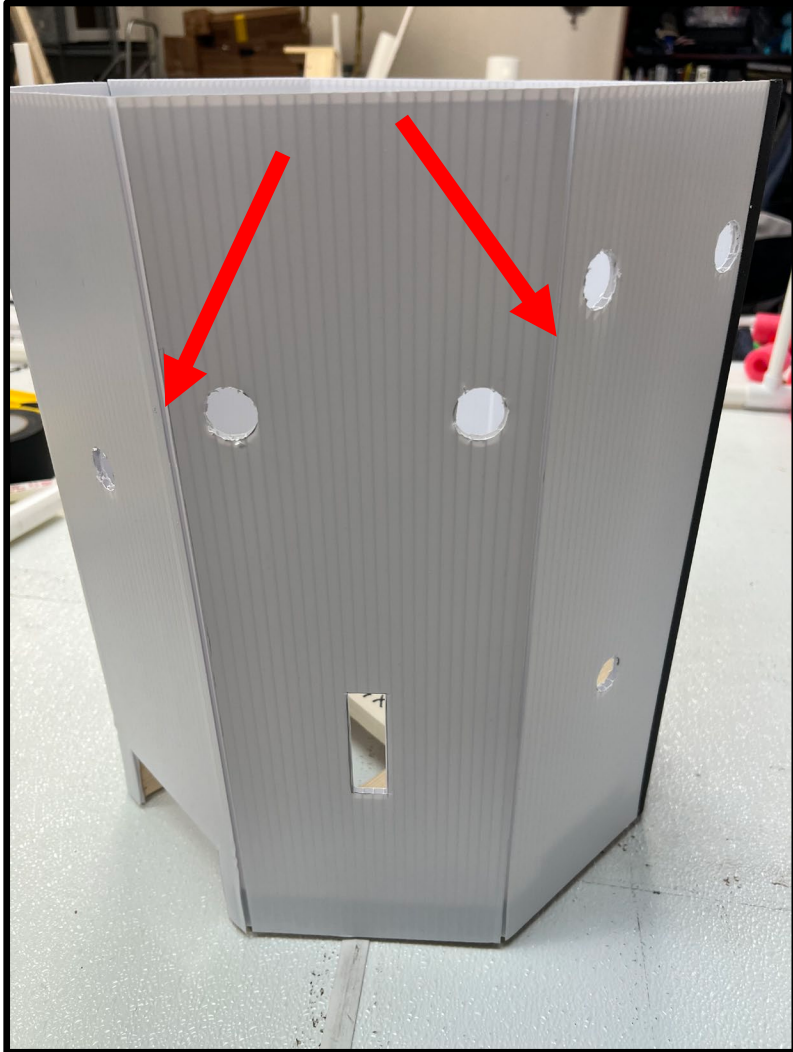
Building Hints for Selecting Signs for “*Lunar Lander-Octagon*”

1. Tape the two sides together as shown below. You can leave $\frac{1}{16}$ - $\frac{1}{8}$ ” gap between the sides. KIPR uses black GAFF tape for tournament tables
2. Carefully bend the two sides around the octagon base.
 1. You can bend each cut over the edge of a table if needed.
3. Tape the edge where they come together



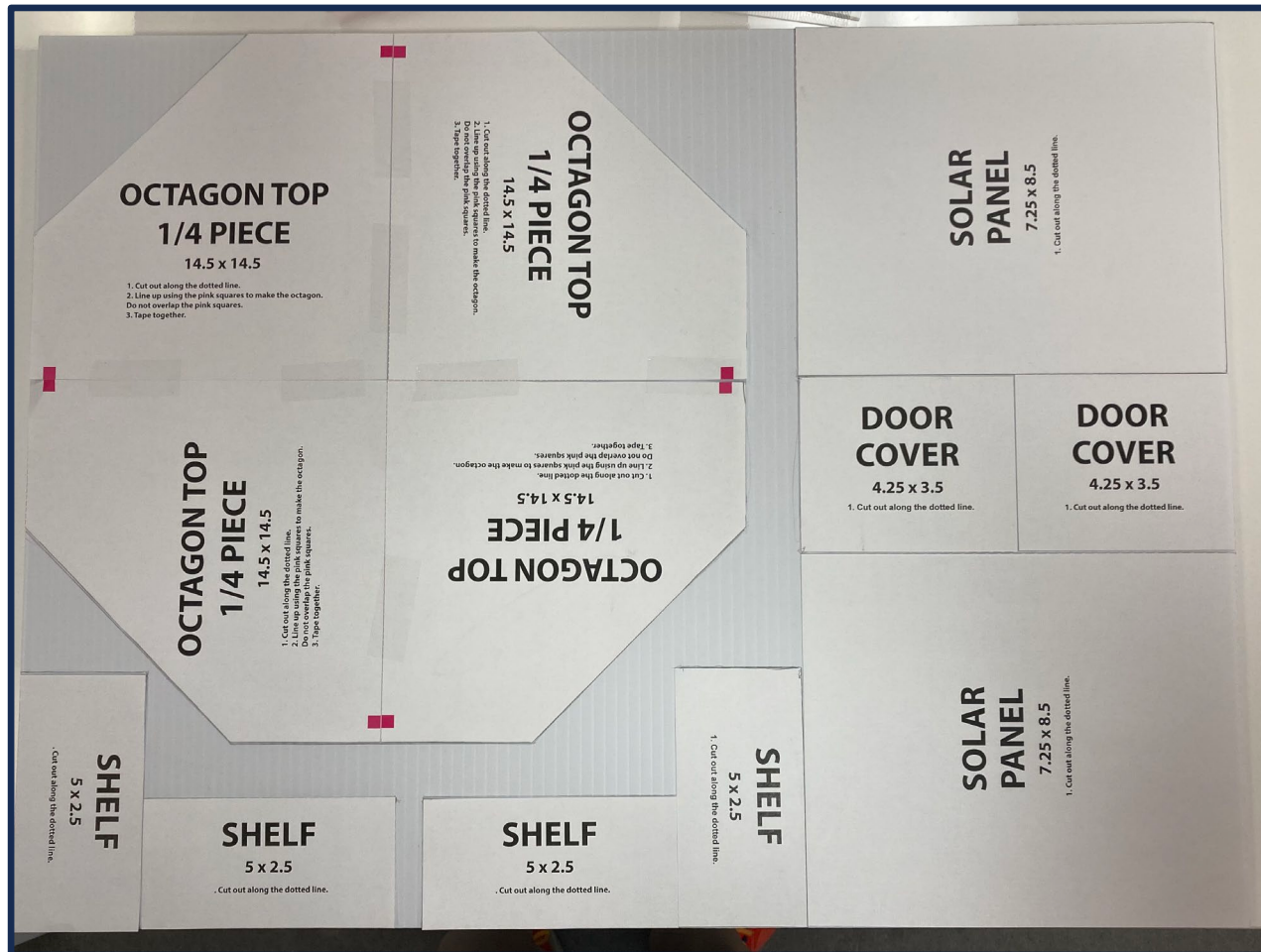
Building Hints for Selecting Signs *for “Lunar Lander-Octagon”*

1. Tape each joint



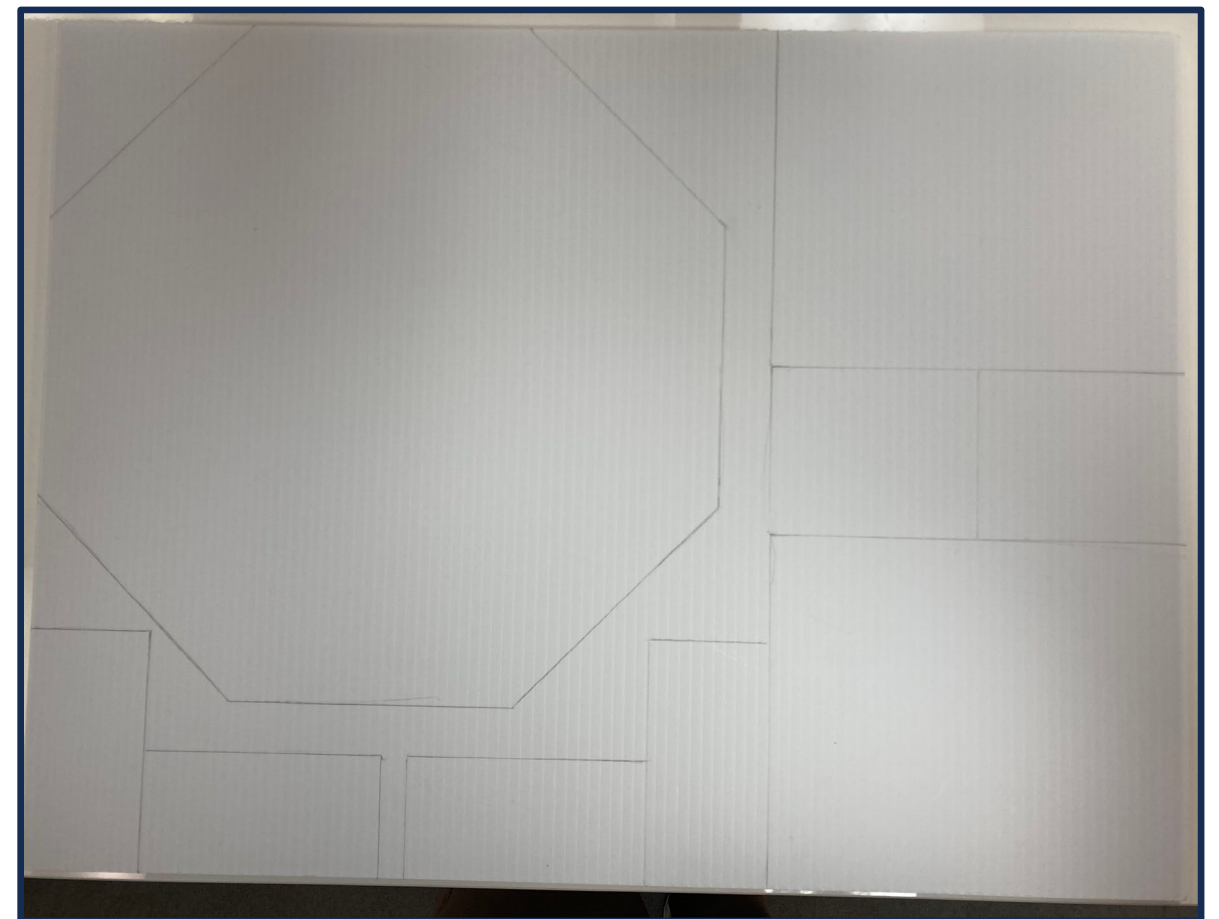
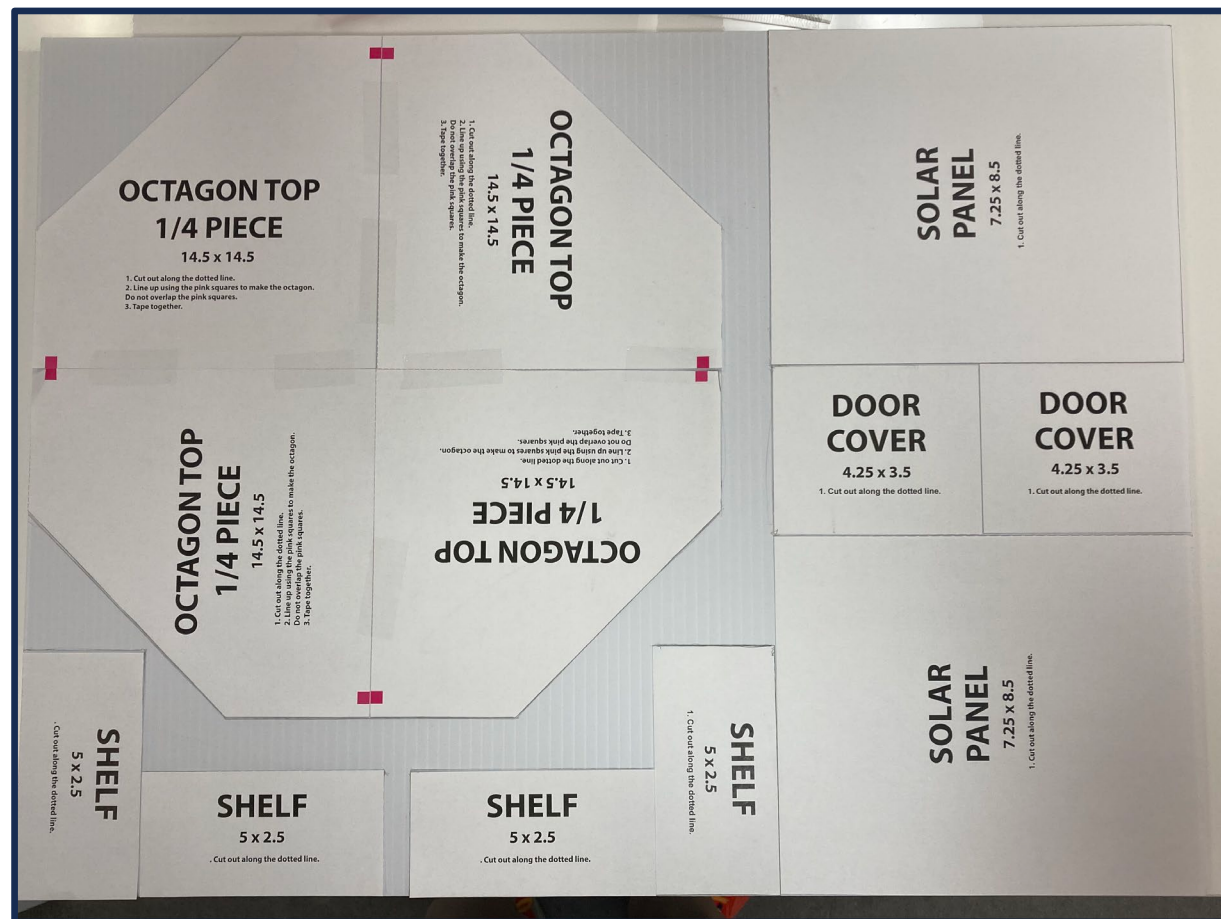
Building Hints for “*Lunar Lander-Octagon*” Cutting Plastic Sign

1. Print Out, cut out, and place the guides onto 1, 18” x 24” plastic sign. Trace the outlines and then cut out the pieces for the Octagon Top, Shelves, Door Covers and Solar Panels.



Building Hints for “*Lunar Lander-Octagon*” Cutting Plastic Sign

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Building Hints for “*Lunar Lander-Octagon*” Cutting Plastic Sign

1. Use a razor knife and a straight edge to carefully cut out the shapes

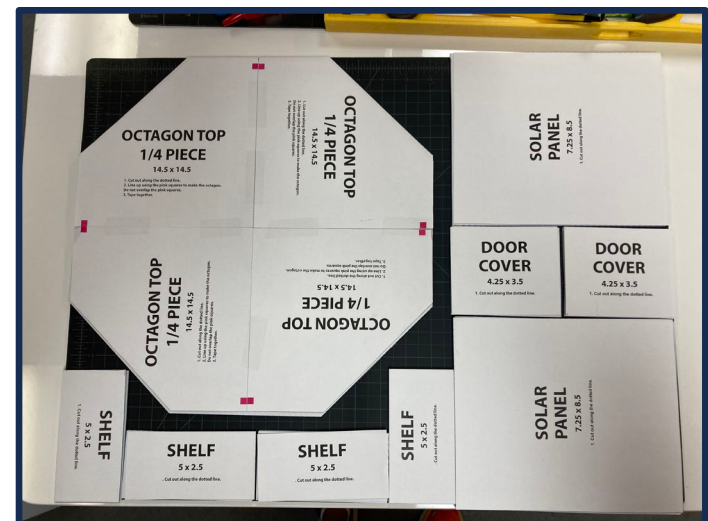
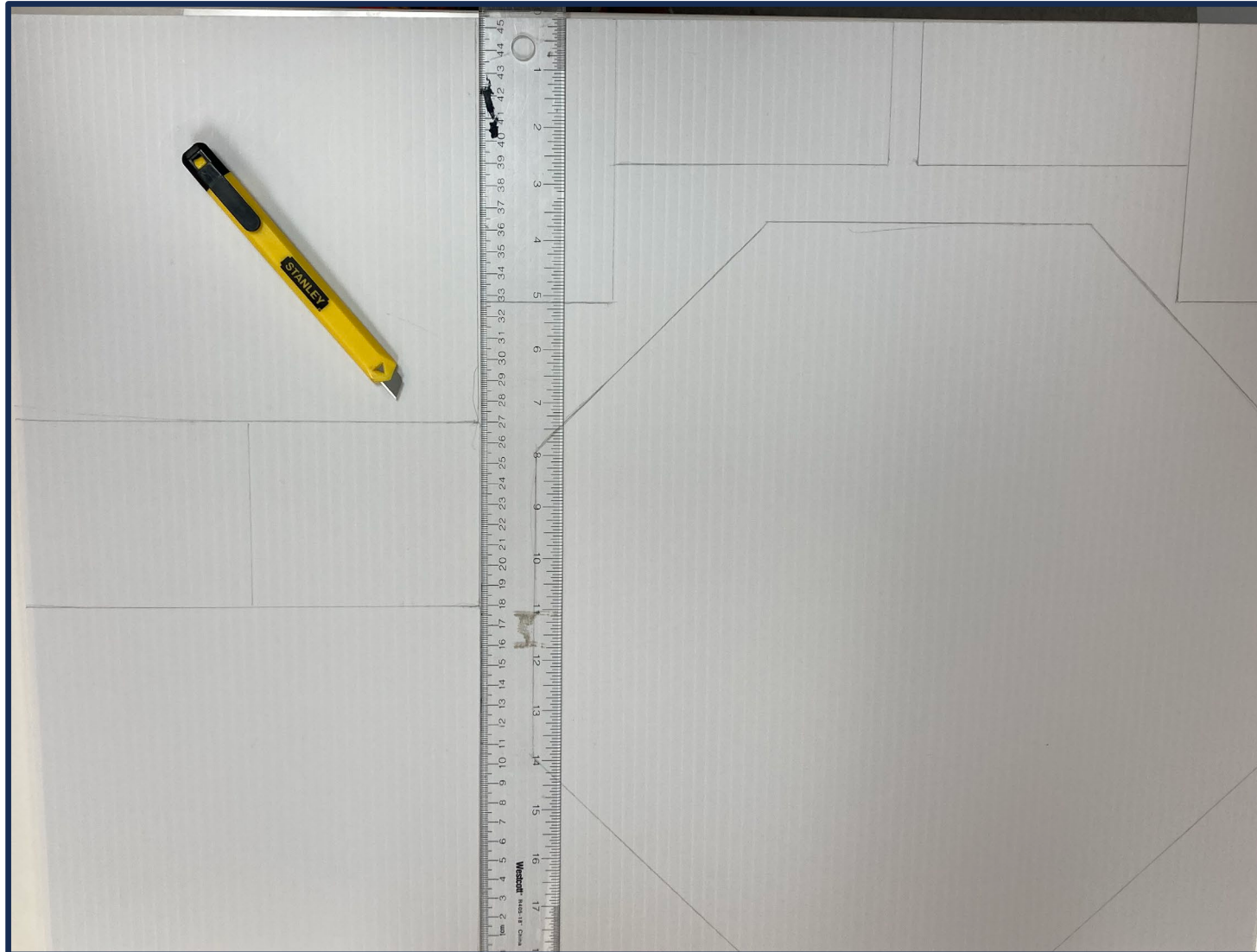
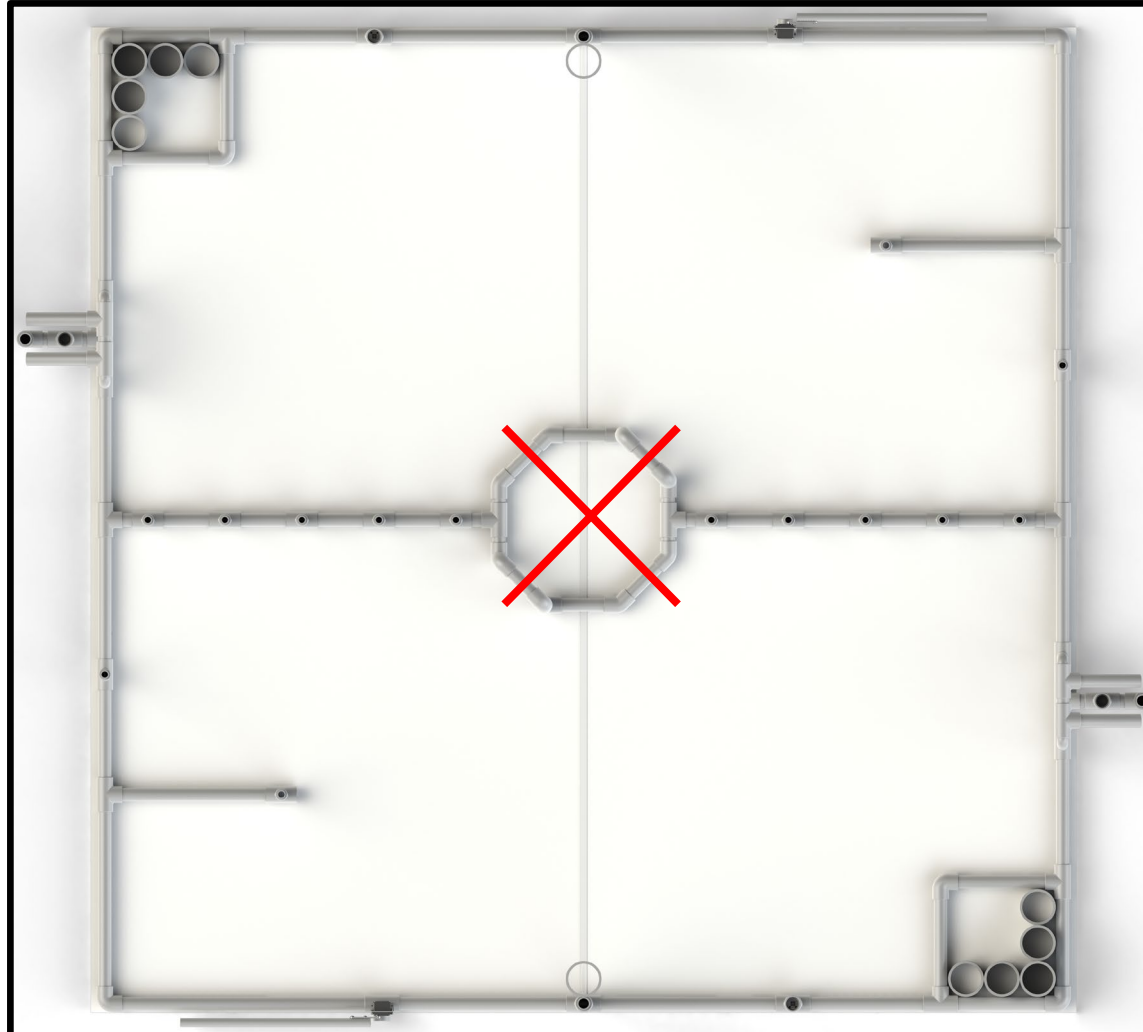


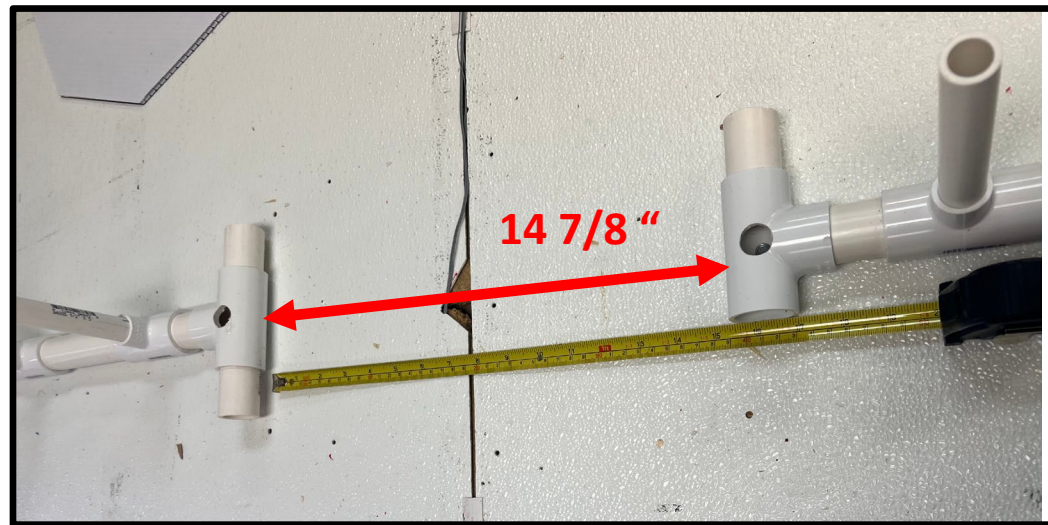
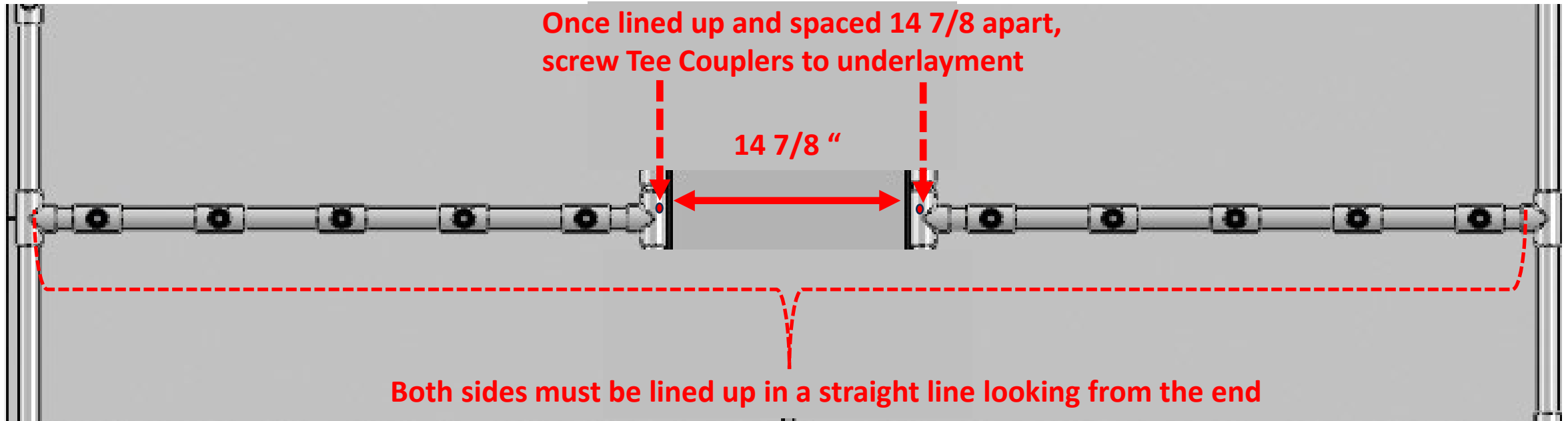
Table PVC

Layout and fit all pieces EXCEPT for the PVC making up the Octagon.

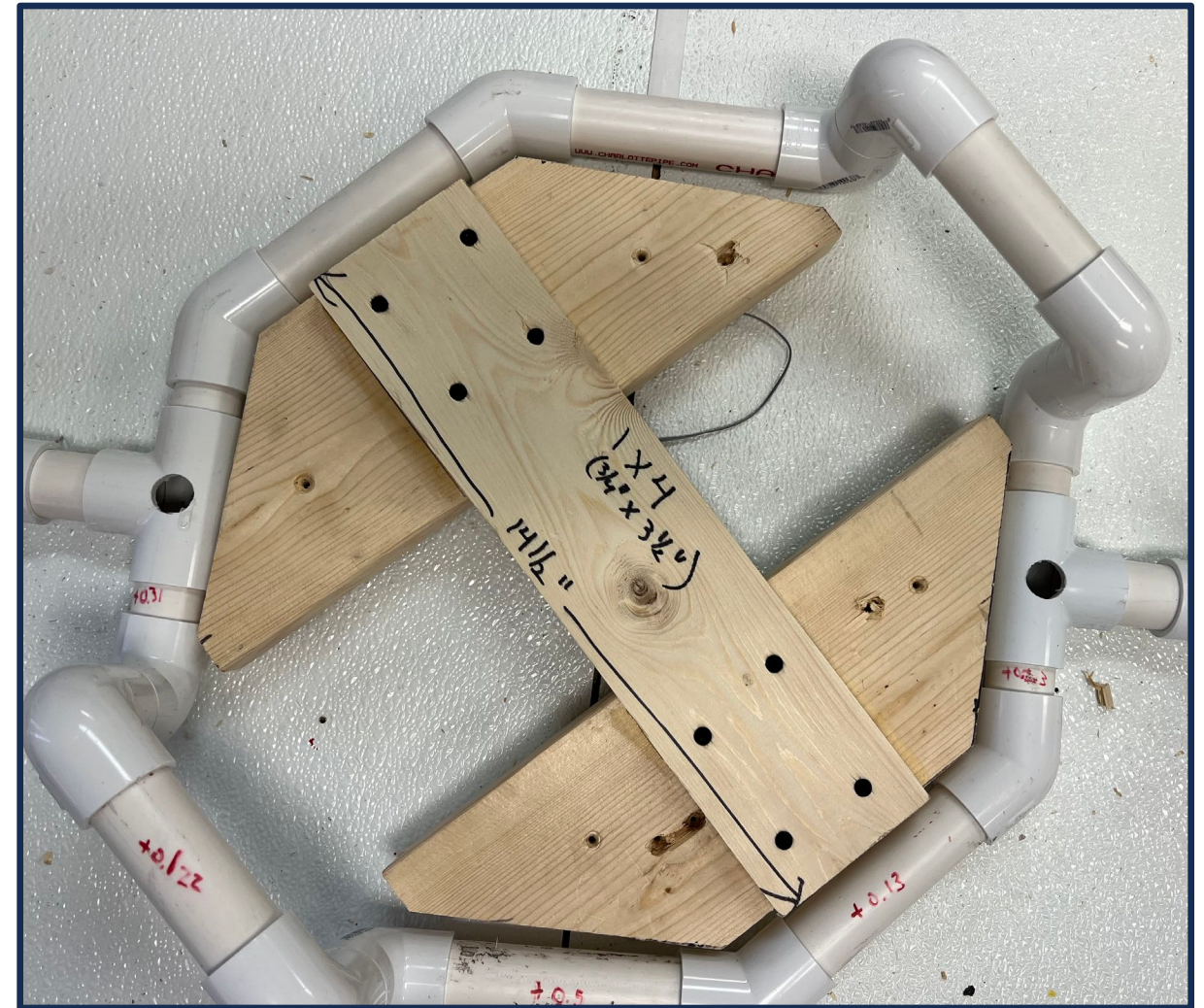
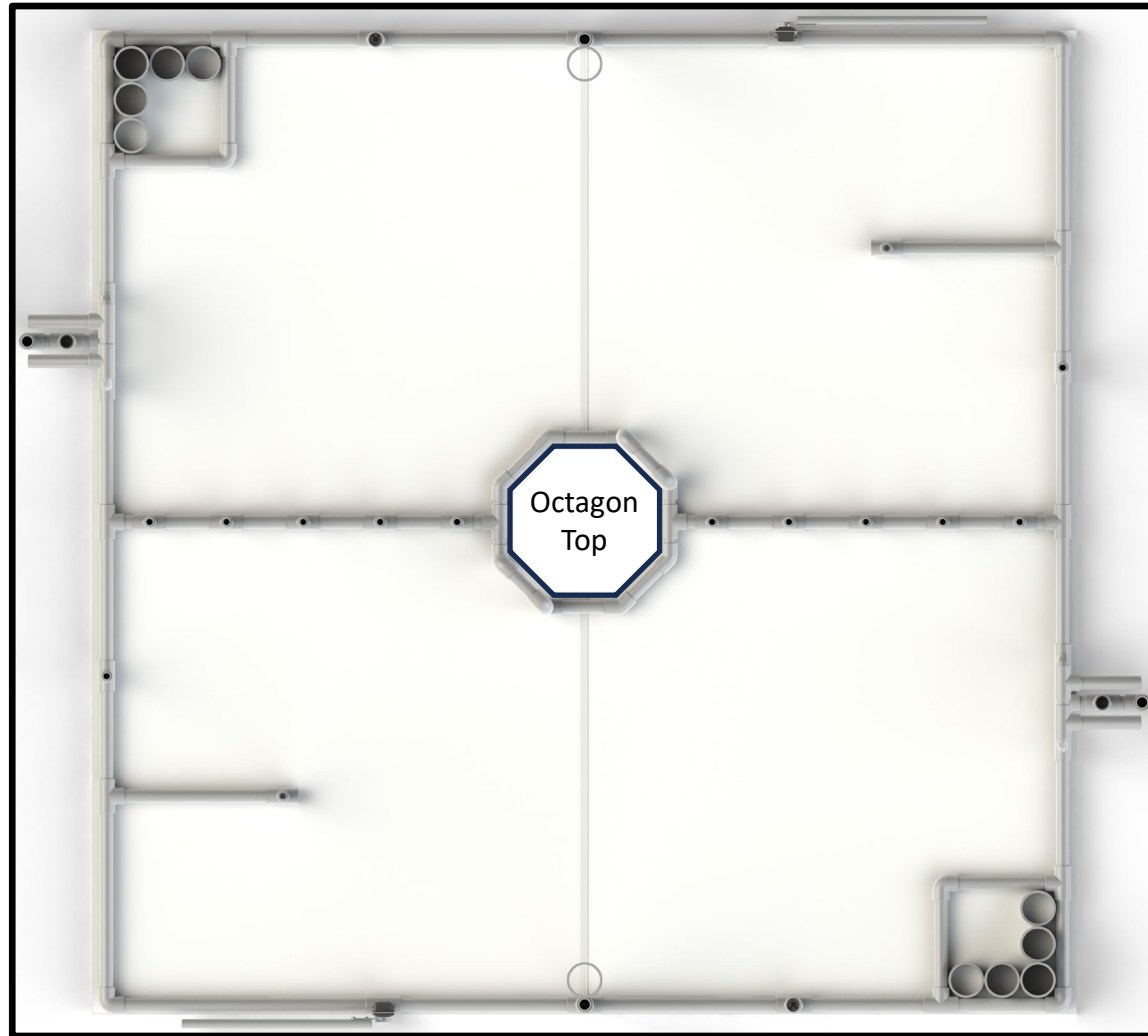
Do not screw any of the pieces down until completing the Octagon first (refer to following slides)



Carefully Line up the two Octagon Tees so that they are straight and spaced correctly then screw in place

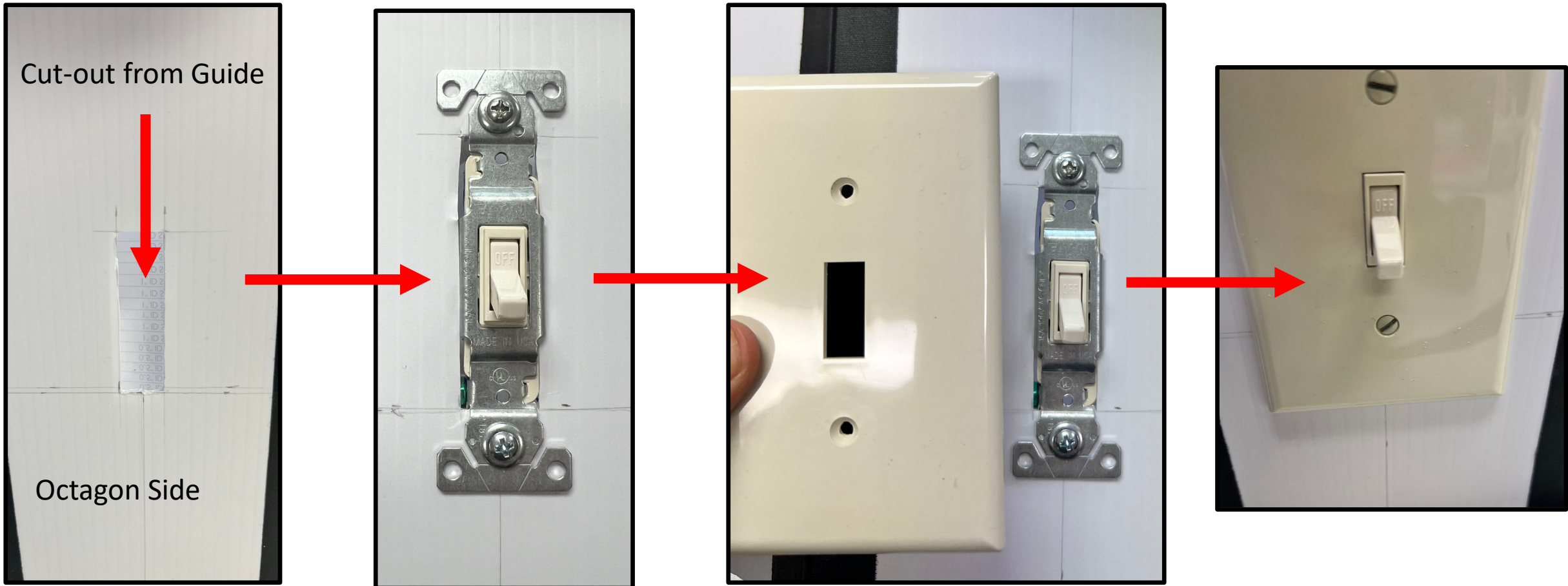


- Screw down the rest of the PVC perimeter making sure the dimensions match the build document
- Assemble the pieces of the octagon and using the “Octagon Top” or the Base Mount that you have assembled or cut out from the plastic sign tap the octagon PVC until it fits with the “Octagon Top” or Base.



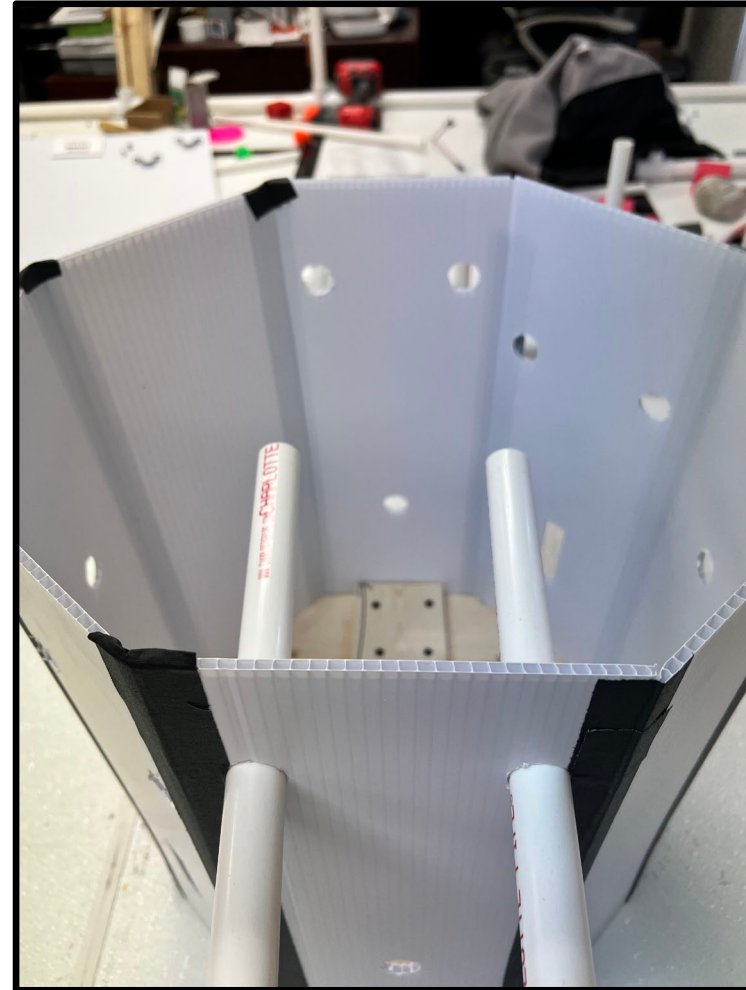
Mounting Switch to "Lunar Lander-Octagon"

- Insert switch into cut out on lander side(s) screw into place then attach the cover plate. Off is in down position



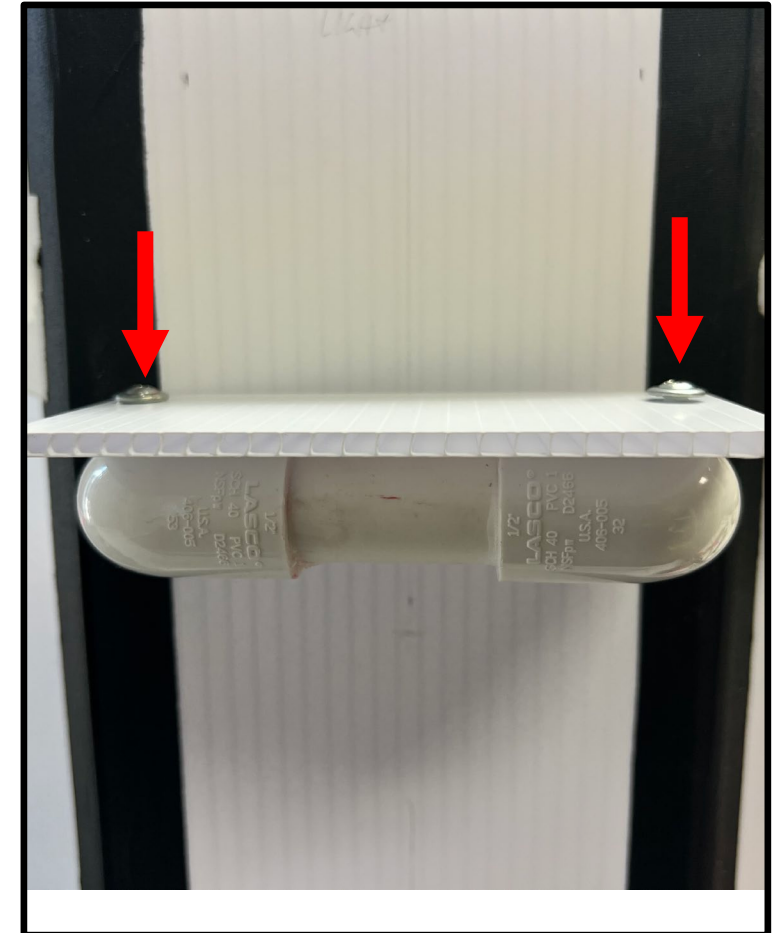
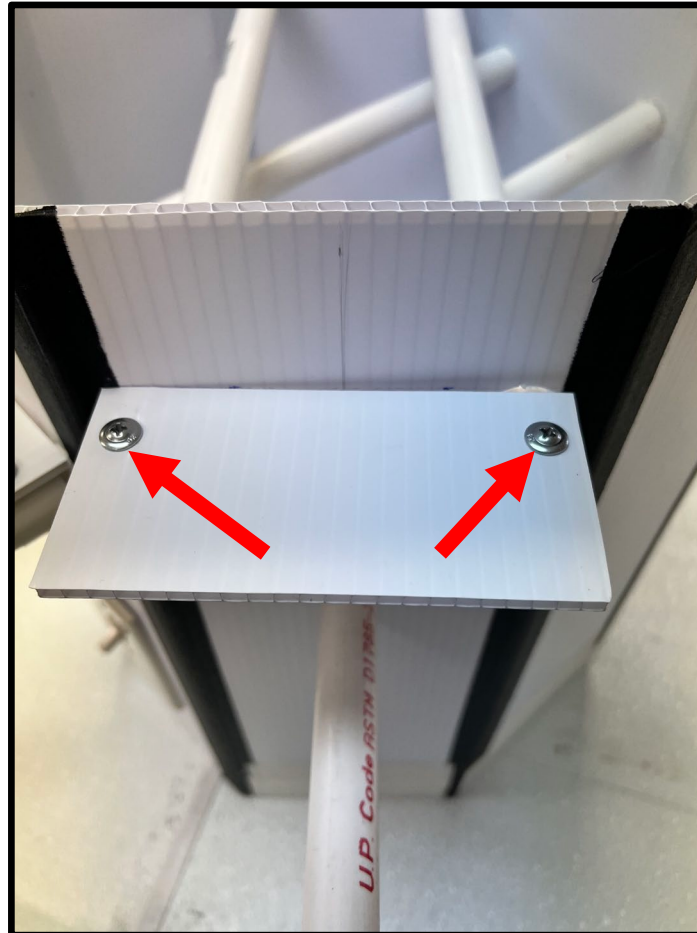
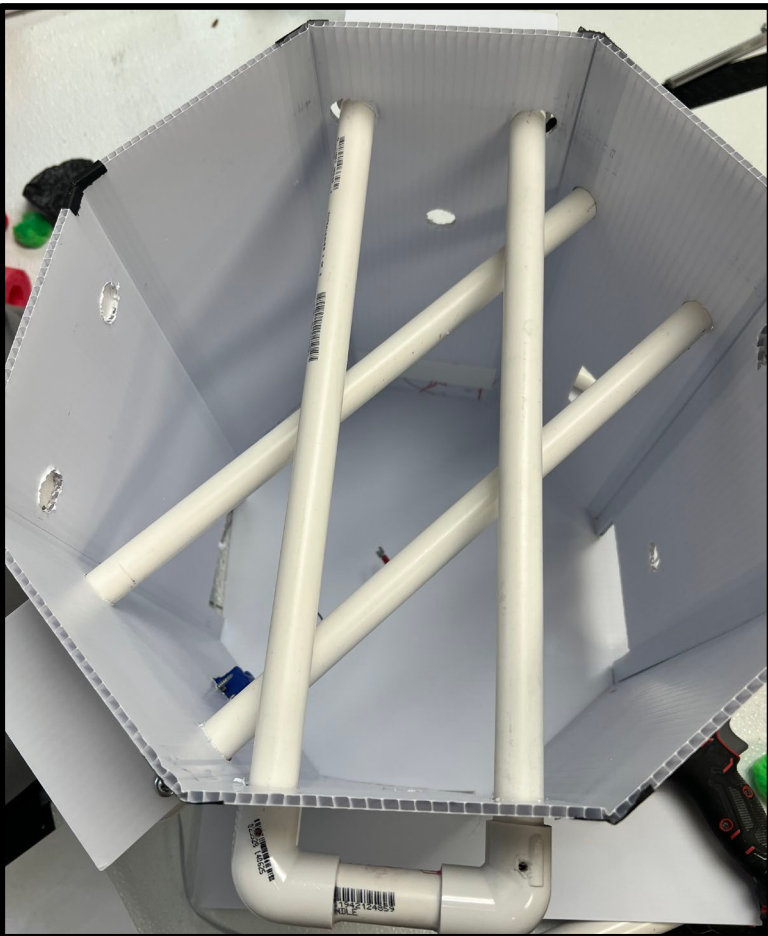
Insert PVC to "Lunar Lander-Octagon"

- Insert PVC through lander for shelves and rods



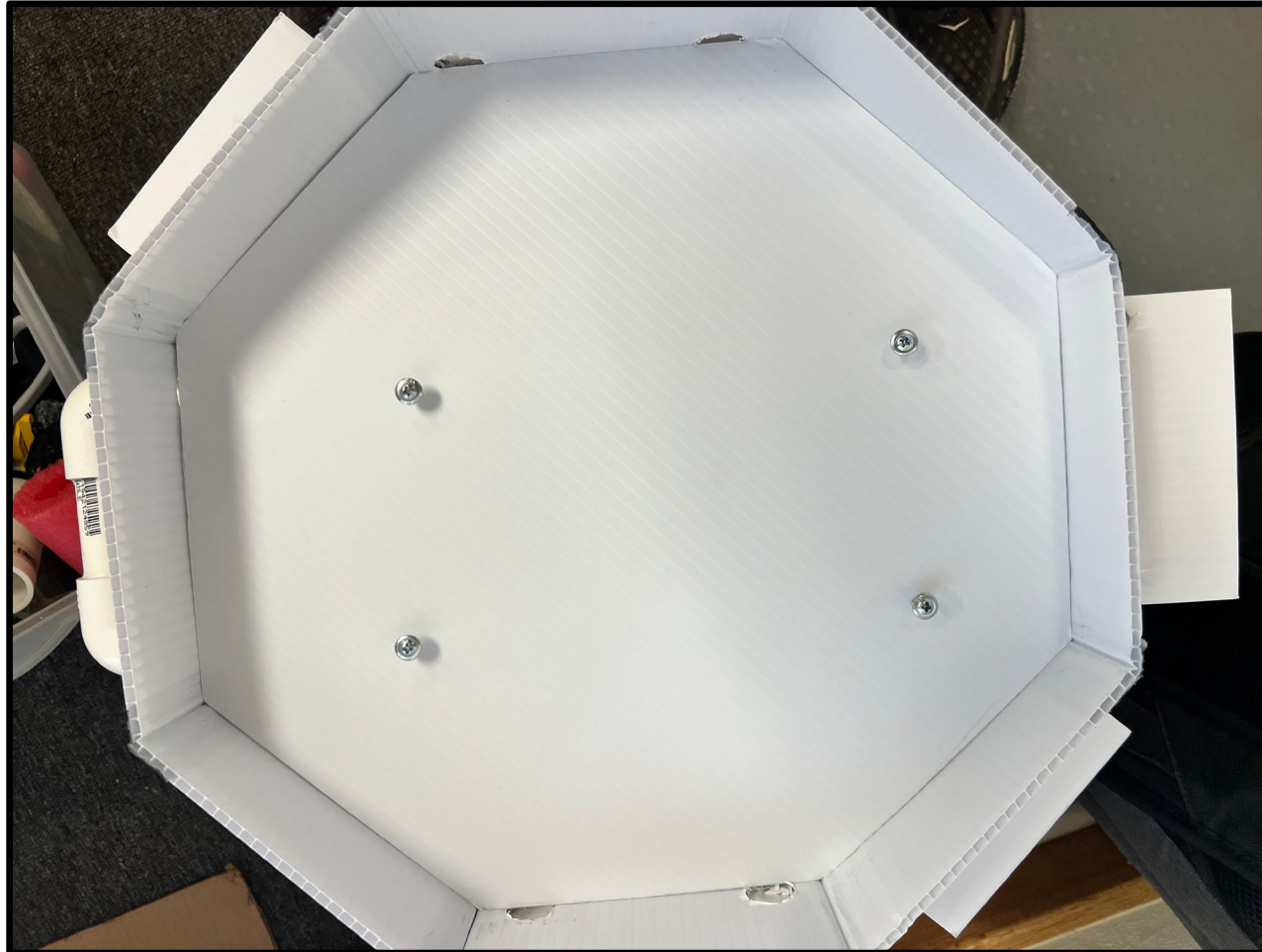
Mounting Shelves to "Lunar Lander-Octagon"

- Insert PVC through Octagon cutouts shelf assembly
- Shelves screw onto the PVC with two screws



Mounting Top to "Lunar Lander-Octagon"

- Insert top into Octagon and screw in place



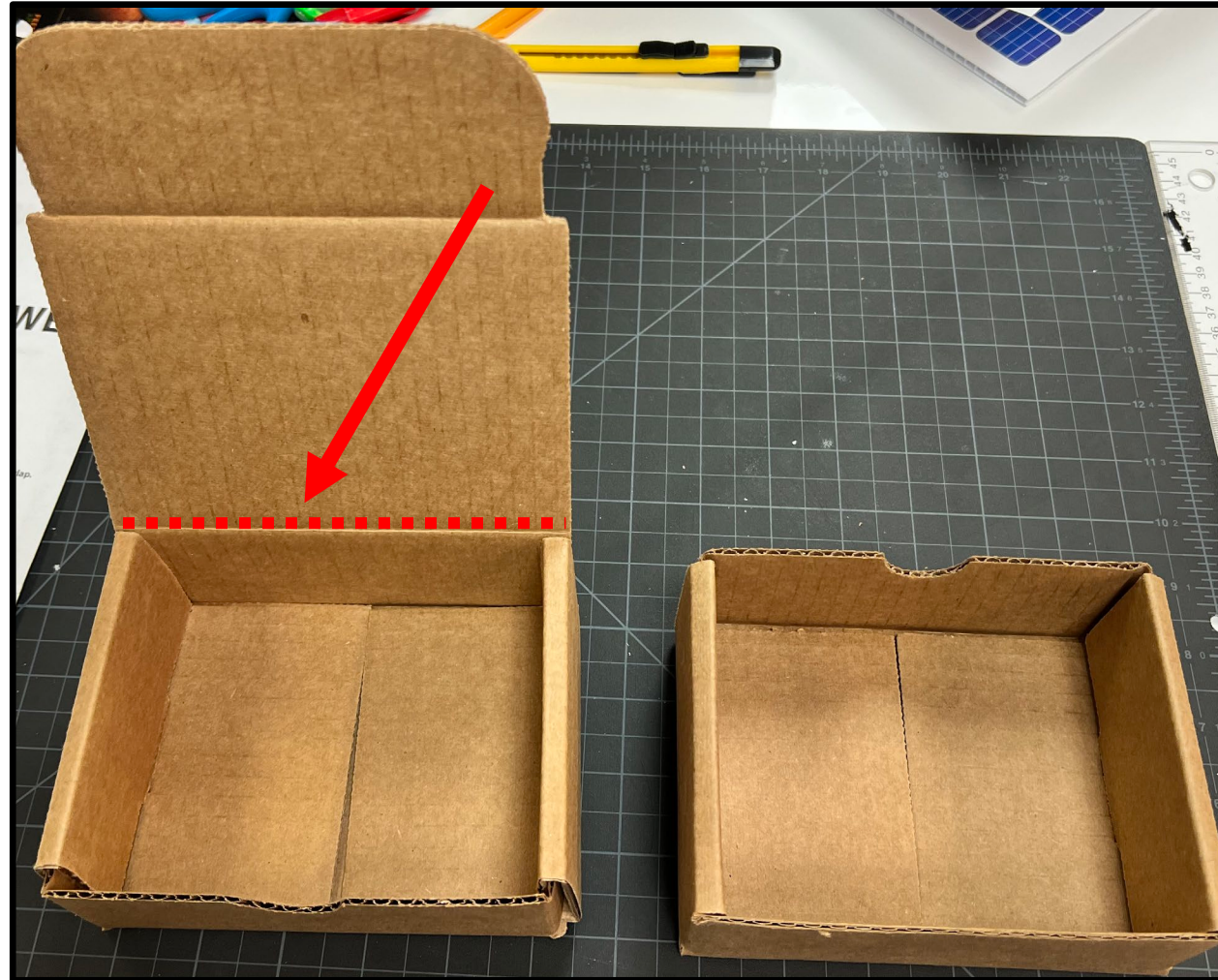
Place Lunar Lander Over Base in center of table

- Attach the pre-built base to the subsurface with screws
- Attach to base with screws on all sides except drawer sides



Building Drawers for Luna Lander

- Fold Boxes provided in Kit
- Cut off top flap



Building Drawers for Luna Lander

- Attach Door Cover by using Conduit Clamp screwed through door cover and cardboard on end of box using machine screws from kit



Drawers slide into Lunar Lander



Mounting Solar Panels

- Mount Panels onto PVC using 4 screws

