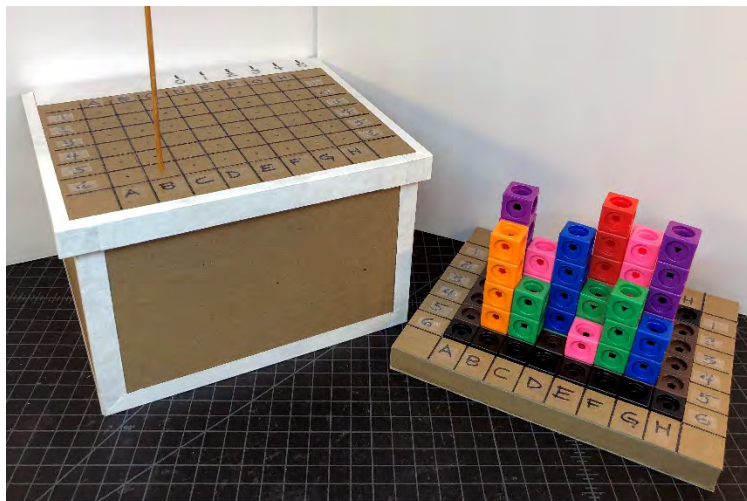


# SEEING THE UNSEEN

Seeing the Unseen allows students to explore a hidden object and build a replica using only touch.



## How it Works:

One person/team builds a hidden structure inside the box using 2 cm cubes on a gridded platform.

Next, the other person/team uses a probe in each grid square on the box lid to determine the shape of the hidden structure. They then use this information to build a duplicate structure on a grid platform outside the box.

When finished, the box is opened, and the two structures are compared.

## Materials/Supplies:

- Learning Resources MathLink Cube Big Builders, minimum 200 cubes
- Medium Weight Chipboard (1/16" thick)  
8 1/2" x 11" - Minimum 11 pieces
- White Glue
- 1/2" Strong Double-Sided Tape
- Tyvek - 2 sheets @ 8 1/2 x 11 **OR**  
Tyvek Envelopes (2 @ 9x12) or (3 @ 6x9)  
Note: If Tyvek is not available, 85# cardstock can be substituted, but it will not be as durable.
- 1/8" dowel (12" long) for probe
- Size #2 Cork Stoppers - Minimum 20-25,  
Maximum 48 (see Finishing Step 1 for details on determining quantity needed)

## Optional:

- Foam Core Scrap 1 3/4" x 8 1/2"
- E6000 Glue

## Tools:

- Pencil
- Craft (X-Acto) Knife with extra blades
- Self-Healing Craft Mat
- Metal Ruler with measurements in inches (1/16") and centimeters
- Braille Label Maker with clear label tape/stickers
- Black Sharpie
- Thin Line Glue Applicator (18 Gauge)
- Hole Punching options:
  - Drill Press (use 1/8" brad point bit)
  - Crop-A-Dile Big Bite Punch (scrapbooking tool)
- Teflon Bone Folder or metal spoon
- Weights (anything heavy, e.g. a book, canned goods, 1x2x3 metal blocks)
- Wax Paper (use to protect work surface when gluing)

## Optional:

- 4 Spring clothespins or binder clips that open 1/4"

## Online Sources if you cannot find supplies locally:

- MathLink Cubes: Amazon [Learning Resources Mathlink Cube Big Builders Set of 200](#)  
Note: The 100 cube set will not be enough
- Medium Weight Chipboard: Amazon [Grafix Medium Weight Chipboard Sheets, 8.5 x 11 inches](#)
- Size #2 Corks: Available at Hobby Lobby, Walmart, Amazon
- Thin Line Glue Applicator 18 Gauge: [Fineline Applicators 18-Gauge Applicator FL2023](#)  
NOTE: Make sure to get the 18 Gauge, the 20 gauge is too small
- Crop-O-Dile Big Bite: Check with a scrapbooker/paper crafter to see if you can borrow this tool. It must be the Crop-O-Dile "Big Bite" which has a long reach, not the "regular" Crop-O-Dile which has a short reach. It is also available on Amazon. [Crop-A-Dile 2 Big Bite Punch](#)
- White Glue: Amazon [Scotch Quick Drying Tacky Glue, 4 Ounces](#)
- 1/2" Strong Double-Sided Tape: Amazon [Scor-Pal SP203 Scor-Tape 1/2" X 27yds](#)

# Cutting Guide

## MEDIUM WEIGHT CHIPBOARD CUTTING GUIDE

✓	Piece	Quantity	Size (in inches)	Notes
<b>BOX</b>				
	Box Base	2	7 1/8 x 8 3/8	Makes 1 Double Thickness piece
	Box Front and Back	2	5 1/2 x 8 3/8	
	Box Sides	2	5 1/2 x 7 3/16	
	Box Back Reinforcement	1	5 1/2 x 8 3/8	
	Lid Support	2	1/2 x 8 1/2	Makes 1 Double Thickness piece
<b>LID</b>				
	Lid Top	1	7 5/8 x 9	
	Lid Sides	4	5/8 x 7 1/2	Makes 2 Double Thickness pieces
	Lid Front	2	5/8 x 9	Makes 1 Double Thickness piece
<b>INTERIOR PLATFORM</b>				
	Interior Platform Base	1	7 x 8 1/4	
	Interior Platform Top	1	7 x 8 1/4	
	Interior Platform Outside Sides	4	5/8 x 6 7/8	Makes 2 Double Thickness pieces
	Interior Platform Outside Front & Back	2	5/8 x 8 1/4	
	Interior Platform Inside Sides	4	5/8 x 6 7/8	Makes 2 Double Thickness pieces
	Interior Platform Inside Front & Back	4	5/8 x 6 1/4	Makes 2 Double Thickness pieces
<b>EXTERIOR PLATFORM</b>				
	Exterior Platform Base	1	6 3/4 x 8 1/4	
	Exterior Platform Top	1	6 3/4 x 8 1/4	
	Exterior Platform Outside Sides	4	5/8 x 6 5/8	Makes 2 Double Thickness pieces
	Exterior Platform Outside Front & Back	2	5/8 x 8 1/4	
	Exterior Platform Inside Sides	4	5/8 x 6 5/8	Makes 2 Double Thickness pieces
	Exterior Platform Inside Front & Back	4	5/8 x 6 1/4	Makes 2 Double Thickness pieces
<b>MISCELLANEOUS</b>				
	Glue Guide Top	1	2 x 8 1/2	
	Glue Guide Base	2	1 3/4 x 8 1/2	Or substitute 1 piece of 3/16 Foam Core cut 1 3/4 x 8 1/2

# Construction Outline

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**Part 1: Preparation** (5 Steps)

**Part 2: Building the Platforms** (13 Steps)

**Part 3: Building the Box** (10 Steps)

**Part 4: Building the Lid** (12 Steps)

**Part 5: Finishing** (4 Steps)

# 1. Preparation - Steps 1-5 of 5

## 1 Gather Materials and Tools

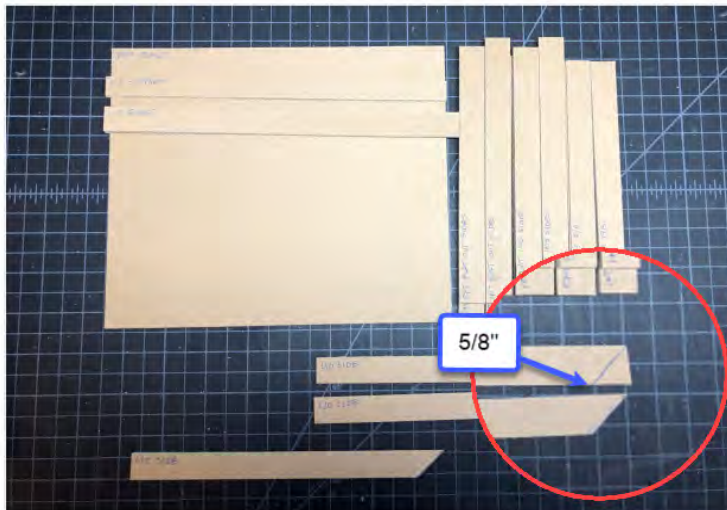
- Use the Materials/Supplies and Tools list as a guide.

## 2 Prepare Work Area

- Ensure adequate ventilation if using E6000 glue.
- Have wax paper ready to protect work surface when gluing
- Have weights ready

## 3 Cut Chipboard

- Cut all chipboard pieces according to the cutting guide.
- Label each piece.



## 4 Prep Double Thick pieces

- Glue the following pieces together in sets of two and set aside under weights for at least an hour:

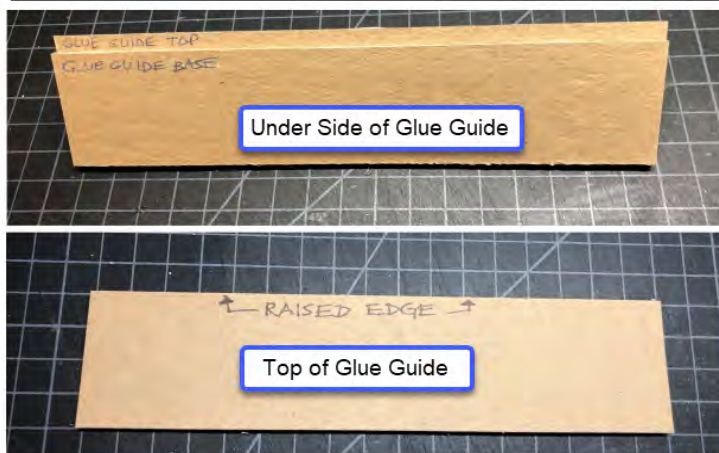
- Box Base
- Lid Support
- Both Lid Sides\*
- Lid Front
- All Platform Outside Sides
- All Platform Inside Sides
- All Platform Inside Front & Back

\*Before gluing the Lid Sides together, miter one end at 45 degrees on each piece by measuring 5/8" from the corner on one edge and connecting that point with the other corner to make a triangle. Cut off the triangle.

## 5 Make Glue Guide

This guide will enable you to make the tactile lines using a fine line glue applicator. It has a raised edge to keep the guide away from the glue line.

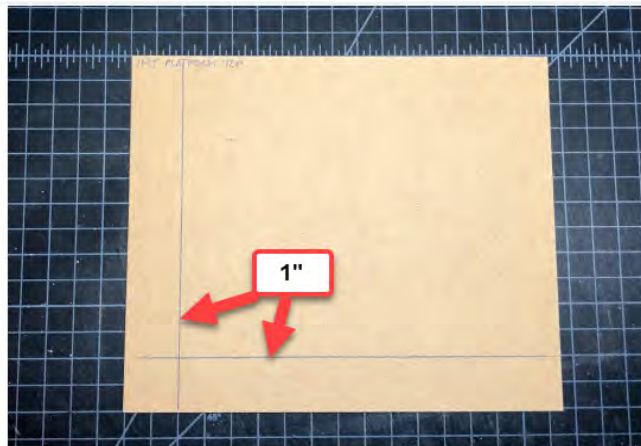
- If foam core is not available, glue two Glue Guide Base chipboard pieces together.
- Line up one long edge and short edges of the Glue Guide Top and either the foam core or assembled Glue Guide Base and glue together. Place under weights to dry.
- Mark the overhanging long edge to indicate which edge to use for running glue along.





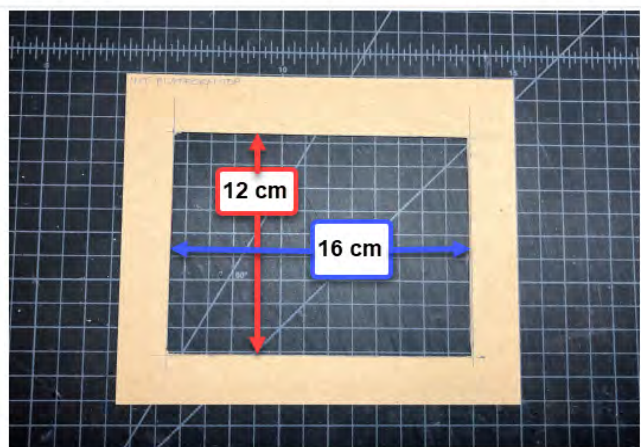
## 2. Building the Platforms - Steps 1-3 of 13

Use these steps to make both the Interior and Exterior Platforms. Although the Interior Platform is slightly bigger than the Exterior Platform, the instructions will work for both sizes.



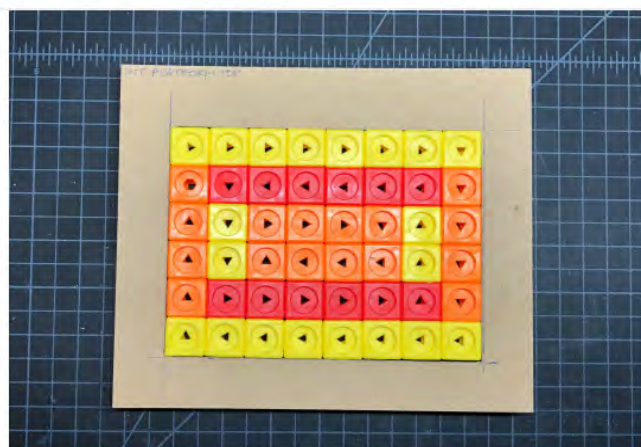
### 1 Measure Baselines for Opening

- Start with a Platform Top.
- Orient the piece so the longer side is horizontal and using a pencil, mark a line 1" in from the left side and 1" in from the bottom.



### 2 Measure & Cut Opening

- Switch to centimeters.
- Using the two lines you just drew as the left and bottom base lines, draw a center rectangle 16 cm wide by 12 cm tall. This will be the cutting line for the center rectangle.
- Cut out the rectangle just to the inside of the drawn line. The line should be just visible on the piece when you are done.

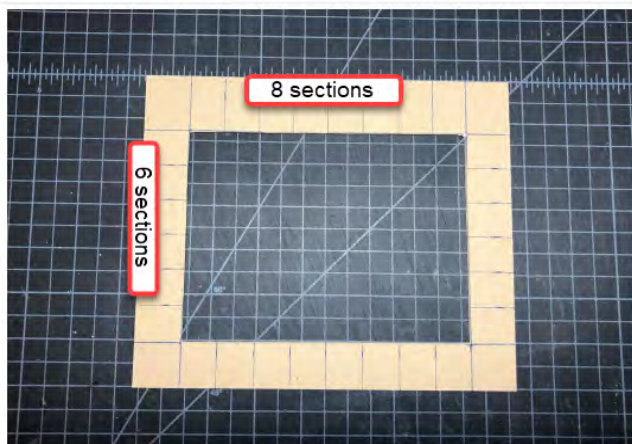


### 3 Test Fit MathLink Cubes

- Take 48 of the MathLink Cubes and put them together in a 6x8 grid. This will be the cube base. There should be no "outies" protruding. Note that they will not all link together.
  - Assemble in three decreasing size rectangles.
  - There should not be any big holes on the top.
- Test fit the cubes. It should be a snug fit. Trim slivers from inside of rectangle if necessary. Then remove the cubes for the next step.

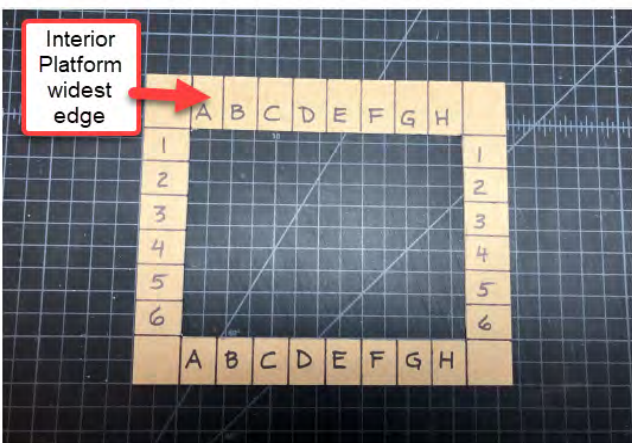
## 2. Building the Platforms - Steps 4-6 of 13

Use these steps to make both the Interior and Exterior Platforms. Although the Interior Platform is slightly bigger than the Exterior Platform, the instructions will work for both sizes.



### 4 Layout the Grid

- Extend the outside lines of the inner rectangle to the edges
- Divide the shorter sides into 6 sections. These sections will be approximately 2 cm wide.
- Divide the top/bottom into 8 sections. These sections will be approximately 2 cm wide.



### 5 Label the Grid

- Use a Sharpie marker to highlight these lines

NOTE: If working on the Interior Platform Top, make sure the widest edge is at the top.

- Skip the corners, and label the top/bottom sections A - H. Write large.
- Skip the corners, and label the side sections 1 - 6. Write large.



### 6 Add Tactile Lines

- Use the Glue Guide and the Fine Line glue applicator to create a raised line on top of each of the Sharpie lines you drew. Set aside to dry.

Tips:

- Practice on scrap first.
- Take your time.
- Watch your sleeves
- Shake the glue down towards the tip often to avoid air bubbles.

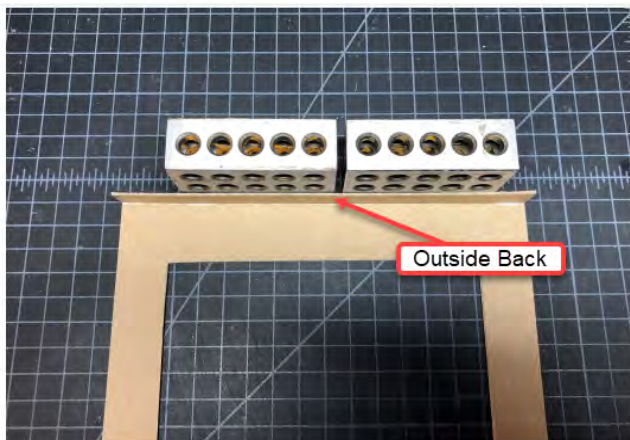
**WHILE YOU ARE WAITING FOR THE GLUE LINES TO DRY...** repeat steps 1 - 6 for the other platform.

Once the glue lines are **completely** dry on one of the platform tops, proceed to step 7.



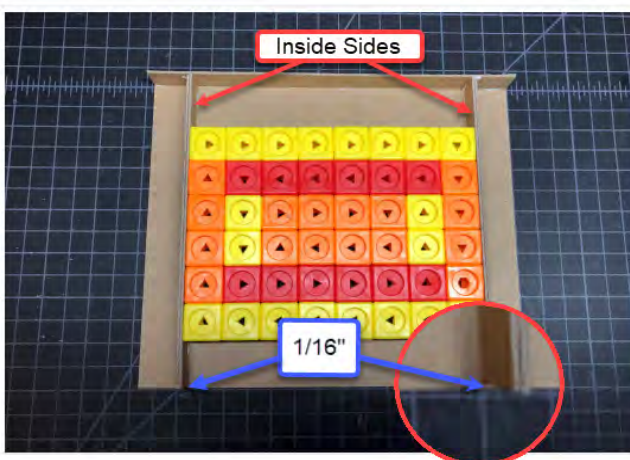
## 2. Building the Platforms - Steps 7-9 of 13

Use these steps to make both the Interior and Exterior Platforms. Although the Interior Platform is slightly bigger than the Exterior Platform, the instructions will work for both sizes.



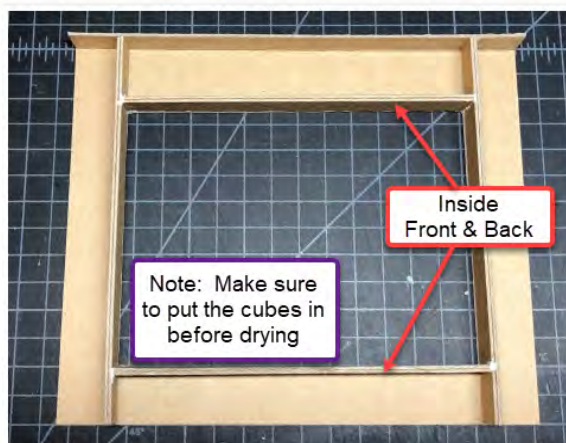
### 7 Attach Outside Back

- Place Platform Top upside down.
- Run a line of glue along the top edge. Place the Platform Outside Back along this edge. Use blocks or similar to make sure it is vertical (I'm using steel blocks in the photo). Apply pressure for a few seconds.



### 8 Attach Inside Sides

- The Platform Inside Sides will be the left and right walls for the opening. Run glue along one long edge and one short end of the Side piece. Butt up against Back piece. The Side piece should be a little short of the front edge- there should be a 1/16" gap at the front to allow for the Front piece to be added later.
- Apply pressure for a few seconds, then repeat for the other Platform Inside Side.
- Place the MathLink Cube Base inside these two sides and use it to make sure both sides are vertical. Let dry.

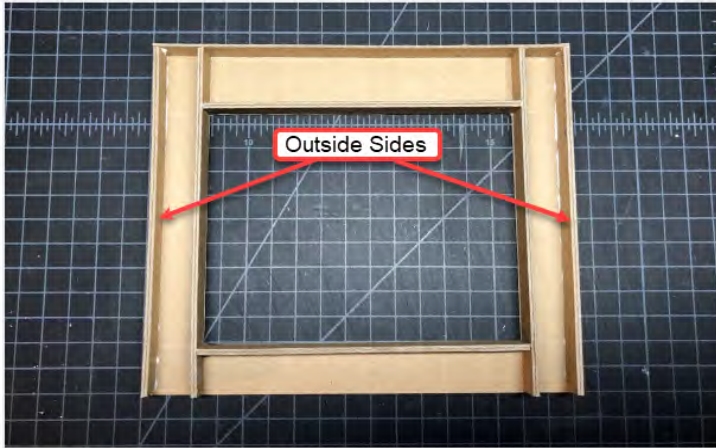


### 9 Attach Inside Front/Back

- The Inside Front & Back form the other two walls for the opening. Take the Platform Inside Back and do a test fit. It should fit snugly inside the Platform Inside Sides and along the edge of the center opening. Trim carefully if too long.
- Run glue along one of the long edges and both short sides and insert. Repeat for the Platform Inside Front piece.
- Place the MathLink Cube Base inside and use it to make sure both sides are vertical. It should be a snug fit. Let dry.

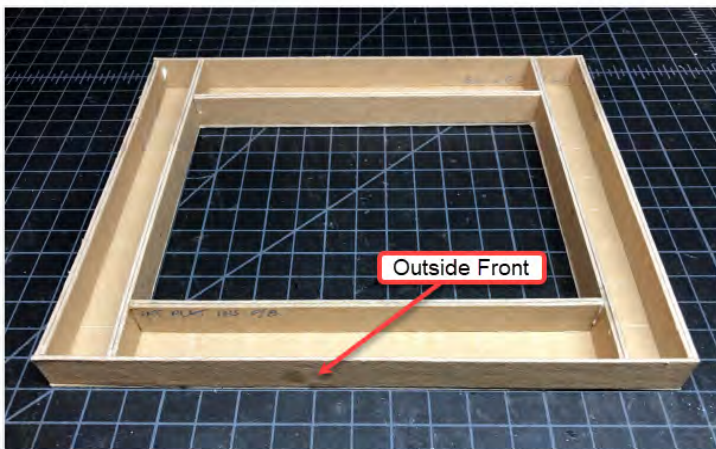
## 2. Building the Platforms - Steps 10-11 of 13

Use these steps to make both the Interior and Exterior Platforms. Although the Interior Platform is slightly bigger than the Exterior Platform, the instructions will work for both sizes.



### 10 Attach Outside Sides

- Run a line of glue along the left outside edge and vertically on the end of the Platform Outside Back.
- Place one of the Platform Outside Sides along this edge. It should butt up against the Back and there should be a gap at the front to allow for the Platform Outside Front to be added later. Make sure it is vertical.
- Apply pressure for a few seconds, then repeat for the other Platform Outside Side.



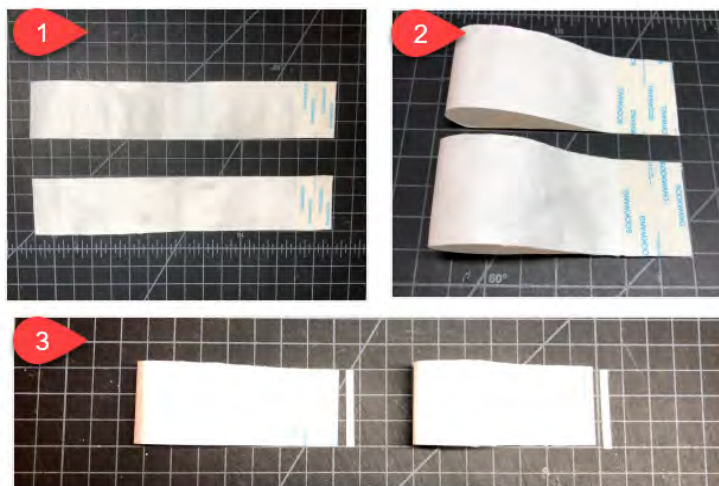
### 11 Attach Outside Front

- Run a line of glue along the front outside edge and all the vertical edges of the inside and outside side pieces.
- Place the Platform Outside Front along this edge. Make sure it is vertical.
- Apply pressure for a few seconds. Allow to dry thoroughly.



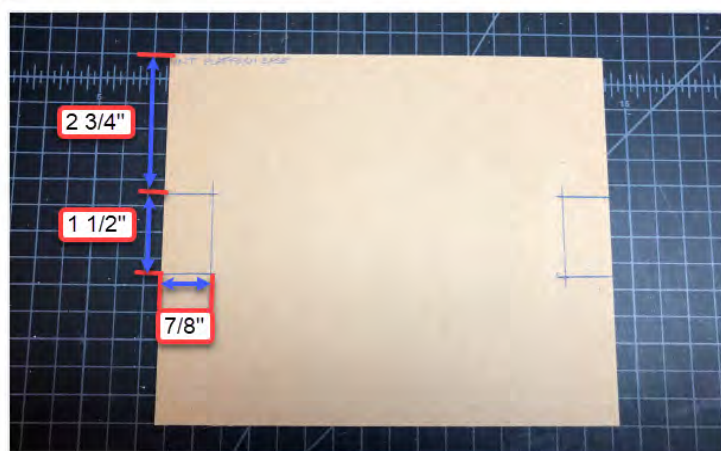
## 2. Building the Platforms - Optional Lifters (**Interior Platform Only**)

Some users like to remove the interior platform to compare the original/hidden construction side by side with what is built using the probe. These lifters are designed to make this possible. If you do not anticipate wanting to remove the interior platform, skip this section and go on to Step 12 on the next page.



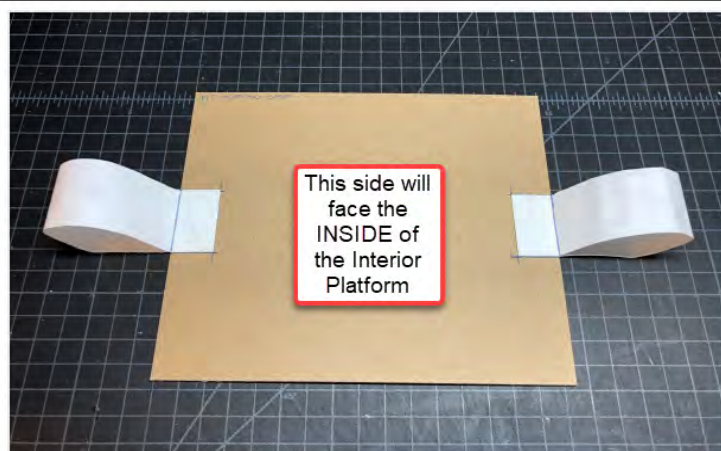
### A Prep Tyvek Strips

- Cut two pieces of Tyvek 1 1/2" x 8".
- Repeat these steps for each piece:
  - (1) Add two pieces of 1/2" Double-Sided tape to one end.
  - (2) Remove the tape backing and fold in half. Burnish the join with a bone folder or edge of spoon. Then add two pieces of 1/2" Double-Sided tape to the end with the join.
  - (3) Trim 1/8" off end with Double-Sided Tape



### B Mark Interior Platform Base

- Check to make sure you have the **Interior Platform Base**.
- Orient the base so the 8 1/4" side is horizontal.
- On each short side, measure down from the top 2 3/4" and mark
- From that mark, measure down a further 1 1/2" and mark.
- Draw two horizontal lines across the Platform Base by connecting the marks.
- Next, measure in 7/8" from each side edge and make a vertical line.
- The result will be a 1 1/2" x 7/8" box in the center of each side.



### C Attach the Lifters

- Remove the tape backing from the end of each Tyvek lifter.
- Attach to the base so the loop end is sticking out.
- Burnish well with bone folder or edge of spoon to ensure a good join.

NOTE: The side where the Tyvek lifters is attached will face the **inside** of the Interior Platform when you add it to the platform assembly in the next step.

Now continue on to Step 12 on the next page.



## 2. Building the Platforms - Steps 12-13 of 13

Use these steps to make both the Interior and Exterior Platforms. Although the Interior Platform is slightly bigger than the Exterior Platform, the instructions will work for both sizes.



### 12 Attach Platform Base

(a) The Platform Base should still be upside down on your work surface, with all the front, back, and side pieces sticking up.

- Test fit base - it should line up on all four edges.
- Apply glue to top edges of all vertical pieces.



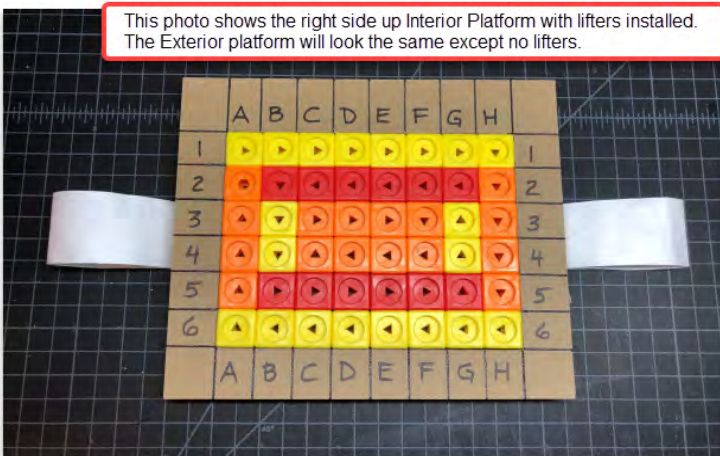
This photo shows the upside down Interior Platform with lifters installed. The Exterior platform will look the same except no lifters.

(b) Place Platform base upside down on top.

Note: if you installed the Tyvek lifters, they should be sticking out, and the side of the base where they were attached faces the inside.

- Apply pressure and then a little weight and allow to dry thoroughly.

**REPEAT** steps 7-12 for the other platform.



This photo shows the right side up Interior Platform with lifters installed. The Exterior platform will look the same except no lifters.

### 13 Optional: Glue MathLink Cubes inside platform

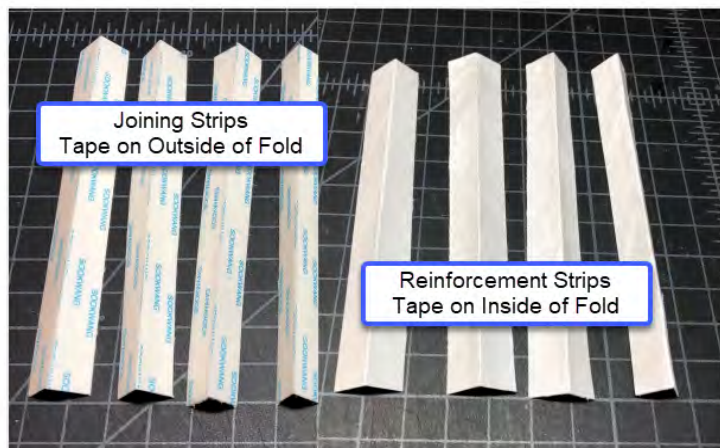
- To prevent the MathLink Cube base from coming out of the platform, use dabs of E6000 glue to attach the cube base inside each platform.

Always use E6000 in a ventilated area.

- Make sure the cube base is firmly down inside the platform.
- Allow to dry.

### 3. Building the Box - Steps 1-3 of 10

These instructions refer to using Tyvek for Joining/Reinforcement strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



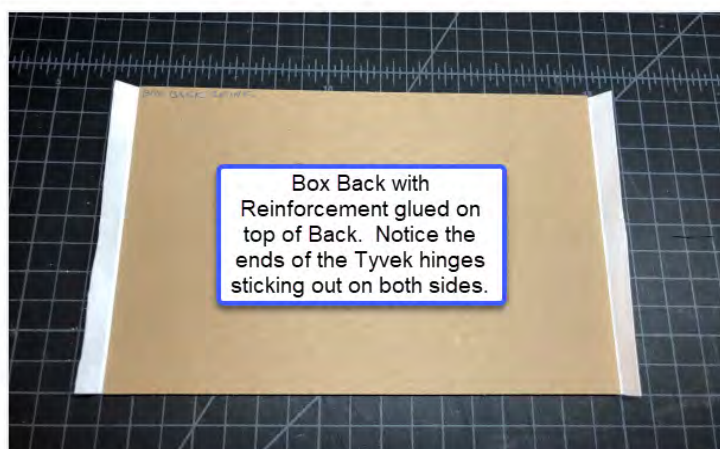
#### 1 Prep Joining/Reinforcing Strips

- Cut 8 pieces of Tyvek 1" x 5 1/2"
- Use two strips of 1/2" Double-Sided tape on one side of each piece.
- Fold strips in half lengthwise:
  - half with tape on outside (Joining Strips)
  - half with tape on inside (Reinforcement)
- Use a bone folder or back of spoon to crease.



#### 2 Attach Joining Strips on Box Front & Back

- Draw a line 1/2" in from the edge on each end of the Box Front and Back pieces. Do this on both the inside and outside of each piece.
- Use four of the prepared Tyvek **Joining** strips (tape on outside).
  - Remove backing paper from one 1/2" strip of Double-Sided tape on each strip.
  - Using the drawn lines as a guide, attach a strip to each edge of the Box Front & Back on the inside on the inside only.
  - The other half of each joining strip will be hanging off the edge of these pieces, with the tape backing still on.



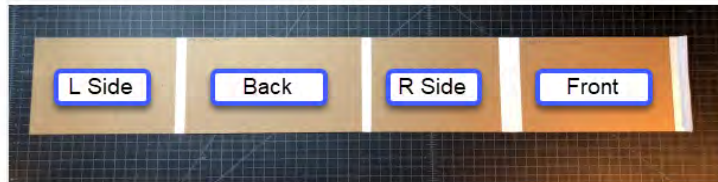
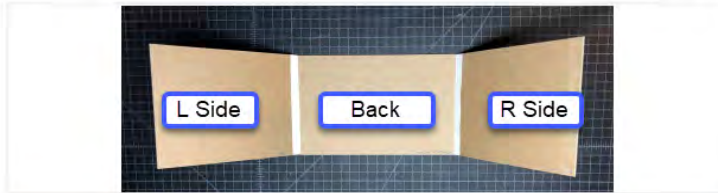
#### 3 Reinforce Box Back

- Add glue to Box Back Reinforcement and attach to inside of back to make a double-thick piece. The joining strips get sandwiched between the two pieces. Note that the other half of each joining strip is still hanging off the sides.
- Add weights to cover the surface. Allow to dry thoroughly.



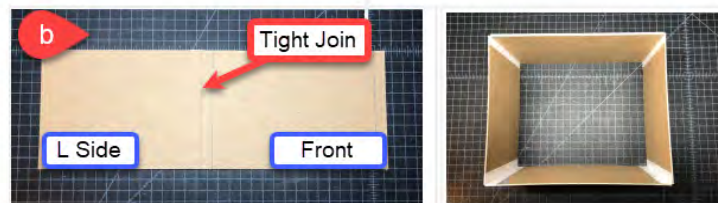
### 3. Building the Box - Steps 4-6 of 10

These instructions refer to using Tyvek for Joining/Reinforcement strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



#### 4 Join Sides Together

- When joining pieces, make sure:
  - to butt the edges up tightly.
  - the bottom edges are in a straight line.
- First join the two sides to either end of the back piece. The Box Back Reinforcement should be facing up.
- Next add the Front piece on the right
- Burnish these three joins with bone folder or edge of spoon.



#### 5 Join Final Sides To Make Box

- Do a dry run first:
- Keep the Back and Right sides on the table.
- (a) Fold the Left side and Front up to meet in the middle. The meeting edges in the center should butt up tightly together.
- (b) Remove the backing from the Double-Sided tape and secure the join.
- Burnish the join with bone folder or edge of spoon.



#### 6 Add Box Base

- Dry fit Box Base by slipping it inside the box. It should be a snug fit. Remove.
- Run a line of glue on the inside bottom edge of box sides all around.
- Drop in the base and push until it is even with the bottom edges. Be careful- glue will probably ooze out. Clean up any excess.
- Allow to dry.

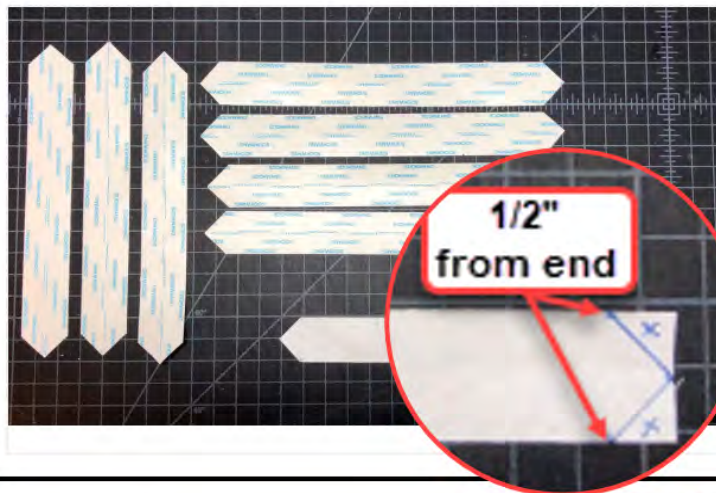
### 3. Building the Box - Steps 7-9 of 10

These instructions refer to using Tyvek for Joining/Reinforcement strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



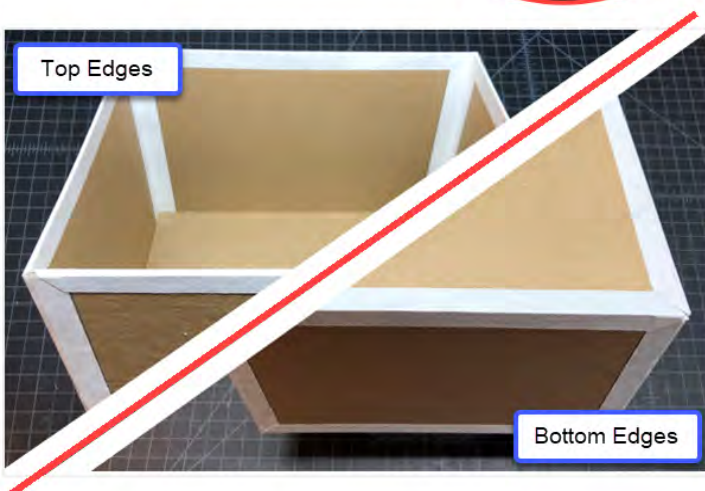
#### 7 Reinforce Corners

- Use the remaining four pieces of Tyvek to reinforce the outside corners.
- Remove tape backing from one side and attach to outside of box, using the guidelines on the Front and Back pieces for placement.
- Then remove tape backing from the other side, wrap around the corner and attach.
- Support each corner from the inside and burnish the strips.



#### 8 Prep Bottom/Top Reinforcement Strips

- Cut 4 pieces of Tyvek 1" x 8 1/2" for top and bottom of front/back.
- Cut 4 pieces of Tyvek 1" x 7 5/16" for top and bottom of both sides.
- Use two strips of 1/2" Double-Sided tape to cover one side of each piece.
- Miter all four corners of each strip by measuring in 1/2" on each side from end and cut off corners as shown with "x".
- Fold lengthwise with tape on inside and burnish.



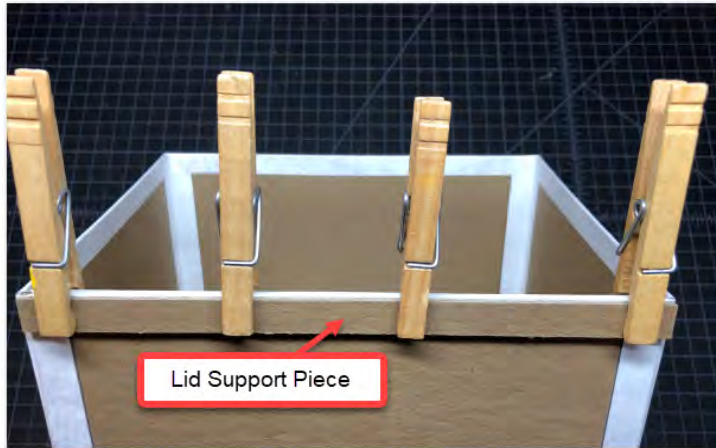
#### 9 Add Bottom/Top Reinforcement

- Draw a line 1/2" in from the bottom edge all around the outside. Repeat for the top edge.
- Remove backing paper from one 1/2" strip of Double-Sided tape on a Reinforcement strip and attach to each box piece using the drawn line as a guide.
- Remove the other strip of backing paper and wrap around to the bottom/inside the top.
- Support box from inside and burnish.



### 3. Building the Box - Step 10 of 10

These instructions refer to using Tyvek for Joining/Reinforcement strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



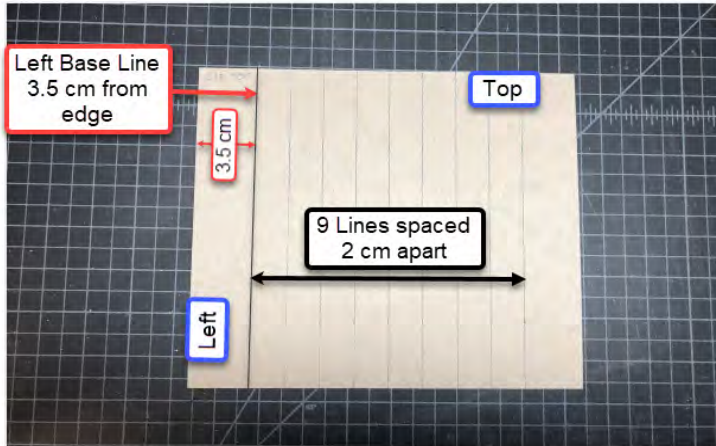
#### 10 Add Lid Support Piece

- Use white glue to attach the Double-Layer Lid Support piece to the Back. (Remember, the Back is the double-thick side of the box.) The Lid Support piece should be flush with the top edge of the box.
- Use clothespins to clamp until dry, or lay the box down on its back and place a book inside as a weight.
- Allow to dry.



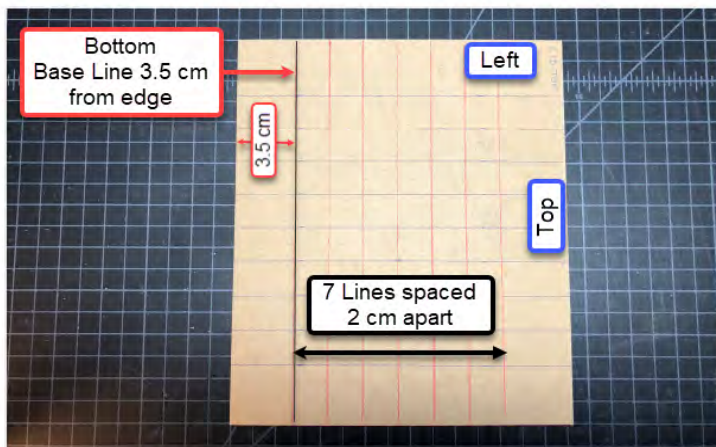
## 4. Building the Lid - Steps 1-3 of 12

These instructions refer to using Tyvek for Reinforcement/Hinging strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



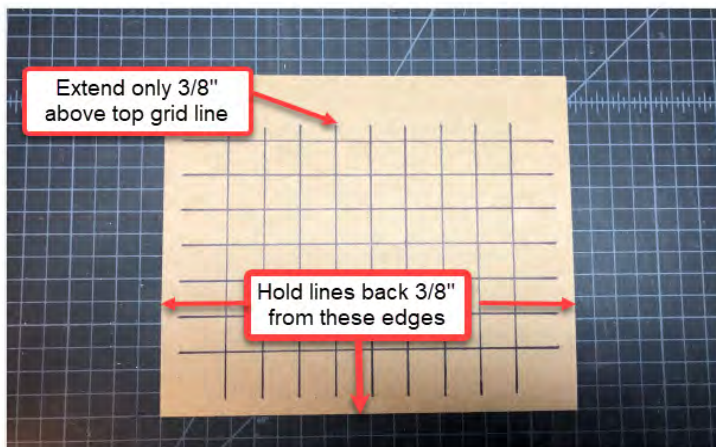
### 1 Prep Lid Top - Vertical Lines

- Orient the Lid Top so the 9" side is horizontal and the Top edge is at the top.
- From the left, measure in 3.5 cm, and draw a pencil line from top to bottom to create the left base line.
- From this base line, measure 8 sections, each 2 cm in width. Draw lines from top to bottom.
- There should be nine vertical lines.



### 2 Prep Lid Top - Horizontal Lines

- Now turn the Lid Top to the right so the Left edge is on the top.
- From the left, measure in 3.5 cm, and draw a pencil line from top to bottom to create the bottom base line
- From this base line, measure 6 sections, each 2 cm in width. Draw lines from top to bottom.
- There should be seven lines in this direction.



### 3 Outline Grid with Sharpie

Turn the lid to the left so the 9" side is horizontal and the Top edge is at the top. The edges around the grid should be:

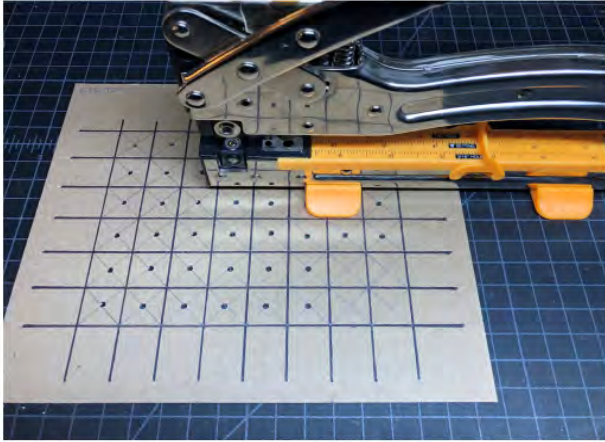
Left	3.5 cm
Bottom	3.5 cm
Top	App. <b>3.9</b> cm
Right	App. 3.5 cm

- Use the Sharpie to highlight the grid lines:
  - Horizontal Lines: Start and stop app. 3/8" in from the left and right edges.
  - Vertical Lines: Extend app. 3/8" above the top row of grid. Stop short of bottom edge of lid app. 3/8".



## 4. Building the Lid - Steps 4-6 of 12

These instructions refer to using Tyvek for Reinforcement/Hinging strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



### 4 Make the Holes

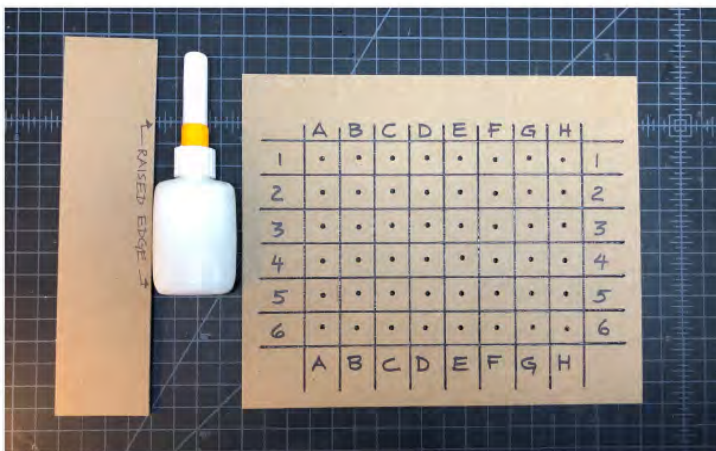
- Mark the center of each grid square by using a pencil to connect all the diagonals. This will produce a center "x" in each grid square.

- Drill or punch a 1/8" hole centered on each "x". There will be 48 holes.

Note: If using a **drill press**, practice on a scrap piece of chipboard:

- adjust speed to get the cleanest holes
- mark the start point for each hole with an awl
- a wood support behind the chipboard may help

If using the **Crop-O-Dile Big Bite**, make sure to use the **1/8"** hole punch.



### 5 Add Letters, Numbers & Tactile Lines

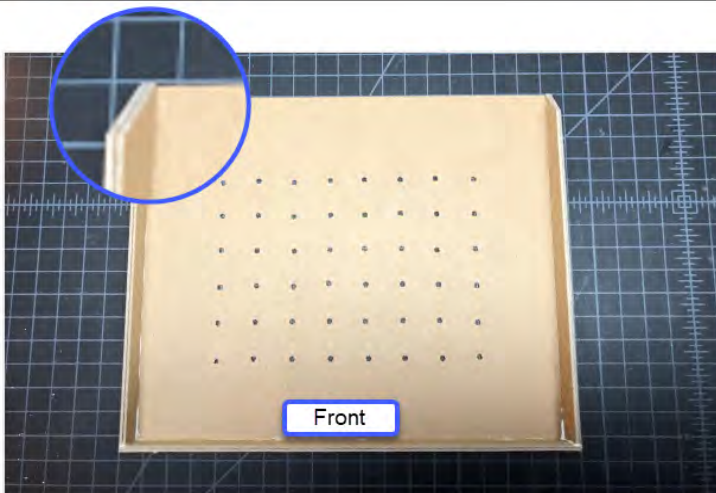
- Draw a pencil line 1/2" above the top grid line. The letters at the top of the grid should not go past this line (to allow for Probe Depth markings being added later on the top edge).

- Skip the corners, and label the top/bottom sections A - H. Write large.

- Skip the corners, and label the side sections 1 - 6. Write large.

- Use the Glue Guide and the Fine Line glue applicator to create a raised line on the entire length of each of the Sharpie lines you drew.

- Set aside to dry thoroughly.



### 6 Attach Lid Front & Sides

- Flip Lid upside down. Make sure the front edge is closest to you.

- Add glue to one long edge of the Lid Front. Attach to the Lid Top, making sure to align the edges and keep it vertical. Apply a little pressure, then allow to dry.

- For each Lid Side piece, apply glue to long edge and **square** end edge.

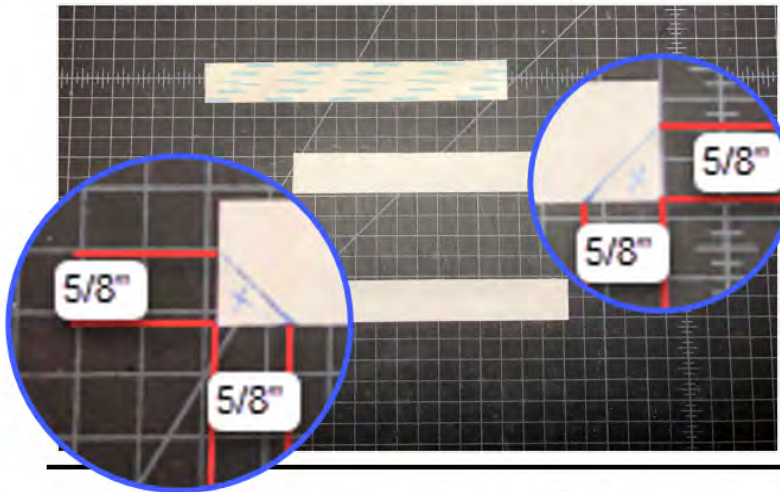
- Attach sides to Lid Top, butting square end against Lid Front and making sure to align the edges and keep vertical. The longer edge of the side gets glued. Apply a little pressure, then allow to dry.

Note there is no back piece.



## 4. Building the Lid - Steps 7-9 of 12

These instructions refer to using Tyvek for Reinforcement/Hinging strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



### 7 Reinforce Lid Sides

- Cut two pieces of Tyvek @ 1" x 9"
- Cut one piece of Tyvek @ 1" x 7 1/2"
- Add Double-Sided tape to one side of each piece to completely cover.
- Cut a 5/8" miter on one bottom corner of each of the 9" pieces.
  - On one, cut it on the left end
  - On the other one, cut it on the right end.



### 8 Attach Side Lid Reinforcement

- Repeat these steps for both sides:
- Remove entire backing from a 9" Tyvek strip.
- Start by attaching to the Side. Align the mitered corner of Tyvek with the mitered corner of the Lid Side. Make sure to keep the Tyvek edge even with the bottom edge of the Chipboard Lid Side as you go along.
- When you get to the corner, wrap the Tyvek around, keeping the bottom edge of the Tyvek even with the bottom edge of the Front Side after you make the turn.
- Snip a little triangle out of the Tyvek on top of each corner.



### 9 Complete Lid Reinforcement

(a) Finish reinforcing the sides by folding the Tyvek side side pieces over onto the Lid Top and burnish.

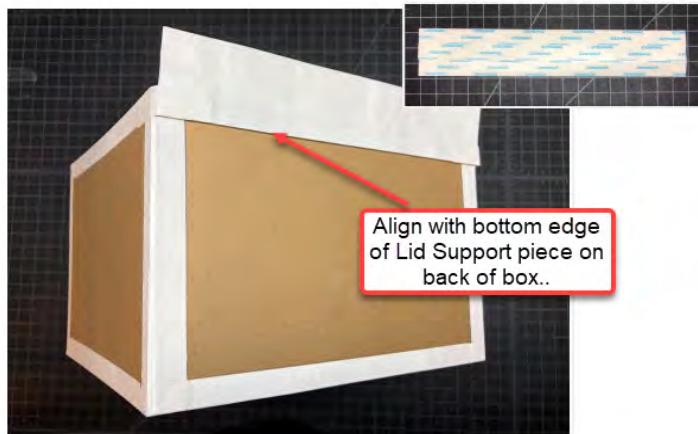
(b) Add Tyvek to Front side:

- Remove the tape backing from the remaining Tyvek strip (the 7 1/2" piece).
- Center it on the front, keeping the bottom edge of the Tyvek even with the bottom edge of the Front Side.
- Fold the Tyvek front piece over onto the Lid Top and burnish.



## 4. Building the Lid - Steps 10-12 of 12

These instructions refer to using Tyvek for Reinforcement/Hinging strips. Cardstock can be substituted, but it will not be as durable, especially when hinging the box top.



### 10 Prep Tyvek Hinge

- Cut one piece of Tyvek @ 1 1/2" x 8 1/2"
- Add Double-Sided tape to one side to completely cover (3 strips @ 1/2" wide).
- Remove backing from one 1/2" piece of tape and add along Lid Support piece, aligning the bottom edge.
- Burnish

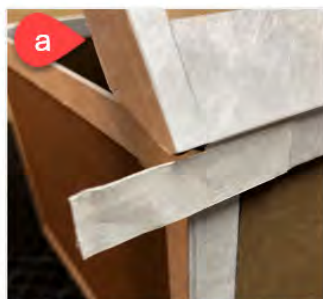


### 11 Attach Lid to Box

- Place the Lid on top of the box, and align the edges so the back edge is even with the box and the sides overhang the box evenly.

You may need help to keep the lid in place for the next step.

- Remove the backing paper from the remaining adhesive on the Tyvek hinge. Carefully fold over and attach to the lid.
- Burnish.



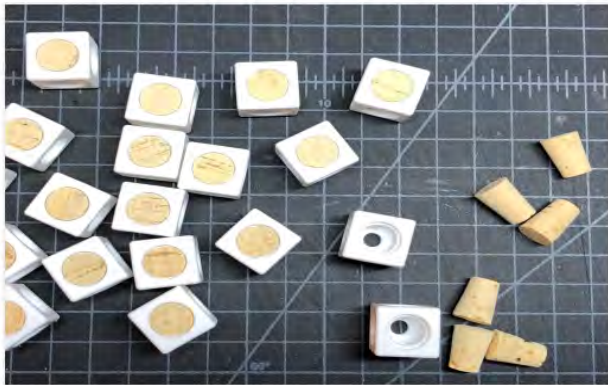
### 12 Add Hinge Reinforcement

- Cut 2 pieces of Tyvek, 1/2 x 2". Add Double-Sided tape to one side.

(a) Reinforce corners by attaching 1" on each end of the Lid Support piece

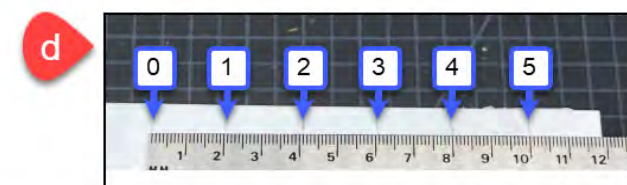
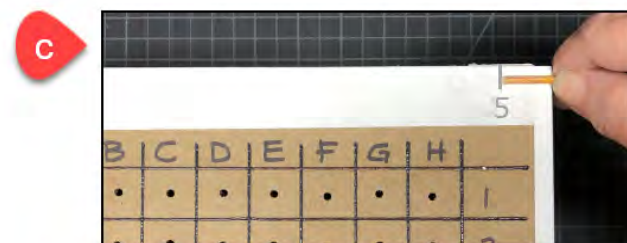
(b) Then wrap around to the side. Support and burnish.

## 5. Finishing - Steps 1-2 of 4



### 1 Modify Some of the Cubes

- The top cube in each stack needs to have its large hole blocked so the probe is stopped at the top of the stack.
- Determine the number of cubes to modify (Suggest 1/4 of remaining cubes, but no more than 48 are needed)
- Press a #2 cork into the hole as far as it will go.
- Separate these blocks from the unmodified blocks - they are only used for the top layer.



### 2 Measure Depth Markings

**2a.** Using the Interior Platform, build 5 stacks of blocks on the front row.

- The first stack should have 5 blocks, then 4 blocks, 3, 2, and 1 in descending order.
- Make sure the top block of each stack is a "modified block" from Step 1.
- Insert the Interior Platform into the box. Make sure it is flat on the bottom and close the lid.

**2b.** Insert the 1/8" dowel in the hole above the 5 cube stack. Place your fingers around the dowel where it touches the lid. Do not let go.

**2c.** Still holding on to the dowel, transfer this measurement to the box lid.

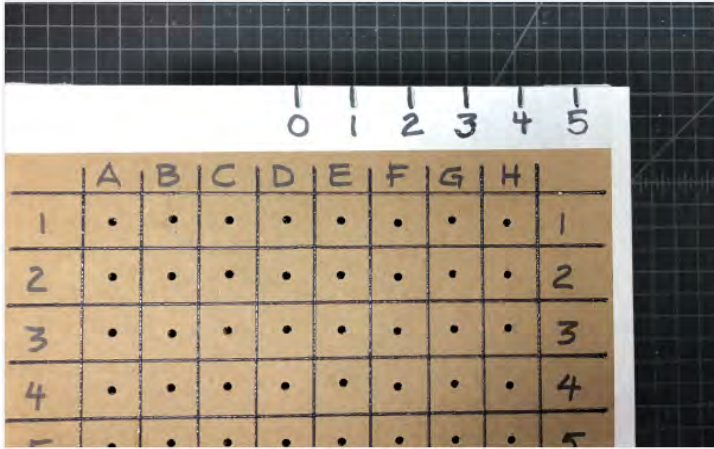
- Align your finger position on the top right edge of the lid.
- Using a pencil, mark the spot where the dowel ends. This is "5".

**2d.** Mark depth guide for the remaining stack heights.

- Measure 2 cm to the left of "5" - this is the "4" position.
- Continue measuring 2 cm to the left of each number and marking until you get to "0".
- Use the dowel to check these markings.



## 5. Finishing - Steps 3-4 of 4



**3**

### Add Lines, Numbers & Tactile Lines

- Emphasize the depth markings with a Sharpie line and tactile glue line.
- Use Sharpie to write the large number beneath each line.

**4**

### Add Braille Labels

- Add clear Braille Labels to all numbers and letters on both platforms and the lid.