

# Homemade Puzzles

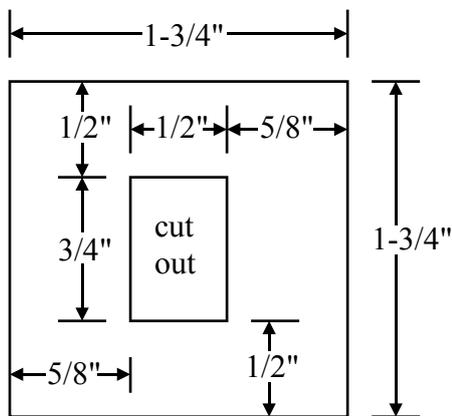
## Cubey plans

This is a small cube, only 2" each way. Each side holds three panels: an outer, middle and inner panel, which are connected together, so moving the outer panel will move the inner panel the same way. There is only one panel that will move initially; moving this panel will release a second inner panel, and that in turn will release another, and so on. The last panel to move will allow that side of the cube to come away, revealing the inner workings.

The cube is made from 1/8" plywood, but you can re-size this plan if you wish.

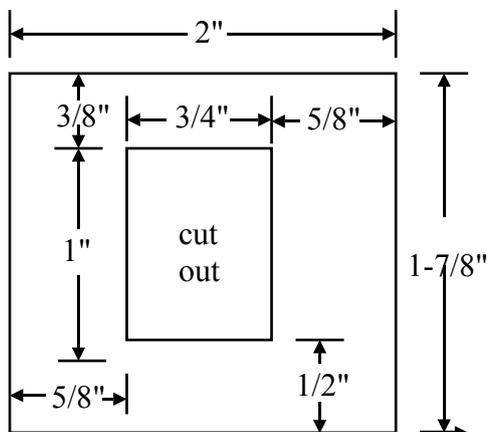


The side panels:



Cut two pieces.

These are the left and right sides .



Cut four pieces.

These are the front, back, top and bottom.

A note on the side panels:

since the front, bottom, back and top panels overlap at one end, make sure the grain of the wood is lying in the same direction on each piece. This makes it harder to tell which way is which.

The outer panels:

Cut six pieces at 1-1/4" x 1-1/4".

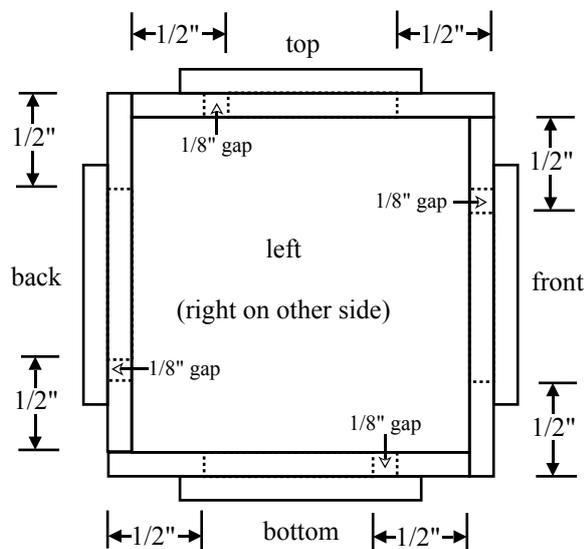
Sliders:

cut two at 1/2" x 5/8": these are the left and right sliders.

cut four at 3/4" x 7/8": these are the front, bottom, back and top sliders.

A note on the sliders:

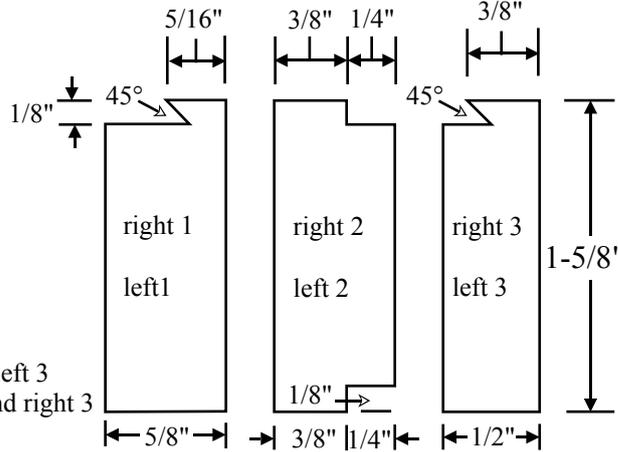
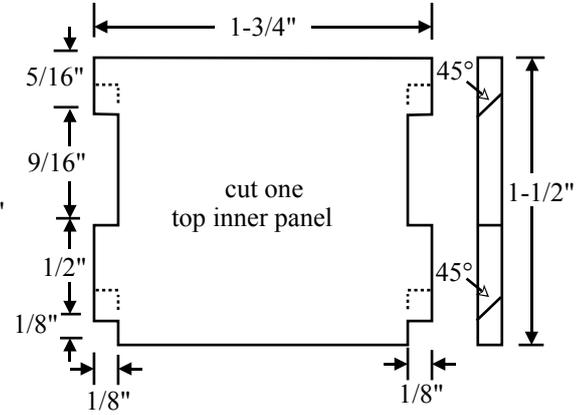
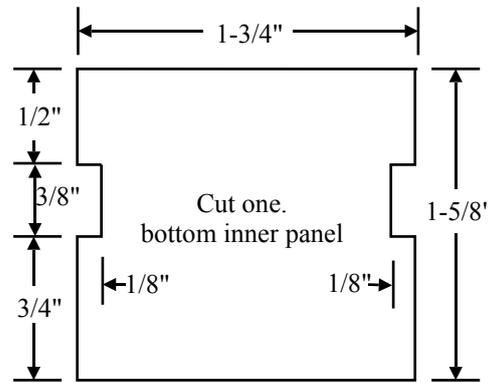
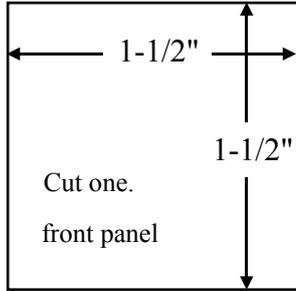
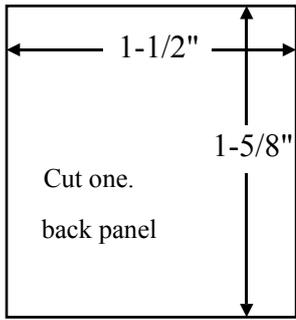
all the sliders must move at least the thickness of the plywood, so that they can move the inside panels the same distance. If your plywood is slightly thicker than 1/8", you may have to shorten the sliders: the left and right sliders would be shorter than the 5/8" dimension: the other four sliders would be shorter than 7/8" dimension.



Layout of the cube. **Don't** glue anything just yet!

Next are the inner panels.

Inner panels.



**A note on the inner panels:**  
all the inner panels make a distance of at least the thickness of the plywood, and their size depends also on that thickness. If your plywood is thicker than 1/8", you may have to make the inner panels slightly smaller than the dimensions shown. Check that the inner panels will fit inside the side panels, and that they move far enough to allow the next panel to move into the space left behind.

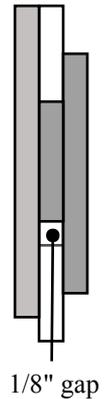
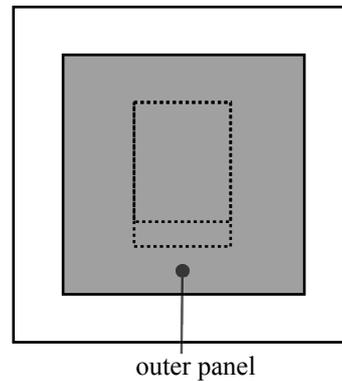
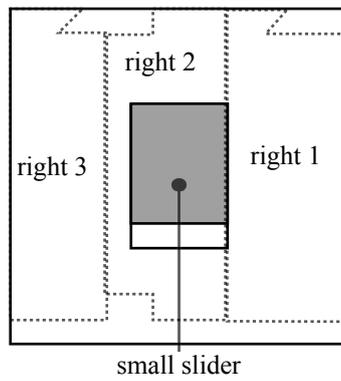
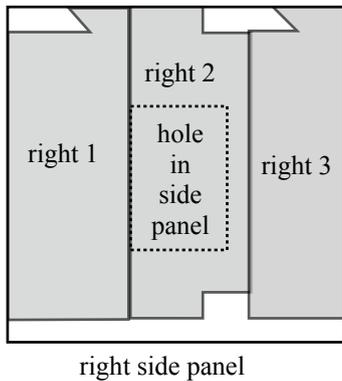
Cut two of each.  
Inner panels left 1, left 2 and left 3  
Inner panels right 1, right 2 and right 3

**Assembly:**

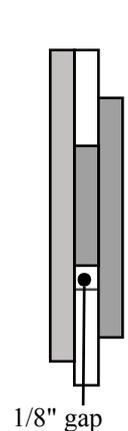
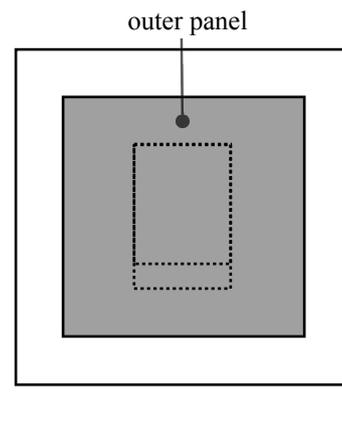
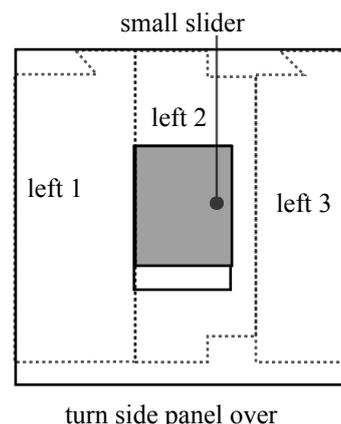
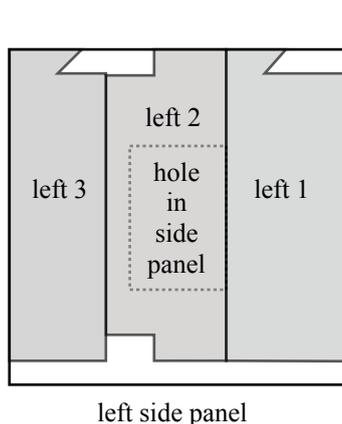
Lay the right side panel down.  
Glue the right 1 panel on so that it is flush with the top and left of the right side panel.  
Position the right 2 panel in the middle, flush with the top, but do NOT glue. Glue the right 3 panel in place, flush with the top. It should be flush with the right edge of the side panel.

Turn the side panel over.  
Glue one of the smaller sliders to the right 2 panel, through the hole. The slider should be at the top of the hole.

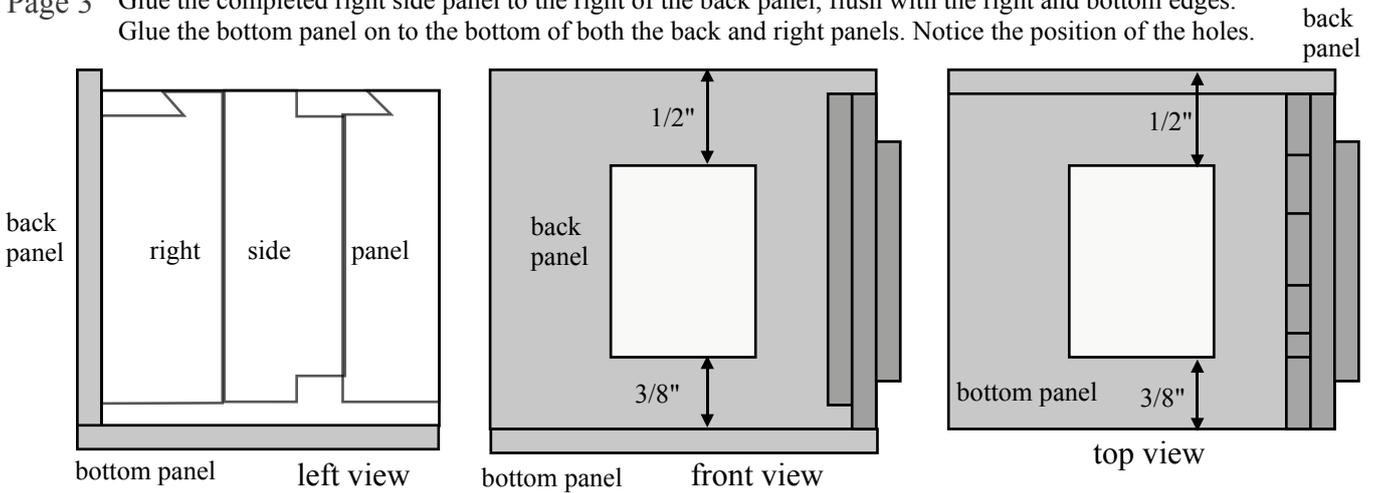
Glue an outer panel onto the face of the slider. The outer panel should be in the middle of the right side panel. When the glue has set, make sure that the outer panel can still move, together with the slider and inner panel right 2.



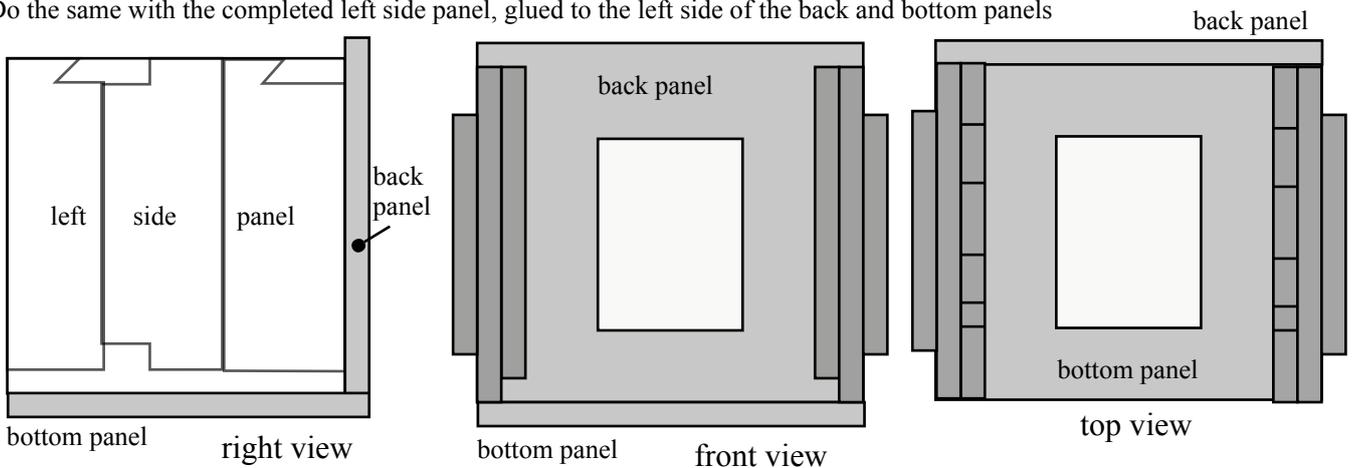
Do the same with the left side panel: this is a mirror image of the right side. When glue has set, check for movement.



Page 3 Glue the completed right side panel to the right of the back panel, flush with the right and bottom edges.  
 Glue the bottom panel on to the bottom of both the back and right panels. Notice the position of the holes.

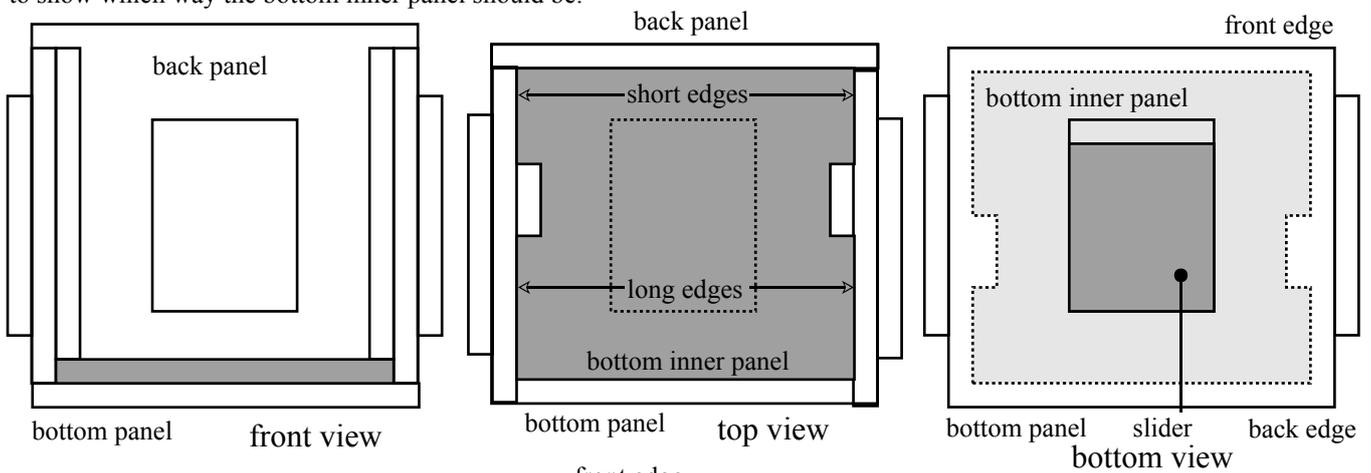


Do the same with the completed left side panel, glued to the left side of the back and bottom panels

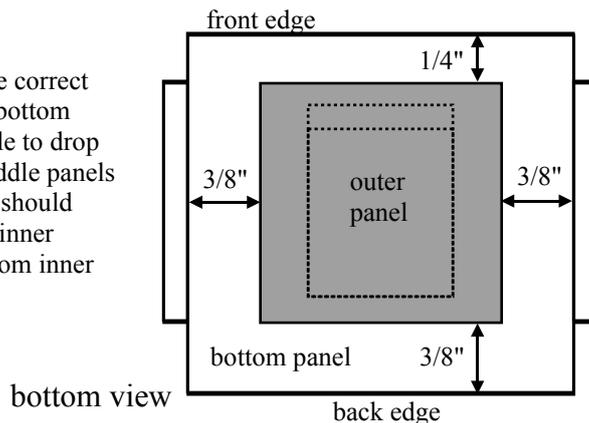


Slide the bottom inner panel beneath the left and right inner panels, all the way to the back.  
 In this top view, the left and right inner panels are not shown, to show which way the bottom inner panel should be.

Turn the box onto the back panel, so that the bottom is facing you. Glue a slider to the face of the bottom inner panel. The slider should be at the bottom of the hole.



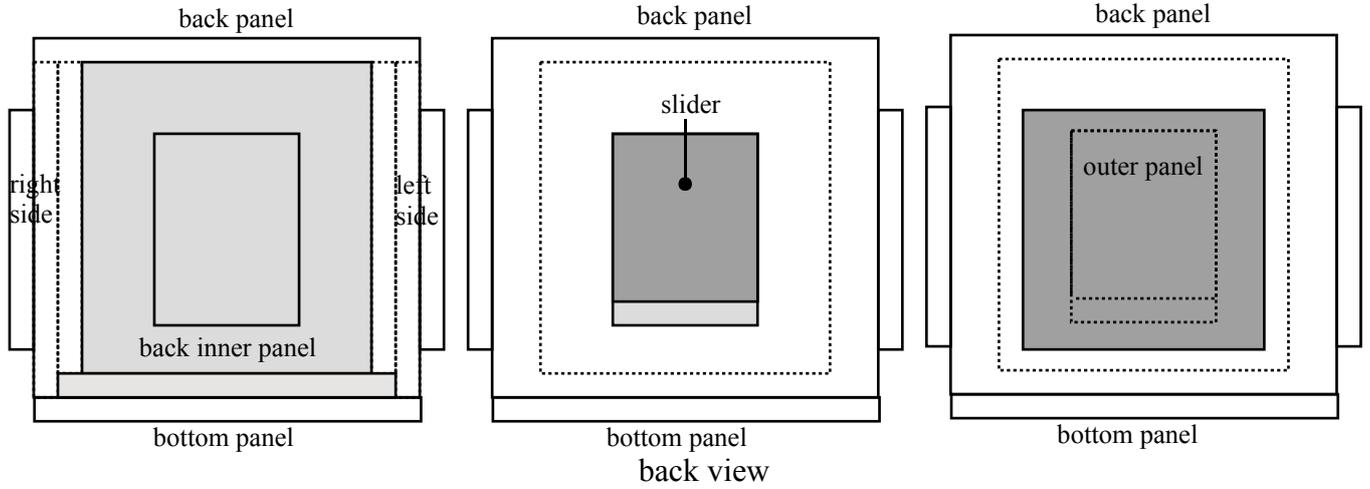
If the bottom inner panel is in the correct way round, when you move the bottom slider forward, you should be able to drop the left and right sliders. The middle panels on both sides (right 2 and left 2) should drop into the slots in the bottom inner panel. Check this before the bottom inner panel is glued into place!



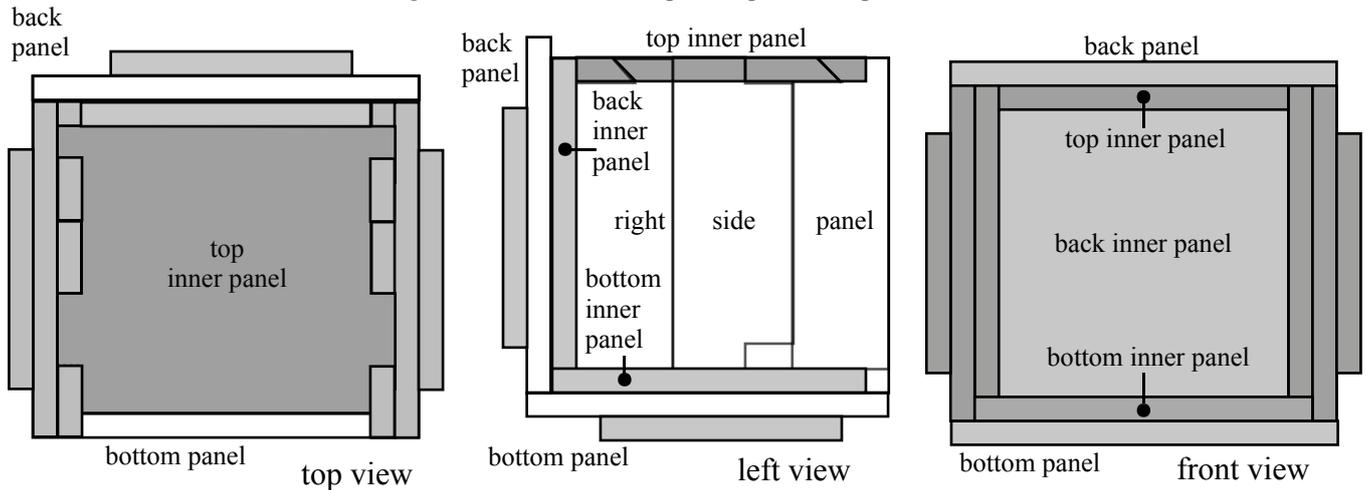
Glue an outer panel to the slider. Notice the position of the panel. When the glue has set, check that the outer panel will move, taking the slider and bottom inner panel with it.

Turn the box so that the back is facing you. With the bottom inner slider at the back, drop the back inner panel down between the left and right inner panels, so that it is resting on the bottom inner panel.

Glue a slider to the inner panel, through the hole. The slider should be at the top of the hole. Glue an outer panel to the slider. The panel should be in the middle of the back.

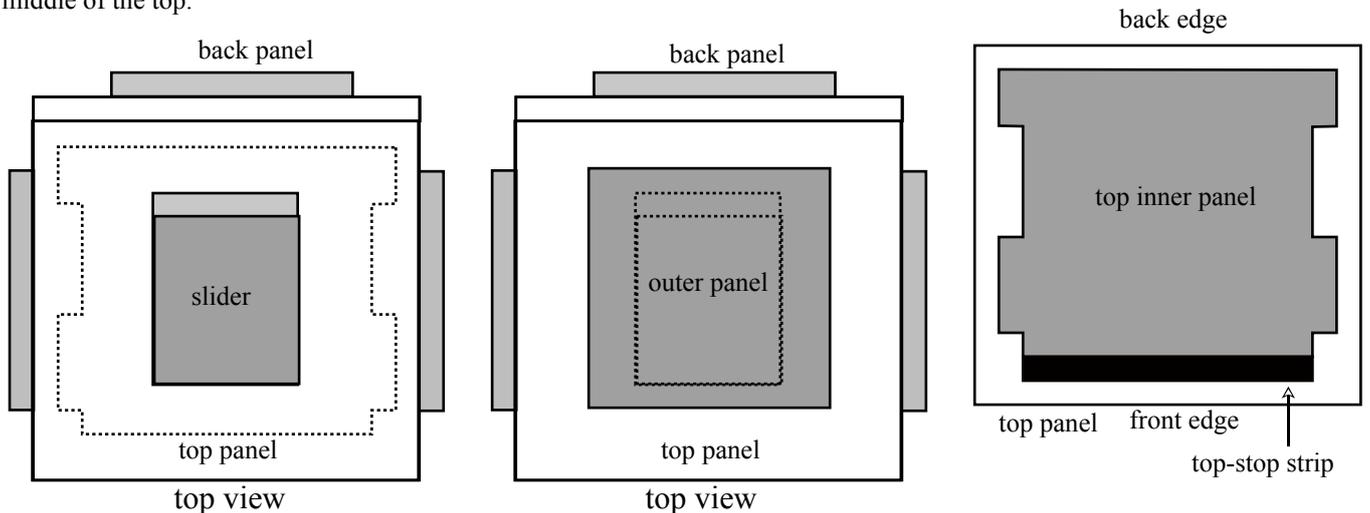


Move the bottom slider forward, and drop the back, left and right sliders. Place the top inner panel in position on top of the left and right inner panels. Bring it forward so that the angled cuts meet. Now raise the back, left and right sliders to lock the top inner panel into place.



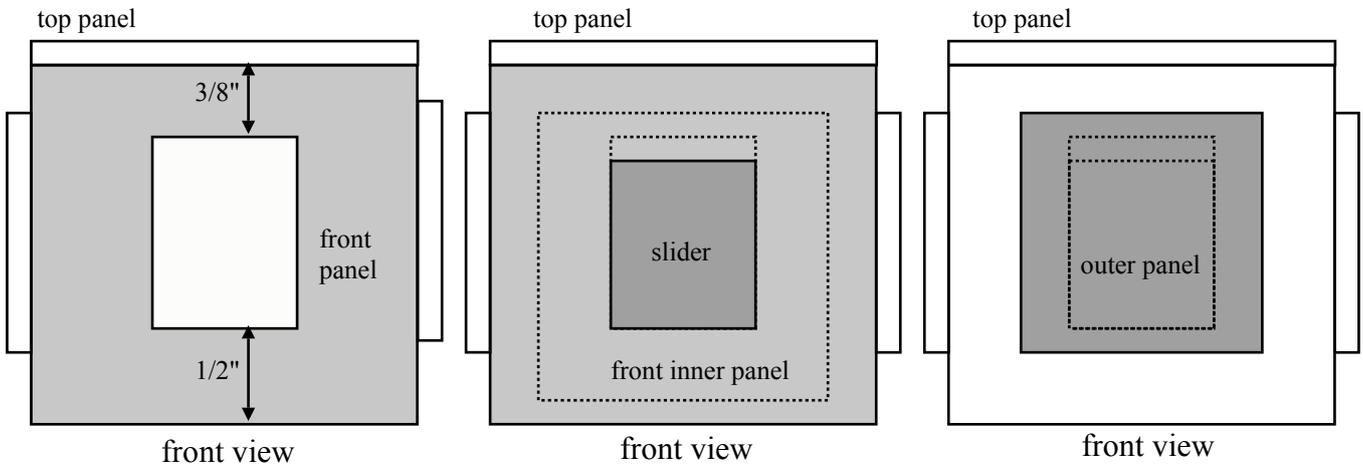
Place the top panel onto the top inner panel. Notice that it will overhang the front edges of the left and right sides. Do NOT glue it! Glue a slider onto the top inner panel through the hole. The slider should be at the front of the hole. Glue an outer panel to the slider. It should be in the middle of the top.

Remove the top panel (you will have to move the bottom, back, left, right and top sliders to release the top), and turn it over. Cut a strip of 1/8" square plywood, 1-1/2" long, and glue to the underside of the top panel, just against the front edge of the inner panel. This will stop the top panel from sliding back towards the front of the box when it's all locked. This strip is shown in black.



With the top still removed, turn the box so that the front is facing you. Move the bottom slider back, out of the way, and glue the last panel to the front edges of the left, right and bottom panels. Notice the position of the hole.

Drop the front inner panel down between the left and right inner panels, all the way to the bottom. Glue the last slider to the inner panel through the hole. The slider should be at the bottom of the hole. Glue the last outer panel to the slider. This panel should be in the middle of the front.

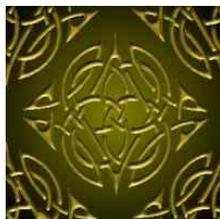
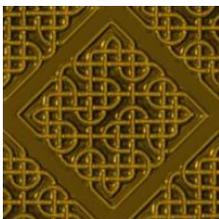


That's it!  
 Cubey is finished, all but finishing off.  
 I brushed on a stain/varnish combination all over, to help darken the edges of the plywood.

There is a little Celtic pattern glued to the outer panels. This is the one I used. If you want to use a printed pattern, after printing, spray them with artist's fixative.



Some alternative patterns.



**Enjoy your puzzle!**

While I've taken every care to ensure these plans are correct, if you find something wrong, please let me know so that I can correct them.

These plans are free.  
 If you sell or give away this puzzle, please mention where the plans came from.  
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