

Craft Stick House Activity

Age level: K – 3rd grade

Time required: 1 hour, may require 2 sessions

Adult supervision required: Yes, general skills

Introduction

In this activity children will construct the shell of a house using craft (popsicle) sticks. It uses only full-length sticks. Full scale drawings of the components are included in Appendix A based on a standard 4-1/2" x 3/8" x 3/32" thick stick. These are available in bulk quantities from common retail outlets. Simple tooling is recommended. Children will use colored markers and/or paint to decorate the completed house. The assembled house is shown in Figure 1 before decorating. Children may paint the house or use colored markers to add details such as doors and windows. Individual components may be colored before assembly.



Figure 1. Craft stick house

Material List

Craft sticks	168 ea. (Plan on 200 to allow for waste)
School glue	
Waxed paper	
Paints	
Colored markers	
Plastic block - 4-1/8" x 4-1/8" x 3/4"	1 ea.
Weights	
Carpenter square, 8"	1 ea.
Speed square	1 ea.

Component Fabrication

A box of economy craft sticks will contain some that are not straight or are flawed in other ways. These should be rejected.

Framing

The four walls are connected using two frames at the top and bottom. These are fabricated with four layers of craft sticks interlocking at the corners. A piece of waxed paper is placed on the work surface to prevent gluing to the table. A 4-1/8" square block cut from a 1-by (3/4" thick) PVC trim board is placed on the waxed paper. Four craft sticks are placed around the block as shown in Figure 2.



Figure 2. First layer of sticks for frame

Place a bead of glue along the center of all four sticks as shown in Figure 3.



Figure 3. Glue on first layer

Carefully place a second layer of sticks ensuring that the ends overlap the joints on the first layer as shown in Figure 4.



Figure 4. Second layer

Glue two more layers alternating the joints. Figure 5 shows the completed, four-layer frame.

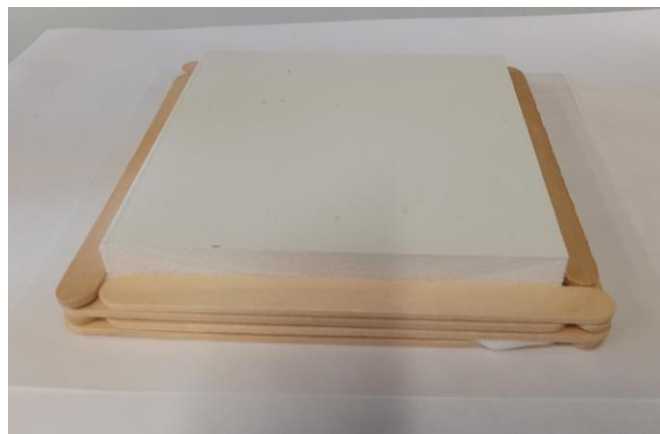


Figure 5. Frame with four alternating layers of sticks

The second frame will be assembled on top the first so that the resulting assembly will be the same height as the 3/4" thick block. **Without** placing glue on the 4th layer of sticks, place the 1st layer of sticks for the second frame on top. Place a bead of glue along the center of the sticks. Be careful not to use too much glue on this layer as it may flow into the joint between the two frames and make them difficult to separate. Place a layer of sticks ensuring that the ends overlap the joints on the previous layer. Glue two more layers for a total of eight (Fig. 6).



Figure 6. Eight layers for two frames

Carefully align the sticks around the plastic block. Cover the frame with a sheet of waxed paper. Gently place a flat block on the frame and add weights to ensure that the sticks are sufficiently clamped while the glue sets.



Figure 7. Weight the frames

Let the glue set for about one hour then carefully remove the blocks and separate the frames. Allow the glue to dry completely

Wall panels

Place a small carpenter square on a sheet of waxed paper to align the sticks for the wall panels. Place 13 sticks side-by-side in the square as shown in Figure 8.



Figure 8. Start wall panel

Apply a bead of glue over the entire length of a stick as shown in Figure 9. Place the stick, glue side down, over 12 of the 13 craft sticks in the wall panel, about 1" from the top. Place 3 more glued sticks on the panel, staggering the ends as shown in Figure 10.

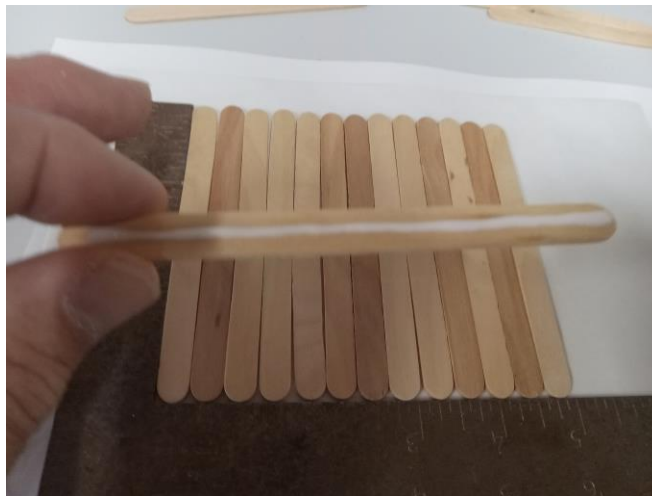


Figure 9. Apply glue to stick

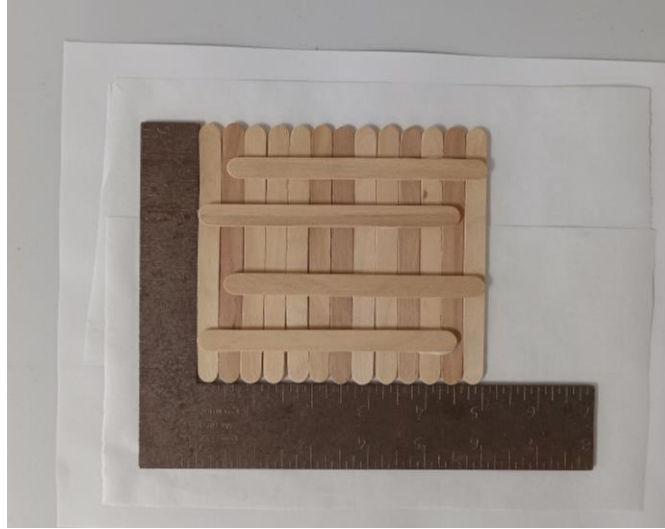


Figure 10. Wall panel

Cover the wall panel with a sheet of waxed paper. Gently place a flat block on the frame and add weights to ensure that the sticks are sufficiently clamped while the glue sets. You can carefully remove the square at this point use on the next panel.

Make four wall panels.

After allowing at least a half hour for the glue to set, add gable ends to two wall panels. They should be handled carefully as the glue does not fully harden for several hours.

Place 13 craft sticks on a piece of waxed paper as shown in Figure 11. Use a 45° triangle to enforce the proper orientation.



Figure 11. Gable end

Apply glue to a gable panel as shown in Figure 12.



Figure 12. Apply glue to gable panel

Place a completed wall panel on the glued area as shown in Figure 13. Approximately 1/8" of the end sticks on the chevron should be exposed as shown. Cover with waxed paper and weight.

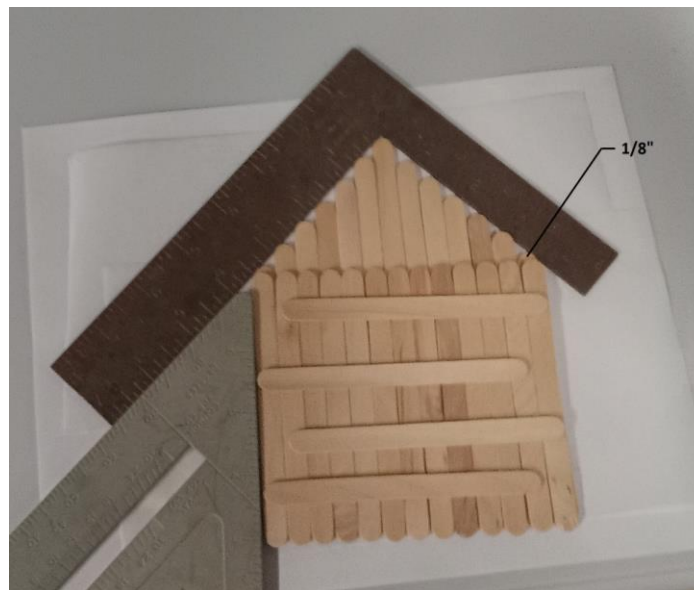


Figure 13. Gable end wall

Repeat for a second gable end wall panel.

Roof panels

Make two roof panels like the wall panels, 15 craft sticks wide, as shown in Figure 14. Glue 4 sticks together (stacked) to make a ridge beam for the roof (Figure 15).



Figure 14. Roof panel



Figure 15. Ridge beam

House Assembly

The major components of the house are shown in Figure 16. The ridge beam is not included in this picture. Children may wish to do some painting and decorating at this time.

Pro Tip: For mixed-age groups or younger children, components can be pre-made by volunteers then decorated and assembled by kindergarten and first graders.



Figure 16. House components

Place a bead of glue around the outside perimeter of the two frames and place the bottom frame on a sheet of waxed paper as shown in Figure 17.

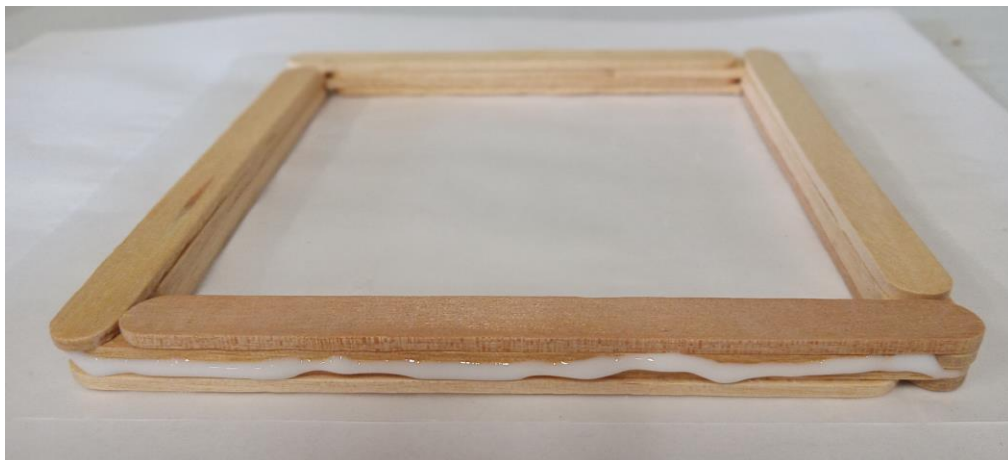


Figure 17. Bottom frame

Working with a partner, place the four wall panels around the bottom frame and insert the top frame as shown in Figure 18. Use two rubber bands to secure the assembly while the glue dries.

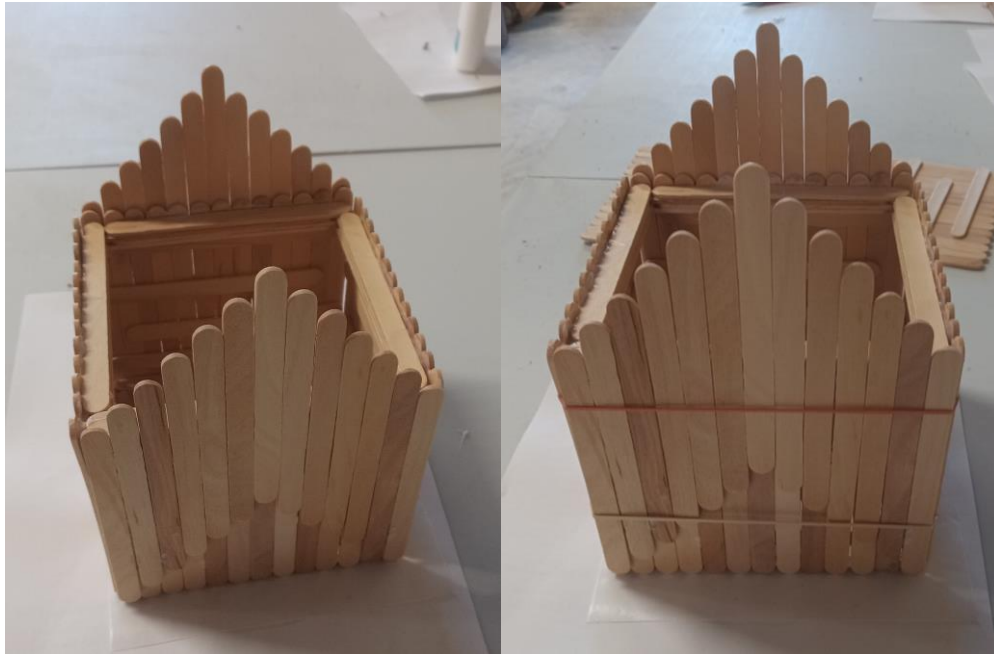


Figure 18. Wall assembly

Place a bead of glue on two adjacent sides of the ridge beam. Place one glued side on a roof panel, then place the connect the other roof panel as shown in Figure 19. Brace the second panel so the panels are perpendicular.

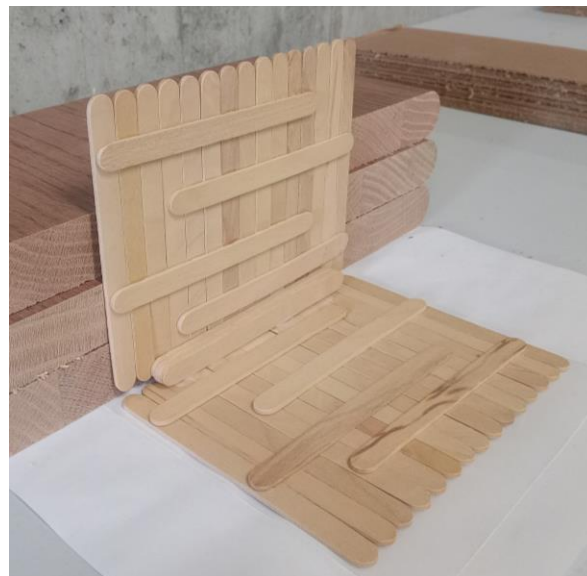


Figure 19. Connect roof panels

Allow all glue to dry before removing the rubber bands and placing the roof on the house.

Appendix A
Component Drawings

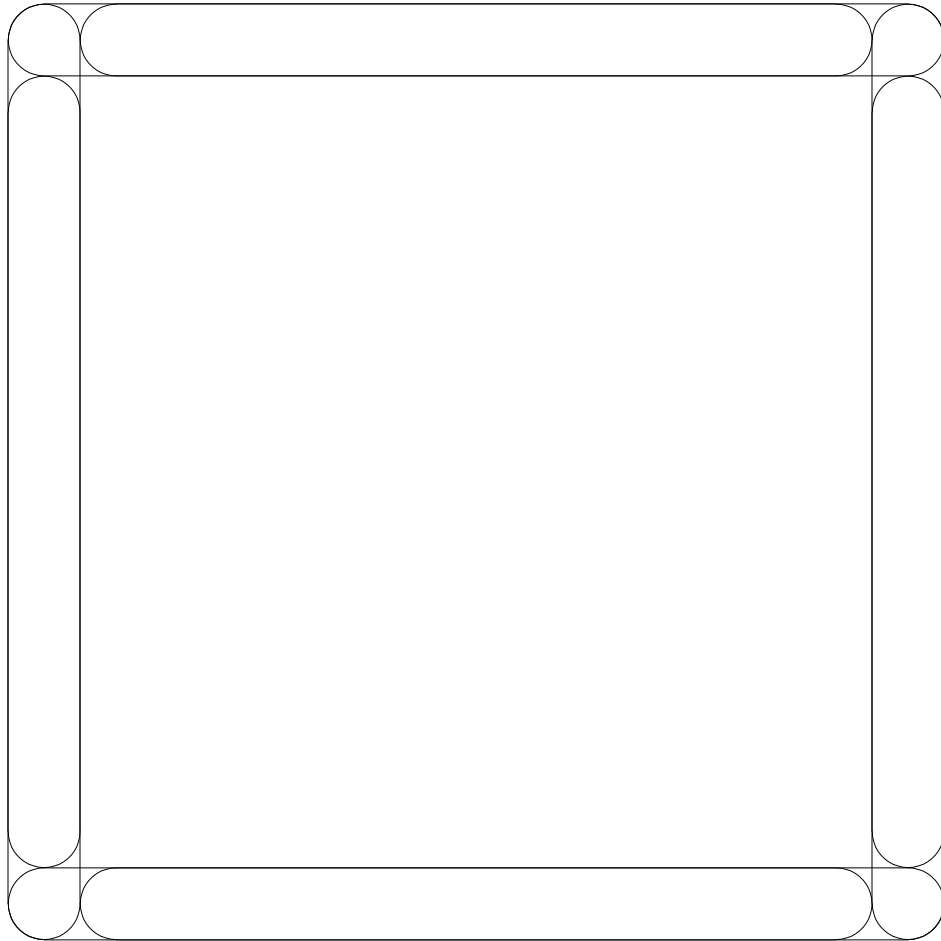


Figure A1. Frame

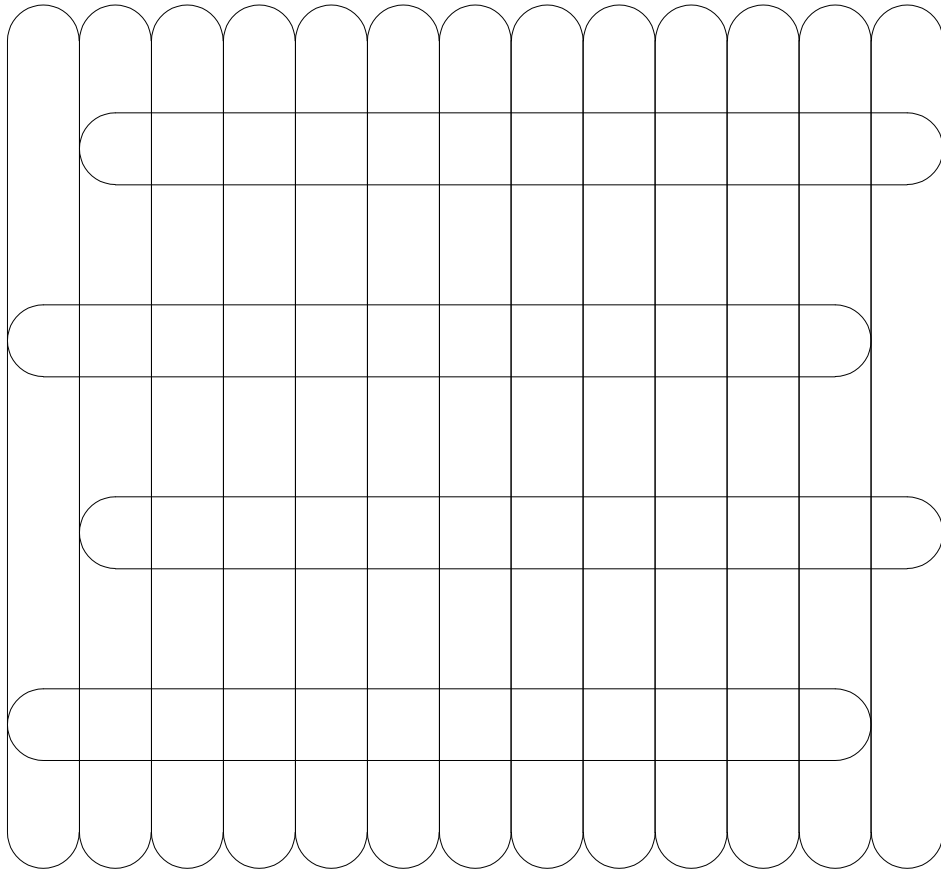


Figure A2. Wall panel

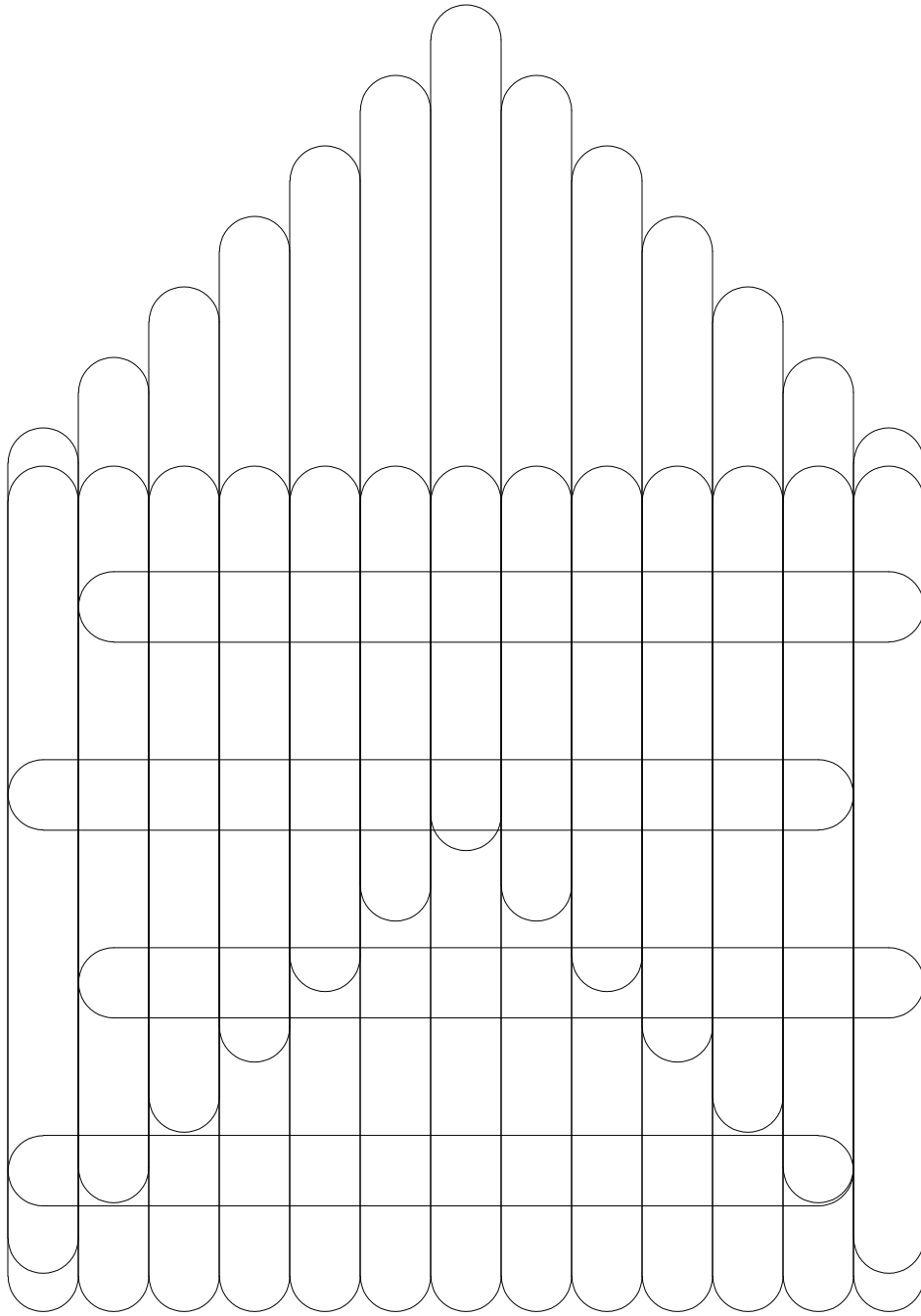


Figure A3. Gable wall panel

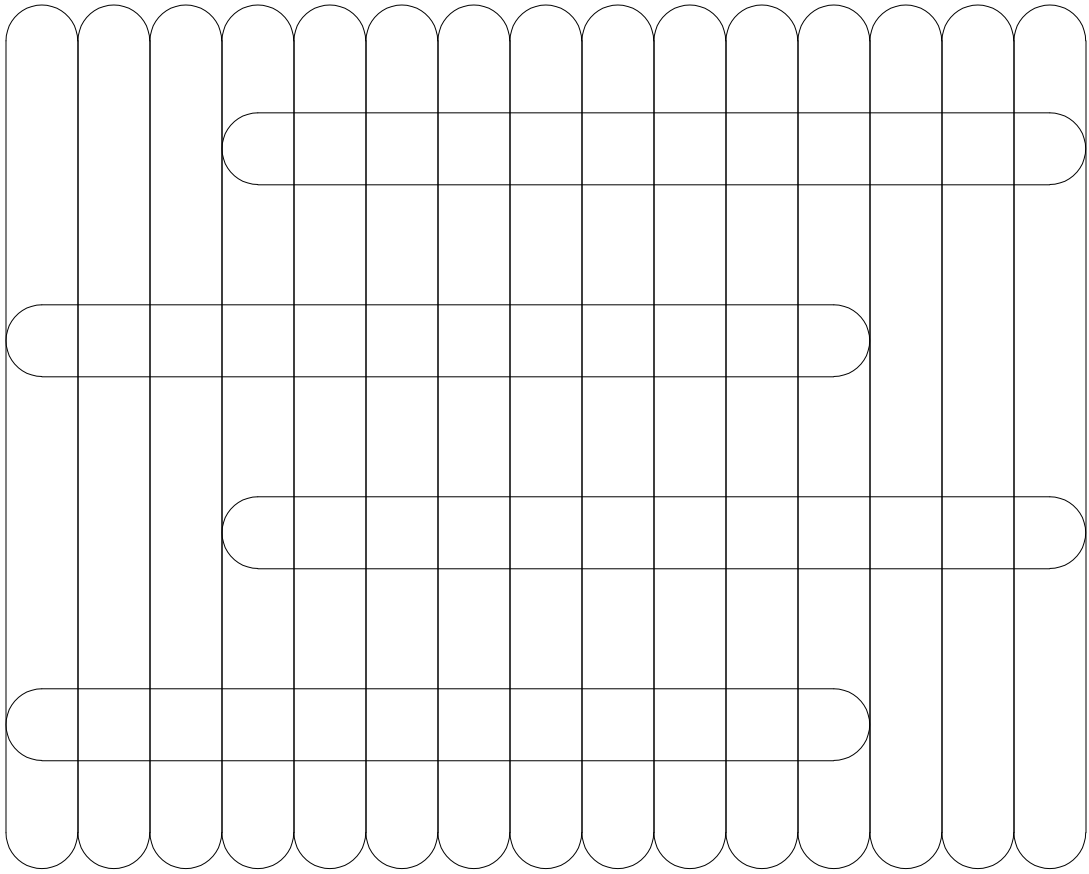


Figure A4. Roof panel