

**Kentucky
4H
Wood
Science
Plans Notebook**



Plans – Level 1



Ky 4-H Wood Science Plans - Level 1



NOTE HOLDER

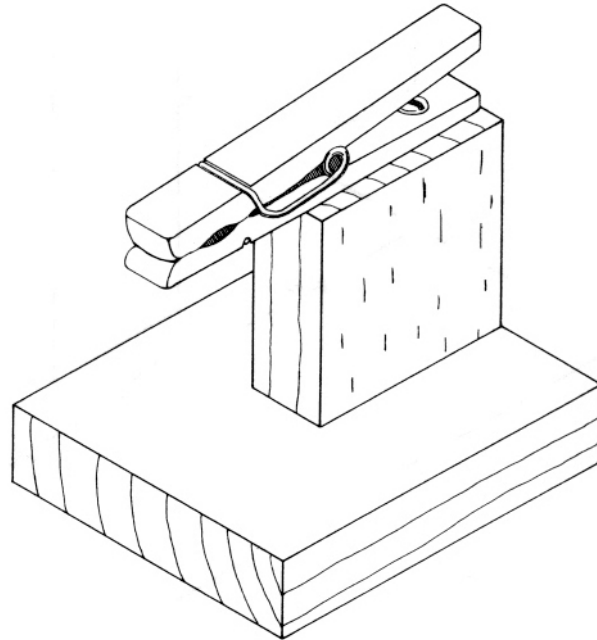
WS101

MATERIALS NEEDED:

- 1 piece wood 3/4" x 2" x 2"
- 1 piece wood 3/4" x 3" x 3 1/2"
- 1 wooden spring-type clothespin
- 2 - 1 1/2" nails
- 1 - 1/2" woodscrew
- Wood Glue
- Shellac

TOOLS NEEDED:

- Saw
- Drill, 1/8" Bit
- Sandpaper
- Brush
- Hammer
- Screwdriver
- Shellac, varnish or other finish

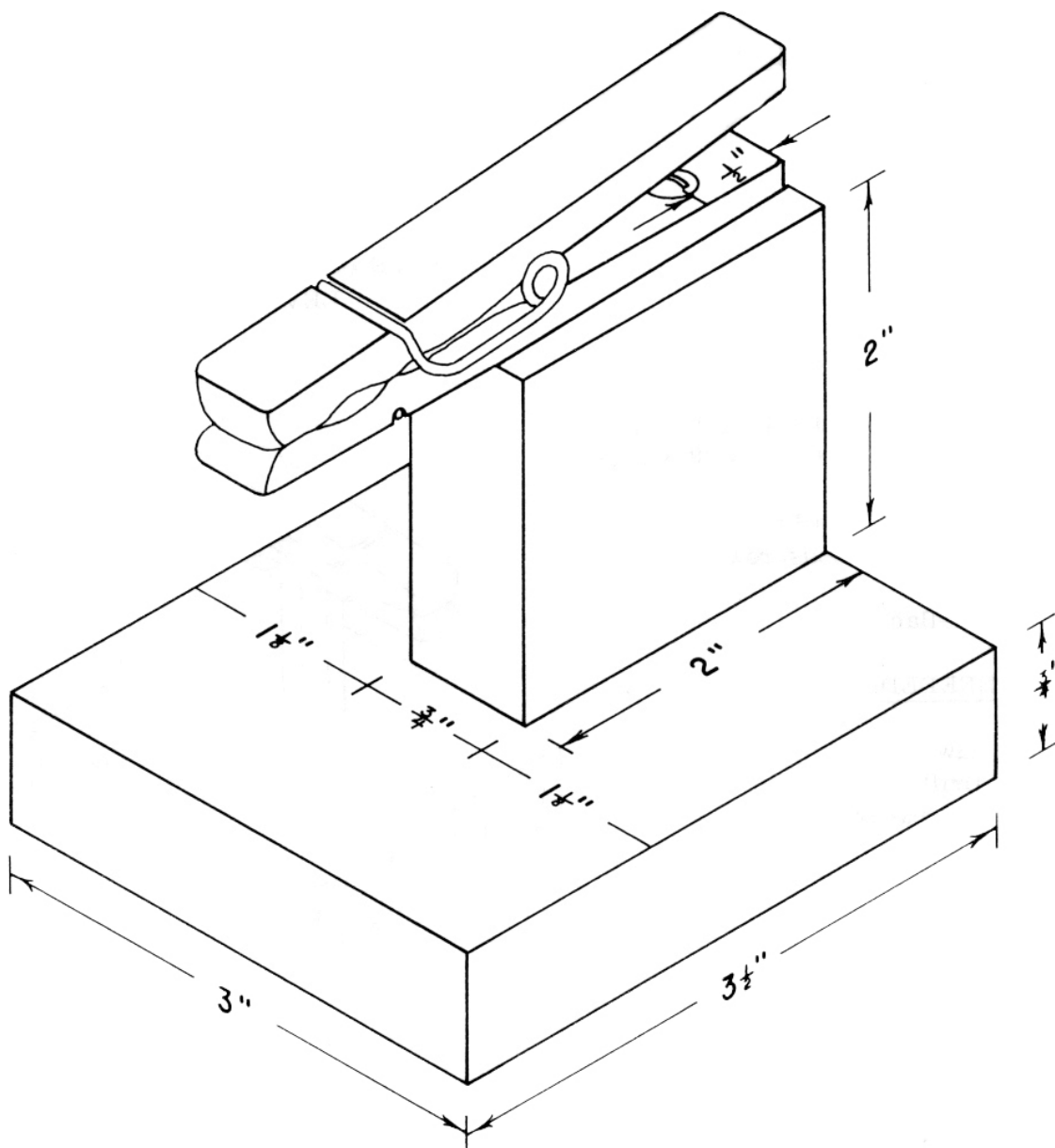


INSTRUCTIONS:

1. Cut pieces to size.
2. Sand pieces smooth.
3. Glue the 3/4" x 2" x 2" piece to the 3/4" x 3" x 3 1/2" piece and nail from the bottom into the top piece. The assembly should be centered on the base and flush with the back. Wipe away any glue from the edges.
4. Glue the clothespin to the top of the 3/4" x 2" x 2" piece and secure with the screw.
5. When the glue dries, apply a coat of shellac, varnish or other finish.



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MAGAZINE RACK

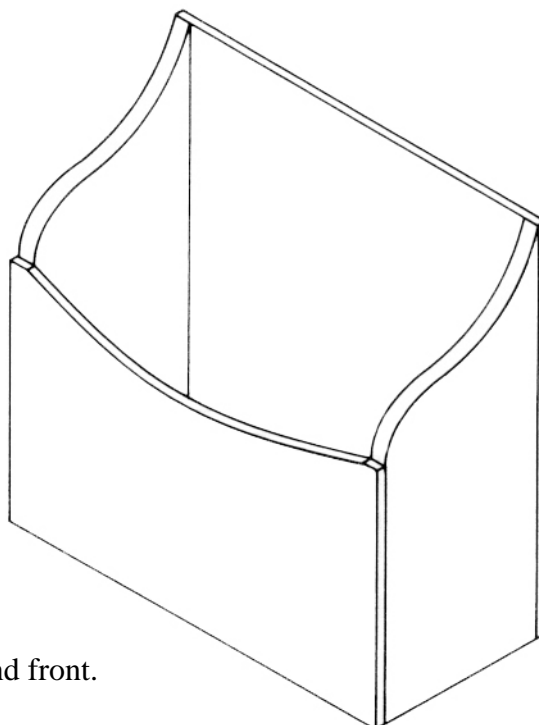
WS102

MATERIALS NEEDED:

1 piece wood 1/4" x 12" x 12" – back
1 piece wood 1/4" x 12" x 7 1/2" – front
2 pieces wood 1/2" x 12" x 5" – sides
1 piece wood 1/2" x 11" x 5" –bottom
Wood Glue
2d Finishing Nails

TOOLS NEEDED:

Jig Saw
Hammer
4d finishing nails
Sandpaper
Paint or shellac

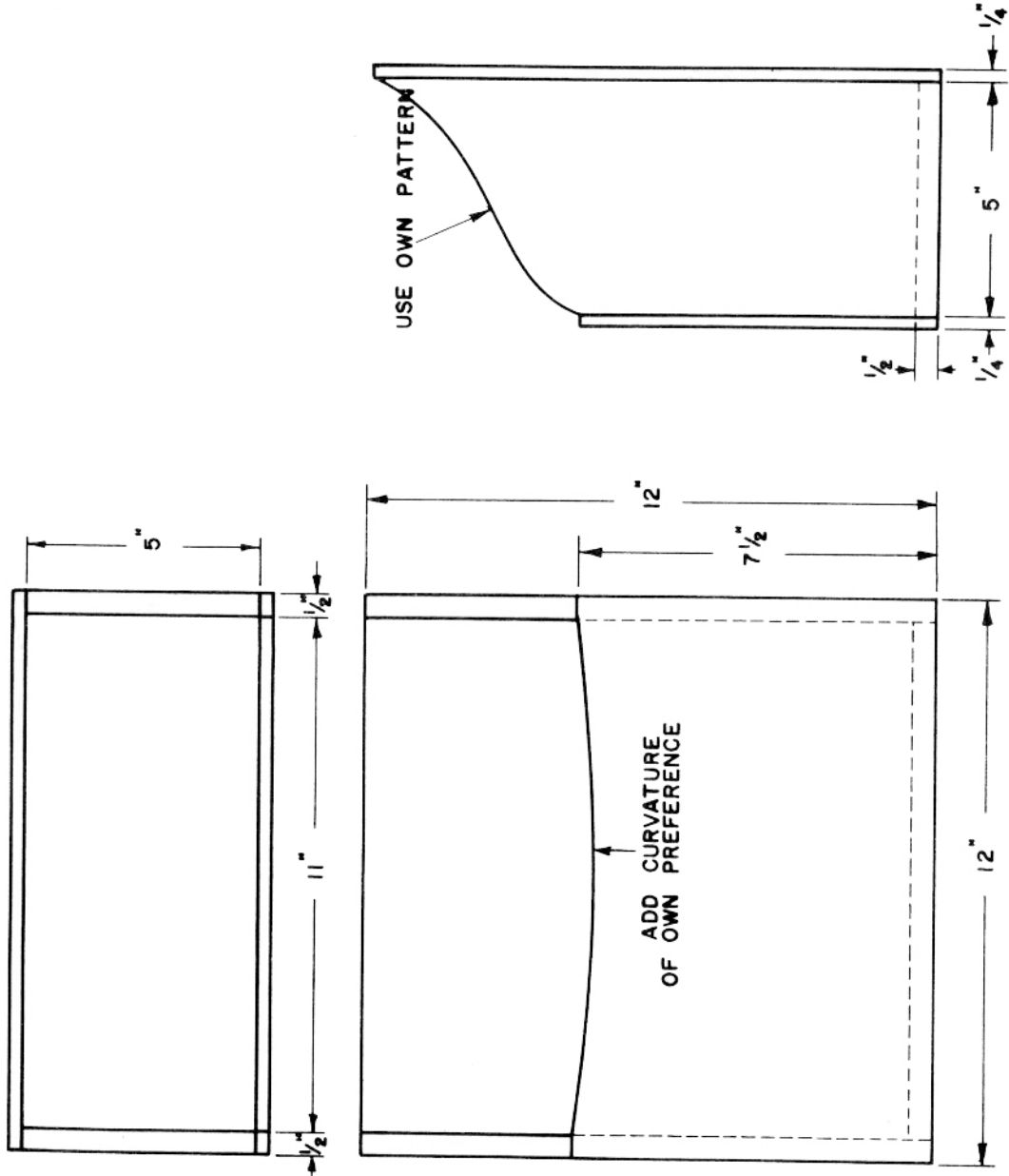


INSTRUCTIONS:

1. Cut pieces to size, cut curves on sides and front.
2. Glue and nail back to sides.
3. Glue and nail bottom in place.
4. Glue and nail front in place.
5. Sand and finish.



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PICTURE FRAME

WS103

MATERIALS NEEDED:

1/2" x 3/4" wood – length will be 1 1/2" longer than picture.

Heavy cardboard – size will be 1 1/2" larger than picture.

Glue

1 1/4" finishing nails - 4 each

TOOLS NEEDED:

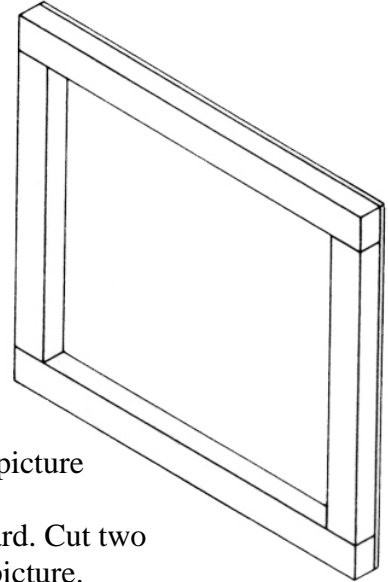
Hammer

Saw

Utility knife

Sandpaper

Stain and varnish



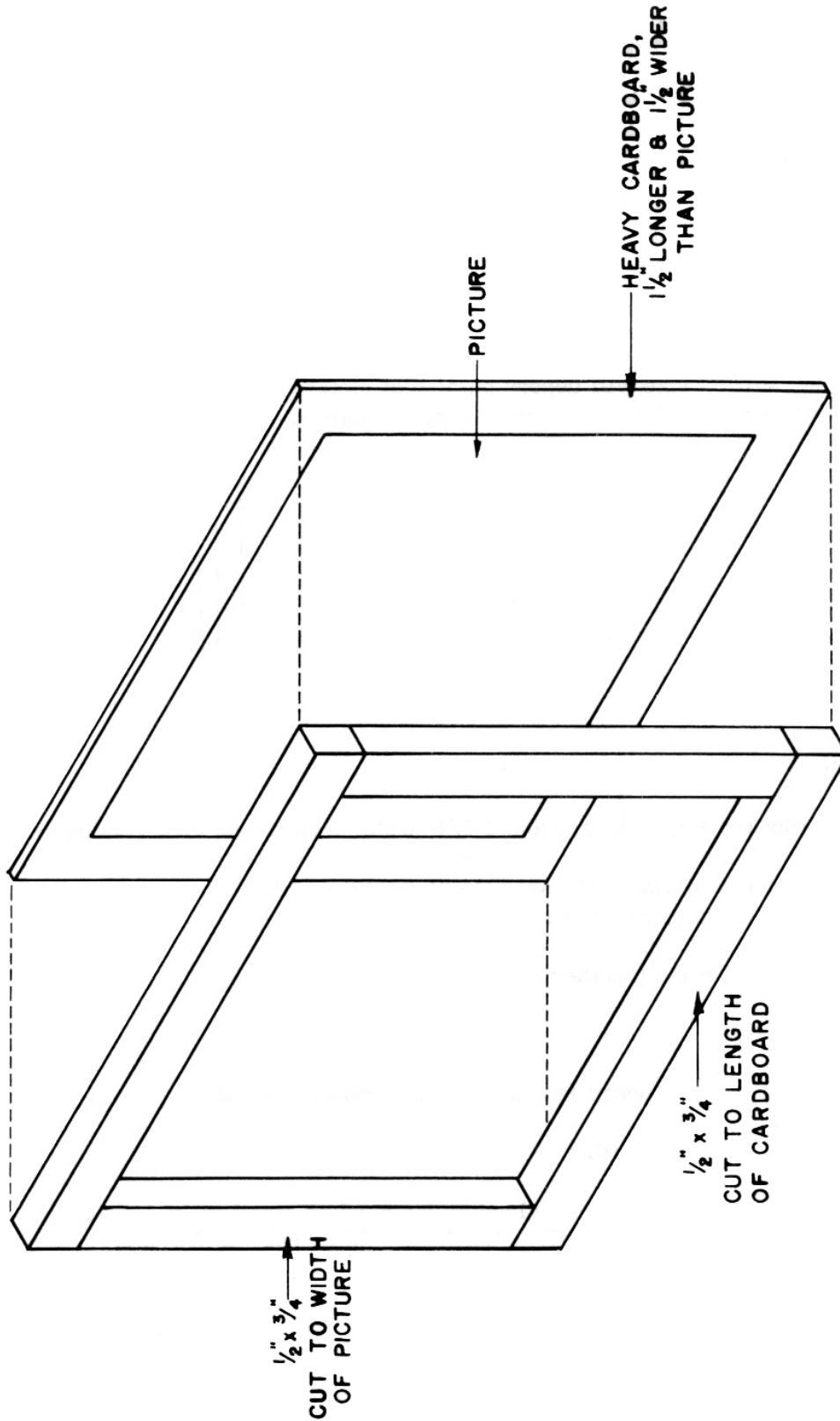
INSTRUCTIONS:

1. Cut cardboard 1 1/2" longer and 1 1/2" wider than the picture to be framed.
2. Cut two pieces of wood the same length as the cardboard. Cut two more pieces whose length is equal to the width of the picture.
3. Glue and nail frame together.
4. Sand and finish.
5. Glue picture to cardboard leaving 3/4" margin all around.
6. Glue frame to cardboard.

NOTE: A piece of string may be glued or fastened on small tacks in back of picture to hang on wall. (Tacks should be put into frame).



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BED FOR CAT OR SMALL DOG

WS104

MATERIALS NEEDED:

All wood may be 3/4" dressed boards. A 1 x 8 board is assumed which is actually 3/4" x 7 1/2" or less. If any other thickness is used, dimensions will have to be changed accordingly.

1 piece wood 7 1/2" x 18" - back

2 pieces wood 7 1/2" x 11 3/4" - ends

1 piece wood 7 1/2" x 10" - front

1 piece wood 2" x 7 3/4" - front

2 pieces wood 2" x 17 15/16" - floor supports (cut approx. 1/16" short to allow easy fit)

1 piece 1/2" plywood 11" x 18" - floor (cut slightly undersize to allow easy fit)

4d and 6d finishing nails

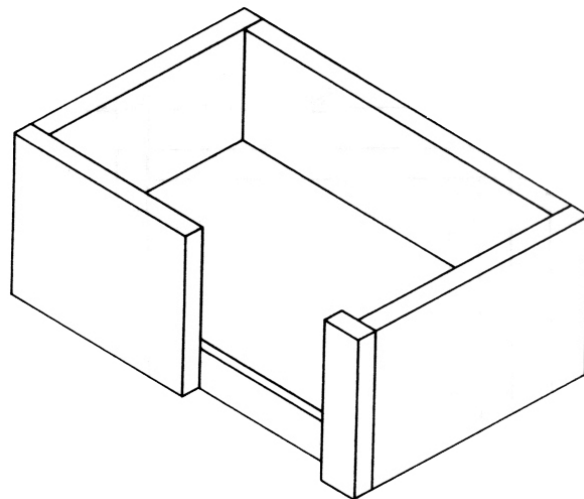
TOOLS NEEDED:

Saw

Hammer

Sandpaper

Shellac or paint



INSTRUCTIONS:

1. Cut pieces to size.
2. Nail floor support to back with equal spacing at each end, flush at bottom edge. Use 4d nails.
3. Nail ends to back. Use 6d nails.
4. Nail front pieces to ends. Use 6d nails. Be careful of splitting the narrow piece.
5. Set box on edge with front face down, put front floor support in place, align and nail with 4d nails into front pieces.
6. Put floor in place and nail floor to supports with 4d nails.

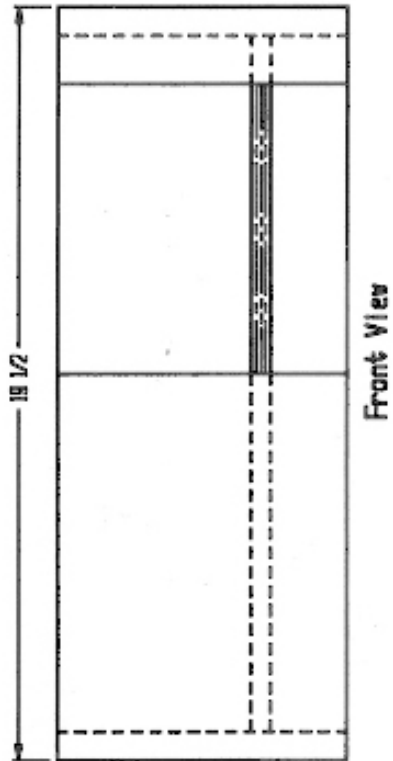
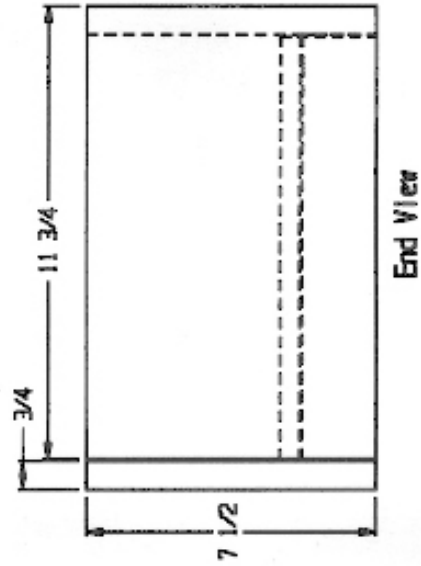
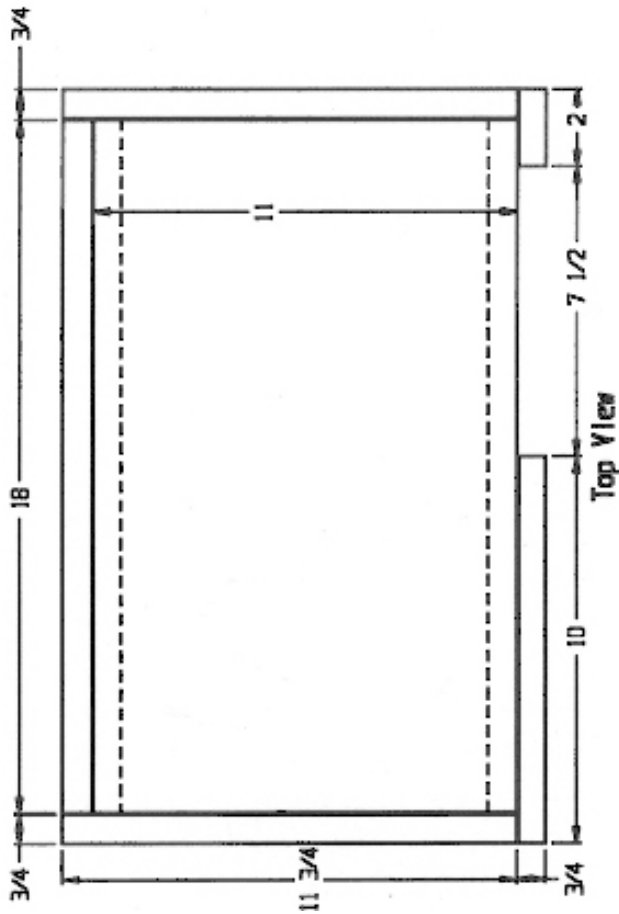
NOTE: If pet is larger or smaller, dimensions can be changed accordingly.



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All dimensions in inches.
Nail with 4d and 6d finishing nails.



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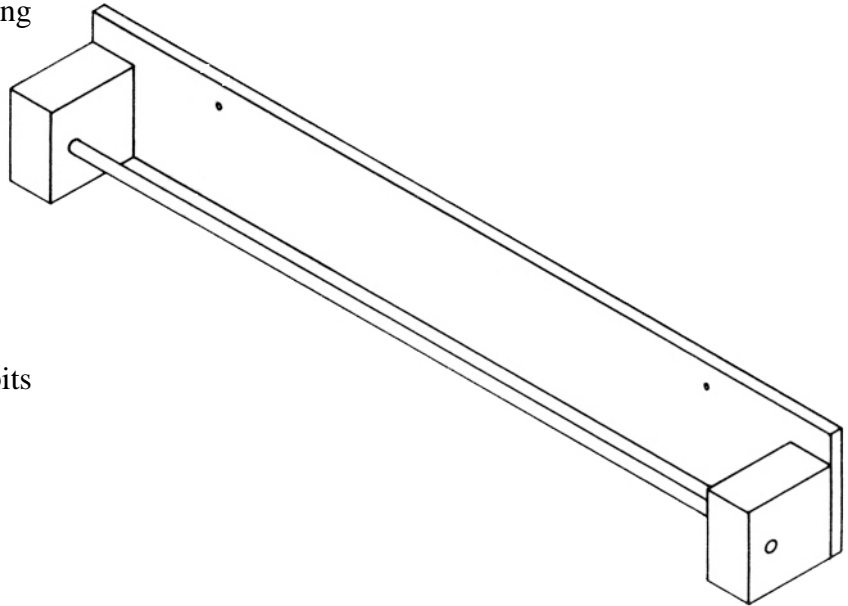


NECKTIE OR TOWEL HOLDER

WS105

MATERIALS NEEDED:

- 1 piece wood 1/4" x 2 5/8" x 18" – back
- 2 pieces wood 1" x 2" x 2" – ends
- 1 piece 1/4" dowel 18" long
- Glue
- 4 – 3/4" brads
- 2 – No. 6 x 3/4" round head wood screws



TOOLS NEEDED:

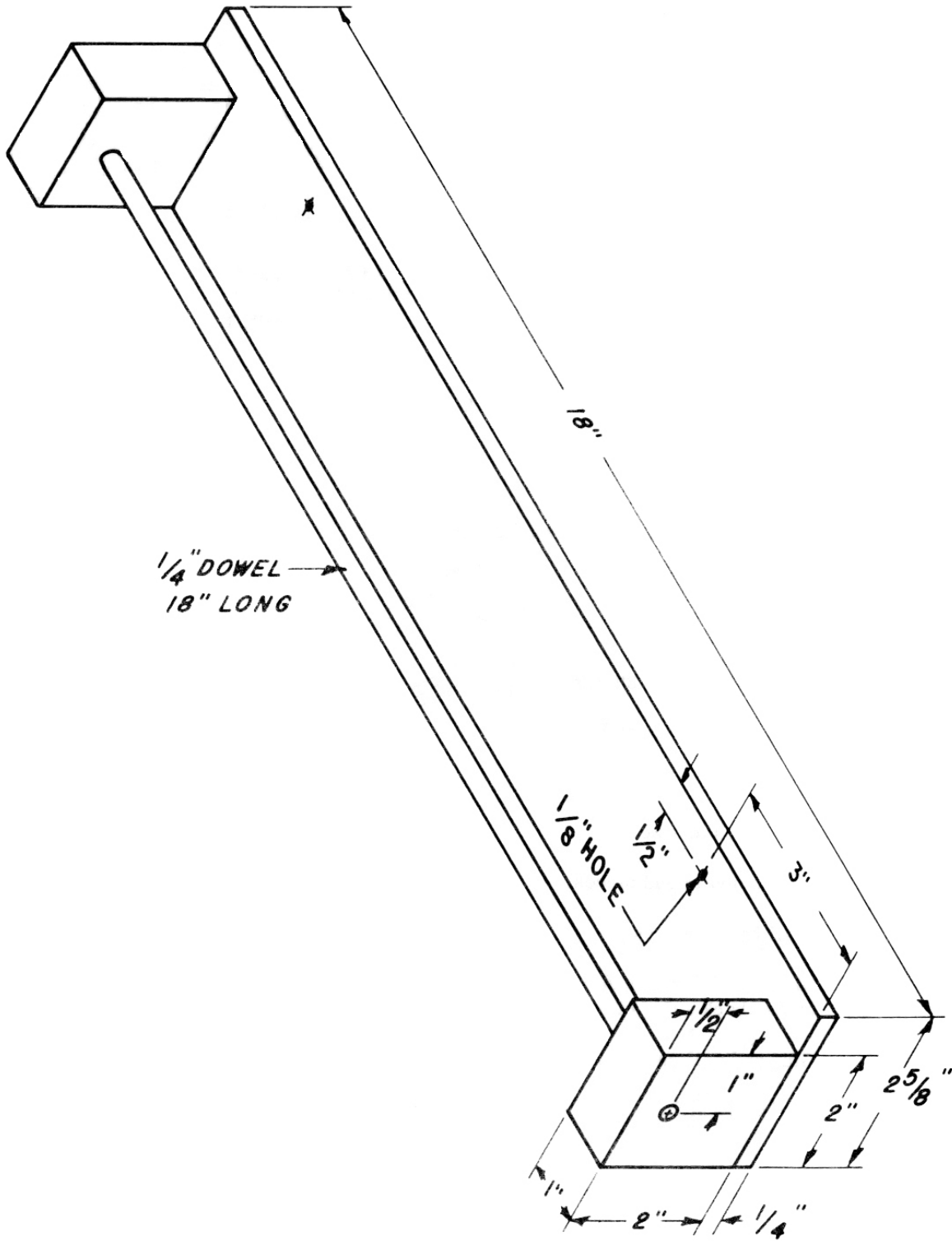
- Saw
- Hammer
- Drill with 1/4" and 1/8" bits
- Sandpaper
- Paint or stain and varnish

INSTRUCTIONS:

1. Cut pieces to size.
2. Drill holes in end pieces.
3. Drill holes in back.
4. Glue dowel in one end piece. Set against back and glue dowel in other end so back sides of end pieces will be in line.
5. Glue and nail ends to back.
6. Sand and finish.



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NEST FOR ROBBINS & PHOEBES

WS106

MATERIALS NEEDED:

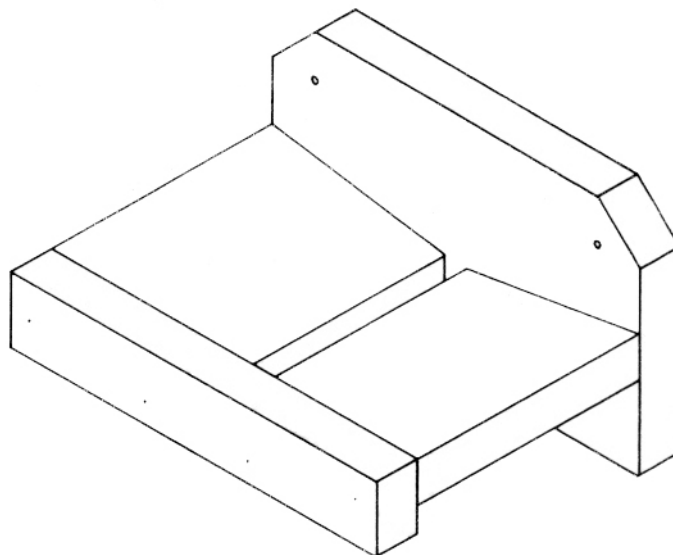
- 2 pieces wood 1" x 5 1/2" x 4 1/4" – middle pieces
- 1 piece wood 1" x 5 1/2" x 9" – back
- 1 piece wood 1" x 1 5/8" x 9" – front
- 8 – 6d Finishing nails

TOOLS NEEDED:

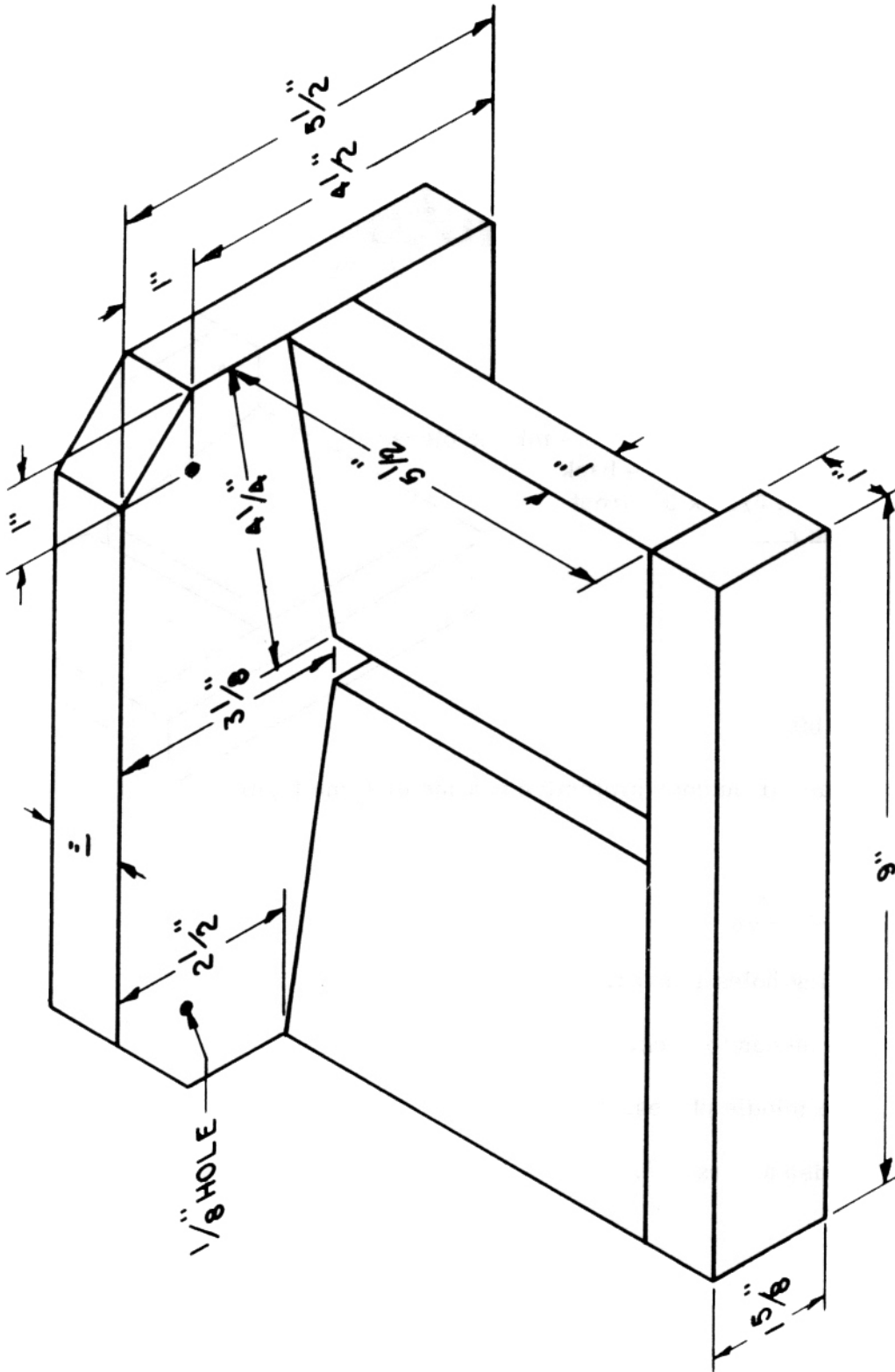
- Saw
- Hammer
- Drill with 1/8" bit
- Sandpaper
- Paint and shellac (or outdoor protective coating of some type)

INSTRUCTIONS:

1. Cut pieces to size.
2. Drill mounting holes in back.
3. Nail middle pieces to back.
4. Nail front to middle pieces.
5. Sand and finish as desired.



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TIN CAN FLOWER POT

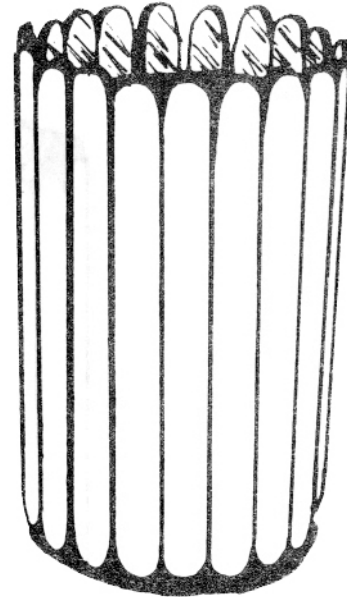
WS107

MATERIALS NEEDED:

1 – tin can with paper wrapper
Enough ice cream sticks to go around can
Glue

TOOLS NEEDED:

Sandpaper
Paint or stain and varnish

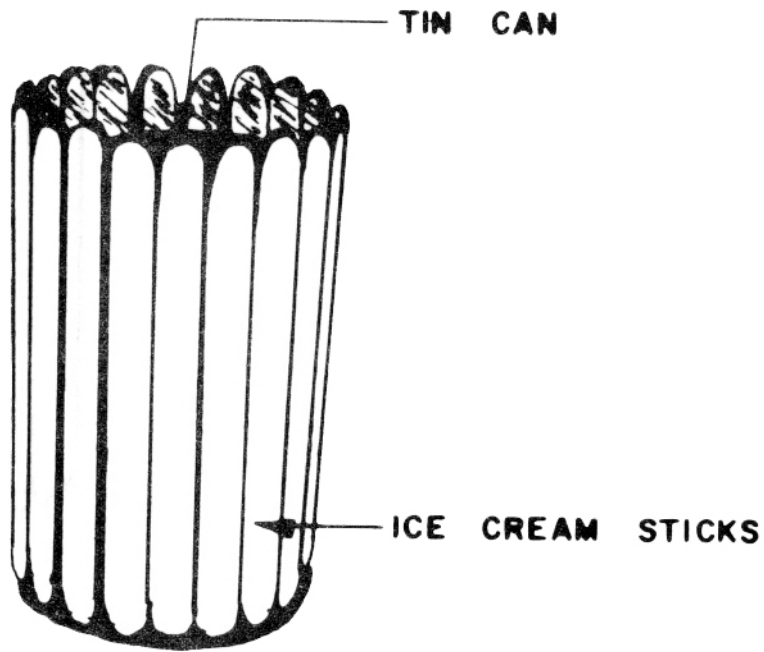


INSTRUCTIONS:

1. Leaving paper wrapper on the can, glue sticks in place, one at a time, letting each one dry before gluing another one on.
2. Sand and finish as desired.



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PET LUNCH COUNTER

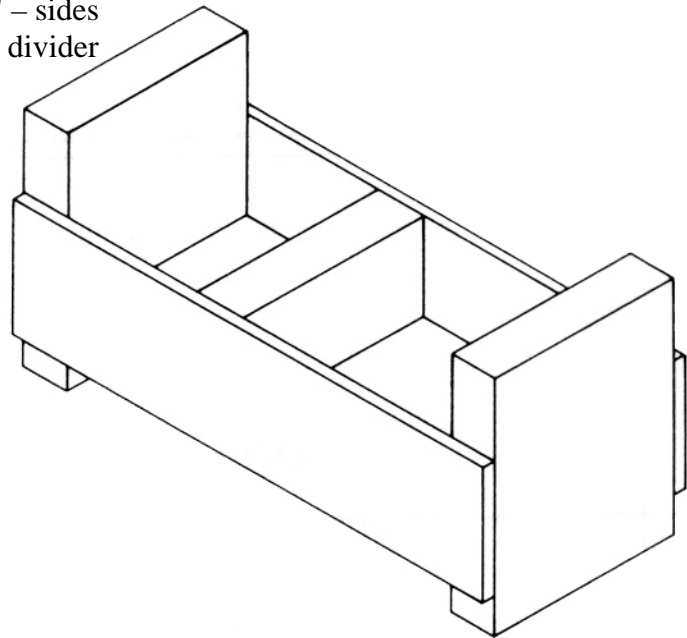
WS108

MATERIALS NEEDED:

- 1 piece wood 3/4" x 4" x 9" – bottom
- 2 pieces wood 3/4" x 4" x 5" – ends
- 2 pieces wood 1/2" x 3" x 10 1/2" – sides
- 1 piece wood 3/4" x 4" x 1 3/4" – divider
- Glue
- 4d Finishing nails
- 2 Plastic Refrigerator dishes

TOOLS NEEDED:

- Saw
- Hammer
- Sandpaper
- Paint or varnish (stain optional)

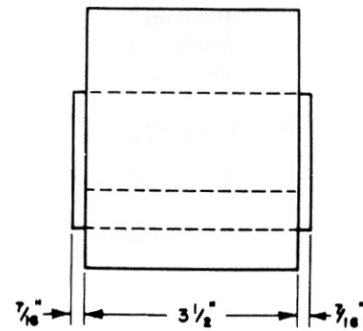
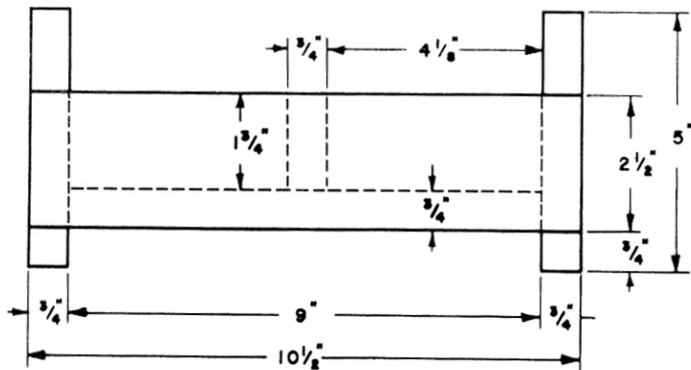
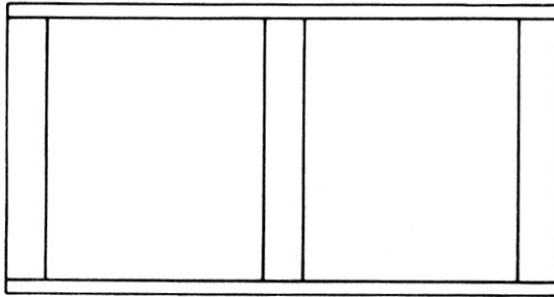


INSTRUCTIONS:

1. Cut pieces to size.
2. Glue and nail ends to bottom.
3. Glue and nail sides to ends.
4. Glue divider between sides and nail through sides into ends of divider.
5. Sand, paint or varnish
6. Put a plastic dish in each side. One will be for water, the other for food.



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DOOR STOP

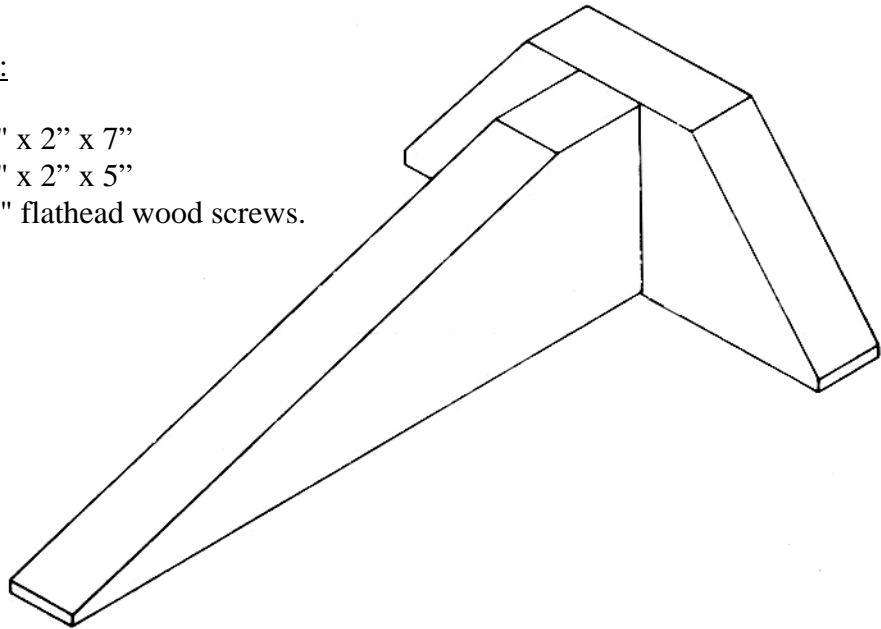
WS109

MATERIALS NEEDED:

- 1 piece wood 3/4" x 2" x 7"
- 1 piece wood 3/4" x 2" x 5"
- 2 – No. 8 x 1 1/2" flathead wood screws.

TOOLS NEEDED:

- Saw
- Screwdriver
- Drill, 1/8" bit

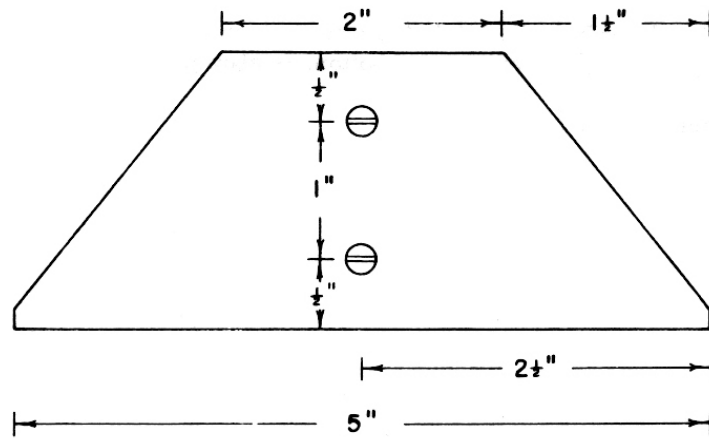
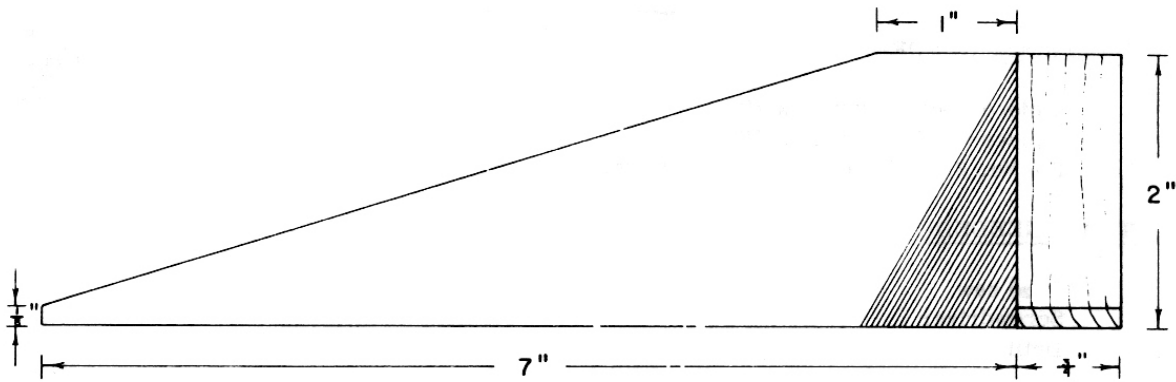


INSTRUCTIONS:

1. Make the angled cuts on the 3/4" x 2" x 7" pieces as shown in the diagram. Do the same for the 3/4" x 2" x 5" piece.
2. Drill two holes through the back into the longer piece with a 1/8" bit. The holes should be 1/2" from top and bottom as shown.
3. Screw the back onto the stop.



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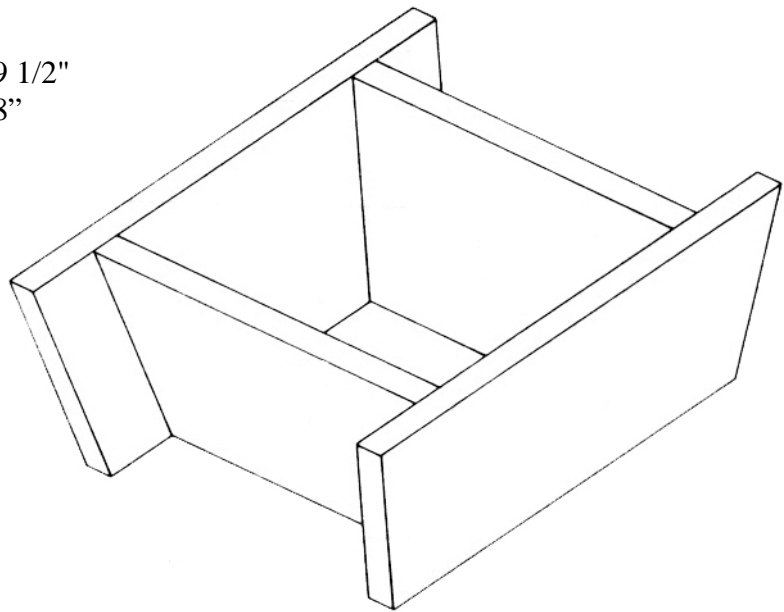


PLANTER

WS110

MATERIALS NEEDED:

2 pieces wood 1/2" x 4" x 9 1/2"
2 pieces wood 1/2" x 4" x 8"
3/4" Finishing nails
Glue
Water resistant paint



TOOLS NEEDED:

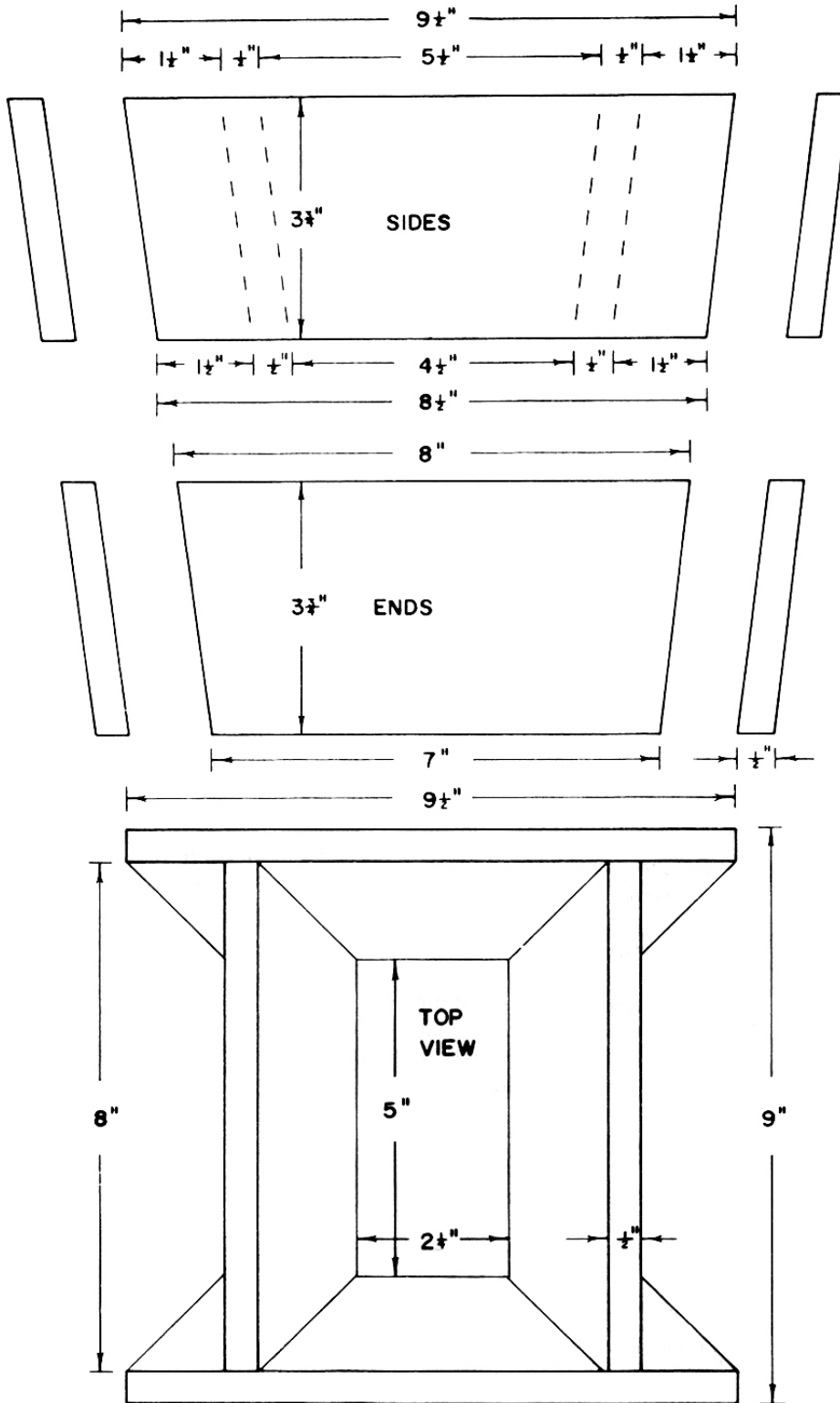
Saw
Hammer
Sandpaper
Brush

INSTRUCTIONS:

1. Cut pieces to size. Make a left and a right side, and a left and right end by beveling the boards in opposite directions as shown in the drawing.
2. Sand pieces smooth.
3. Trace the dotted lines of the sides onto the side pieces. Place a small amount of glue between the dotted lines and assemble to the ends using 3/4" finishing nails. Be sure the bevels are running the proper way, making a flat surface on top and bottom.
4. Add the other side.
5. Apply waterproof paint finish.



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SANDBAPER BLOCK

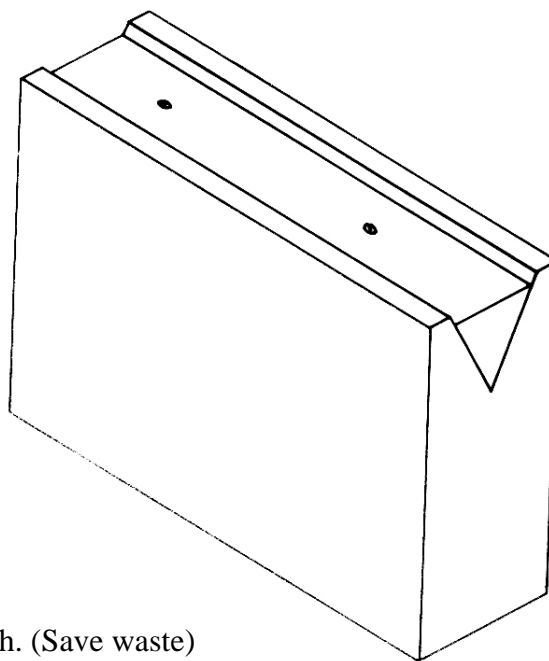
WS111

MATERIALS NEEDED:

- 1 piece wood 1 1/2" x 4" x 5"
- 2 – 1 3/4" roundhead wood screws

TOOLS NEEDED:

- Table saw with tilting blade
- Screwdriver
- Drill with 1/8" bit
- Sandpaper

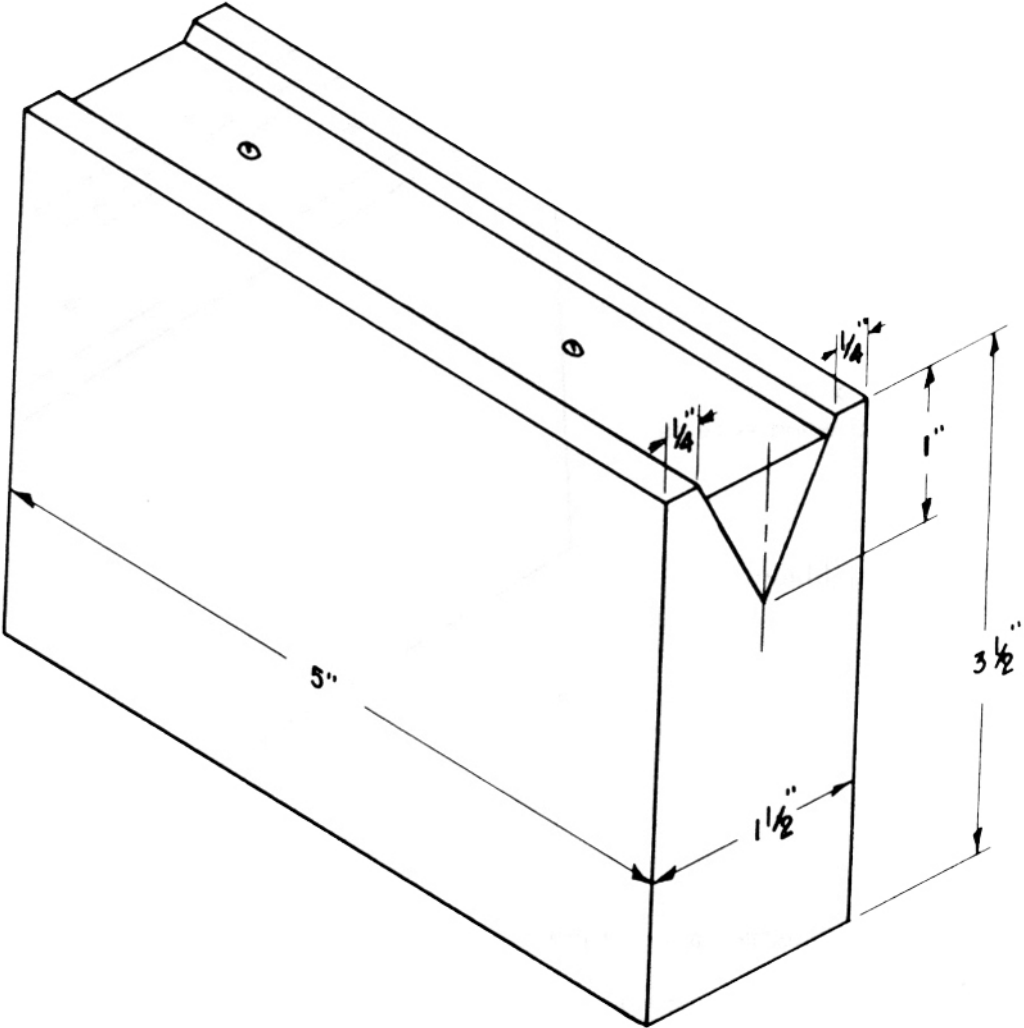


INSTRUCTIONS:

1. Cut block to size.
2. Set table saw on 60° and cut out V notch. (Save waste)
3. Set scrap in V-notch and drill 2 holes for screws.
4. Insert screws.
5. To use, remove filler piece, wrap sandpaper around block and tuck edges in to V-groove, insert filler piece and tighten with screws.



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PENCIL HOLDER

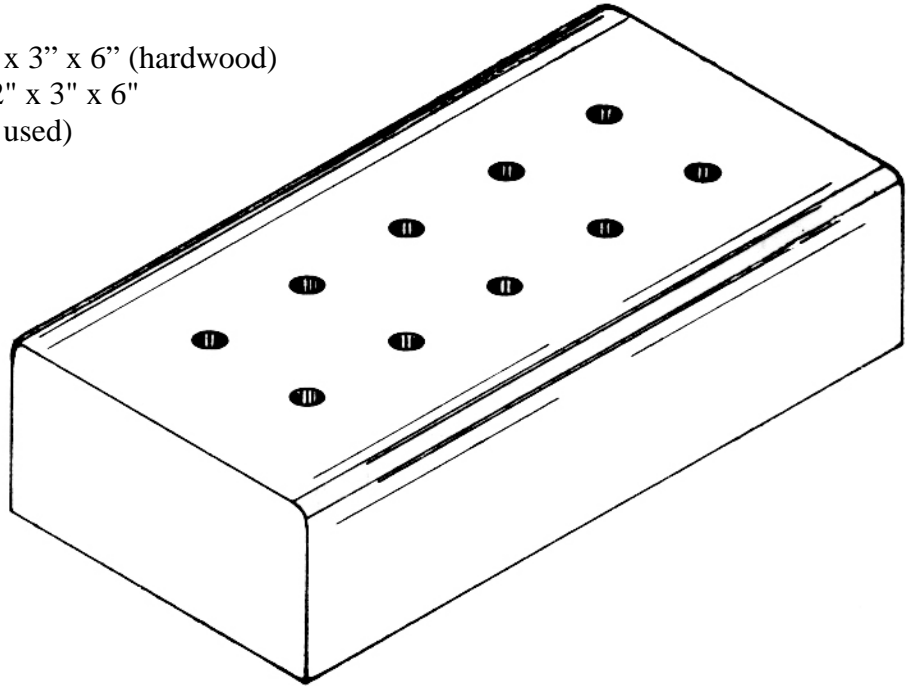
WS112

MATERIALS NEEDED:

2 pieces wood 3/4" x 3" x 6" (hardwood)
or one piece 1 1/2" x 3" x 6"
Glue (if two pieces used)
Varnish

TOOLS NEEDED:

Wood clamp
Drill, 5/16" bit
Sandpaper
Brush
Saw

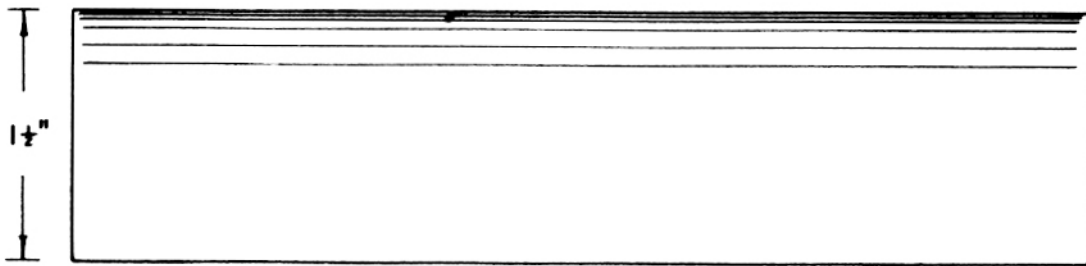
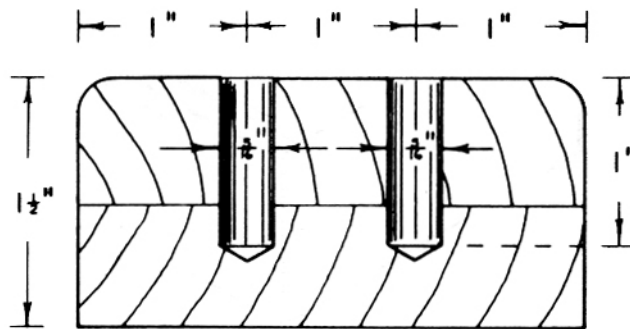
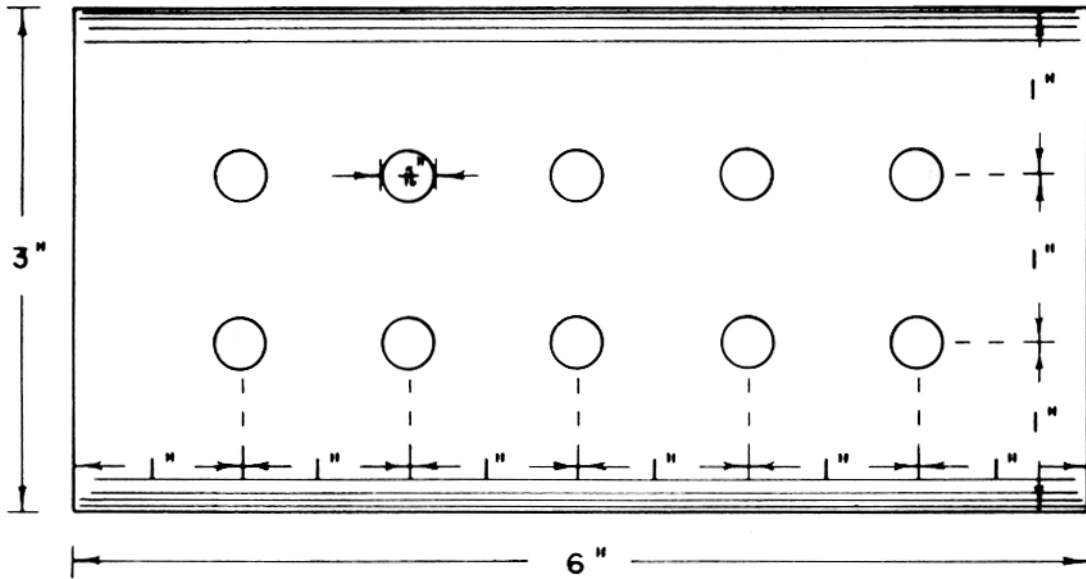


INSTRUCTIONS:

1. Cut pieces to size.
2. For two pieces, glue the two pieces together forming a 1 1/2" x 3" x 6" block. Be sure to clamp the block securely and wipe off the excess glue. When block is dry remove clamp.
3. On the 3" x 6" face draw a 1" grid. At the intersection points, drill 5/16" holes, 1" deep. You should have 10 holes all 1" apart.
4. Sand smooth and round the long edges on the top face.
5. Apply a coat of clear varnish or other finish.



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SMALL FLAG HOLDER

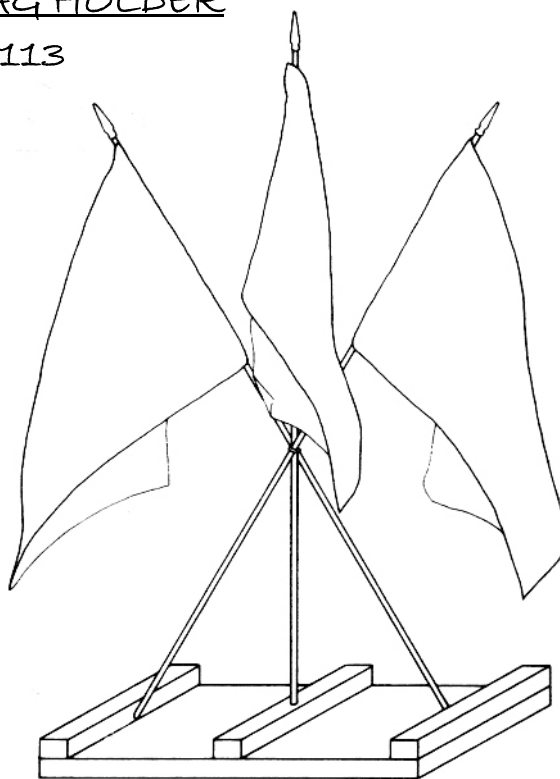
WS113

MATERIALS NEEDED:

1 piece wood 1/2" x 4" x 10"
3 pieces wood 1/2" x 3/4" x 4"
3/4" finishing nails
Glue
Varnish

TOOLS NEEDED:

Saw
Drill
Round file
Sandpaper
Brush

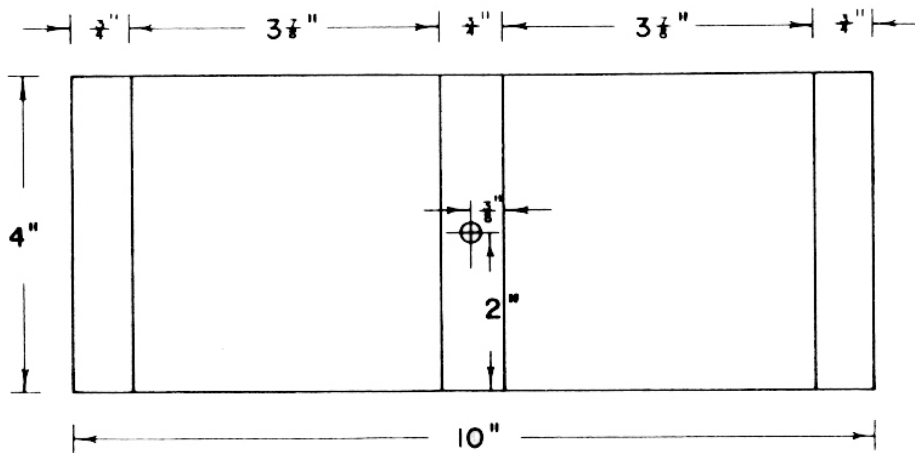
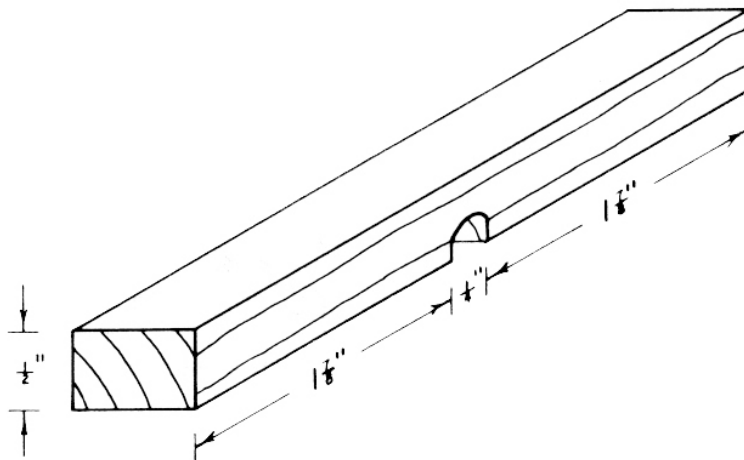
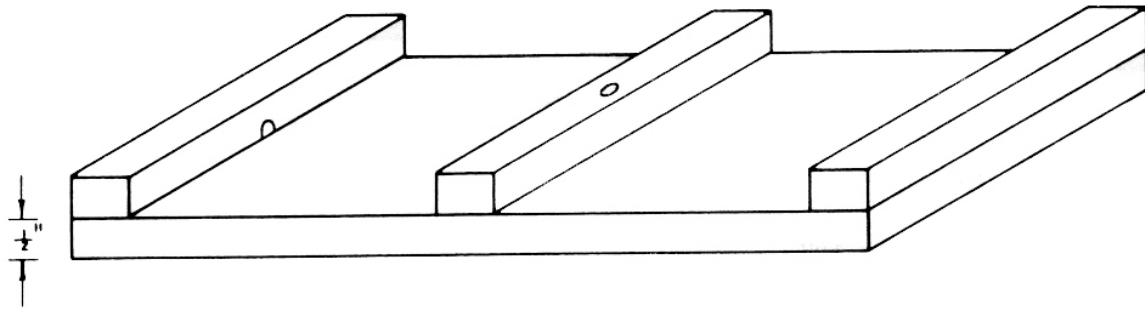


INSTRUCTIONS:

1. Cut pieces to size.
2. With a round file make a 1/4" groove 1 7/8" from either end of both end flag supports.
3. Drill a hole the size of the flag staff in the center of the middle support.
4. Glue and nail the end supports to the ends of the base with the grooves down and to the inside, and the wider 3/4" surface on the base.
5. Glue and nail the middle support down.
6. Sand smooth and varnish.
7. Use 1/4" flag staffs and tie them together with string or a rubber band about 8" from the bottom. Place the middle flag securely in the center position, and the other two in the angled grooves.



Ky 4-H Wood Science Plans - Level 1



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KNIFE RACK

WS114

MATERIALS NEEDED:

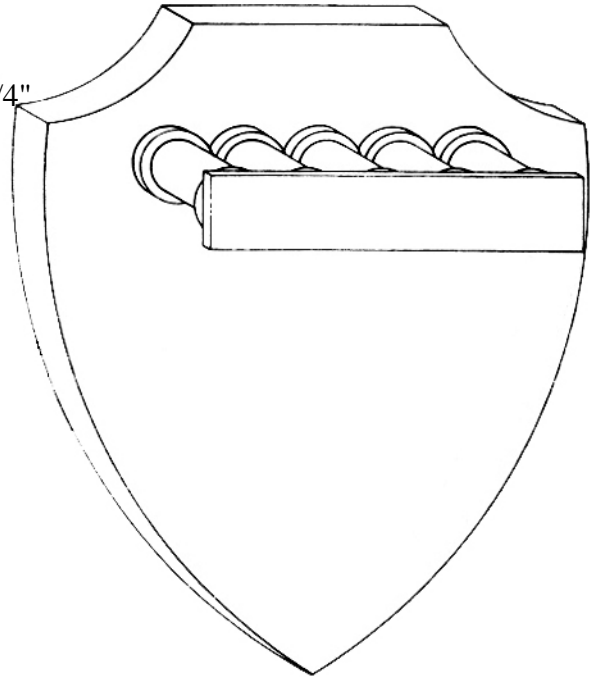
- 1 piece wood 1/2" or 3/4" x 7 1/4" x 8 3/4"
- 1 piece wood 1/4" x 1" x 5"
- 5 – 1" or larger spools
- Varnish or other finish
- 3/4" finishing nails
- Glue

TOOLS NEEDED:

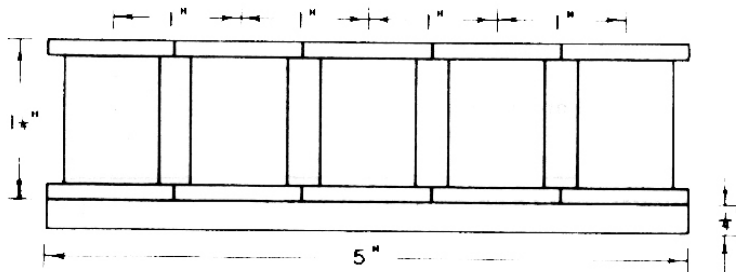
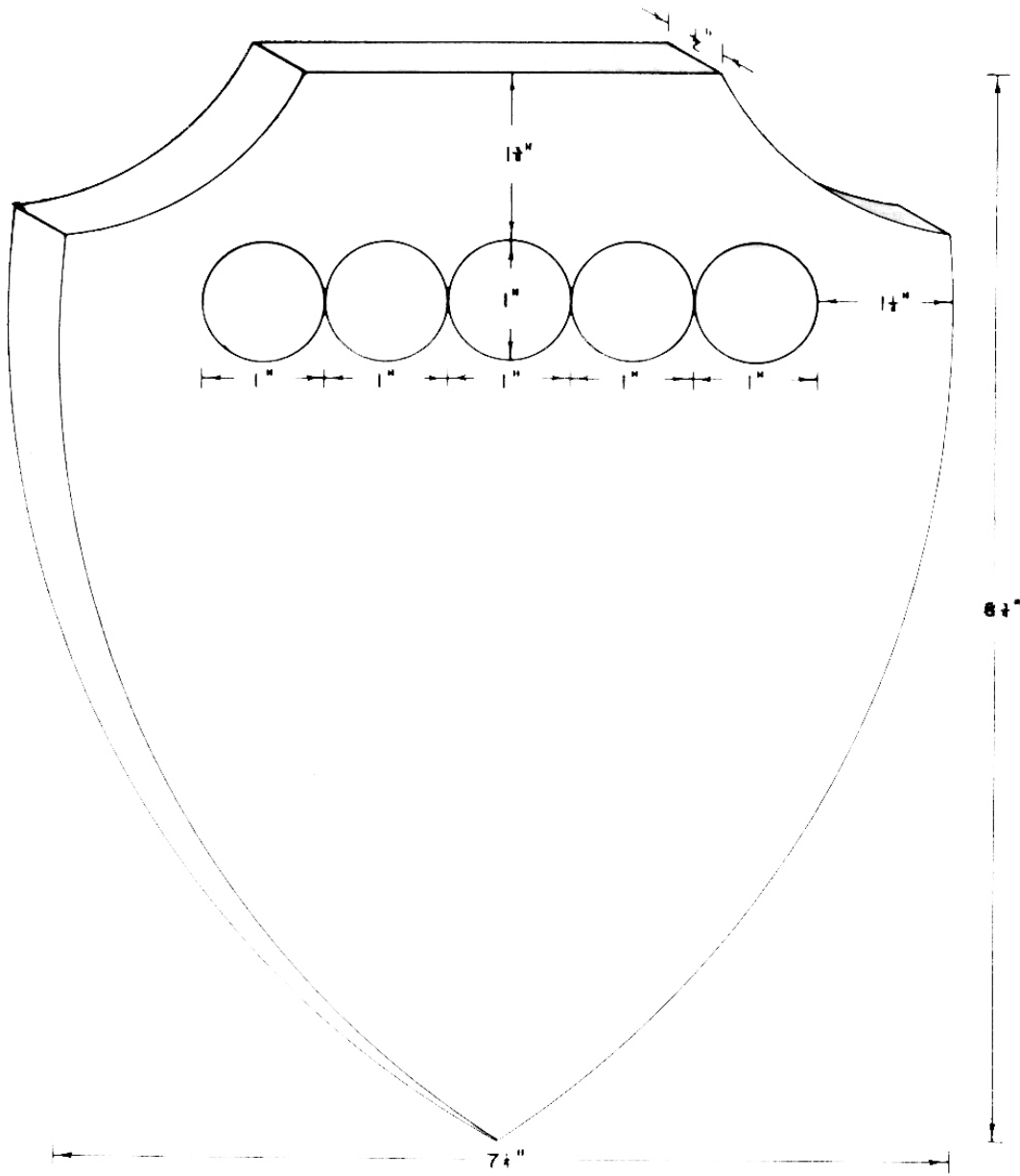
- Hammer
- Band, jig or coping saw
- Sandpaper
- Brush

INSTRUCTIONS:

1. Cut pieces to size.
2. Trace the pattern drawing's face. Draw this on the 7 1/4" x 8 3/4" board. Cut out pattern using the band, jig or coping saw.
3. Sand all edges smooth.
4. Using the pattern again, mark off the spool spacing on the shield.
5. Glue the spools to the 1/4" x 1" x 5" piece.
6. Glue and nail the spool assembly, using 3/4" finishing nails from the back side.
7. Complete sanding and apply finish.



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ICE CREAM STICK FRAME

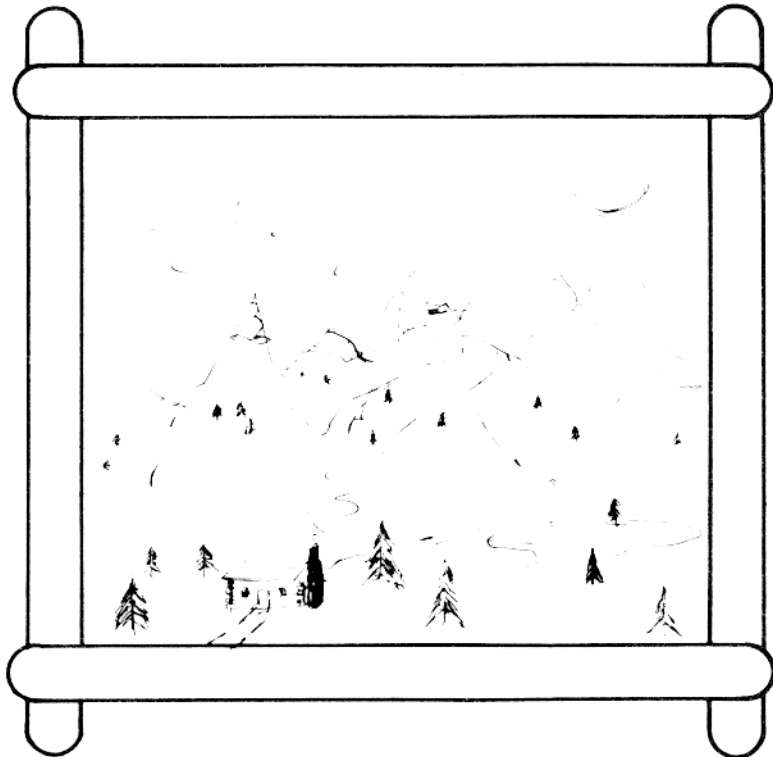
WS115

MATERIALS NEEDED:

Ice cream sticks
Cardboard (size of picture)
Picture (smaller than length of sticks)
Glue

TOOLS NEEDED:

Varnish

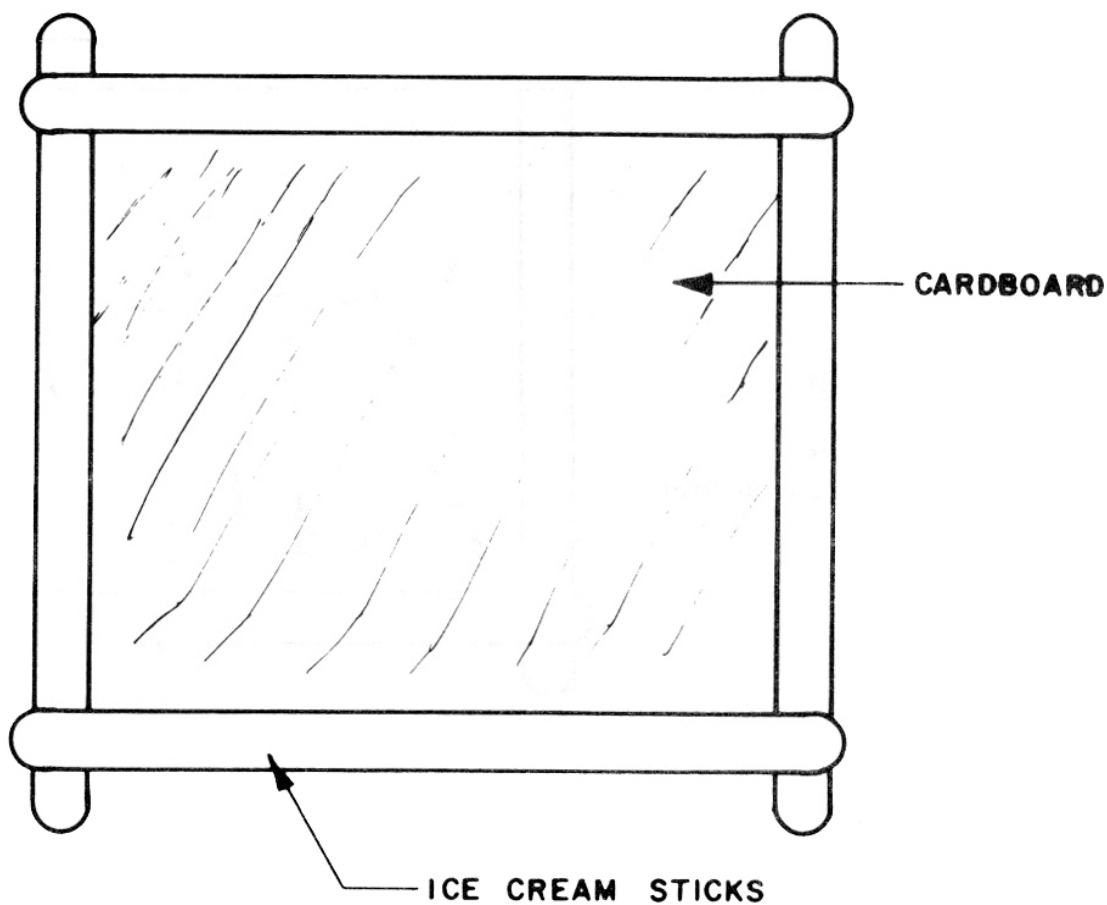


INSTRUCTIONS:

1. Cut cardboard to size of picture.
2. Glue picture to cardboard.
3. Glue sticks along edge of cardboard to make frame.
4. Apply varnish to frame.



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4-H BOOK ENDS

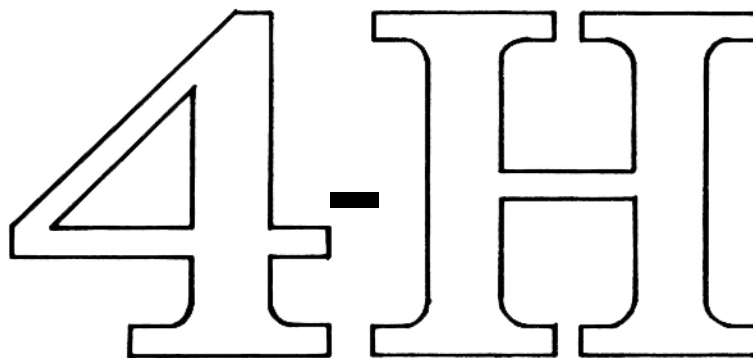
WS116

MATERIALS NEEDED:

- 1 piece wood 2" x 6" x 10"
- 1 piece sheet metal 5 5/8" x 14"
- Varnish
- 6 – 1/2" round head wood screws
- 2 – 2 1/2" fabricated plastic letters (4-H)

TOOLS NEEDED:

- Saw
- Sandpaper
- Screwdriver
- Drill, 1/8" bit
- Brush
- Hack saw



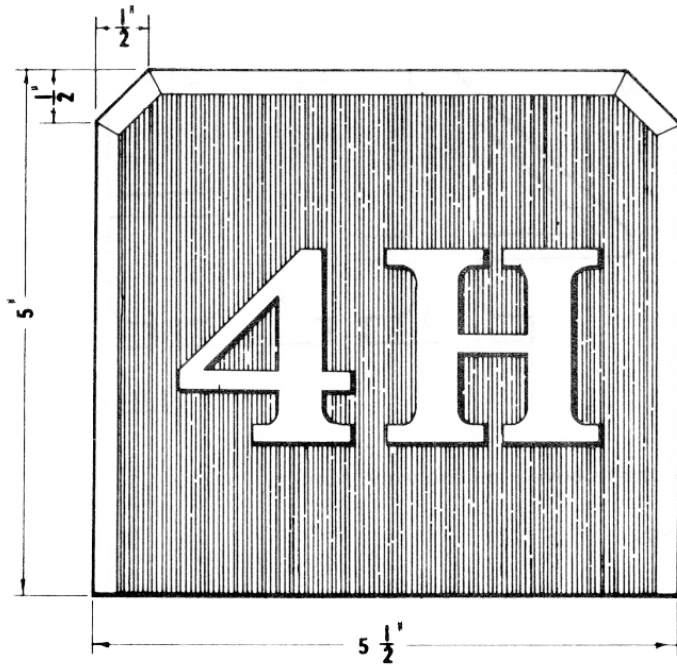
FULL SIZE

INSTRUCTIONS:

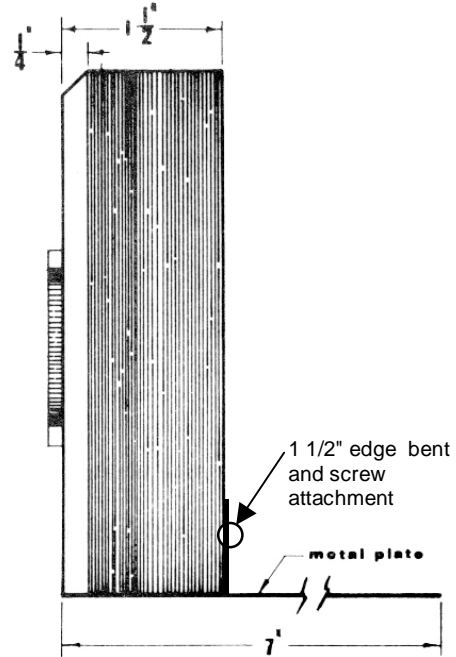
1. Cut pieces to size including appropriate bevels on the wood blocks.
2. Cut the sheet metal with a hack saw.
3. Sand pieces smooth.
4. Drill 3 holes in the sheet metal 3/4" from the 5 5/8" side and every 1 7/8" along this edge. Bend 1 1/2" of this edge with the holes 90 degrees.
5. Screw the metal sheet to the edge of the book ends with the bottoms flush. The bend allows the screw heads to fasten the metal but keep from scratching the shelving if they were on the bottom.
6. Apply 2 coats of clear varnish.
7. Attach adhesive letters.



Ky 4-H Wood Science Plans - Level 1



FRONT



SIDE



Ky 4-H Wood Science Plans - Level 1



BELT & NECKTIE RACK

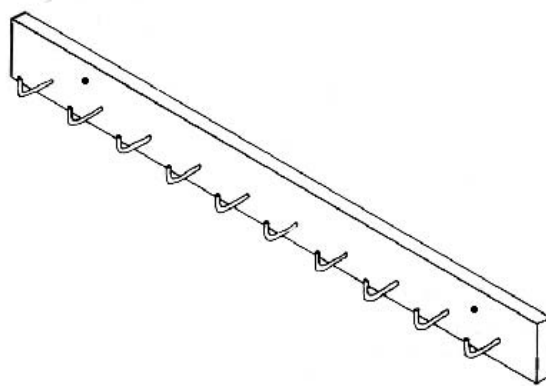
WS117

MATERIALS NEEDED:

- 1 piece wood 1/2" or 3/4" x 2" x 18" for mount
- 16 L-shaped hooks 1 1/4" to 1 1/2" long
- 2 #6 x 1" flat head screws for 1/2" wood or 1 1/2" for 3/4" wood

TOOLS NEEDED:

- Saw
- Drill with 1/32" and 1/8" bits
- Sandpaper
- Paint or stain and varnish

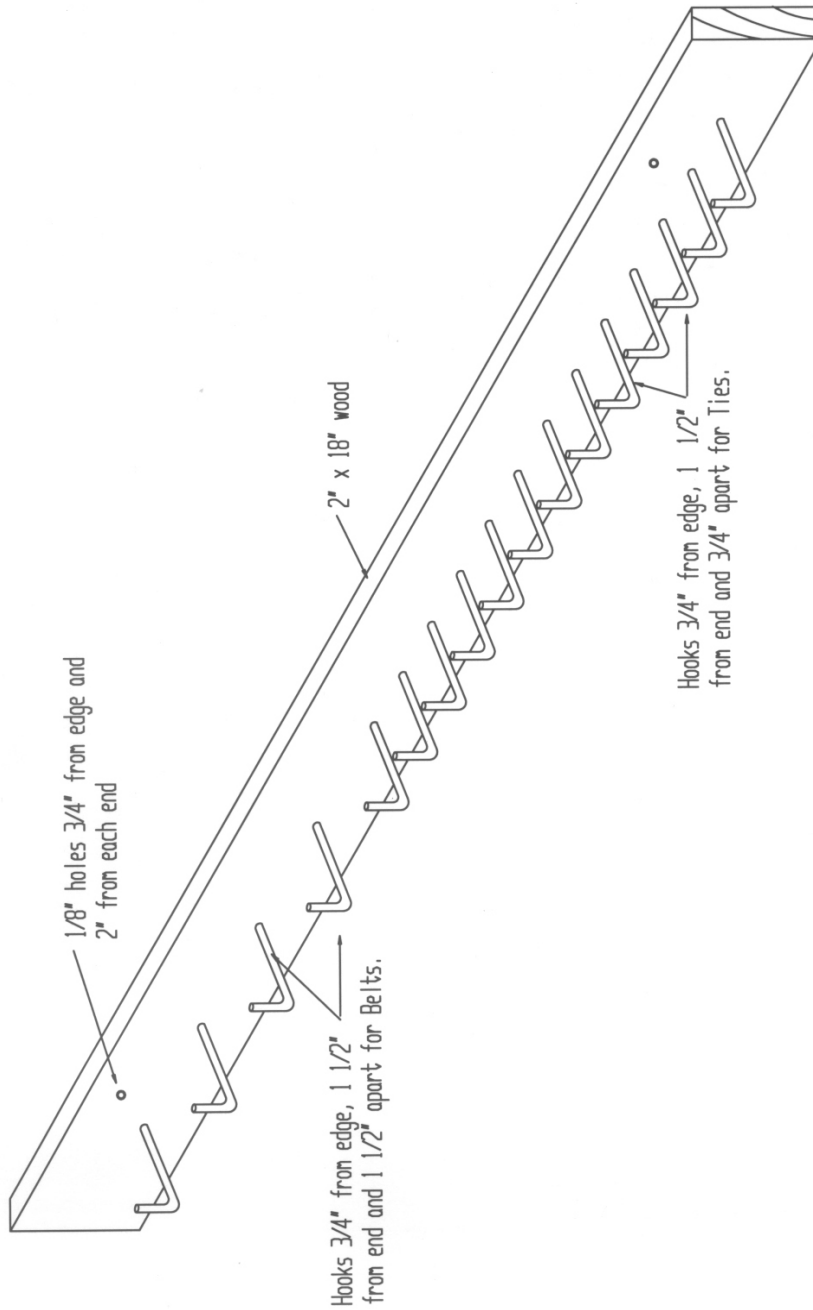


INSTRUCTIONS:

1. Cut wood mount to size
2. Mark holes for hooks, drill pilot holes with 1/32" bits.
3. Mark and drill mounting holes with 1/8" bit.
4. Sand and finish.
5. Insert hooks.
6. Mount in closet, on wall or door.



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Ky 4-H Wood Science Plans - Level 1



AIRPLANE & STAND

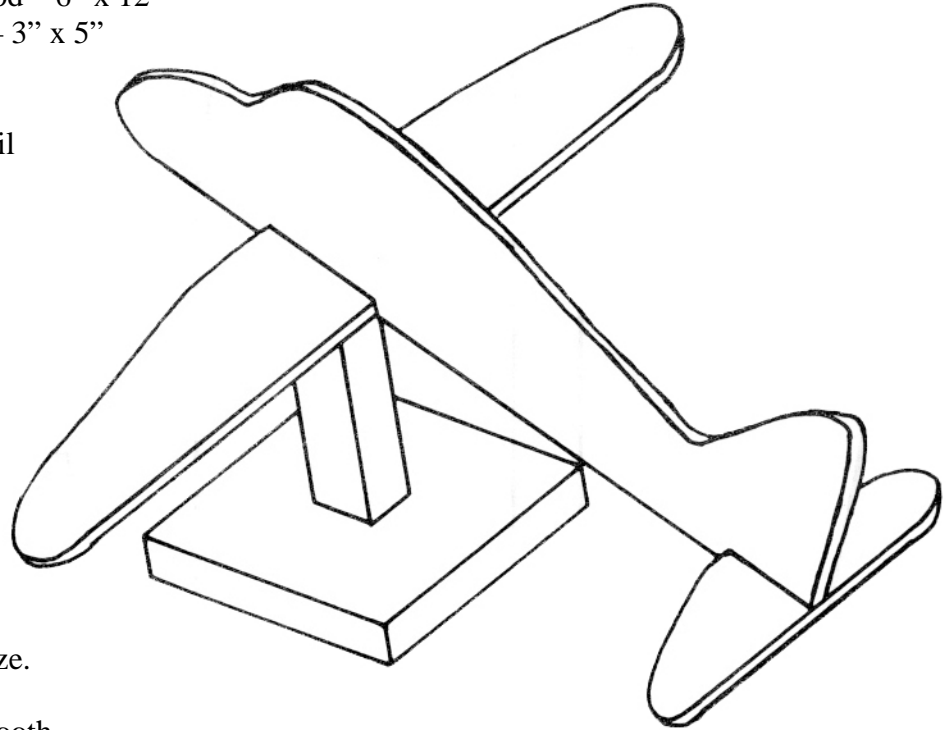
WS118

MATERIALS NEEDED:

- 1 piece 1/4" plywood – 6" x 12"
- 1/2" or 3/4" wood – 3" x 5"
- Glue
- 2 – 3/4" brads
- 1 – 2d Finishing nail

TOOLS NEEDED:

- Jigsaw
- Hammer
- Sandpaper
- Paint or varnish



INSTRUCTIONS:

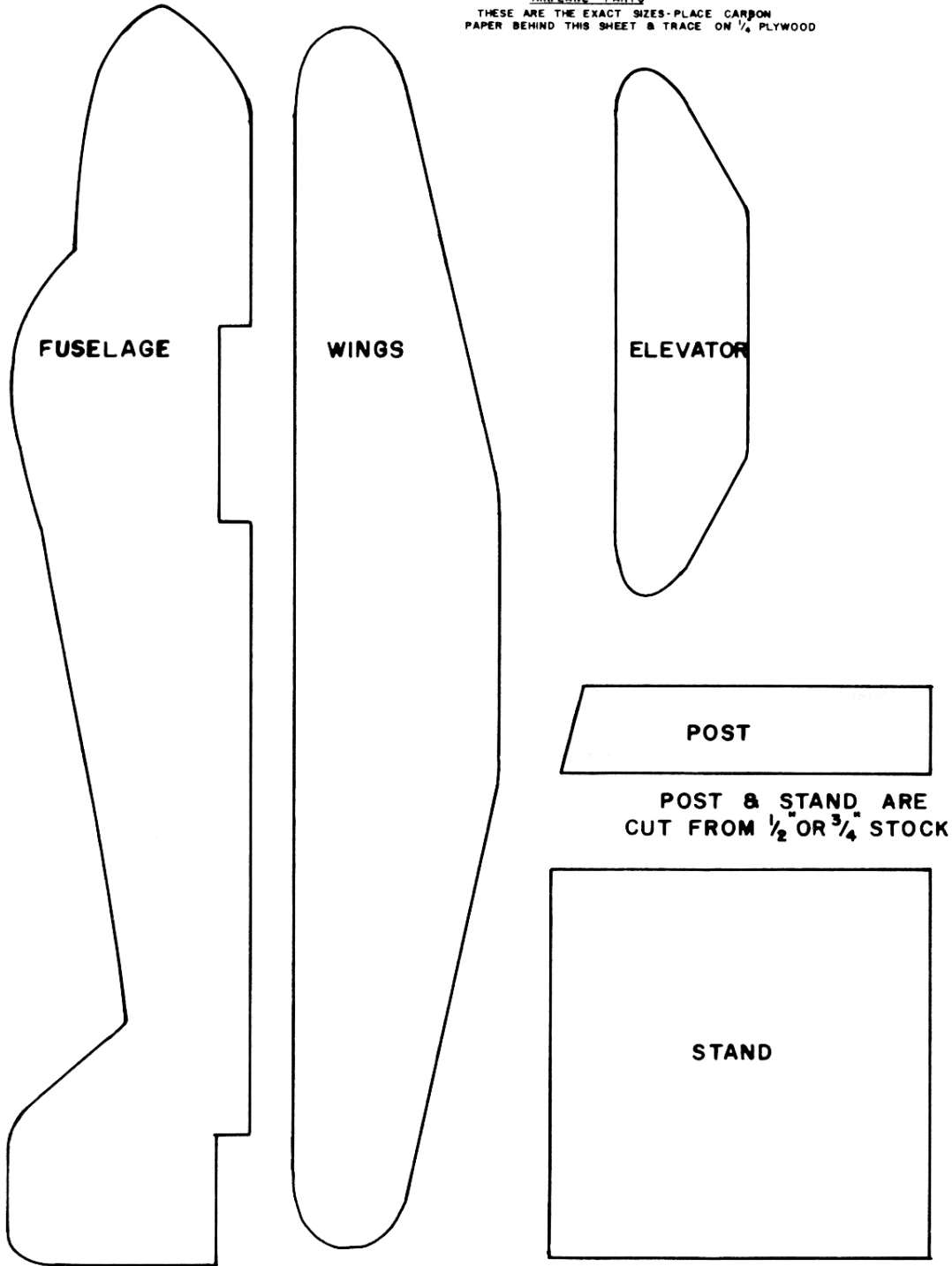
1. Cut pieces to size.
2. Sand pieces smooth.
3. Glue and nail post to stand using the 2d finishing nail.
4. Glue and nail wings to post using the 3/4" brads.
5. Glue fuselage to wings.
6. Glue elevator to fuselage.
7. Finish as desired.



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AIRPLANE PARTS
THESE ARE THE EXACT SIZES-PLACE CARBON
PAPER BEHIND THIS SHEET & TRACE ON 1/4" PLYWOOD



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LOG CABIN

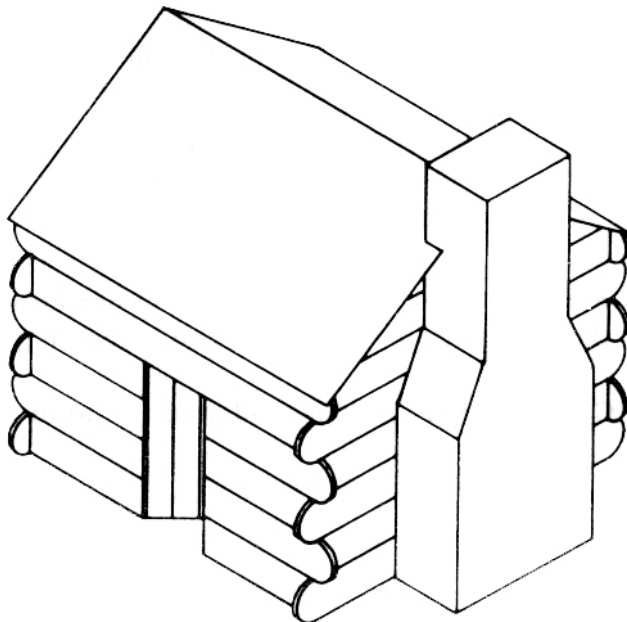
WS119

MATERIALS NEEDED:

Poster board or heavy cardboard
Old file folder
30 ice cream sticks
1 piece wood 1" x 2" x 4 1/4"
Glue
Masking tape

TOOLS NEEDED:

Jigsaw
Xacto knife or utility knife (to
cut cardboard)
Paints (brown for logs, black for roof,
brick red or gray for chimney)

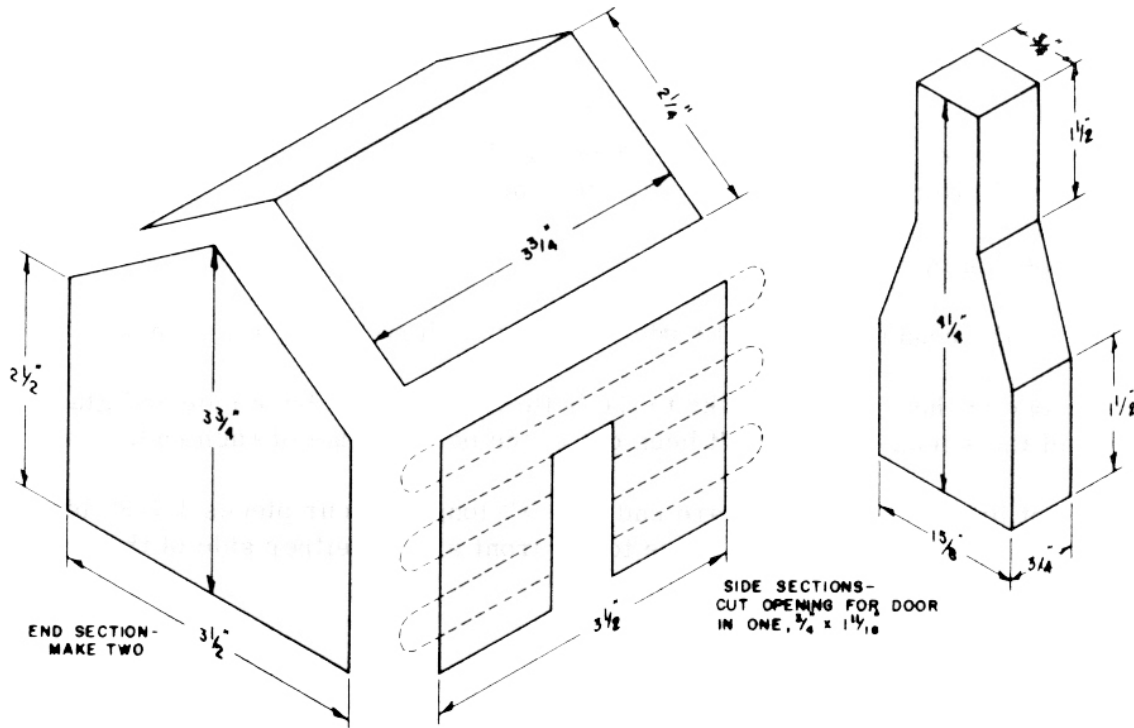


INSTRUCTIONS:

1. Cut two pieces of poster board or heavy cardboard 2 1/2" x 3 1/2" for sides and two pieces 3 3/4" x 3 1/2" for ends.
2. Cut opening in one side for door.
3. Saw off the rounded ends of 10 sticks so that each stick is 3 1/2" long.
4. Glue one of these 3 1/2" sticks to the bottom edge of the back side and glue one of the sticks which hasn't been cut to the bottom edge of each end.
5. Saw out four pieces with square ends 1 3/8" long and four pieces 1 7/8" long with one rounded end. Glue these to the front side on either side of the door starting with the square end pieces.
6. After the sticks that are glued to the lower edge of each end and side are dry, glue up the others alternating round end, square end. There will be six "logs" up to the gable end of the cabin.
7. Saw out three sticks for each gable by marking them from the piece. Glue these in place on the ends.
8. Let all pieces dry and then fasten the four sections, which interlock, together with angle braces about 2" long cut from old file folder.
9. Make the door by gluing two sticks, squared on the ends, about 1 11/16" long, to a piece of cardboard 3/4" x 1 11/16" and hang it from the inside with tape hinges.
10. Make the roof from two pieces of cardboard 3 3/4" x 2 1/4". Cut an opening for the chimney and fasten the two pieces together with tape.
11. Cut out chimney shape and glue to end of cabin.
12. Paint cabin as desired.



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HURRICANE LAMP

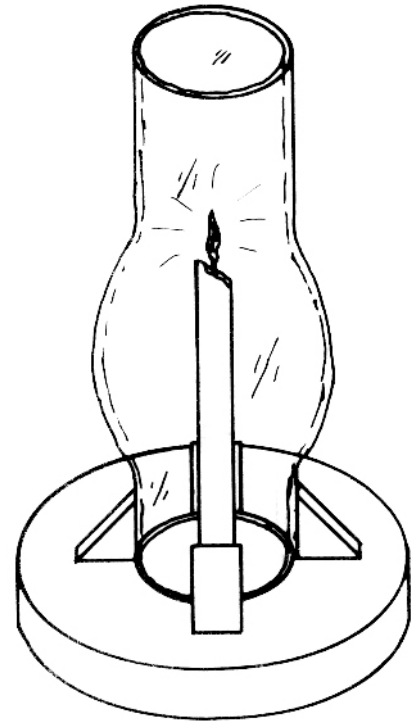
WS120

MATERIALS NEEDED:

1 piece wood 5/8" x 6" x 8"
Glue
Lamp chimney
1" brads

TOOLS NEEDED:

Jigsaw or coping saw
Hammer
Sandpaper
Stain and varnish

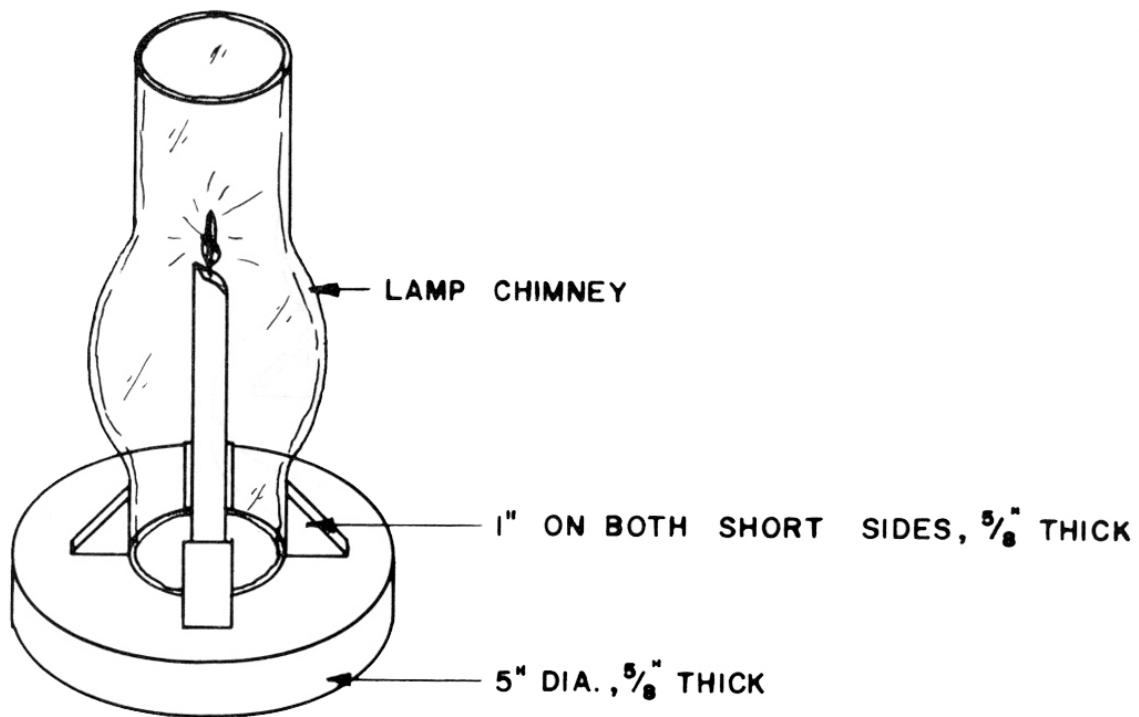


INSTRUCTIONS:

1. Cut pieces to size. (1 – 5" disk and 4-triangles)
2. Sand all pieces.
3. Set chimney on disk and mark a circle around the bottom. Glue triangles around circle and nail from bottom.
4. Apply finish.
5. Take a candle and melt wax on the disk, push candle into soft wax and let harden.
6. Place chimney over candle and fit into wedges.



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TRIVET (HOT POT SUPPORT)

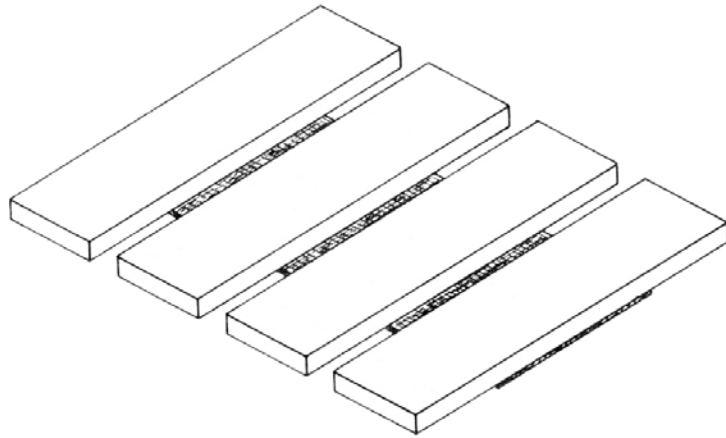
WS121

MATERIALS NEEDED:

4 pieces wood 1/4" x 1 1/2" x 6" – slats
Jute webbing, 7 1/2" long
(approximately 3" wide)
Glue

TOOLS NEEDED:

Saw
Sandpaper
Stain and varnish
(Heat Resistant)

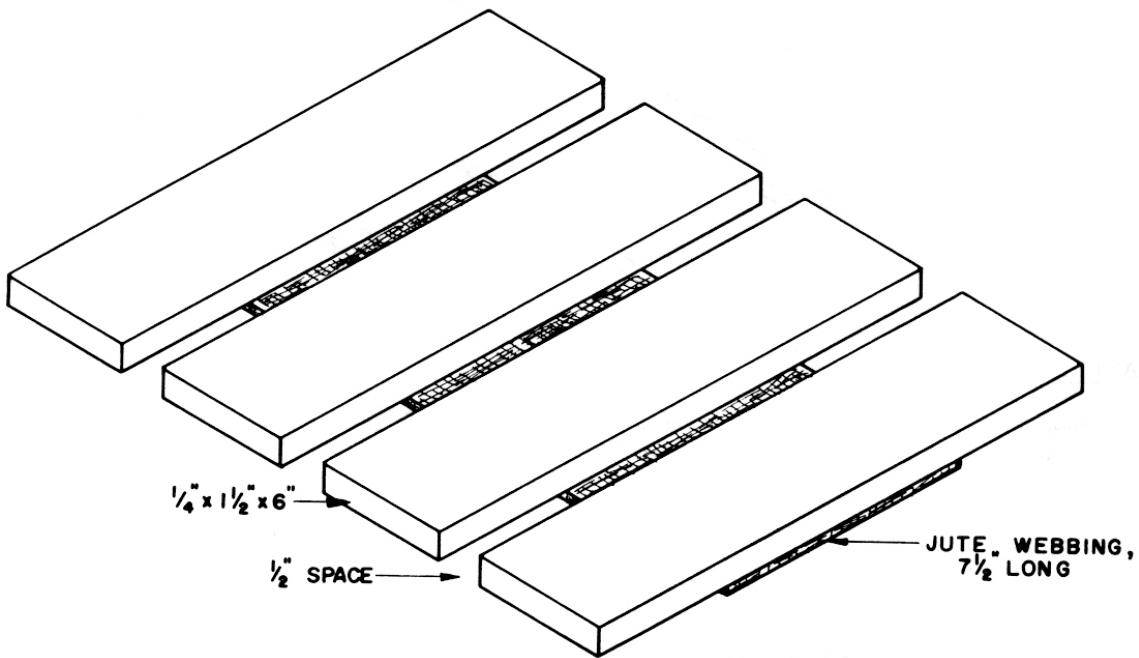


INSTRUCTIONS:

1. Cut pieces to size
2. Sand slats, finish except where it glues to webbing.
3. Glue slats to webbing, leaving 1/2" space between them.



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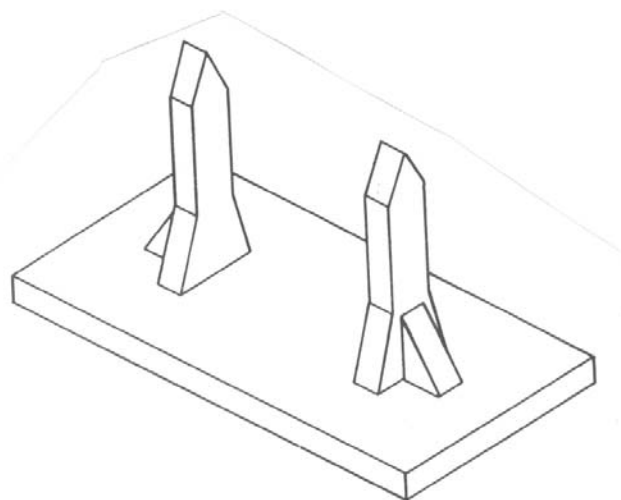
LAUNCH PAD NAPKIN HOLDER WS122

MATERIALS NEEDED:

- 1 piece wood 1/2" x 4" x 8" – base
- 1 piece wood 1/2" x 4" x 5"
for rockets and braces
- Glue

TOOLS NEEDED:

- Jigsaw
- Sandpaper
- Paint or stain and varnish

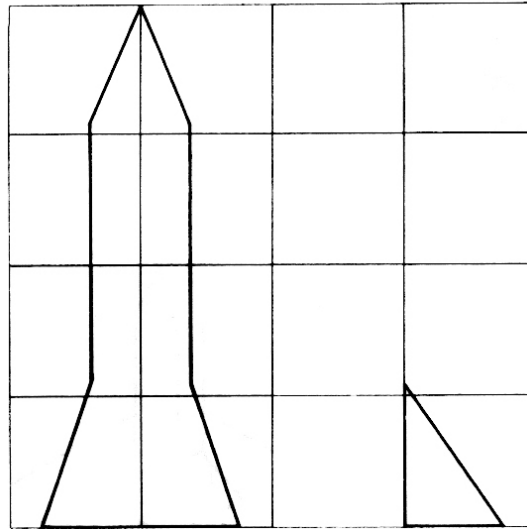


INSTRUCTIONS:

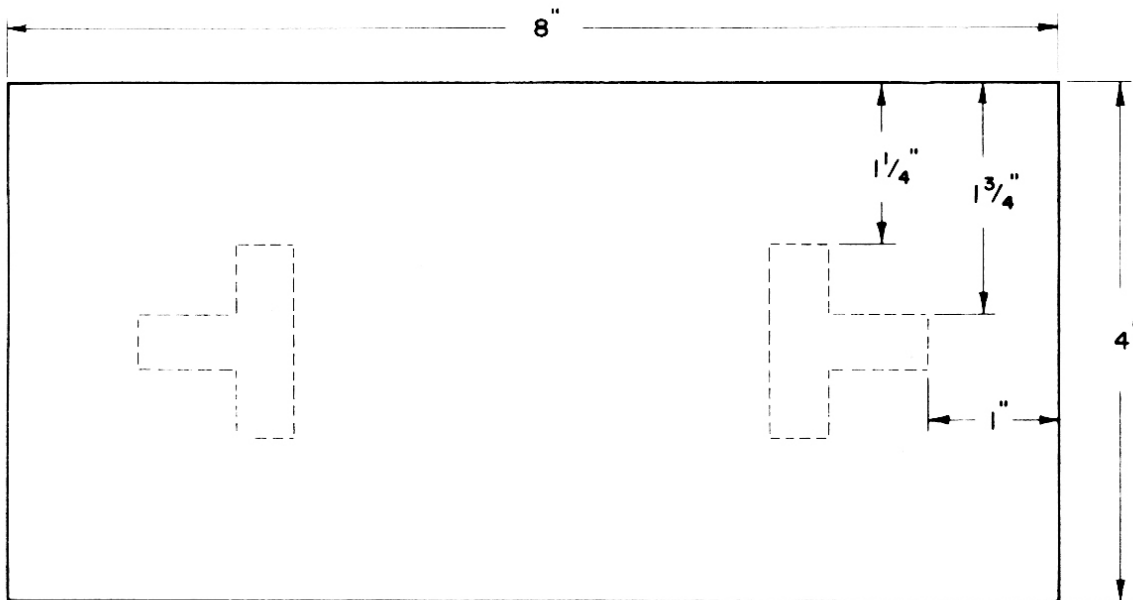
1. Cut pieces to size. Cut out rockets and braces.
2. Glue rockets to base (in position indicated on drawing).
3. Glue braces to base and rockets as shown on drawing.
4. Sand and finish.



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1" SQUARES



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HALF SHELF

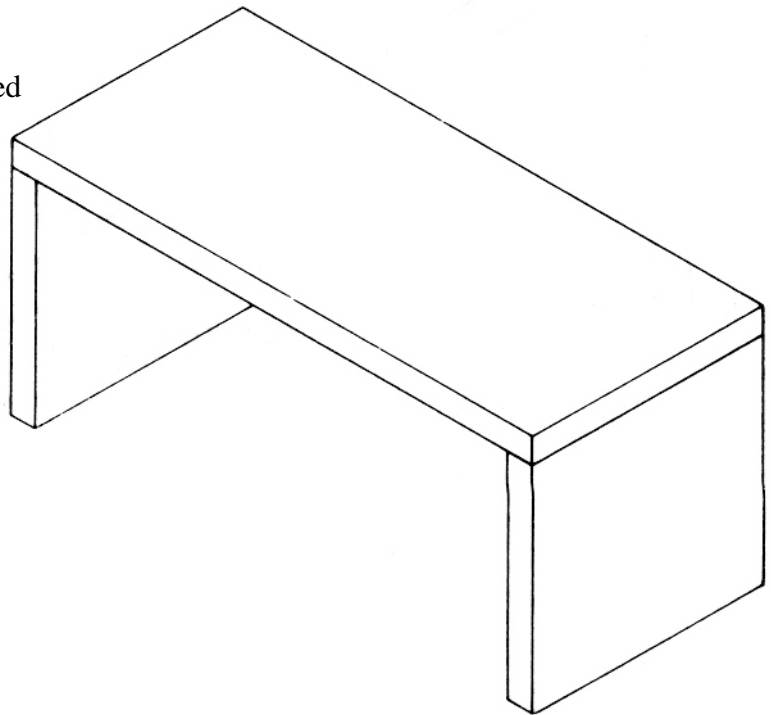
WS123

MATERIALS NEEDED:

- 1 piece wood 1" x 6" x length of your preference up to width of cabinet
Caution: Board longer than 24" cannot be loaded very heavily due to bending
- 2 pieces wood 1" x 6" x 6"
- 4 angle brackets (if shelf is over 16" long)
- 4 – #8 flathead wood screws 1 1/2" long for each angle bracket.
- Glue
- 4d finishing nails
- Note: Wider boards may be used for wider and stronger shelf.
Actual board thickness may be only 3/4"

TOOLS NEEDED:

- Saw
- Hammer
- Screwdriver (optional)
- Sandpaper
- Paint or stain, varnish to match cabinet

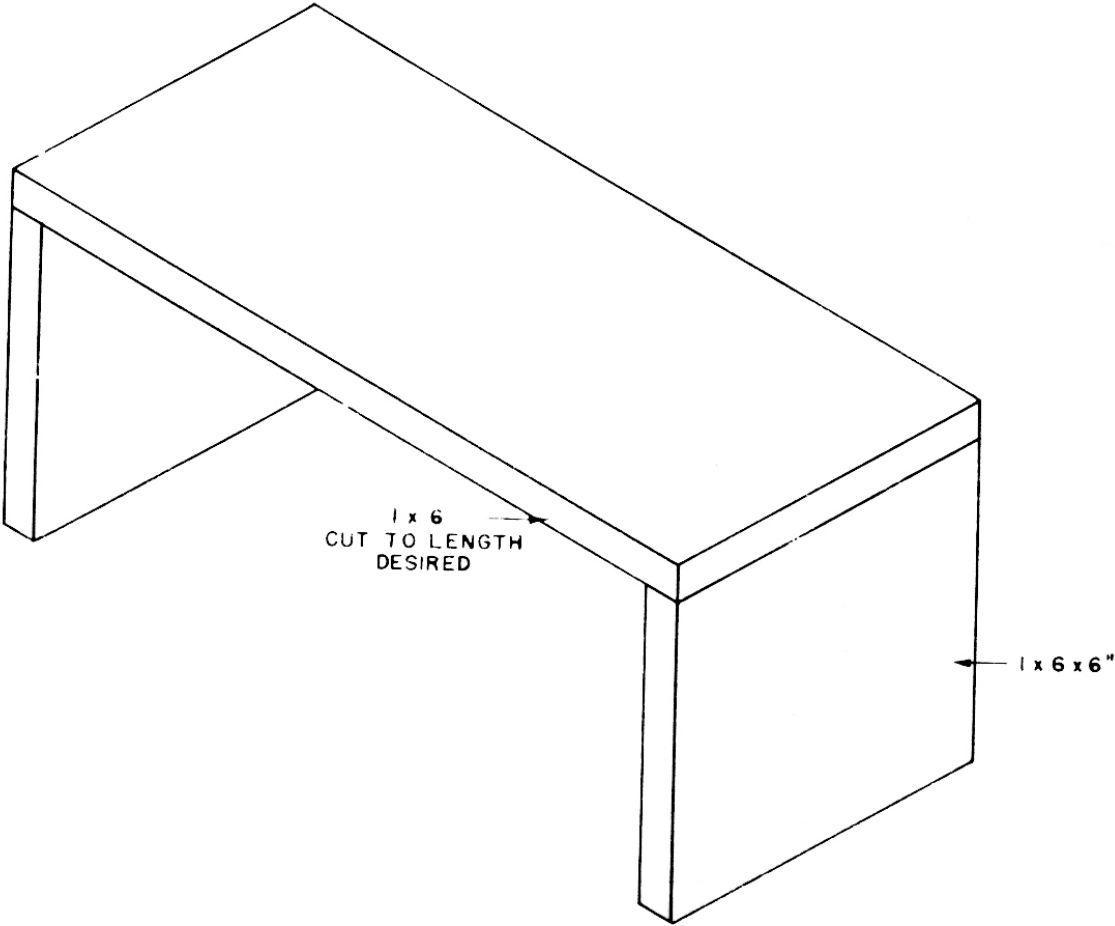


INSTRUCTIONS:

1. Cut pieces to size.
2. Glue and nail ends to shelf. If longer than 16", add angle brackets.
3. Sand and finish.



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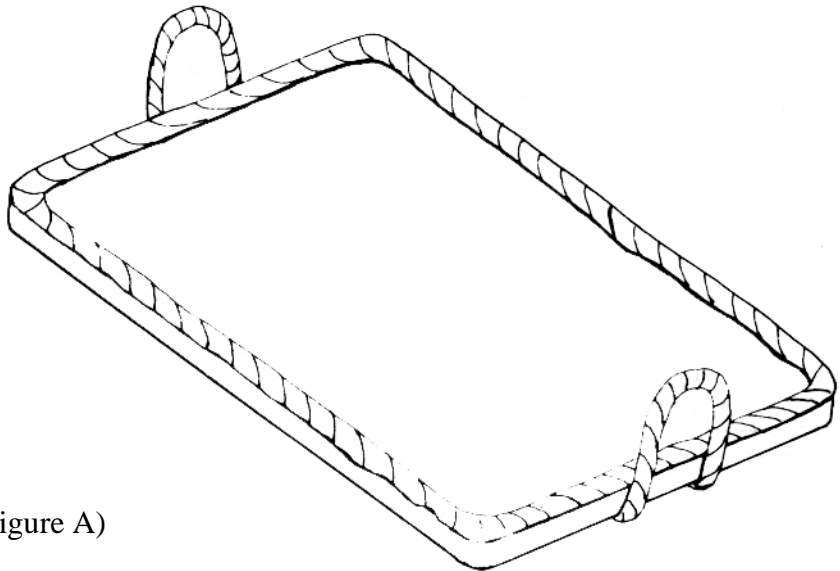
BUNK HOUSE SERVING TRAY WS124

MATERIALS NEEDED:

- 1 piece wood - 1" x 12" x 18"
- 9'-6" rope (approximately 1/4" diameter)
- 1" brads

TOOLS NEEDED:

- Saw
- Hammer
- Razor blade
- Wood rasp
- Metal file
- Sandpaper
- Stain or varnish



INSTRUCTIONS:

1. Cut piece to size. (Figure A)
2. Round corners with wood rasp, sand both faces and all edges.
3. Nail rope to edge, overlapping ends as in Figure B. Nails protruding on other side should be filed flat with the metal file.
4. Cut through both overlapping ends as in Figure C, and nail down, making a perfect joint (Figure D).
5. Turn board over and nail leftover piece of rope to back as in Figure E.
6. Finish tray. Wood may be stained and varnished before or after nailing down rope.



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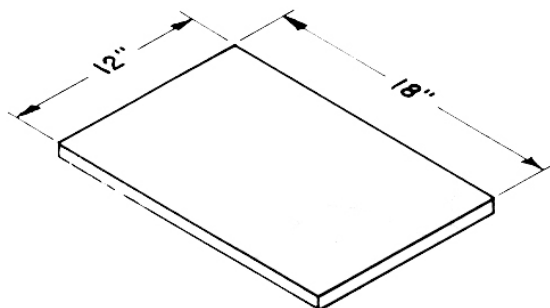


FIG. A

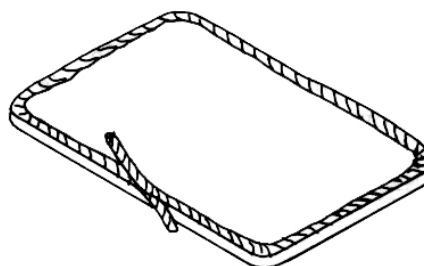


FIG. B

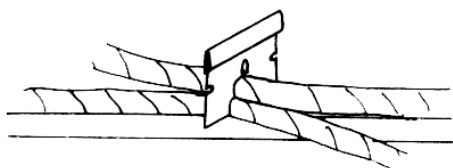


FIG. C

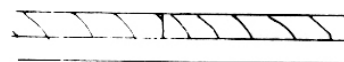


FIG. D

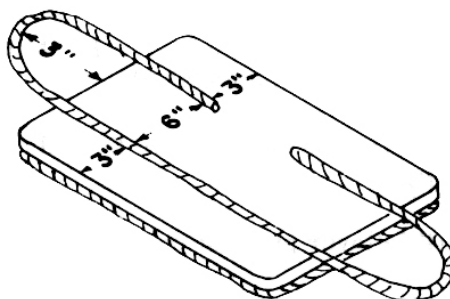


FIG. E

