



## Woodworking Plans

### Get Along Little Doggie

#### Materials needed

- 1 piece of 1 x 2 lumber (actual size  $\frac{3}{4}$ " x  $\frac{1}{2}$ ") and 11" long — axles
- 1 piece of  $\frac{3}{4}$ " x 10" x 22" A-C or better plywood — body\*
- 1 piece of  $\frac{3}{8}$ " x 6" x 8" or  $\frac{1}{2}$ " x 6" x 8" A-C or better plywood — wheels\*
- 2 — 10d finishing nails
- 8 —  $\frac{1}{2}$ " wire nails
- Cloth or leather — ears
- Glue
- Finish, optional

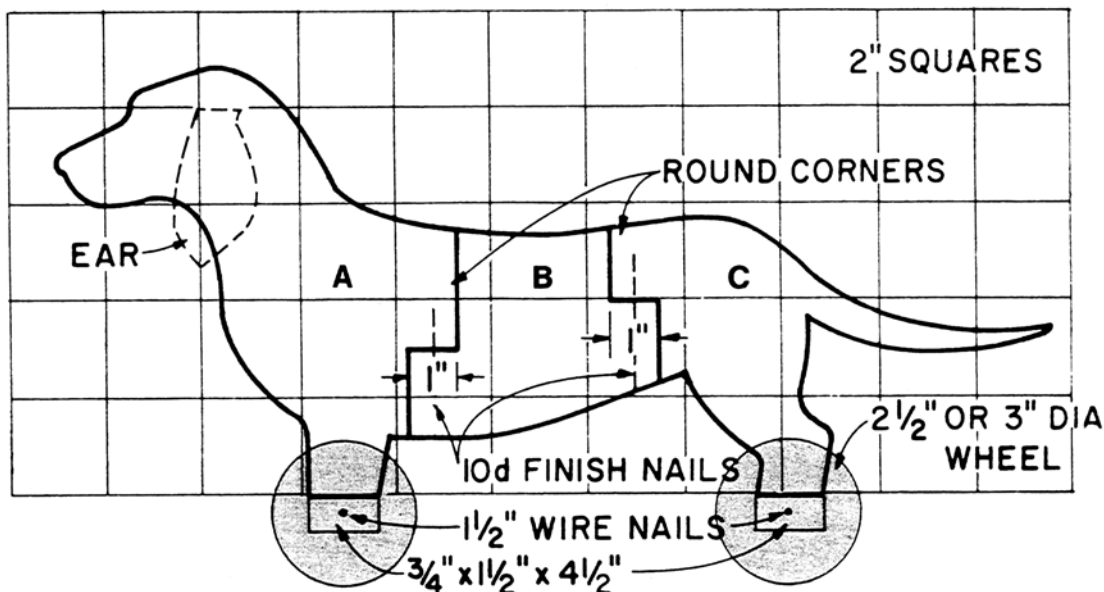
#### Tools needed

- Coping saw
- Hammer
- Rasp or file
- Drill press or other boring tool with appropriate bits
- Pencil compass
- Oscillating sander (or sandpaper)

\*Note: If the toy will be used outdoors, use A-C exterior plywood. For best appearance on front and back, use A-A plywood (A-A exterior for outdoors). See the discussion on plywood grades in Unit II.

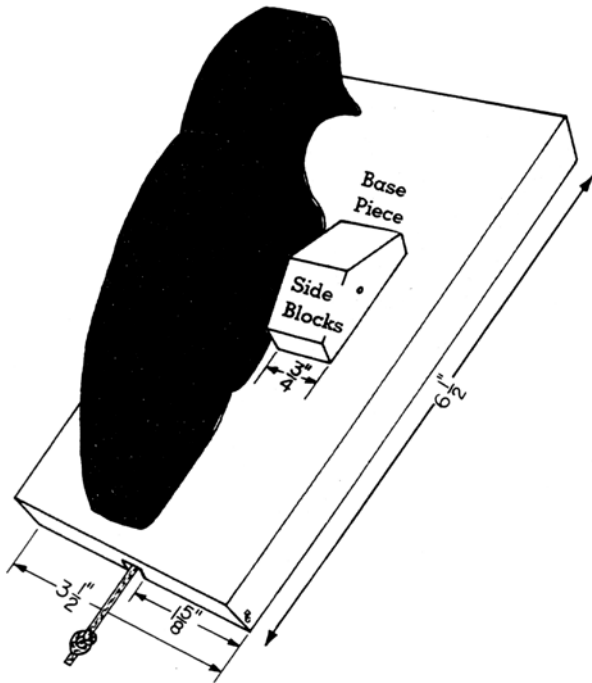
#### Instructions

1. Make a trace pattern using the grid system. Trace pattern onto wood.
2. Cut out body, wheels, and axles.
3. Cut body into A, B, and C pieces. Round the cut edges with a rasp or file so that the dog can twist and turn.
4. Drill loose fitting holes for hinge nails in bottom part of B piece. Drill tight pilot holes for hinge nails in top part of A and C pieces.
5. Sand all pieces smooth.
6. Drill loose fitting holes for nail hub in wheels. Attach axles to A and C pieces with glue and nails.
7. Assemble sections of dog with nails.
8. Attach ears.
9. Apply finish, if desired.





## "Pecky" the Door Knocker



### Instructions

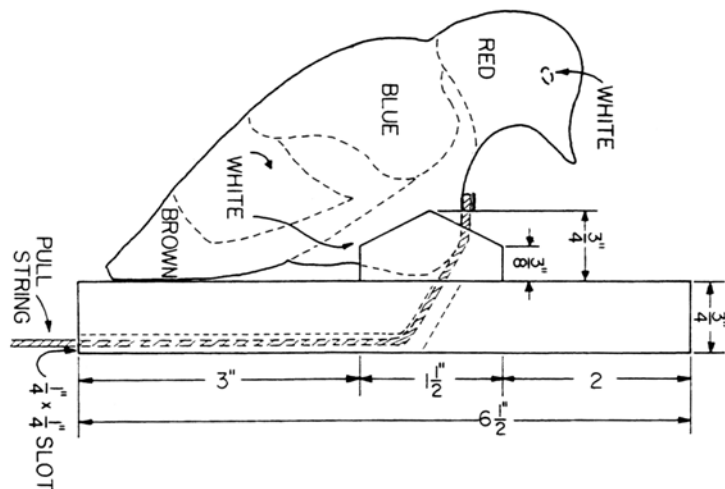
1. From one end of your wood piece, cut out the base to size.
2. Using the grid system, make a trace pattern of Pecky's body size  $3\frac{1}{2}'' \times 5\frac{1}{2}''$ . Trace onto wood.
3. Mark the two side blocks, each  $\frac{3}{4}'' \times 2''$  long.
4. Cut out all three pieces.
5. Mark and drill nail hinge or pivot holes in side blocks. (The hole in Pecky must be larger than the nail you will use as a pivot.)
6. Drill a  $\frac{1}{4}''$  hole through the base piece for the string. Chisel a  $\frac{1}{4}''$  recess on the bottom edge for the string as seen in the illustration.
7. Sand all pieces. Finish as desired.
8. Attach the side blocks to the base piece using the wire brads.
9. Attach pull string to Pecky's breast using the wire nail.
10. Attach Pecky to the base.

### Materials needed (Hardwood preferred)

- 1 piece of lumber  $1 \times 4$  (actual size  $\frac{3}{4}'' \times 3\frac{1}{2}''$ ) and 14" long
- 1 — 6d finishing nail
- 12" of strong cord, cloth or leather shoe lace
- 1 —  $\frac{5}{8}''$  wire nail
- 4 — 1" wire brads
- Finish, optional (weather proof, if needed) or paint

### Tools needed

- Hand saw
- Coping saw
- Drill press or other boring tool with appropriate bits
- Hammer
- Rasp or file
- Chisel
- Oscillating sander or sandpaper





## Sandbox

### Materials needed

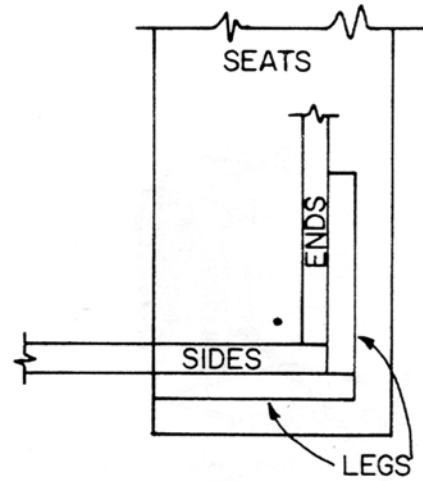
- 3 pieces of 1 x 8 lumber (about  $\frac{3}{4}$ " x  $7\frac{1}{4}$ ") and 8 feet long for ends, sides, and seats
- 1 piece of 1 x 6 lumber (about  $\frac{3}{4}$ " x  $5\frac{1}{2}$ ") and 8 feet long for legs
- 1 piece of 1 x 4 lumber (about  $\frac{3}{4}$ " x  $3\frac{1}{2}$ ") and 4 feet long for support cleat
- 1 piece of  $\frac{3}{4}$ " x  $47\frac{3}{4}$ " x 38" exterior grade plywood for bottom
- 7d galvanized siding nails
- Penetrating semi-transparent oil base stain (free of penta) for finish

### Tools needed

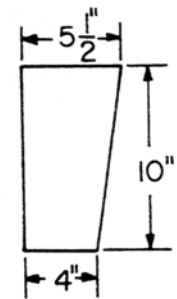
- Crosscut saw
- Coping saw
- Pencil compass
- Square
- Countersink
- Claw hammer
- Drill with  $\frac{1}{4}$ " bit
- Oscillating or belt sander
- Paint brush

### Instructions

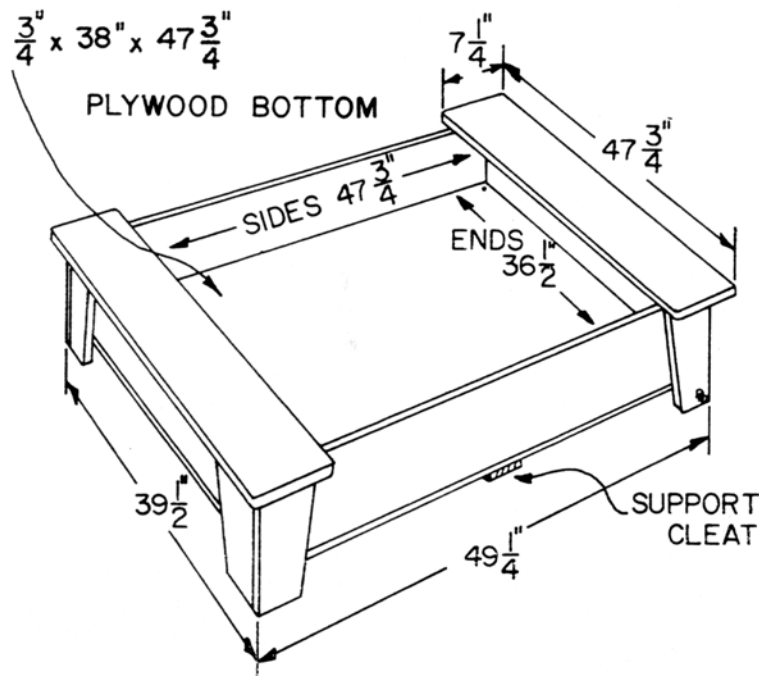
1. Check the thickness of material used for sides. The thickness will affect the length of the end pieces.
2. Drill a drain hole  $\frac{1}{4}$ " in diameter near each corner.
3. Slightly round all corners of seats.
4. Finish.



CORNER DETAIL



LEG DETAIL





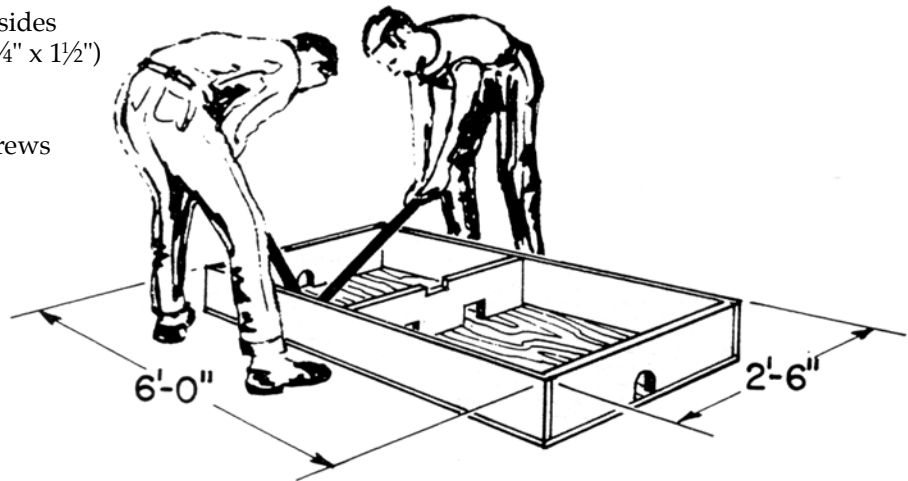
## Box Hockey

### Materials needed

- 1 piece of  $\frac{3}{8}$ " x 30" x 6 feet exterior grade plywood for floor
- 1 piece lumber 2 x 6 (actual size  $1\frac{1}{2}$ " x  $5\frac{1}{2}$ "") and 8 feet long for ends and partition
- 2 pieces lumber 1 x 6 (actual size  $\frac{3}{4}$ " x  $5\frac{1}{2}$ "") and 6 feet long for sides
- 2 pieces lumber 1 x 2 (actual size  $\frac{3}{4}$ " x  $1\frac{1}{2}$ "") and 30" long for sticks
- 1 puck — 1" thick, 2" diameter
- 12 — No. 6,  $1\frac{1}{4}$ " flathead wood screws
- 36 —  $1\frac{1}{2}$ " finishing nails
- Paint or varnish

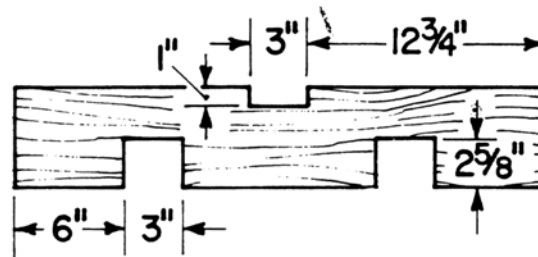
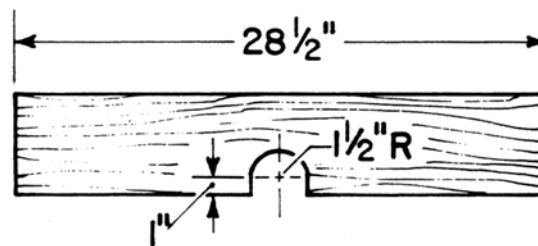
### Tools needed

- Crosscut saw
- Coping saw
- Pencil compass
- Square
- Countersink
- Claw hammer
- Drill with  $\frac{1}{8}$ " bit
- Oscillating or belt sander
- Paint brush



### How to play Box Hockey

Players stand on opposite sides of the box, which is placed on the floor. Each player has a hockey stick and holds it at the end. The puck is placed in the notch in the center partition. To start the game, the players "shinny off." (i.e., They touch the bottom of the box and then each other's stick three times, counting 1-2-3 go.) The object of the game is to knock the puck out of the box through the end opening to the player's own left. When the puck goes through opening, the players start over. Best two out of three goals win.





## Shoe Shine Box

### Materials needed

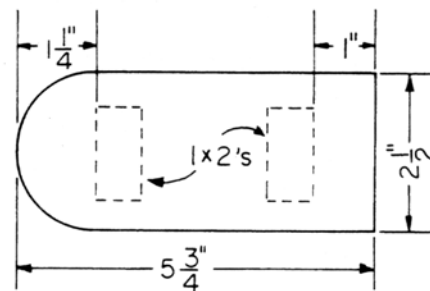
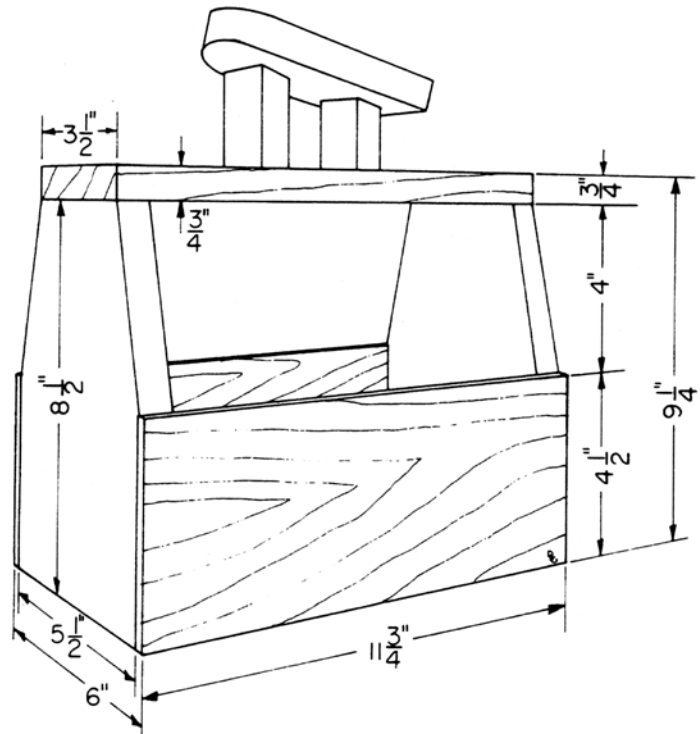
- 1 piece of 1 x 6 lumber (actual size  $\frac{3}{4}$ " x  $5\frac{1}{2}$ ") and 30" long—bottom and ends
- 1 piece of 1 x 4 lumber (actual size  $\frac{3}{4}$ " x  $3\frac{1}{2}$ ") and 24" long—top and footrest
- 1 piece of 1 x 2 lumber (actual size  $\frac{3}{4}$ " x  $1\frac{1}{2}$ ") and 6" long—footrest supports
- 1 piece of plywood  $\frac{1}{4}$ " x  $4\frac{1}{2}$ " x 24"—sides
- 6d finishing nails
- 1" wire brads
- Glue
- Finish, optional

### Tools needed

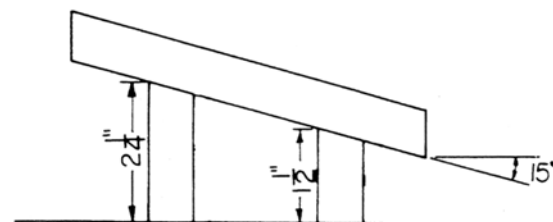
- Hand saw
- Coping saw
- T bevel
- Square
- Hammer
- Bar clamp or adjustable clamp
- Plane
- Belt or oscillating sander (or sandpaper)

### Instructions

1. Cut out pieces to size, as illustrated.
2. Plane all edges smooth and sand pieces before assembly.
3. Attach ends to bottom using glue. Hold with a clamp until dry, then nail.
4. Assemble the footrest and attach it to the top.
5. Attach the top to the ends using glue and nails.
6. Now, attach the plywood sides using glue and the wire brads. Nail into the ends and bottom pieces.
7. Finish as desired.



TOP VIEW



SIDE VIEW



## Step Stool/Chair

### Materials needed

- 1 piece of lumber 1 x 8 (actual size  $\frac{3}{4}$ " x  $7\frac{1}{4}$ ") and 6 feet long. Out of this piece cut:
  - Two A pieces
  - Two B pieces
  - One seat,  $7\frac{1}{4}$ " x 12"
  - One back rest,  $4\frac{1}{4}$ " x  $13\frac{3}{4}$ "
  - Two corner blocks, each  $\frac{3}{4}$ " x 1" x  $6\frac{1}{2}$ "
- 1 piece of  $\frac{3}{4}$ " x 16" dowel stock. Out of this piece cut:
  - Two stops,  $\frac{3}{4}$ " x  $1\frac{1}{2}$ "
  - One spacer,  $\frac{3}{4}$ " x 12"
- 2 —  $\frac{1}{4}$ " x 2" machine bolts
- 6 —  $\frac{1}{4}$ " steel washers
- 6d finishing nails
- Glue
- Finish, optional

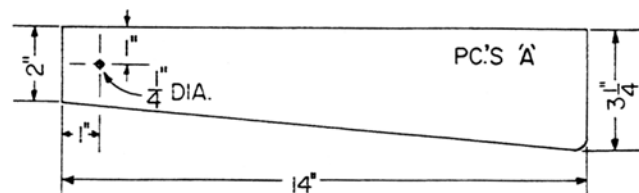
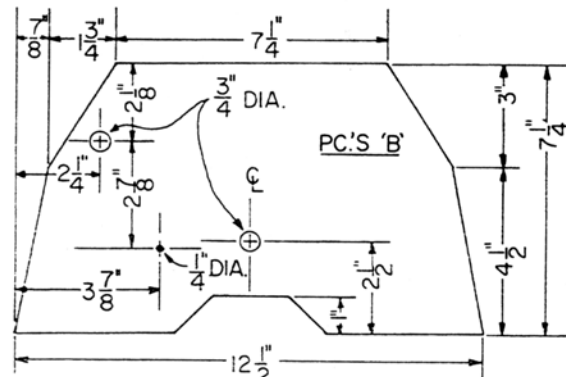
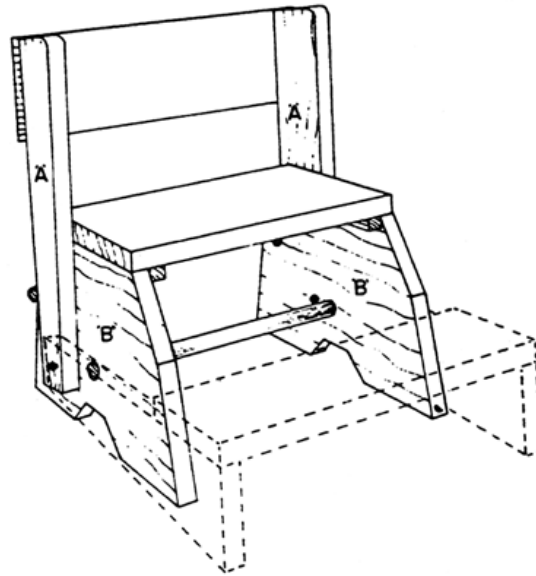
**Note:** Place a steel washer between piece A and piece B, as well as at each end of the bolt.

### Tools needed

- Hand saw
- Hammer
- Drill press or boring tools with appropriate bits
- Coping saw
- Belt or oscillating sander (or sandpaper)
- Clamp (if gluing pieces together)

### Instructions

1. Cut all pieces to size as illustrated.
2. Drill  $\frac{1}{4}$ " and  $\frac{3}{4}$ " holes in B pieces as illustrated.
3. Nail the corner blocks to B pieces.
4. Place dowels for stops and spacer through B pieces, gluing together.
5. Attach seat to B pieces.
6. Drill holes in A pieces as illustrated.
7. Attach A pieces to backrest.
8. Attach A pieces to B pieces using machine bolts and washers on each end of B pieces.
9. Finish as desired.





## Medicine Cabinet for Barn

### Materials needed

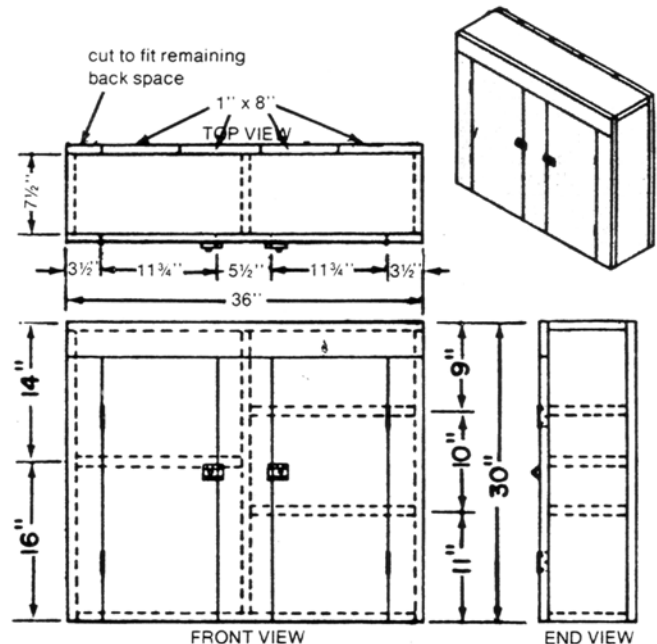
- 2 pieces 1 x 8 lumber (actual size  $\frac{3}{4}$ " x  $7\frac{1}{4}$ ") and 10 feet long
- 1 piece 1 x 8 lumber (actual size  $\frac{3}{4}$ " x  $7\frac{1}{4}$ ") and 12 feet long
- 1 piece 1 x 4 lumber (actual size  $\frac{3}{4}$ " x  $3\frac{1}{2}$ ") and 8 feet long
- 1 piece 1 x 6 lumber (actual size  $\frac{3}{4}$ " x  $5\frac{1}{2}$ ") and 3 feet long
- 2 pieces A-C or better interior plywood  $\frac{3}{4}$ " x 11" x  $26\frac{1}{2}$ "
- 2 pairs small butt hinges
- 2 cupboard turns (or locks)
- Paint
- Screws
- Nails
- Finish, optional

### Tools needed

- Hand saw
- Plane
- Screwdriver
- Chisel
- Hammer
- Oscillating or belt sander
- Square
- Paint brush

### Instructions

1. Cut top, bottom, and sides from 1" x 8" x 12' piece.
2. Assemble with screws, keeping corners square.
3. Cut 4 back boards from one 1" x 8" x 10' piece.
4. Cut remaining back board to length from other 1" x 8" x 10' piece. Cut to fit width of remaining back space using a rip saw.
5. Assemble back to frame with nails keeping corners square.
6. Cut center divider and shelves from 1" x 8" x 10'.
7. Install with nails.
8. Cut door frame from 1" x 4" x 8'.
9. Install with screws.
10. Slightly bevel latch side of plywood doors.
11. Notch door and door frame with chisel to receive butt hinges.
12. Install hinges with screws.
13. Install cupboard turns (or locks).
14. Sand and finish inside and out.





## Saw Horse

### Materials needed

(for horse with 24" legs)

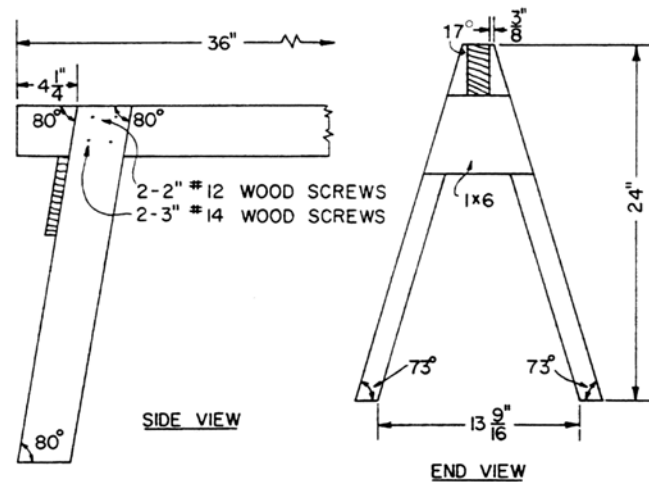
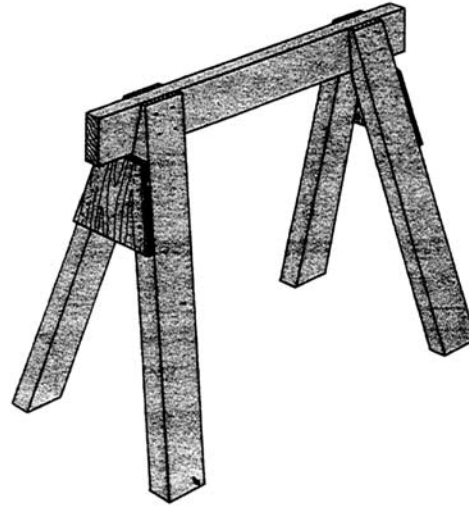
- 1 piece 2 x 4 lumber (actual size 1½" x 3½") 12 feet long, sound wood, free from cross grain, shakes, or other defects which will reduce the strength
- 1 piece 1 x 6 lumber (actual size ¾" x 5½") 2 feet long
- 8 — No. 14, 3" flathead wood screws
- 20 — No. 12, 2" flathead wood screws
- 20 — 4d finishing nails
- Colorless penetrating wood finish, such as boiled linseed oil or varnish with paint thinner or commercial wood seal

### Tools needed

- Hammer
- Crosscut saw
- Screwdriver
- Countersink
- Combination square
- Sandpaper
- Tape rule
- T bevel
- Plane

### Instructions

1. Lay out and cut all pieces.
2. Assemble saw horse as shown with nails.
3. Drill pilot holes and install screws.
4. After the legs are marked and cut out, 1¼" is cut off the tapered end to give a narrow, flat end section. The flat end section will be flush with the top of the beam.



### Suggested Construction Dimensions

Horse height	Leg distance (top) from beam end	Layout leg length	Trimmed leg length
18"	3⅛"	20⅝"	19⅜"
20"	3½"	22⅝"	21⅜"
24"	4¼"	26¾"	25½"





## Garage Creeper

### Materials needed

- 2 pieces of 1 x 2 lumber (actual size  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " ) and 40" long
- 4 pieces of 1 x 2 lumber (actual size  $\frac{3}{4}$ " x  $1\frac{1}{2}$ " ) and 16" long
- 1 piece of  $\frac{1}{4}$ " x 16" x 40" exterior grade plywood
- 4 swivel casters or rollers for creeper. These are available from some mail order houses and most auto supply houses.
- 16 — No. 10,  $\frac{3}{4}$ " flathead wood screws
- 8 —  $\frac{1}{4}$ " x 2" carriage bolts with nuts
- 8 —  $\frac{1}{4}$ " washers
- 1 piece 1" x 12" x 18" plastic foam to fold for headrest covering
- $\frac{1}{3}$  yard vinyl plastic upholstery for headrest covering
- Upholstery nails
- 24 —  $\frac{5}{8}$ " wire brads
- Waterproof glue
- Enamel or wood sealer finishing material

### Tools needed

- Saw
- C-Clamp
- Screwdriver
- Wrench
- Drill and  $\frac{1}{4}$ " bit
- Sandpaper
- Square
- Paint brush
- Plane

### Instructions

1. Cut hardwood strips to size.
2. Round upper inside corner of the 1" x 2" x 40" side pieces with plane.
3. Glue these side pieces to plywood sheet. Use  $\frac{5}{8}$ " brads about 5" apart to serve as glue clamps.
4. To attach 1" x 2" x 16" strips: Clamp in place and drill bolt holes. Release clamps and apply glue. Insert bolts and tighten. Use 3 brads across plywood area to hold plywood to strip while the glue dries.
5. Attach casters or rollers. Check to see that they have clearance to swing in a full circle.
6. Finish.
7. Fold and attach headrest.

