



Woodworking Plans

4-H Key Holder

Materials needed

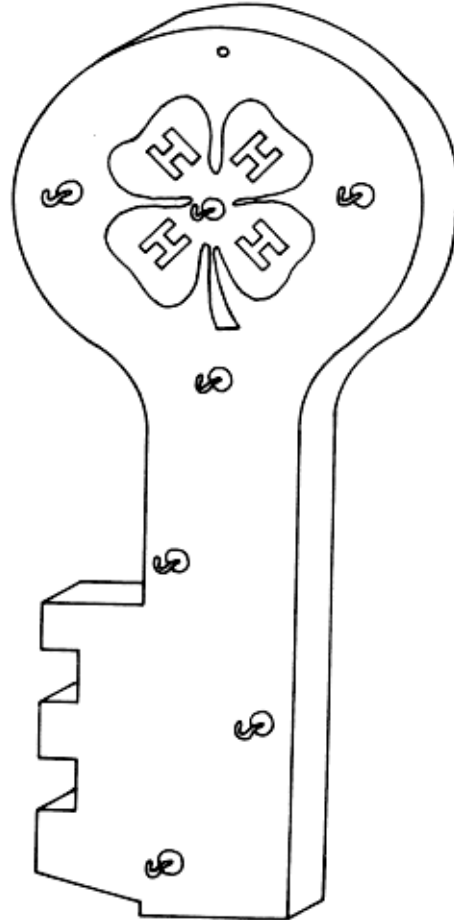
- 1 piece of 1 x 6 lumber (actual size $\frac{3}{4}$ " x $5\frac{1}{2}$ " x 11" long)
- 7 — $\frac{1}{2}$ " cup hooks
- Carbon paper
- Sandpaper (medium and fine grit)
- Paint (green and white)
- Stain
- Varnish

Tools needed

- Coping saw or saber saw
- Boring tool with $\frac{1}{8}$ " bit
- Woodburning tools (optional)

Instructions:

1. Trace pattern onto wood using carbon paper. (See instructions for grid enlargements on page 11.)
2. Cut out the key using the saw.
3. Drill $\frac{1}{8}$ " hole at top for hanging.
4. Sand the wood piece thoroughly.
5. Stain the piece.
6. Take the pattern and re-mark your wood for the 4-H Clover design and cup hooks.
7. Paint the clover green and the H's white. (Instead of using paint, you can burn the clover design into the wood with a woodburning tool.)
8. Varnish the entire item.
9. Install the hooks.





Cutting Board

Materials needed

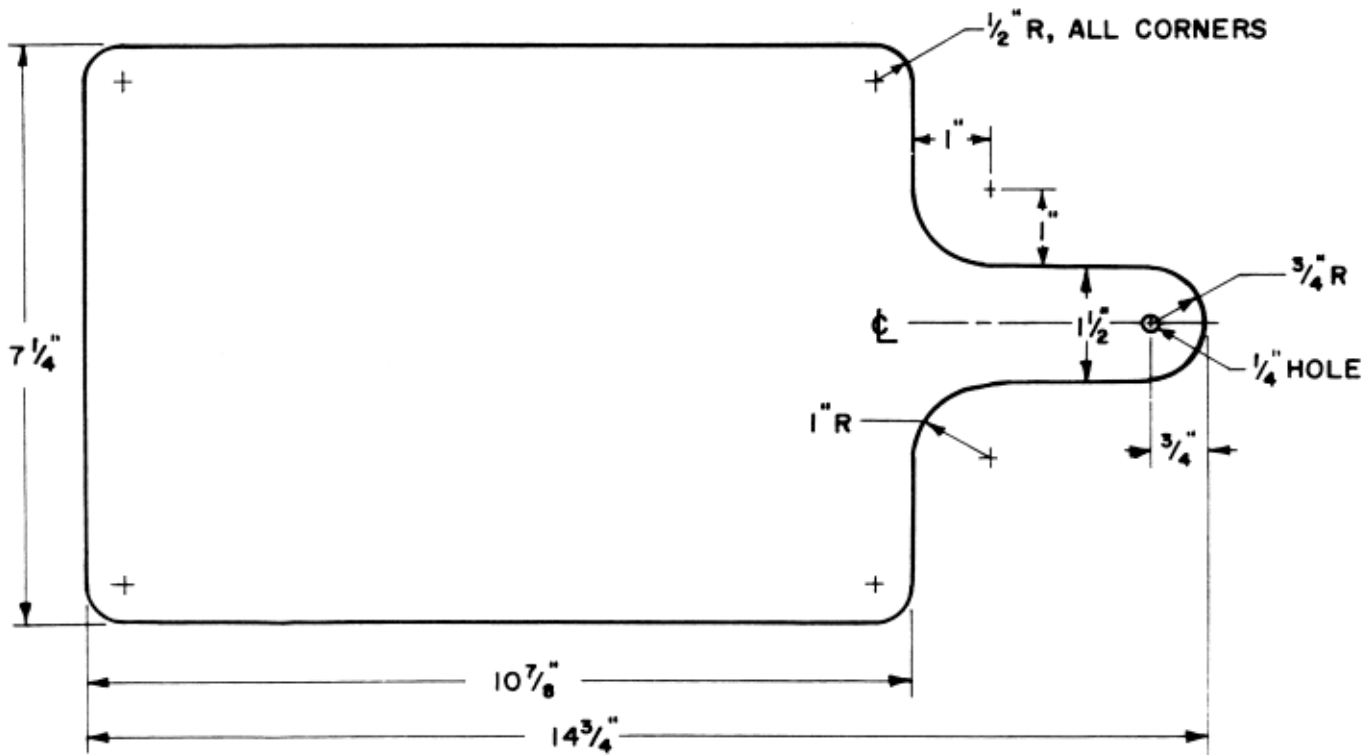
- 1 piece of 1 x 8 hardwood (actual size $\frac{3}{4}$ " x $7\frac{1}{4}$ ") x 15" long
- Sandpaper (medium and fine grit)
- Varnish

Tools needed

- Pencil compass
- Square
- Saw (coping, jig, or saber saw)
- Boring tool with $\frac{1}{4}$ " bit

Instructions

1. Using the pencil compass, lay out curves and the hole in the handle on your wood piece. Use the square to make straight lines on the sides and end.
2. Cut out the curves and drill hole.
3. Sand both sides.
4. Finish with two or three coats of varnish, on one side only. (This process is optional.)





The Shifting Pyramid Game

Materials needed

- 1 piece of $\frac{3}{4}$ " x 8" x 8" A-D or better plywood, or use a piece of lumber 1 x 10 (actual size $\frac{3}{4}$ " x 9 $\frac{1}{4}$ ") x 8" long (base)
- 1 piece of $\frac{1}{4}$ " x 6" x 6" A-D or better plywood, or use a piece of lumber 1 x 8 (actual size $\frac{3}{4}$ " x 7 $\frac{1}{4}$ ") x 6" long (game pieces)
- 1 piece of $\frac{1}{4}$ " dowel stock, 12" long (pegs)
- Glue
- Sandpaper (medium and fine grit)
- Finishing material (optional)

Tools needed

- Saw (coping, saber or jig saw)
- Boring tool with $\frac{1}{4}$ " and $\frac{3}{8}$ " bits

Instructions

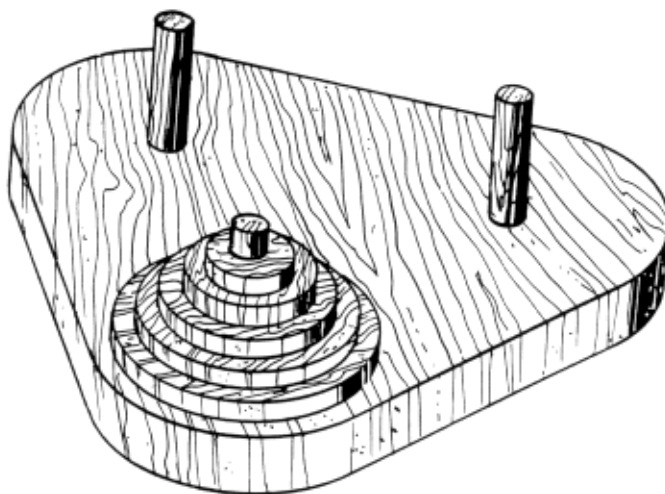
1. Trace the pattern for the base using carbon paper between your piece of wood and the pattern. Use the pattern on page 22.

NOTE: If your saw cuts on the pull stroke, trace your pattern on the back side of your wood piece so that the front face of the piece does not get damaged during cutting.

2. Cut out the base using a saw.
3. Mark and drill $\frac{1}{4}$ " peg holes, $\frac{1}{2}$ " deep in the base at the locations marked with an X.

4. Sand the surfaces and edges of the base.
5. Cut three pieces of the $\frac{1}{4}$ " dowel stock, 3" in length.
6. Sand the dowel pegs, rounding the top ends.
7. Apply glue to the sides of the holes with a small stick, then place the pegs in the holes.
8. Mark and cut the five movable pieces from the $\frac{1}{4}$ " plywood. Dimensions of the pieces are (3 x 3"), (2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "), (2" x 2"), (1 $\frac{1}{2}$ " x 1 $\frac{1}{2}$ "), and (1" x 1"). These pieces can be cut round or square.
9. Mark the centers of each individual piece, and drill a $\frac{3}{8}$ " hole completely through the piece.
10. Sand each piece and finish with a material of your choice. Painting the pieces different colors adds eye appeal.

How to Play:





Place five pieces on one peg in pyramid formation. The object is to shift the entire pyramid (5 pieces) to another peg, moving one piece at a time and at no time having a larger piece above a smaller one. Can you do it in 31 moves (that's perfect)?

To make the puzzle more challenging, use seven blocks instead of five.

