

Puzzle - 9 blocks in a box

This is a box puzzle that I built as a boy. The source is unknown to me. The object is to move the large square block from the lower left corner to the lower right corner of the box without removing any blocks. If each touch is called a move, it can be solved in 26 moves. If the rectangular blocks are rotated before starting, it may be solved in fewer or more moves, or it may be unsolvable. The diagram shown is the STANDARD setup that requires 26 moves (sliding only one block at a time).

Materials needed:

The project is based on using lattice wood, 1 1/8" wide (1/4" thick). The square block can be made by gluing 2 of the 1 1/8" x 2 1/4" blocks together or by cutting it from 1/4" AC plywood).

1. 23" of 1 1/8" lattice (fir/ spruce) for blocks.
2. ~22" of 1 1/8" lattice for box sides.
3. 4 1/2" x 5 5/8" bottom from 1/2" or 5/8" AC plywood or a piece of 1 x 6 pine. A thick bottom gives the boys a good surface to nail the sides onto.
4. Sandpaper, 150 -220 grit for final sanding by boys.
5. Nails, 8; 1" x 15 gauge for attaching the sides to bottom.
6. Photocopy of starting diagram (below).
7. 4 or 5 Magic® markers or wax shoe polishes to color the blocks (in pairs).



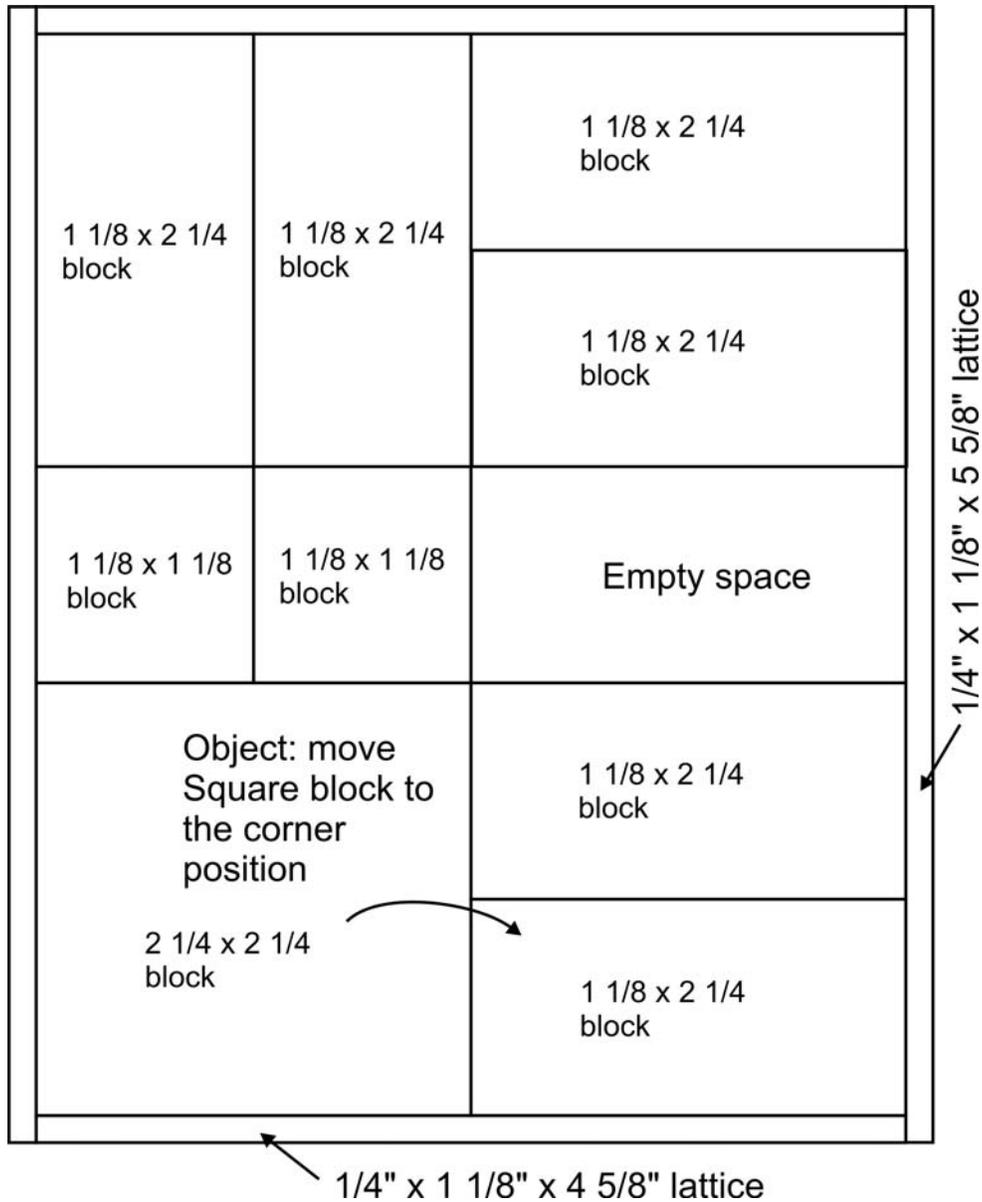
Before the meeting:

1. Cut blocks from 1 1/8" lattice.
2. Glue 2 rectangular pieces to form the square block (unless you have cut it from plywood).
3. Cut 2 - 4 1/2" box sides from 1 1/8" lattice.
4. Cut 2 - 6 1/8" box sides from 1 1/8" lattice.
5. Cut box bottom from 1/2" or 5/8" AC plywood or 1 x 6 pine (4 1/2" x 5 5/8").
6. Sand all parts with belt sander.
7. Reduce the starting diagram by about 50%, make copies so each boy will have one to glue on the back side of their box (so they don't forget how to put the pieces in the box).

NOTE: Be sure there is 1/16" clearance between the blocks in the box.

Assembly at the meeting:

1. Sand all parts with sandpaper (150-220 grit)
2. Glue and nail (1" x 15 gauge nails) four sides the box bottom (see photo),
3. Use Magic® markers or 4 or 5 colors of wax shoe polish to color the blocks (in pairs). If the square block is left natural, then only 4 colors will be needed to color the 4 pairs. Coloring the blocks adds a lot to the project.
4. Cut out the starting diagram (reduced size) and glue it to the back side of their box.
5. If you have time, have a contest to see who can solve the puzzle the fastest.
6. Put their puzzle in a plastic baggie so they don't lose some parts on the way home.



1X Diagram of the puzzle showing the starting position of all 9 blocks with the square block in the lower left corner. The arrow shows the final position of the square block in the lower right corner. This can be done in 26 moves (sliding only one block at a time). If the 2 rectangular blocks in the lower right corner are rotated 90° , (vertical), the puzzle is easier and can be solved in 17 moves.