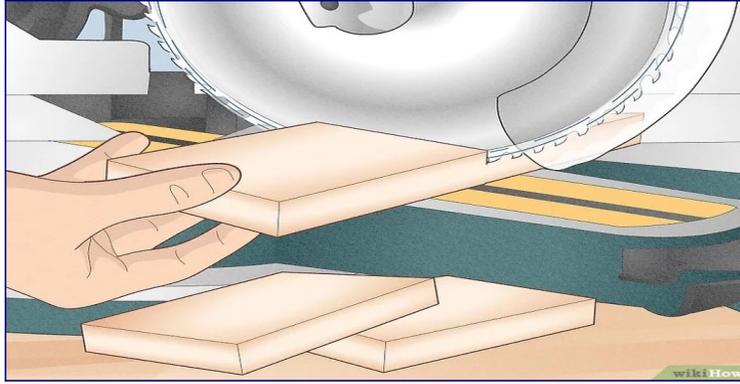


<https://www.youtube.com/watch?v=bogXj4dQTYQ&t=46s>

### 3D Interlocking Block Puzzle

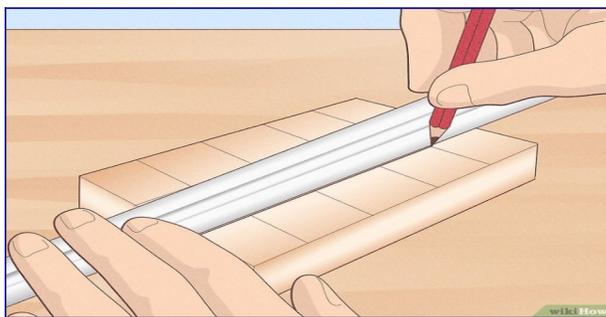


1.

1

**Saw a board into 3 rectangular pieces.** Get a  $13 \times 2 \frac{1}{4} \times \frac{3}{4}$  in ( $33.0 \times 5.7 \times 1.9$  cm) board of hardwood, such as maple, poplar, or birch.<sup>[1]</sup> Mark  $3 \frac{3}{4}$  in (9.5 cm) lengths on the board, leaving about  $\frac{1}{4}$  inch (0.64 cm) between the pieces so you can make clean cuts. Use a miter saw to make straight cuts through your lines so you have 3 pieces of wood that are the same size.

- A miter saw has a large circular blade to ensure that you can make long, straight cuts.
- **Alternative:** If you don't have a saw at home, ask to have your wood cut at the store when you buy your supplies.
- Put on safety glasses before you use any power tools to protect your eyes from dust and wood chips.

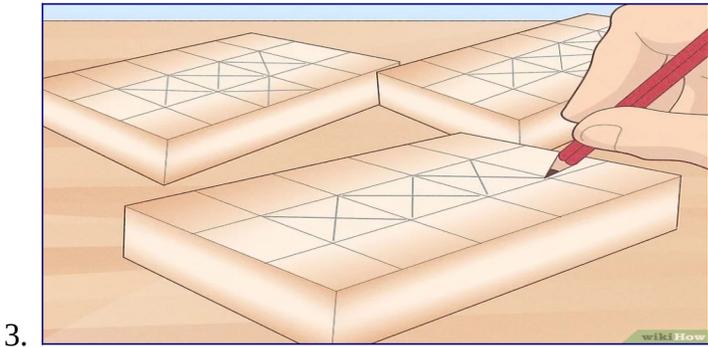


2.

2

**Draw a 3 x 5 grid on the fronts of the wood pieces.** Measure every  $\frac{3}{4}$  inch (1.9 cm) along the edges of the wood pieces and mark them with a pencil. Draw straight lines across the front of the wood to create a 3 x 5 grid of squares on each piece.

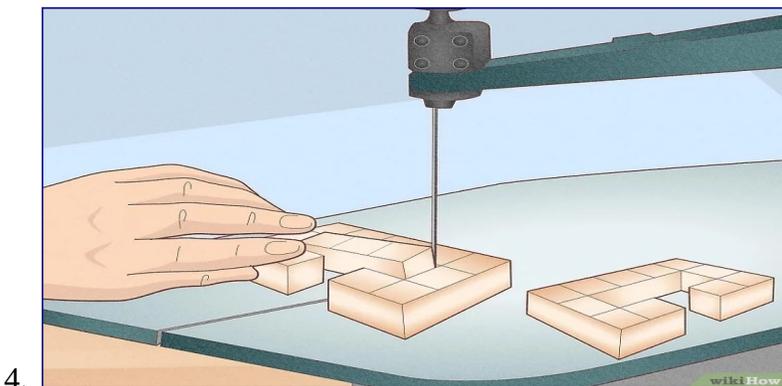
- Make the lines lightly so you don't leave any indentations in the wood and can easily erase your marks.



3

**Mark the 3 or 4 center squares on each wood piece with a pencil.** On each of the wood pieces, draw a large X inside the 3 squares in the center that don't touch an edge. Then, for 2 of the pieces, mark the 3rd square along one of the long edges so the unmarked squares look like the letter C.

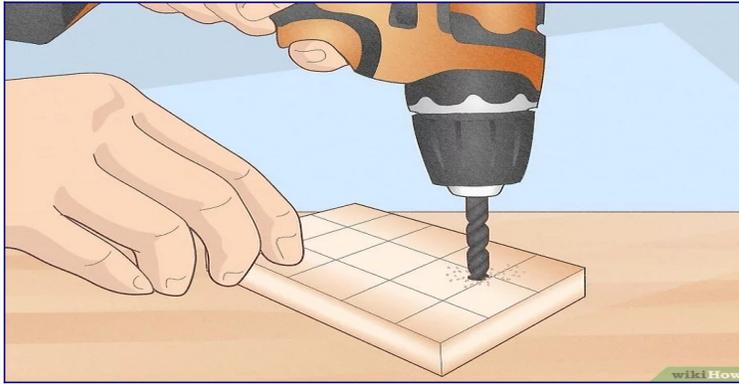
- Marking the squares helps you see which ones you need to cut out at a glance so you don't make a mistake.



4

**Saw 2 of the wooden pieces into C-shapes with a scroll saw.** Put on your safety glasses and use a #7 blade on a scroll saw to cut through the wood. [Turn on the scroll saw](#) and slowly push the wood into the blade to make your cuts. Follow along the outlines of the marked squares to cut them out completely.

- Scroll saws have narrow blades so you're able to cut out curves and more intricate pieces without damaging the saw.
- **Alternative:** If you don't have a scroll saw, you may be able to carefully cut out the pieces with a [hacksaw](#) instead.
- Try cutting the squares out in multiple pieces if you have trouble trying to remove them as a single piece.
- Be careful not to push the wood with a lot of force since you could damage the saw blade or get injured.

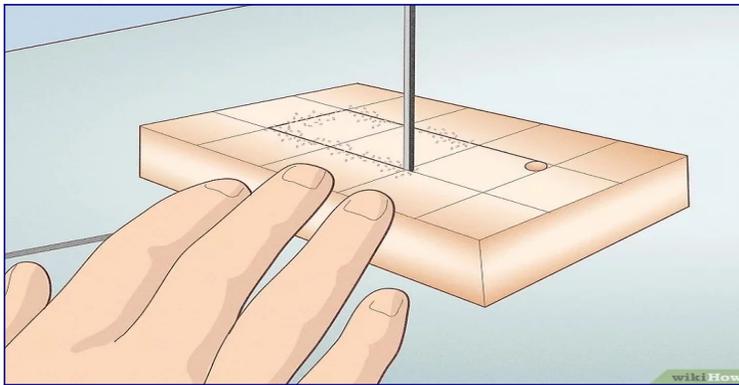


5.

5

**Drill through the middle square on the last wood piece.** Use a drill bit that's slightly wider in diameter than your scroll saw's blade. Take the last uncut wood piece, and position the drill right next to the outline on the middle square. Apply light pressure to guide the bit through the wood.

- Drilling the hole in the last wood piece lets you saw the squares without cutting a line in from the edge.
- Forcing the bit through the wood could damage the drill or the wood, so work slowly if you feel resistance.

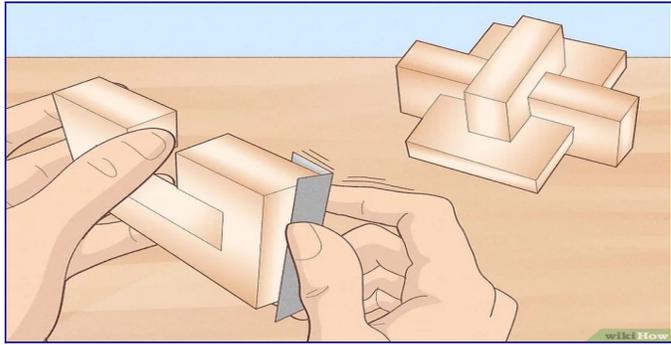


6.

6

**Cut out the 3 central squares to make an O-shaped piece.** Put your scroll saw's blade through the hole you just drilled in the wood piece. Turn on your saw and slowly guide the wood through the blade. Carefully follow along the outlines of the 3 middle squares to remove them from the wood piece.

- Keep your fingers to the side of the saw blade as you guide the wood so there's less risk of cutting yourself.



7.

7

**Smooth out the cut edges with sandpaper.** You can use any grit sandpaper that you have to smooth out your puzzle. Fold the sandpaper a few times and gently rub the sides of the wood pieces that you cut. As you sand, try sliding one of the pieces through the middle hole of another piece to test if they move smoothly or still catch on the wood.

- You can also sand over the grid lines that you drew to remove them instead of using an eraser.