

Easy steps for making stairs in half-inch scale

A complicated-looking assembly made simple

by Larry Elsenheimer | Homosassa, Florida | Photos by the author



Stairways add character and detail that bring an otherwise ordinary structure to life. The following instructions will show you a logical sequence for fabricating something that looks complex but is actually relatively easy to make. As an added benefit, making these stairways will give you confidence to tackle other projects.

Photo 1. Using $\frac{1}{4}$ "-square graph paper and a straightedge, draw a $\frac{1}{2}$ " vertical line,

then a $\frac{1}{2}$ " horizontal line to form a step. Keep adding steps until you've reached the desired height.

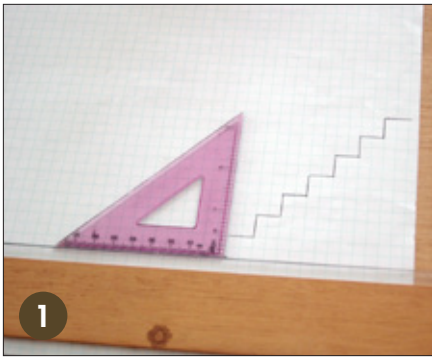
Photo 2. Draw a diagonal line along one side of the zig-zag drawing, as shown in the picture.

Photo 3. Cut off the corner of the paper on the diagonal line. Get a strip of wood $\frac{1}{8}$ " x $\frac{5}{8}$ " x whatever length you need, and a sheet of carbon paper. Place the carbon paper face down on top of the wood.

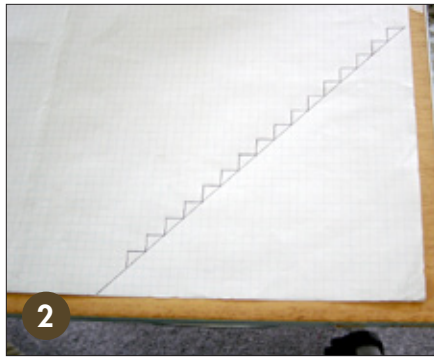
These stairs look complex but are surprisingly easy to construct using the author's methods. They add lots of character to structures.

Now align both the carbon paper and the wood along the zig-zag-patterned edge of the drawing as shown. I use tape to fasten them down so they won't shift when I do the next step.

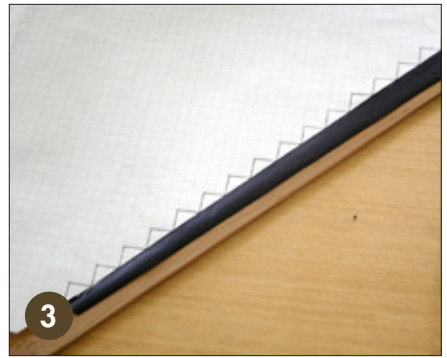
Photo 4. Using a ballpoint pen, trace the pattern onto the wood. Carefully lift



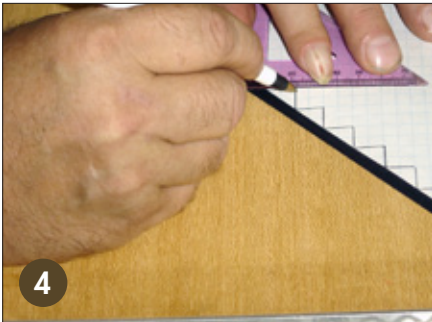
1 Steps are drawn on graph paper.



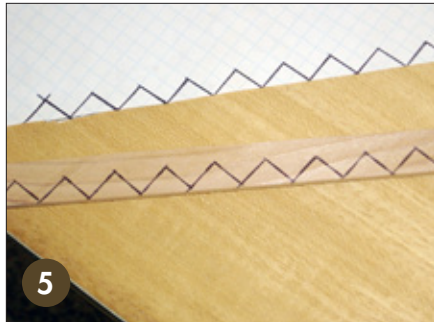
2 A diagonal line is drawn under the steps.



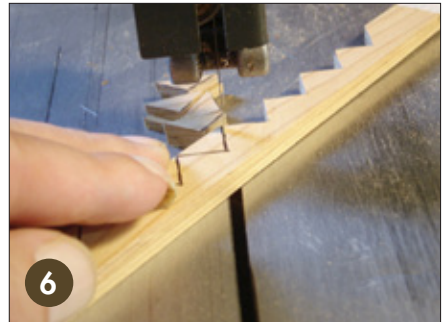
3 The paper is trimmed and wood and carbon paper are placed beneath.



4 Steps are transferred to the wood.



5 The wood stringer, ready to cut.



6 Steps are cut on the bandsaw.



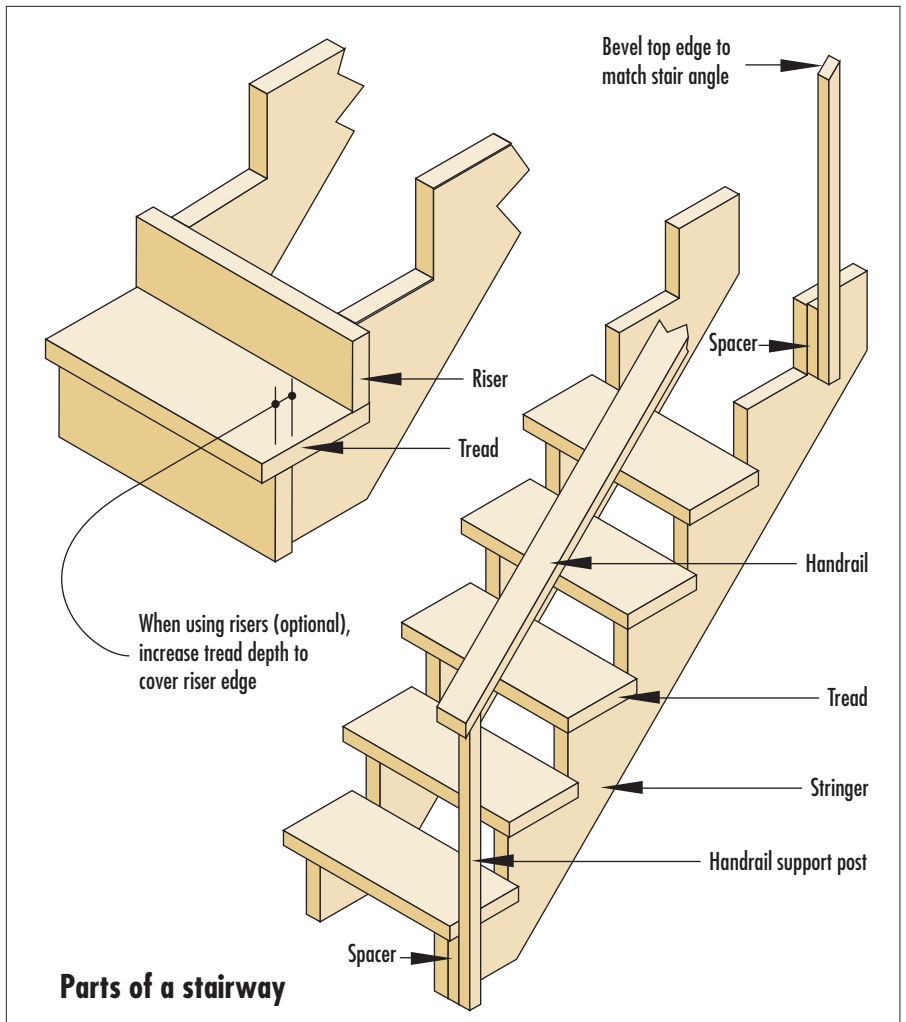
7 Treads are glued in place.

one corner of the carbon paper to make sure that the zigzag pattern has transferred to the wood.

Photo 5. Remove the pattern and carbon paper from the strip of wood. You might want to go over the transferred pattern with a straight edge to make the lines darker and more uniform.

Photo 6. To insure that both pieces match, I found it easier to cut two strips of wood at the same time. Tape two pieces together with the pattern on top. Carefully cut out the pattern using a bandsaw. When you have finished, remove the tape. The finished pieces are called stringers. If you don't have a bandsaw, you can carefully cut the steps by hand using a razor saw or a coping saw with a fine blade.

Photo 7. Determine the width of the steps, then draw two parallel lines on a



Parts of a stairway



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A finished stair.

sheet of graph paper that distance apart. Tape the graph paper over a piece Styrofoam. Then tape a sheet of waxed paper over the graph paper. Place the two finished stringers over the lines and fasten them in place with dress pins. Make sure that the ends are even and the pieces are parallel to each other.

Cut the individual steps (treads) from a piece of $\frac{1}{16}$ " x $\frac{5}{8}$ " stripwood. Make them $\frac{1}{8}$ " or $\frac{1}{4}$ " wider than the risers. The sides of the steps will then have a $\frac{1}{16}$ " or $\frac{1}{8}$ " overhang, depending on your preference.

If you want to add backing (risers) to the steps, make the treads deeper by the thickness of the riser.


Pour a small puddle of glue on the waxed paper near the stringers. Titebond waterproof glue works best for me. Now take a toothpick or a cotton swab and apply the glue to the stringers, a couple of steps at a time. Using tweezers, place the treads onto the stringers. When all of the steps are in place, set the assembly aside to dry.

Photo 8. The finished stair.

Photo 9. If you want to add railings, cut four or six $\frac{1}{8}$ " x $\frac{1}{8}$ " x $\frac{1}{2}$ " pieces of stripwood and glue them to the outside of the bottom and the top steps as shown in the photo and the drawing. These will be spacers for the handrail supports.

For the handrail supports, cut $\frac{1}{8}$ " x $\frac{1}{8}$ " pieces of stripwood, 2" long (or more, depending on your scale) and glue them onto the $\frac{1}{8}$ " x $\frac{1}{8}$ " spacers. I used slightly bent paper clips to hold these pieces in place while the glue dried.

For the handrails, cut two pieces of stripwood, $\frac{1}{16}$ " x $\frac{1}{4}$ " x however long you need, and glue them to the tops of the support posts. Again, I used paper clips to attached the handrails. Now let everything dry overnight.

For multiple stairways, I added a landing and attached another set of steps that goes up to another story. For a free-standing staircase, you can add tall support posts or attach 45° brackets to the side of the structure. 



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A wooden railing completes the stair.