

Newsletter: Creative Theatrical Ideas

SEP
27 2016

Building a Simple Stair Set

By Brian D. Taylor, Project Editor, Pioneer Drama Service

Brian D. Taylor is the project editor for Pioneer Drama Service, a published playwright and a former drama teacher. Working with K-12, college and community theatre groups, he has a wide theatrical background with experience in directing, acting and technical theatre.

Many theatrical productions call for stairs of some kind, whether it's a short staircase leading off to suggest the second floor of a house, a concrete stairway leading down the hill in the park, or perhaps just a set of backstage stairs that an actor can use to access an onstage platform that represents a balcony. What was that famous balcony scene...?

In this article, I will detail a design and cut list for how to make a 4'W x 4'D stair with six steps that will rise 42"... just enough to step up to a standard 4' high platform. And all of this can be done using only two 4' x 8' sheets of plywood.

That's right. Just two sheets of plywood. (Well, that and some screws and tape.)

Let's start with some staircase terminology:

Stair -- a set of steps

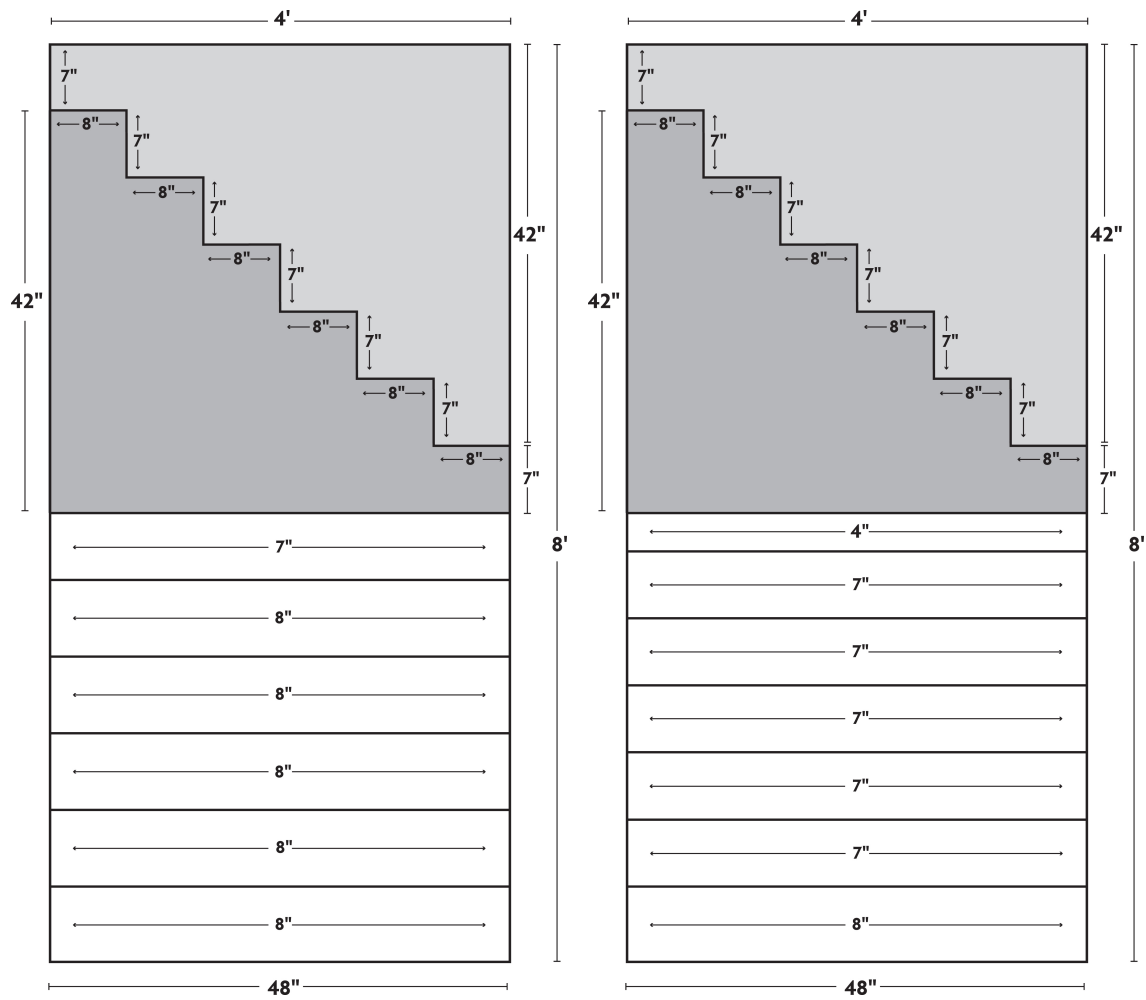
Tread -- the horizontal part of a step that is actually stepped on

Riser -- the vertical part of a step

Stringer -- the part of the stair that supports the structure that the treads and risers are mounted to

Now onto the building... Most of the various types of plywood should work for this project as long as your sheet is roughly 1/2" thickness. To ensure adequate weight-bearing capability, 1/4" thickness or less is not advised.

The most important part of the process will be measuring and cutting the plywood precisely so that no part of the lumber goes to waste. The two sheets of plywood should be cut using these layouts.



Figures 1 and 2: Cutting guides

Following these two diagrams for the two sheets of plywood will give you the following pieces:

- 4 Stringers, measuring 48"D x 42"H, each with 6 steps that measure 7"H x 8"D
- 6 Treads, measuring 48"W x 8"D
- 6 Risers, measuring 48"W x 7"H
- 1 Support Strip measuring 48"W x 4"H.

Once you've carefully measured and cut all the elements, you can begin construction of the stair. Begin with two of your stringers. Align them upright 48" from one another and attach a tread to the third step with screws. This will give you a relatively firm structure to start with.

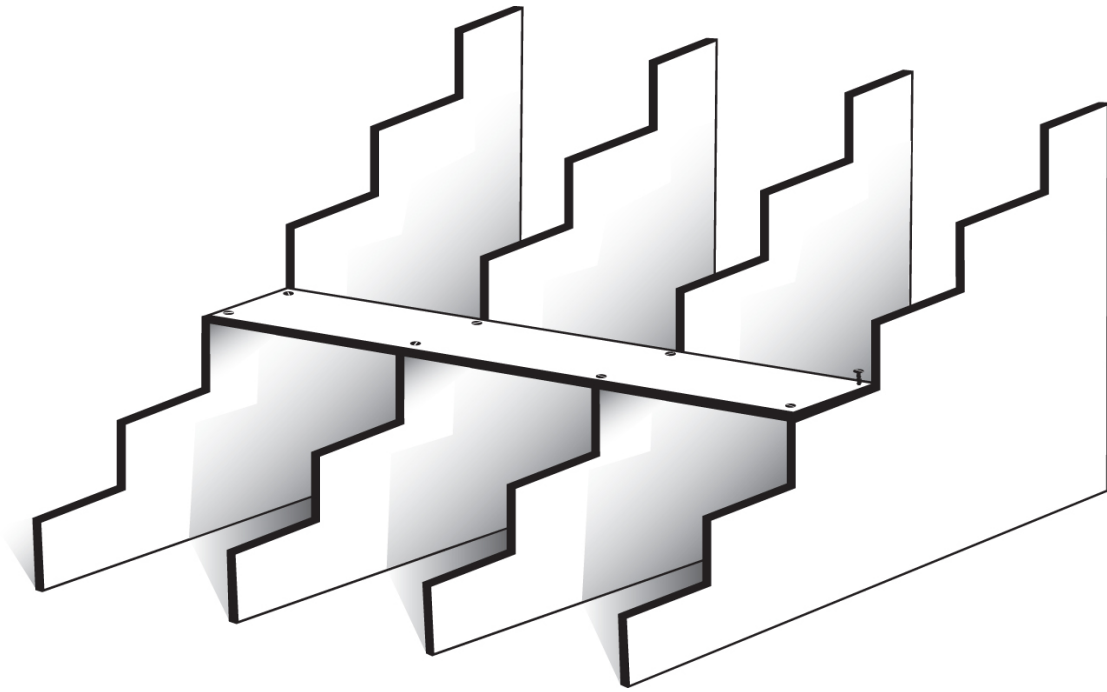


Figure 3: Stringers and tread

From there, add in the other two stringers so that all four stringers are 1' apart. Attach these additional two stringers to the third step tread with screws. Now add the remaining treads and risers until the stair is complete.

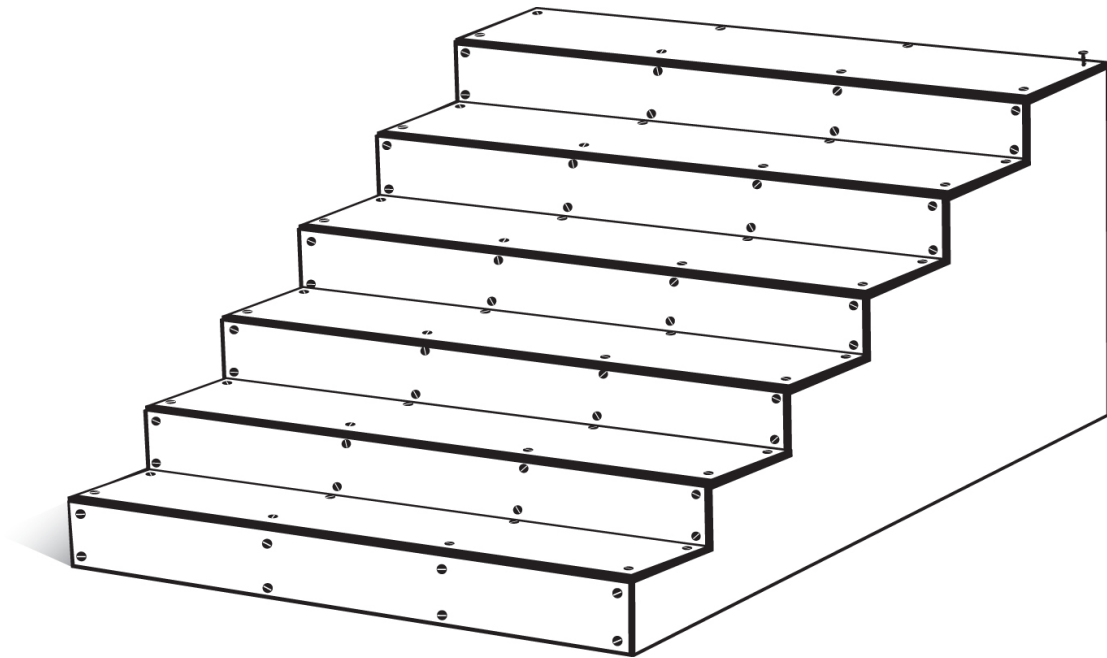


Figure 4: Complete stair

Finally, use the 4" support strip on the back along the bottom of the stair to add additional support to the back of the stringers.

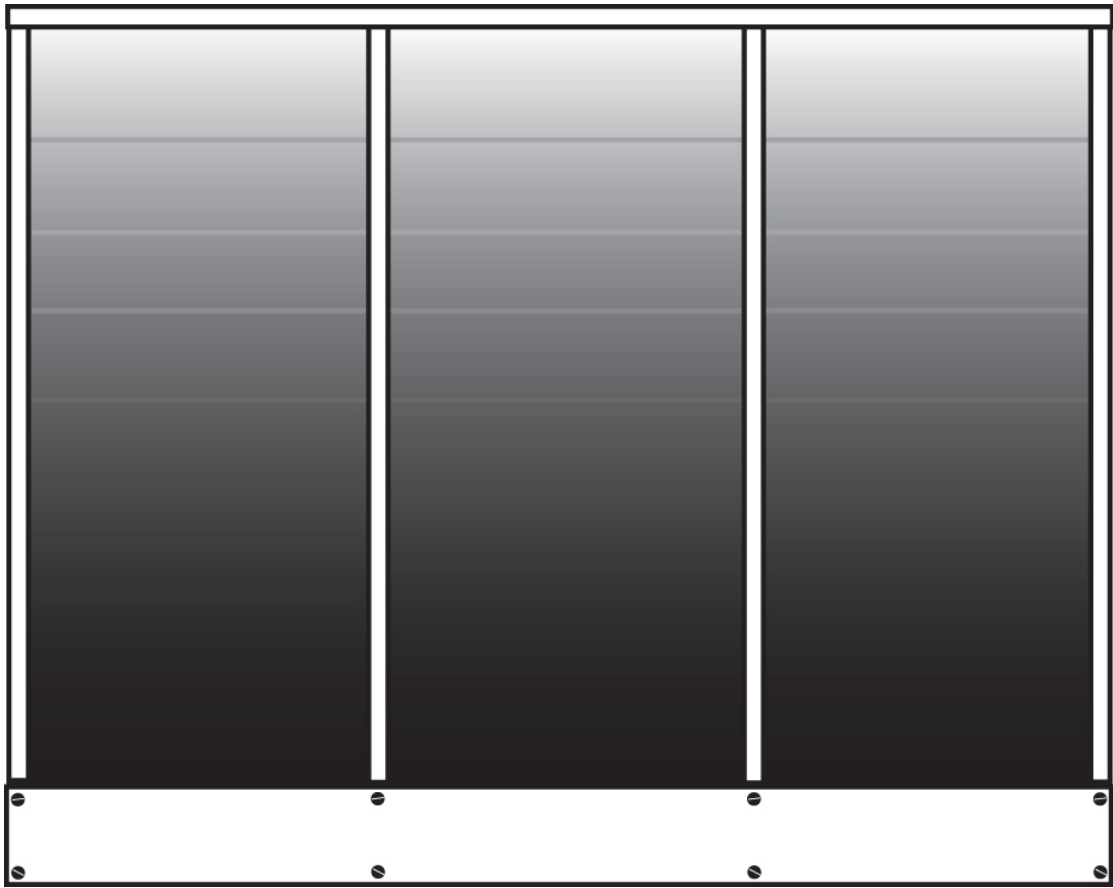


Figure 5: Add the back strip

Now that you have your stair constructed, there will be small gaps where the treads and risers are not flush. These gaps can be covered with heavy masking tape or duct tape or even with pasted on strips of muslin.

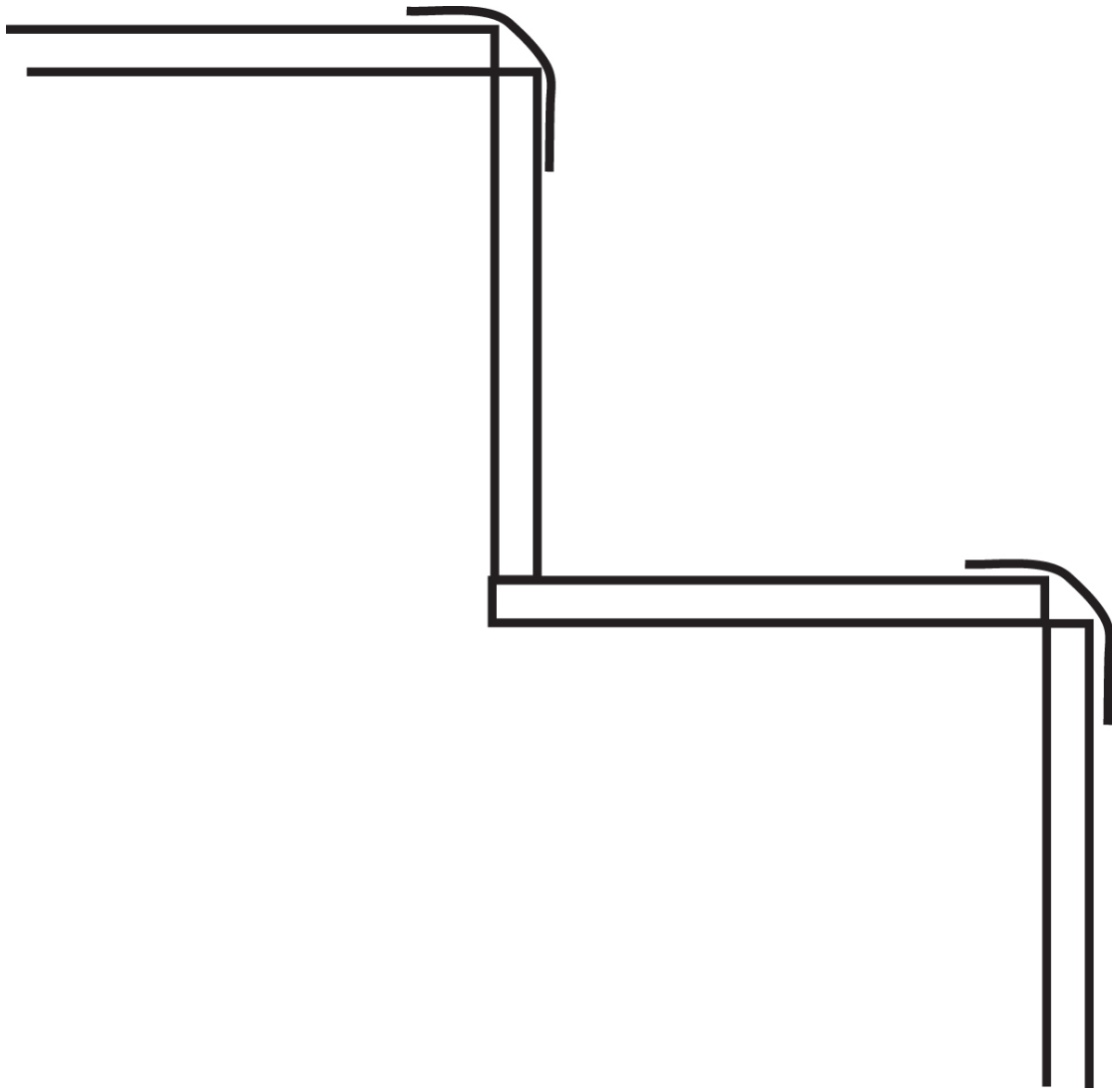


Figure 6: Cover the tread gaps

After the gaps are masked, your six-step stair is ready for paint!

IN THE SPOTLIGHT



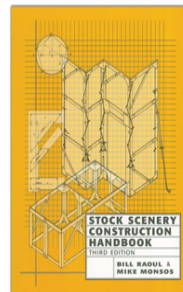
Play It Safe DVD — Introduction to Theatre Safety

This 80-minute DVD uses humor very effectively as it covers both an overview of



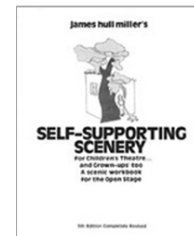
Backstage Handbook (3rd ed.)

This handy reference book brings together under one cover an incredible variety of information useful to



Stock Scenery Construction Handbook

This revised third edition of the popular college textbook has been fully updated



Self-Supporting Scenery for Children's Theatre ... and Grown- Ups, Too

Learn how to construct free-standing scenery to

important OSHA laws and the basic safety guidelines that everyone working in a theatre needs to know.

designers, technicians, and students who work behind the scenes in theatre, film, and television.

throughout to reflect the evolving nature of theatre design.

convert any space into a theatre.

Like what you've read? [Subscribe to our email newsletter.](#)