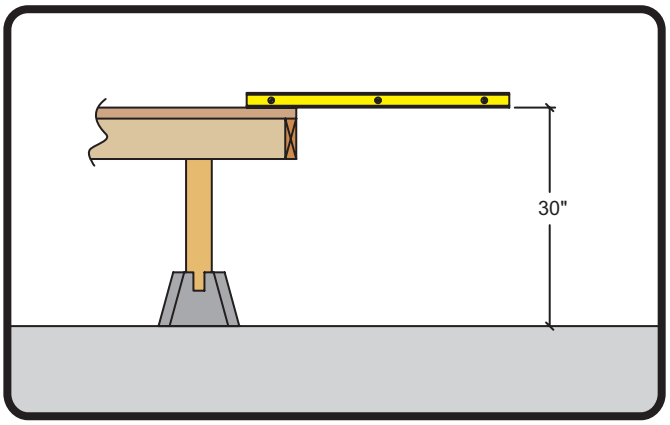
Floating Foundation

Deck System

How-To Build a Staircase

STEP 1 - Determine the Rise of the stairs.

Using a level on the deck as a guide, measure from the bottom of the level to the grounds surface at the end of the finished staircase. You will need to estimate where the end of the final staircase will most likely be (Total Run). To estimate this location, estimate the number of stair treads and multiply by 11 inches. Here we estimate four stair treads.



Terms

Rise is the vertical distance from the surface of one step to the surface of the next step.

The **Total Run** is the total horizontal distance covered by the staircase, from the edge of the deck to the

The **Total Rise** is the total vertical distance from the top surface of the deck to the bottom of the finished stairs.
Note: You can't find the rise simply by measuring straight down from the deck, because the ground directly below may not be level with the end of the

Run is the horizontal distance from the leading edge of one step to the leading edge of the next step

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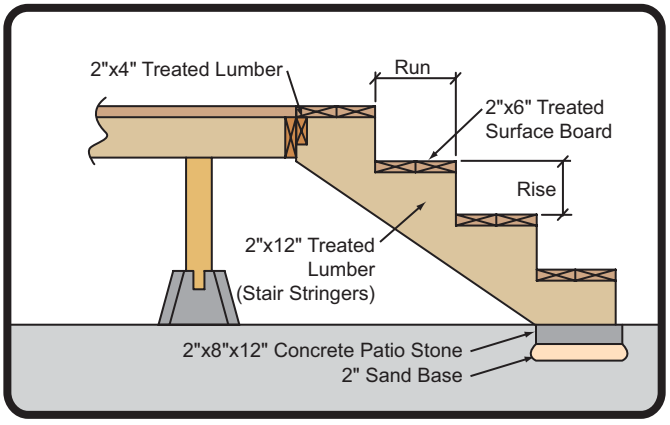
STEP 2 - Determine the rise of each step.

The rise of each step needs to be equal. The typical rise for a step is between 6-7 3/4 inches.
To determine the rise, follow these steps:



A. Divide the overall height (Total Rise) by the desired rise per step (7"). This will give you an estimated number of steps. (Example: 30" divided by 7 = 4.285)

B. Round up or down to the closest whole number. (Example = 4 Steps)

C. Divide the overall height by the number of steps to get the actual rise per step. (Example: 30 divided by 4 = 7.50 or 7 1/2" per step)

D. If the distance is not acceptable, either add or subtract one step and recalculate. (Example: 30 divided by 5 = 6.00 or 6" per step)

STEP 3 - Determine the run of each step.

The run is the horizontal distance of the step. There are two typical stair options. (A) Two 2"x6" surface boards next to each other. These two boards together equal 11 inches of run. Or, (B) One 2"x12" board. One 2"x12" is equal to 11 1/4 inches of run.

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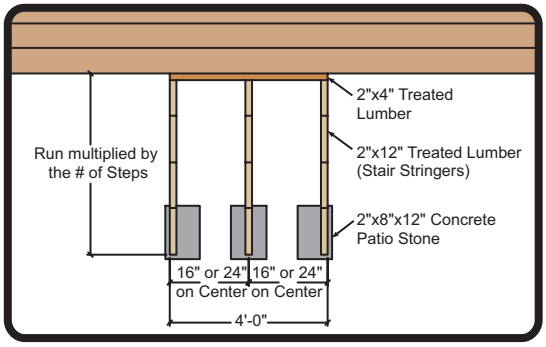
STEP 4 - Determine the width of the stairs.

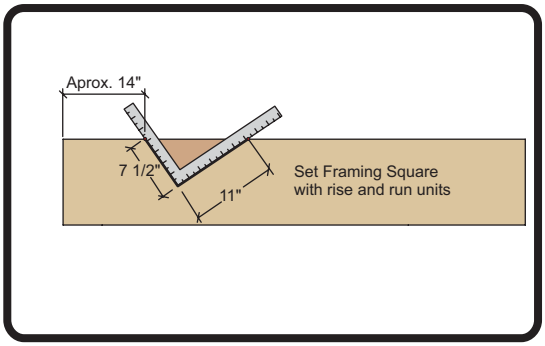
Determining the overall width of the staircase is partially a personal preference. Typically, stairs are not built with a width less than 32 inches. If you are building with 2"x6" decking material, try to keep the width in 1 ft. increments (3ft, 4ft, 5ft, 6ft, etc.) . If you are building with 5/4"x6" or composite decking, try to keep the width in 16 inch increments (32", 48", 64", 80", etc.).



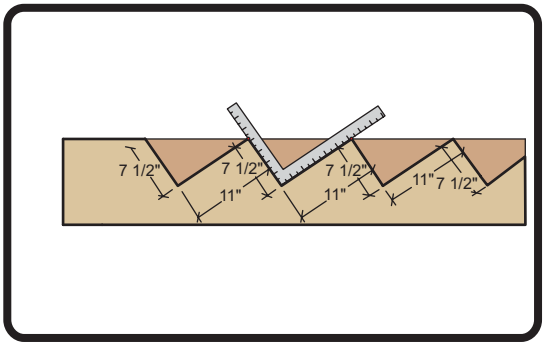
For this example, we'll be using 2"x6" decking for a 4 ft. wide staircase.

STEP 5 - Determine number of stair stringers.

The quantity of stair stringers is based on how wide the stairs will be and what type of surface boards you are using. If you're using 2"x6" wood, the maximum distance between stringers should not exceed 24 inches on center. If you are using 5/4"x6" wood or composite lumber, the maximum distance between stingers should not exceed 16 inches on center.

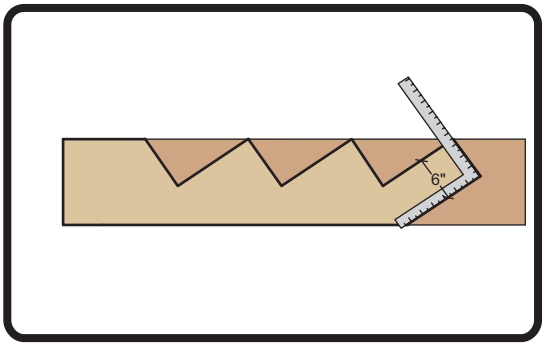


Divide the width by 16" or 24" (based on decking material) and then add 1.
For example: 48" / 24" = 2 2 + 1 = 3 stringers



STEP 6 - Cut the first stair stringer.

For this step, you will need a framing square. You can find a framing square at most home centers. On one edge of the framing square, mark a line at the run distance. On the other side of your framing square, mark a line at the rise distance. You will use these marks to quickly layout your stair stringer.



Position the first mark you made on your framing square approximately 14-16 inches from the end of the 2"x12" board. Align the second mark on your framing square to the edge of the 2"x12" treated board and draw the the first step.

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STEP 6 - Cut the first stair stringer (continued).

From the end point of the first step, continue drawing the remaining steps using the marks on the framing square as your guide.

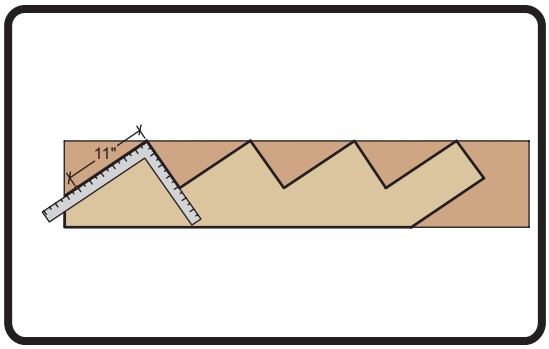
On the bottom step, use the framing square to draw a line perpendicular to the rise of the step. Use a dimension equal to the rise minus the thickness of the surface board. (For Example: 7 1/2" minus 1 1/2" = 6") Extend a line at this dimension to the back edge of the 2"x12" board.

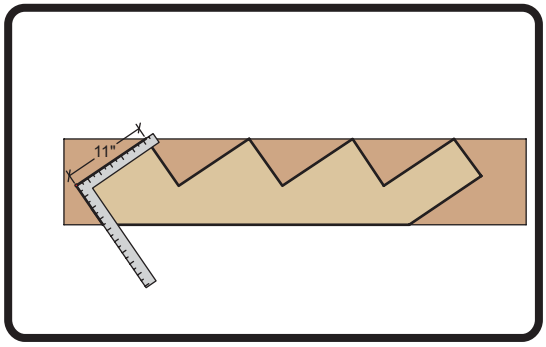
At the top step, use the framing square to draw a line that is perpendicular back from the rise of the step. Extend the line to the back edge of the 2"x12" board. Then mark a point that is equal to the distance of the run (starting from the point of the step).

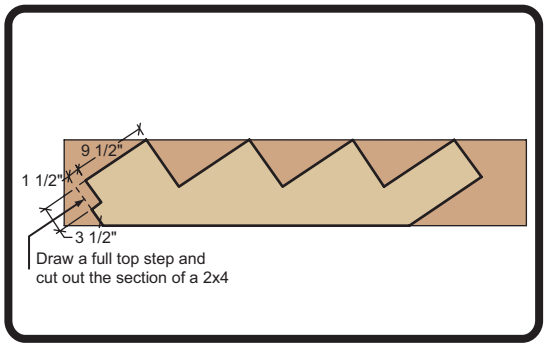
From this mark, draw a line that is perpendicular to the top run. Extend the line to the back edge of the 2"x12" board.

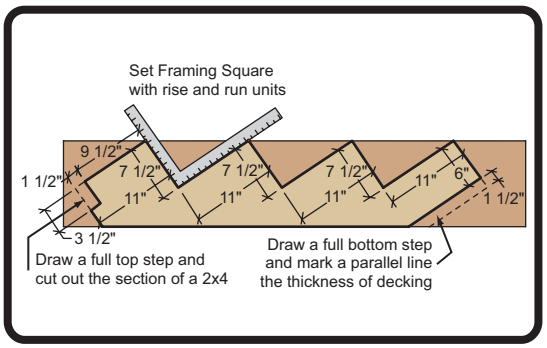
Next, draw a notch that is 1 1/2" by 3 1/2". This will be used to attach a 2"x4" board.

Now, all of the drawing on the board should be complete. Use a circular to cut out the stair stringer. Only cut up to the end of the line, not past it. Due to the curve of the circular saw blade, some material will remain in the corners. Use either a hand saw or a jig saw to remove the remaining material.









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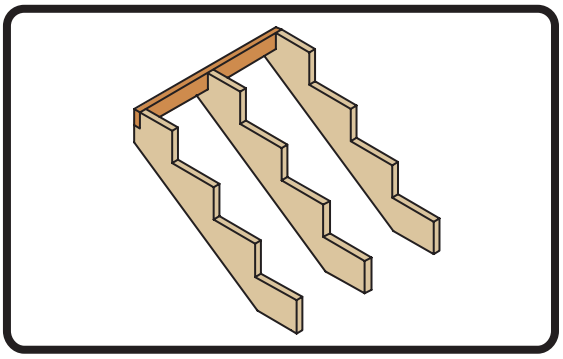
STEP 7 - Cut the remaining stair stringer.

Using the first stair stringer as a guide, trace the stringer layout onto the remaining 2"x12" boards. Using the same method as before, cut out the remaining stair stingers.



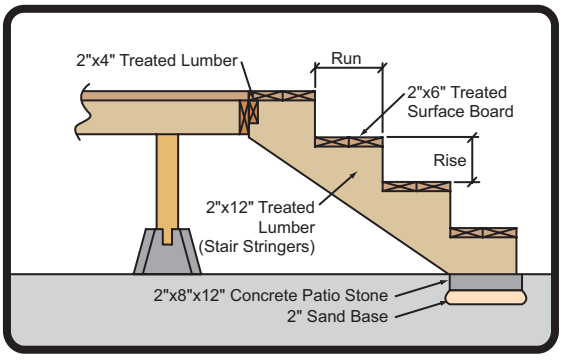
STEP 8 - Attach the 2"x4" board.

Once all the stringers are completely cut out, cut a 2"x4" board equal to the width of the staircase. Then attach the 2"x4" board to the notch cut in the stringers. Use three deck screws per connection.

STEP 9 - Place and Level Patio Stones.

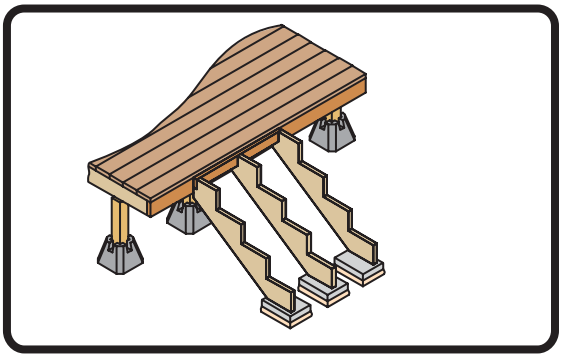
Each stringer should rest on top of a concrete patio stone. A 2"x8"x16" concrete patio stone works great, pick a stone that you think will look and work best. for your situation.

Use the frame of the stairs to find the location and placement of the patio stones. Dig a small hole 2-4 inches deeper than the thickness of the patio stone. Fill the hole with 2-4 inches of sand or crushed rock and place the patio stone on top. Verify that each patio stone is level with the base of the stairs and level with one another. Add or remove sand where needed.



STEP 10 - Attach the frame to the deck.

Position the stair frame so that the frame is level with the top of the support board or end board. Verify that each step remains level, and each stringer, is flush with the patio stone. Next, attach the 2"x4" board to the deck using two deck screws every 8 inches.



STEP 11 - Attach the surface boards.

Starting from the bottom step, place and secure surface boards on top of the stair stringers. Secure using two deck screws at each connection, and continue until all surface boards are secured.