



Step 1

Mark the Pergola Elevation and Width on the House

Mark two perpendicular lines from your home's soffits to the patio to mark the desired elevation of the pergola, spacing them at the same width as the patio's concrete pad. Use a bar level to ensure the lines are vertical.



Step 2

Cut and Notch Three Beams for the First Roof Layer

Cut three two-by-eight beams for the first roof layer that parallels the house. Notch them with a jigsaw to support four of six second layer beams--the other two will butt against the ends of the first layer's beams.



Step 3

Level, Pre-drill and Attach the Ledger to the House

Level the ledger and pre-drill holes for lag screws through the ledger, and fascia board into the side of the house. Tighten the lag screws with a ratchet.



Step 4

Drill Patio for Post Brackets and Attach with Expansion Anchors

Position the post brackets, marking their centers on the concrete with a hammer and sharp instrument. Drill a hole at each mark, insert an expansion anchor through the bracket into the concrete, and tighten it with a ratchet.



Step 5

Install Post Supports and Posts to Brackets with Heavy-gauge Nails

Install post supports in the brackets to raise the posts above concrete and moisture to prevent rotting. Hold the posts in vertical position and secure each to its bracket with a hammer and heavy-gauge galvanized nails.



Step 6

Hold Posts Vertical with Temporary Stakes and Braces

Screw pairs of temporary braces to stakes in the ground and clamp the braces to the posts to keep them vertical in both directions for the remainder of the project. Use a bar level to confirm the posts are plumb.



Step 7

Screw First-layer End Beams to the Posts

Align and clamp notched end beams in the first layer to the posts at the correct elevation. Pre-drill holes with a countersunk bit. Drive the stainless-steel screws into the beams and posts using a square-ended bit.



Step 8

Cut and Curve One End of Six Second-layer Beams

Cut six second-layer beams with a decorative curve on one end. They'll be longer than the depth of the patio and run perpendicular to the house. Notch the bottom edges to interlock with the notches on the first layer's beams.



Step 9

Interlock Layer-Two beams to Layer-One Beams and Trim the Posts

Notch the second-layer beams eight times for the eight beams in the final layer and then interlock them to the first layer. Trim the post tops flush with the top of the beams with a Japanese handsaw.



Step 10

Cut Eight Third-layer Beams, Notching to Interlock with Beams Below

Cut eight beams with both ends curved for the third/final layer. Cut six shallower notches in the bottom edges to interlock with notches on the second layer. Fit them together and tap with a mallet to seat them.