



DISCLAIMER:

READ BEFORE YOU BEGIN! THESE PLANS ARE INTENDED AS A GUIDE ONLY! READ THESE INSTRUCTIONS COMPLETELY THROUGH ONCE AND UNDERSTAND WHAT IS REQUIRED.

We will not be held responsible for any accidents or injuries anyone may sustain. Builder assumes all risks associated with construction work!

We assume some builder competency in the use of tools, safety and equipment.

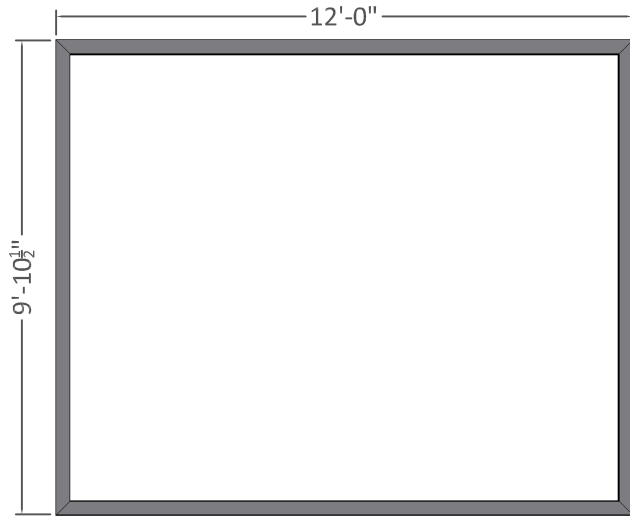
If you are unsure of any procedures, please contact a professional. The methods in this plan assume a minimum amount of power tools. Also, if you know of alternate methods of construction, feel free to use them!

Using other tools to speed the work process is just fine.

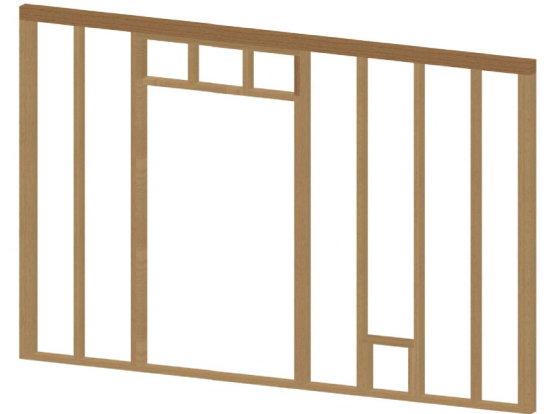
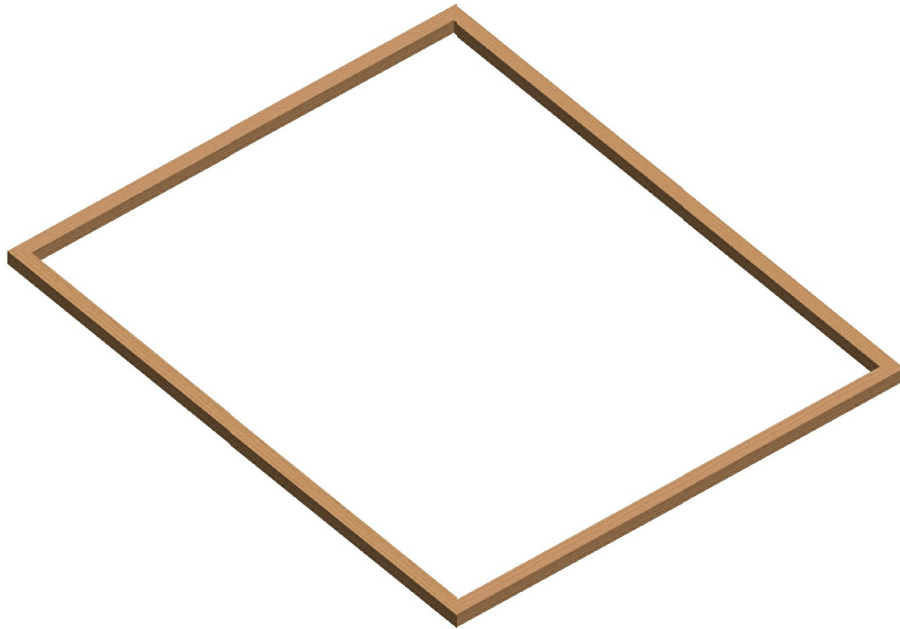
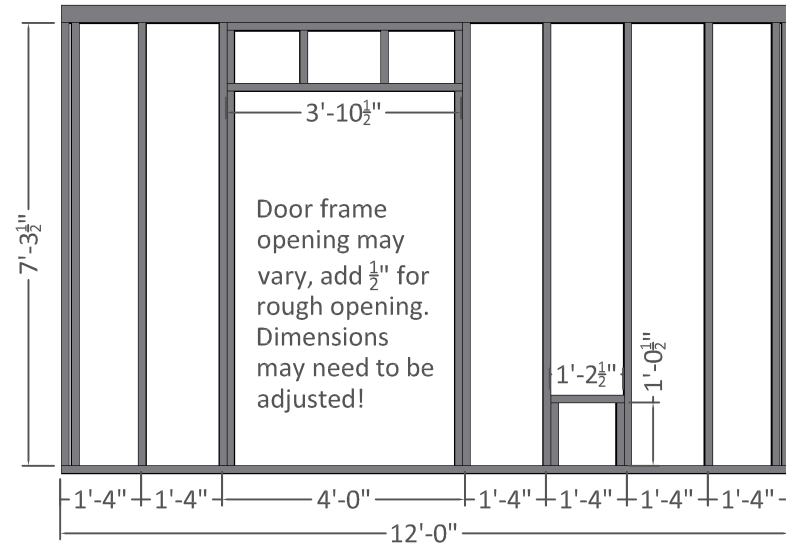
Work safely and wear proper safety equipment such as gloves, ear protection and eye protection.



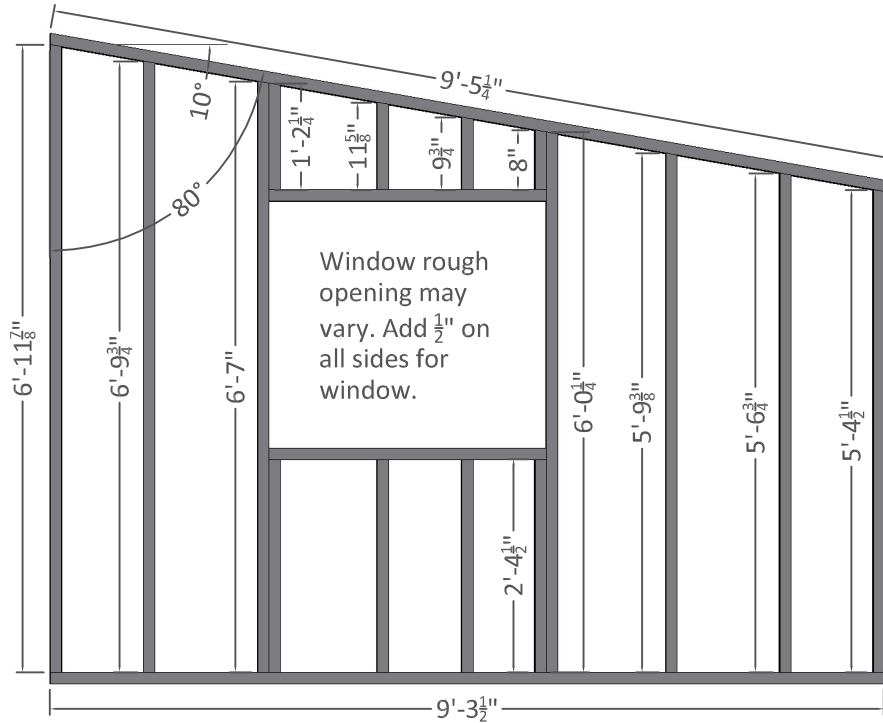
To begin, cut 4x4 pressure treated post as dimensioned below. Mitering the ends is NOT required, but we recommend it for a professional-looking finish!



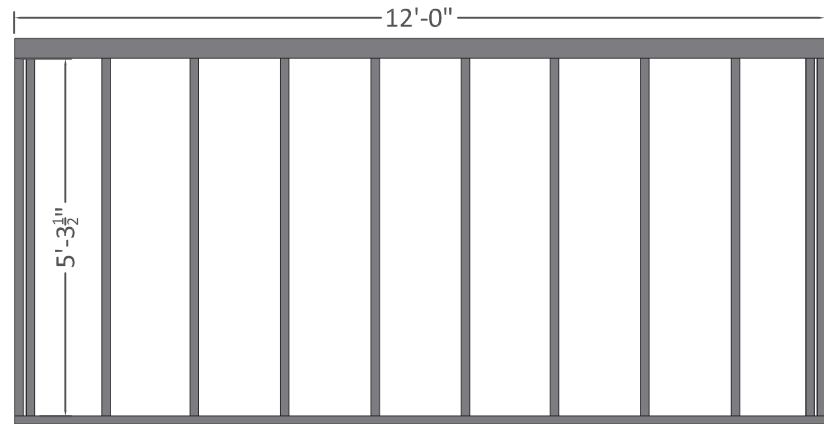
Construct the front wall as shown below. You will want to use a 4x4 for the top plate as the rafters will sit directly on, and be supported by, the post.



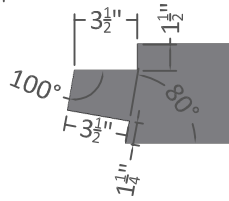
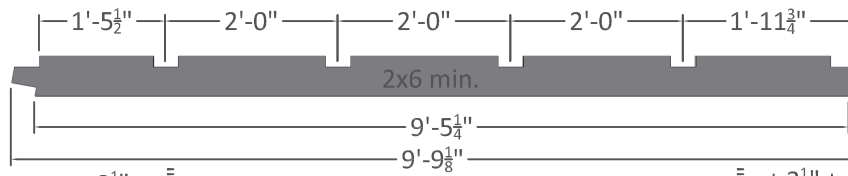
For the side walls, construct them as shown below.



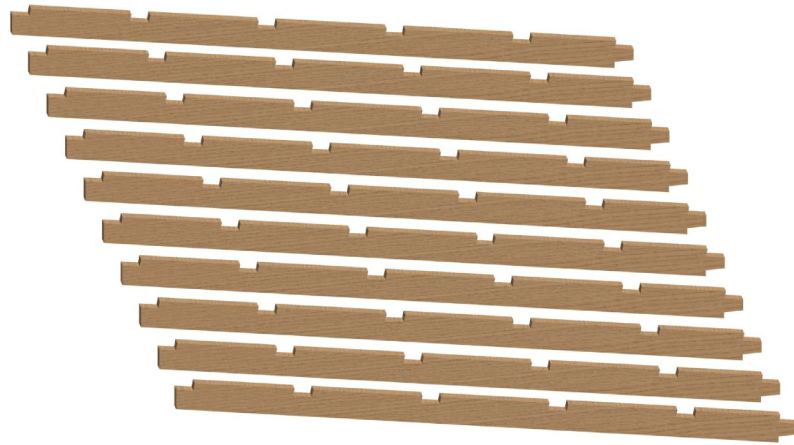
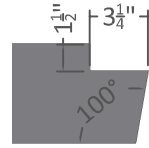
Construct the rear wall as shown below. Use a 4x4 post as the top plate as the post will support the rafters above.



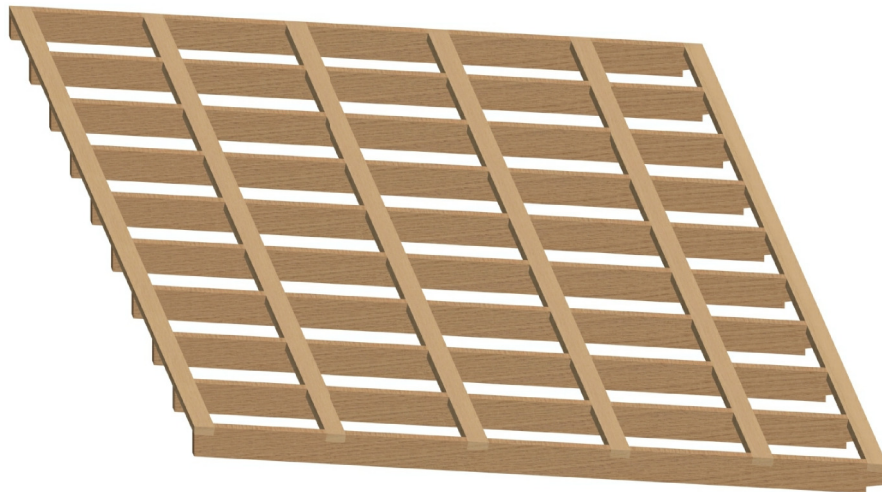
For the rafter, follow the detail below. You will want to ensure the first rafter sits nicely in place and use it as a template for the remaining rafters.



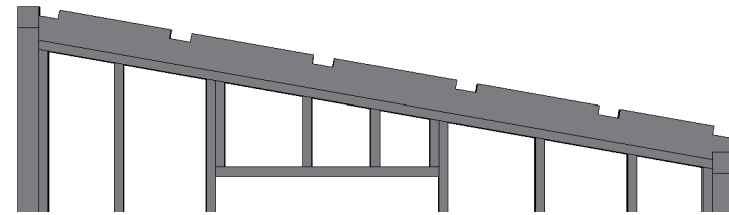
We have included basic instructions on cutting rafter seats with a construction square or speed square.



Cut 2x4 purlins to fit.



The rafters should sit on the side wall pretty evenly.

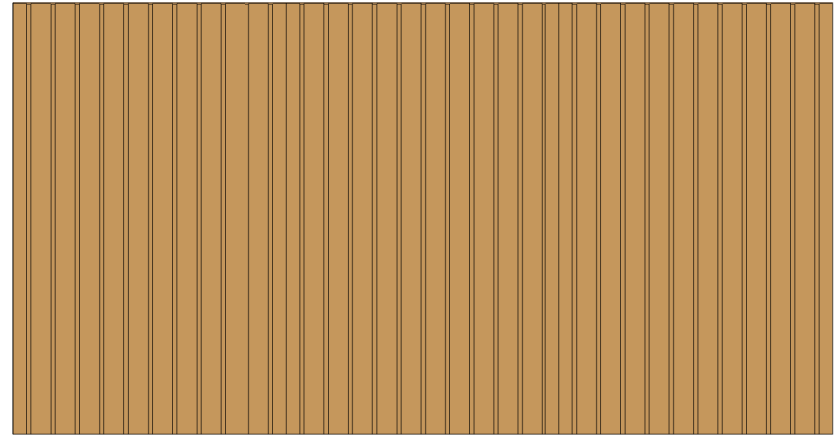
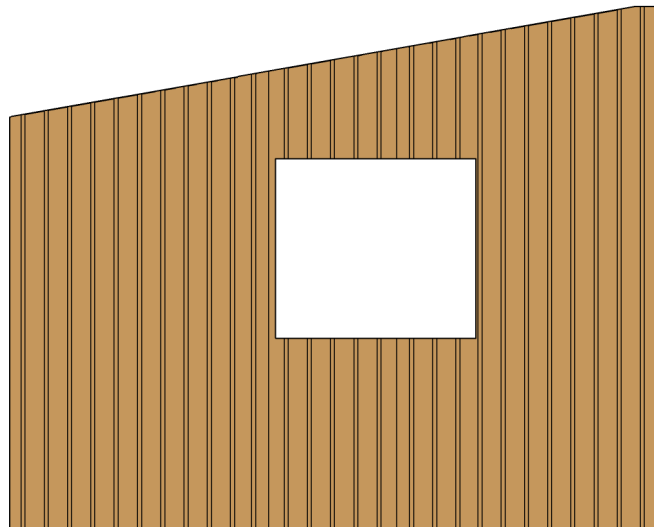
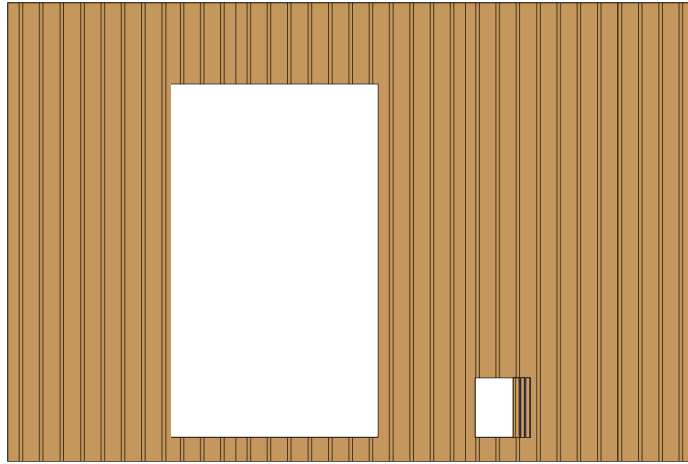


Before you get to the roofing, make absolutely sure the rafters are in place solidly. Use joist hangers connected to the front wall top post. This will take the weight of the rafter and displace it into the studs below. Also make sure the rafters align with the studs at 16" below.

Notes:

For the sheathing, we do not dimension up the sheathing as styles and types may vary by the tastes and budget of the builder. We are not going to assume to know thickness of sheathings, but we will recommend at least $\frac{1}{2}$ " exterior plywood sheet for the walls and $\frac{3}{4}$ " cedar or oak plywood sheeting for the roof.

Sheathing should look something like the diagrams below. Remember to cut out the chicken access in the front wall. **Keep the scrap for a door that you can open and close.**



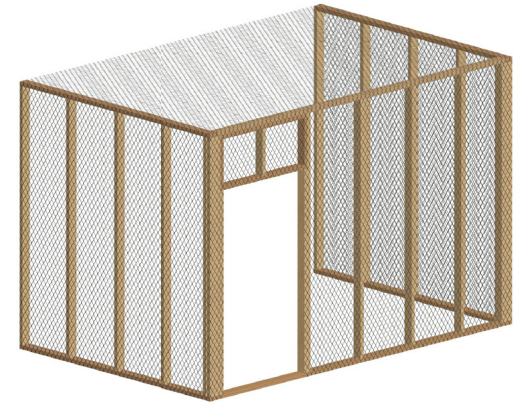
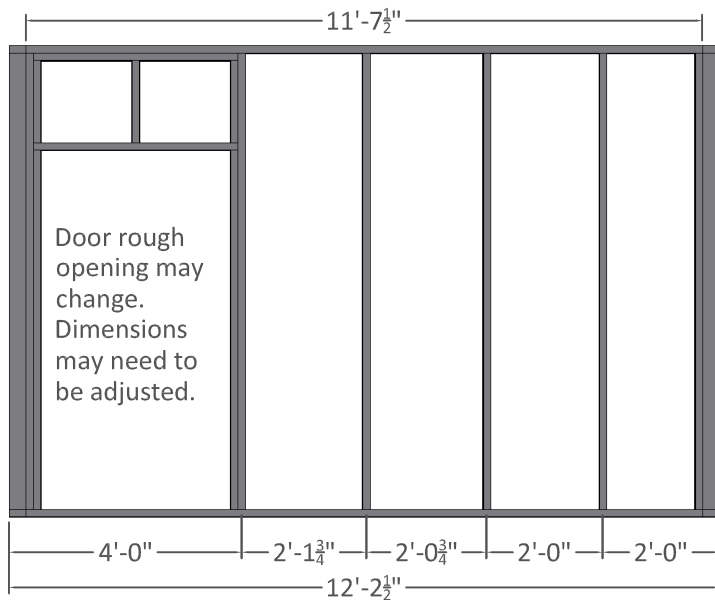
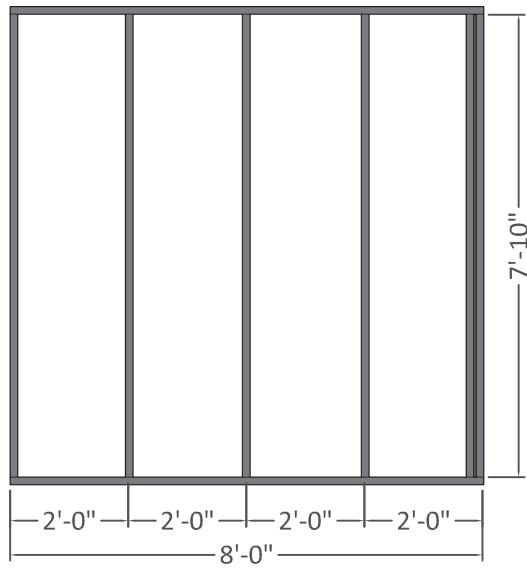
Use caution when working at heights. Even small falls can result in serious injury! Use all safety precautions and work with an assistant when constructing the roof!



Trim and accessories are up to the builder. For the doors and windows, we have included instructions for making a basic door and window, but we highly recommend purchasing a door and windows.

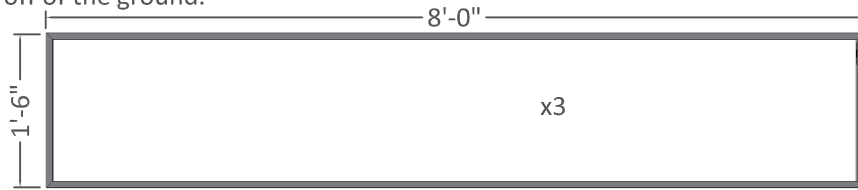


For the chicken run, the structure is pretty self explanatory. The chicken run is basically a "cube" with chicken wire surrounding it. The run is NOT required and should you want free-roaming chickens, not necessary. Follow the diagrams below for to complete the chicken run.

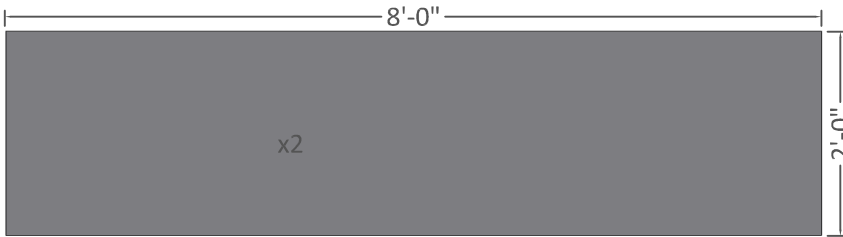


These dimensions MAY change depending upon builder's use of trim and size of sheathing. The run shown expands the entire length of the coop as designed in these plans and may change upon builder requirements!

In this design, the nesting boxes will be free-standing, meaning you can place them wherever you want. Begin by constructing a base out of 1x4 planks as shown below. This will act as a footer and keep the nesting boxes off of the ground.



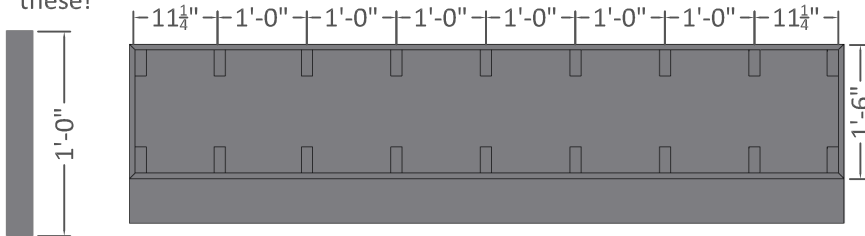
Now, you need to attach some flooring. We recommend $\frac{3}{4}$ " oak or cedar plywood sheet for their insect and water resistance properties. You will need 2 pieces like this.



Attach the flooring to the footer by aligning the very back corners. Ensure the footer is square and the edges are flush. While you are at, it go ahead and construct the floors of both levels of nesting boxes right now. You should have something that looks like the diagram below.



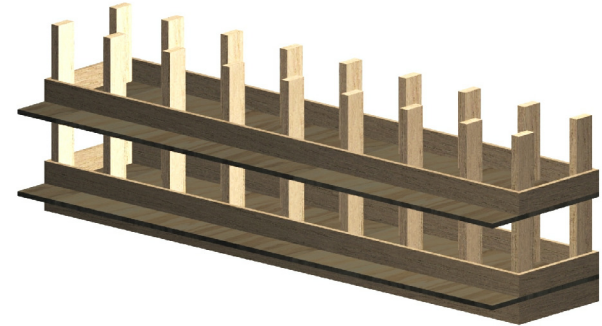
Cut supports as shown from 2x4 plank. You will need a whopping 36 of these!



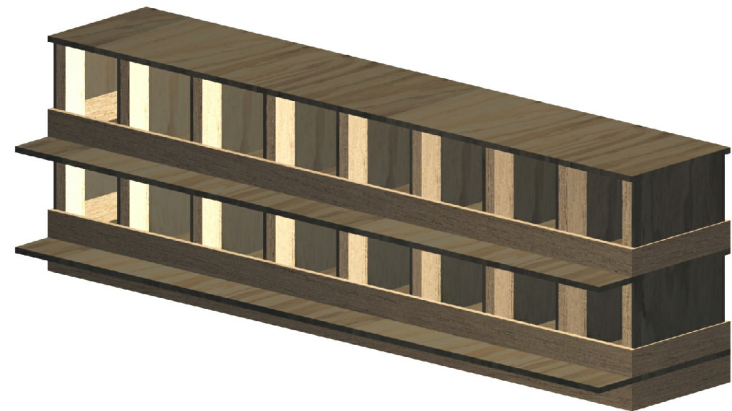
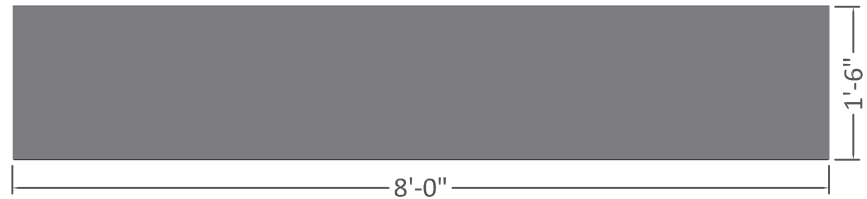
You will want to cut yourself divider plates using at least $\frac{3}{8}$ " plywood sheeting.



Stack the second frame on top of the first and attach them together. Repeat the alignment as before. You should have something that looks like the diagram below.



Stack nesting boxes no more than 4 levels high. In this coop, we will stop at two levels or else the windows will be covered. Cut a top piece as detailed below and attach to the top of the structure.

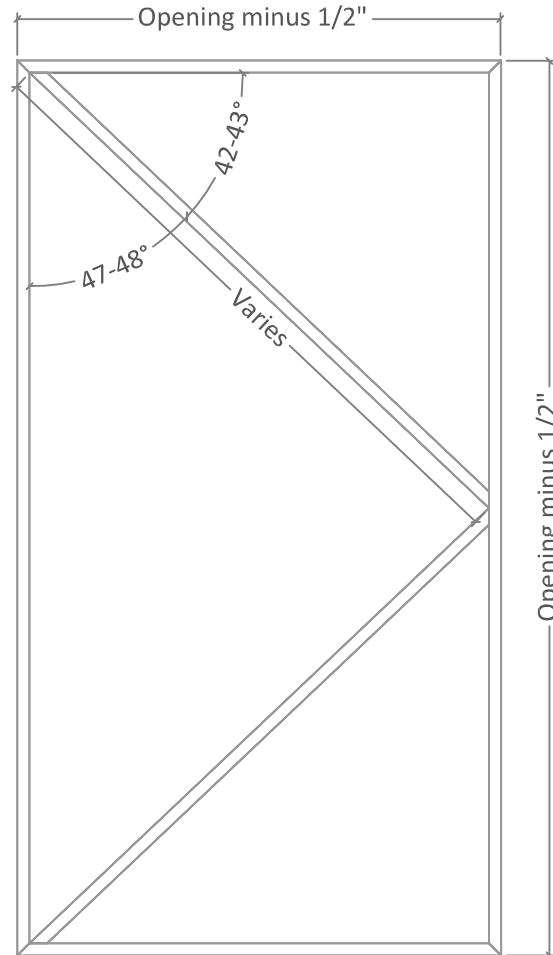




For the door, construction is relatively simple. If you want to install a latch, that is up to you. We do not show the details because there are special tools involved, most of which the normal person does not have. However, if you DO happen to come across such tools, you will be able to add a doorknob and catch should you desire.

As with the window, this is a very simple door and you do NOT have to construct the door in this way. If you prefer to purchase a door, make sure the rough opening size is adequate. The frame rough opening in this instance can be anything. Just tweak the dimensions to match your rough opening. **Be sure you subtract $\frac{1}{2}$ " from the rough opening to allow for swing!**

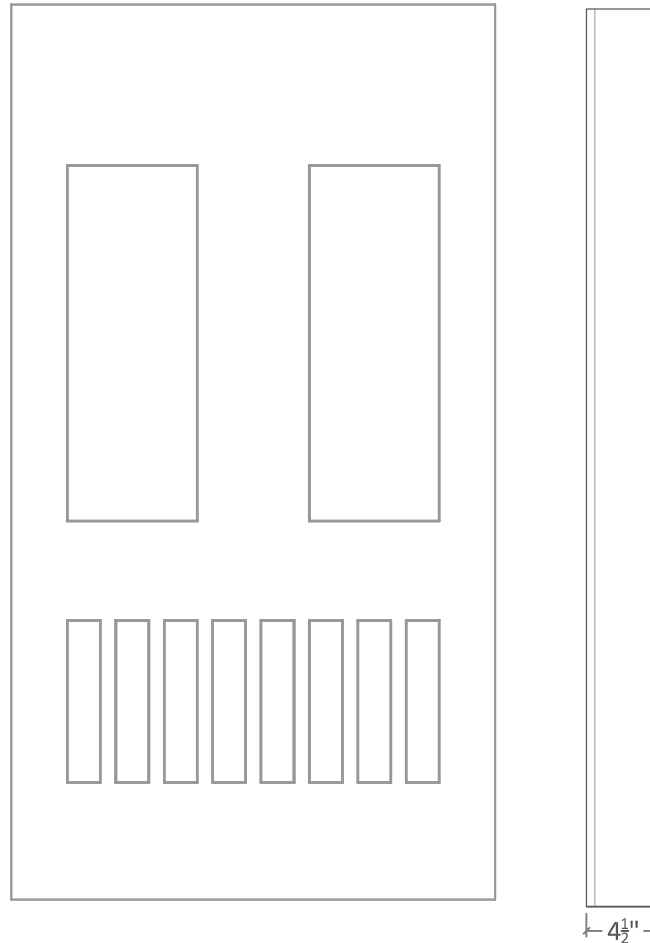
1) To begin, we are using $1\frac{1}{4}$ " planks and $\frac{1}{2}$ " plywood sheeting. Cut the frame pieces as shown below. You DO NOT have to miter the corners, we just recommend it for aesthetic purposes.



We will show the door in this example with a pattern cut out of the front and back sheeting, but this is not required. It is purely for looks and does not affect the integrity of the door at all.

Before you attach the panel to the door frame, you will want to check the swing in the doorway. We have allowed for $\frac{1}{2}$ " swing, but depending on construction methods and accuracy, swing may be affected by as much as 1".

Please ensure the frame will swing in the opening without getting stuck or caught. You should allow more swing once you add the door panels so check after each step to ensure swing is not impeded.



Materials

Description:	Qty:
1x4x6' Planks	5
4x8'x $\frac{1}{2}$ " Plywood Sheet	2
Hinges	3

2 Attach the front panel to the door frame, and MAKE SURE THE CORNERS ARE SQUARE and edges are flush. You may even want to sand the corners of the inside swing so they are rounded a little bit.

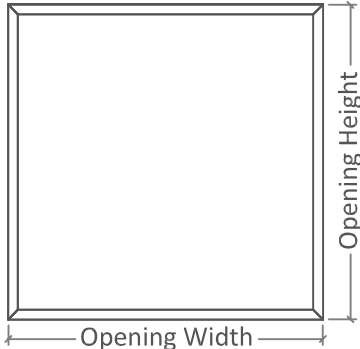
3) Insulate the door with either blow foam or regular R-13 roll insulation will work.

4) Enclose the door with the second panel. You may want to round the edges on this side also.

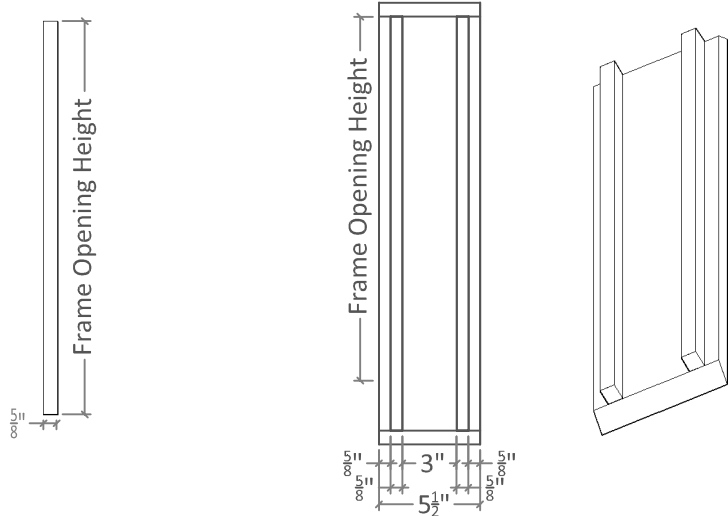
5) A single slide bolt works wonders on the outside and inside to lock the door shut. If you don't want your kids to be able to lock the door, only install the slide bolt on the outside! The slide bolt also offers a grip to pull the door open.

Windows are complicated to design and when at all possible, should be purchased. These details are for a very simple sliding window. You will need, and know how to use, a miter saw, a router (preferably with a guide) or table saw with an adjustable gouging blade (or blade kit, and a square (speed square, carpenter square, either works).

1) Cut and miter 1x6 planks as shown below. DO NOT ASSEMBLE YET!

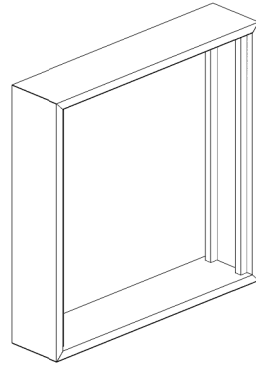


2) Rip a 1x4x8' into strips $\frac{5}{8}$ " thick. These will serve many purposes in the future but for now, we just want four of them to match the opening, so either rip and cut one piece or rip an entire board into $\frac{5}{8}$ " strips and place the pieces to the side for later.



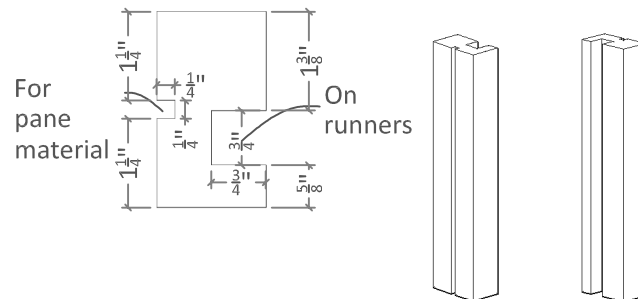
3) Using 1" screws and a level, screw two runners onto one of the exterior frame pieces. Repeat for the second side (see above).

4) Check to make sure the runners will fit inside the frame when assembled. Make any adjustments if necessary. DO NOT ASSEMBLE!

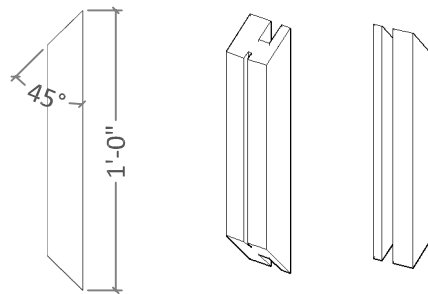


5) Rip a 8'-2x6 down the center lengthwise.

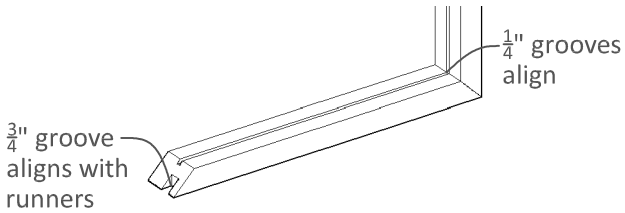
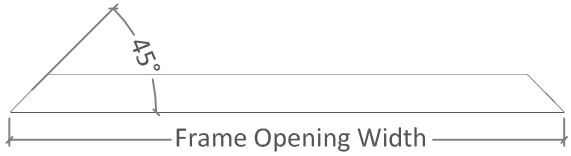
6) Use a router to gouge a $\frac{3}{4}'' \times \frac{3}{4}''$ groove down the center of one side. Flip the board over and gouge a $\frac{1}{4}'' \times \frac{1}{4}''$ groove down the center of the other side (see detail)



7) Miter the ends. Make sure the narrow ($\frac{1}{4}''$) groove is facing inwards! The wide ($\frac{3}{4}''$) grooves go out toward the runners, the inside grooves will hold a pane of window material.



8) Rip a 2x6 lengthwise down the middle and miter ends as shown below. Run a $\frac{1}{4} \times \frac{1}{4}$ " groove down the middle, just as with the 2x6 above. Hold them together and MAKE SURE THE GROOVES ALIGN PROPERLY! You will need to gouge a $\frac{3}{4} \times \frac{3}{4}$ " groove out of the ends.



Materials

Description:	Qty:
2x6x6' Planks	24
1x6x8' Planks	6
1x4x8' Planks	6

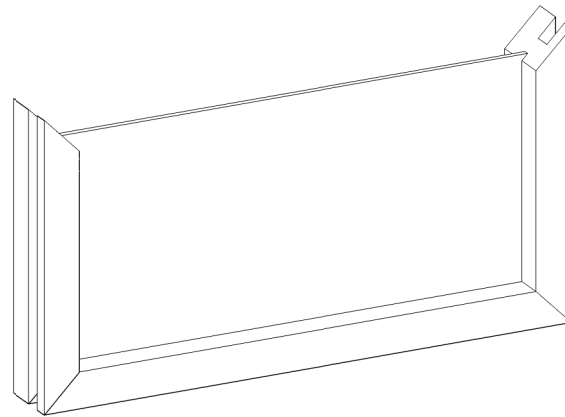
9) Lastly, before construction, you will need to determine what type of pane material you want to use. For a playhouse, we would recommend against using glass and go with clear acrylic or polyvinyl pane.

IF YOU DECIDE TO USE GLASS, WE HIGHLY RECOMMEND PURCHASING $\frac{1}{4}$ " THICK PROFESSIONALLY CUT PANES. YOU WILL NEED 2 PER WINDOW. ON THIS SET THAT EQUALS 12 PANES OF GLASS TOTAL.

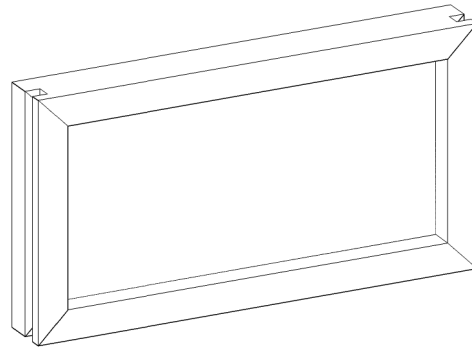
SHOULD YOU DECIDE TO CUT YOUR OWN GLASS, YOU DO SO AT YOUR RISK! USE ALL SAFETY PROCEDURES AND EQUIPMENT WHEN HANDLING GLASS!



10) Assemble the window frame around the pane. Run a bead of epoxy or polyethylene (or equivalent) seal down the frame pieces as you assemble the window to get a good, weather-tight, bond. You could increase rotting and mildew growth if you choose not to.

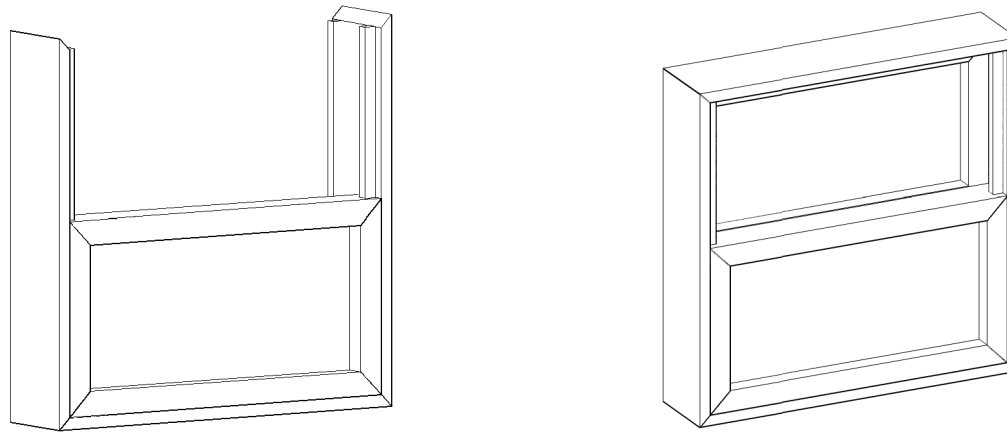


11) Cap off the window with the top piece and connect all pieces with 1" small radius ($\frac{1}{4}$ " or smaller) screws. Be sure you don't screw down into the window pane!



12) Repeat for second window.

13) Once you have two window assemblies, two exterior frame pieces with runners on them, and two exterior frame pieces for the top and bottom, carefully assemble the exterior window frames AROUND the window assemblies.



14) Cap off the window assembly, Ensure the windows slide easily and there is about $\frac{1}{16}$ - $\frac{1}{8}$ " gap between the window assemblies so they will not impede each other's movement.

15) Place the window in the window frame. Screw the exterior frame to the opening provided. You may have to use a soft mallet or a dead-blow hammer to get the window centered in the opening.

16) How the windows stay up or down is up to the user. We recommend getting a slide bolt and installing at least one on the movable assembly. Which assembly moves or stays stationary is up to the builder.

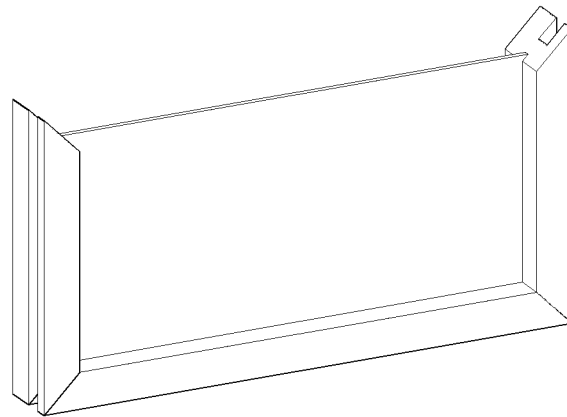
17) Lastly, before construction, you will need to determine what type of pane material you want to use. For a playhouse, we would recommend against using glass and go with clear acrylic or polyvinyl pane.

IF YOU DECIDE TO USE GLASS, WE HIGHLY RECOMMEND PURCHASING $\frac{1}{4}$ " THICK PROFESSIONALLY CUT PANES. YOU WILL NEED 2 PER WINDOW. ON THIS SET THAT EQUALS 12 PANES OF GLASS TOTAL.

SHOULD YOU DECIDE TO CUT YOUR OWN GLASS, YOU DO SO AT YOUR RISK! USE ALL SAFETY PROCEDURES AND EQUIPMENT WHEN HANDLING GLASS!

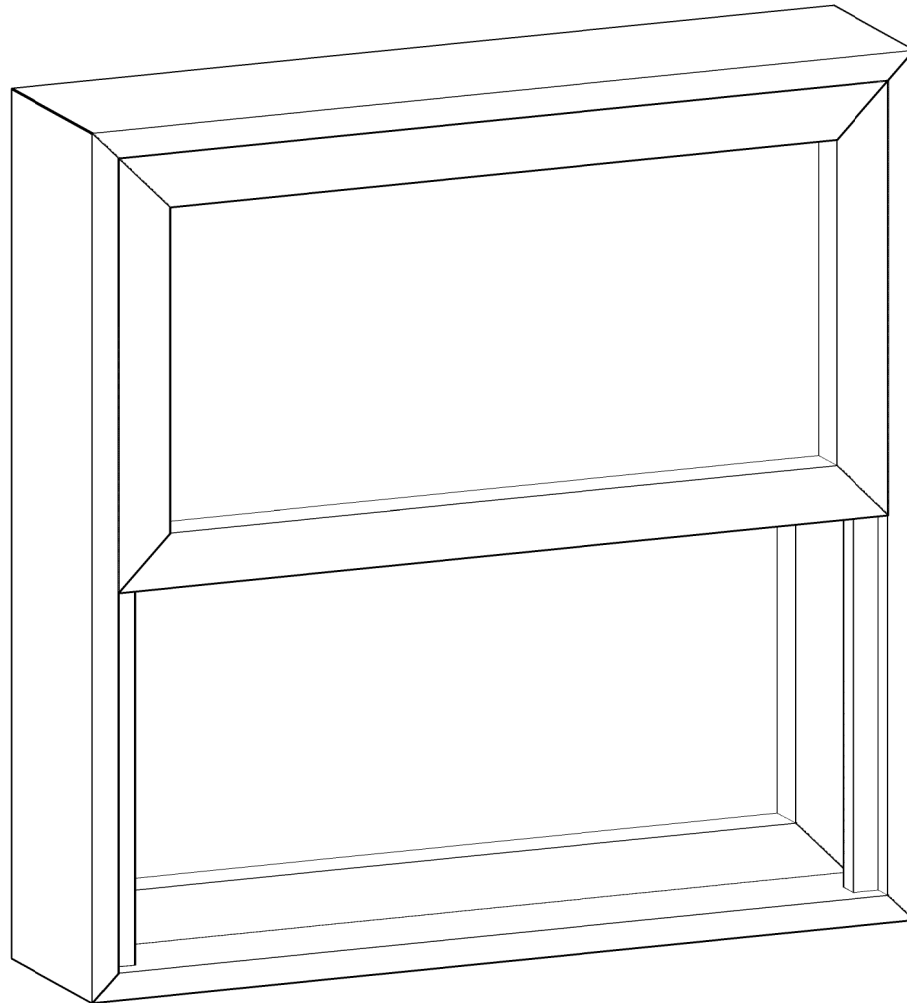


18) Assemble the window frame around the pane. Run a bead of epoxy or polyethylene (or equivalent) seal down the frame pieces as you assemble the window to get a good, weather-tight, bond. You could increase rotting and mildew growth if you choose not to.



Additional Stuff for the Window Assemblies:

- 1) Use weather striping along the seam between the window assemblies to keep wind, and weather out as much as possible.
- 2) We recommend having one stationary, and one movable window. Most often, anchor the exterior window to the top of the assembly and let the interior window slide up and down.
 - 1) Drill a $\frac{1}{4}$ " pin hole in the interior, left or right, side of the movable window assembly.
 - 2) While the window is closed, drill into the runner about $\frac{1}{4}$ ".
 - 3) Keeping the drill bit inside the pin hole, pull the drill bit back out a little, raise the window and drill back in about $\frac{1}{4}$ " into the runner. We recommend about 3" increments.
 - 4) Repeat as necessary for how much you wish the window to open. Cut a length of $\frac{1}{4}$ " dowel (may need sanding to slide freely) to use as a pin.
 - 5) Add a slide pin to both the top and bottom of the movable window so the windows can be "locked" shut if you wish.



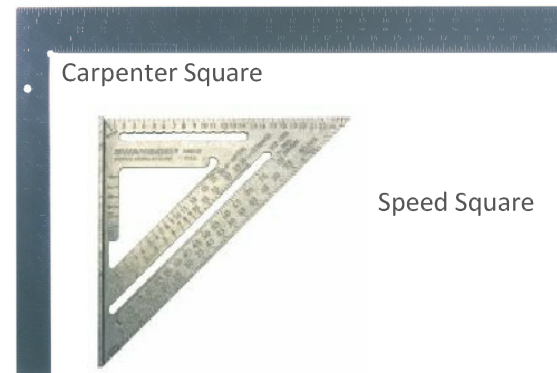
To determine the rafter lengths,

- 1) Divide the entire span by two (example: If the roof span is 20 feet, divided by 2 = 10 feet, 0 inches).
- 2) Now add the overhang (example: 18-inch overhang makes the length 11 feet 6 inches).
- 3) Now, convert the 6 inches of the 11 feet 6 inches into a fraction. It happens to be 0.5 (6 divided by 12). Thus 11 feet 6 inches is now 11.5
- 4) Suppose you desire an 5/12 roof pitch, or for every 12 inches horizontally, you get 5 inches up and 12 inches vertically. Convert that number by using the rafter conversion chart below or can be found on any framing square.
- 5) For the purpose of this article, the 5/12 roof pitch converts to 1.083 on the rafter conversion chart found on any framing square. Therefore, $11.5 \times 1.083 = 12.4545$ feet is what the rafter length will be.
- 6) Obviously, getting to the thousands of an inch is a feat in itself, so lets just round to the nearest $\frac{1}{8}$ " which is 12.5 feet or 12'-6".

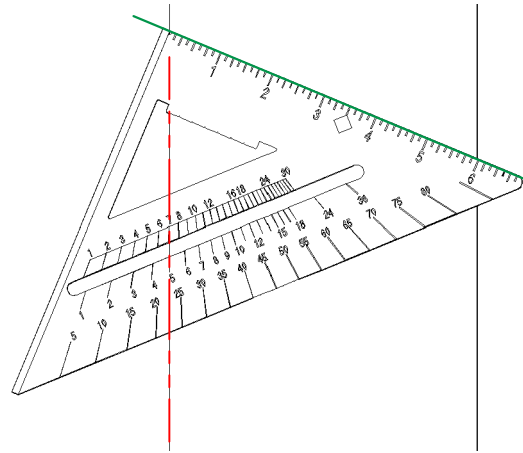
<u>Roof Slope</u>	<u>Factor</u>
Flat	1.0
1:12	1.003
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414
13:12	1.474
14:12	1.537
15:12	1.601
16:12	1.667
17:12	1.734
18:12	1.803
19:12	1.873
20:12	1.943
21:12	2.015
22:12	2.088
23:12	2.162

If you feel at all uncomfortable constructing roof elements, consult a professional. Also, you will need to be comfortable with heights and please use all safety precautions when placing the rafters. Not every rafter will be directly above a solid surface and there will be open spans beneath them. We recommend use of a ladder and assistant(s) to help you get the rafters into position.

1) If you need to be introduced to the tools most professionals work with when cutting rafters. There are basically two tools used commonly, the speed-square and the carpenter square. Both are shown below.

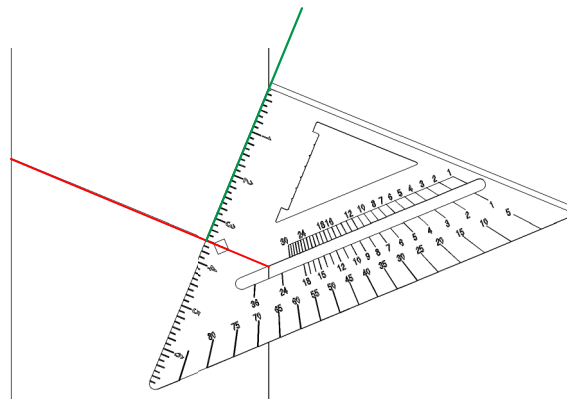


For the speed square, start by lining up your plumb cut by aligning the pivot point on the speed square with the desired pitch. This example is going to use a 5-12 slope but the principle is the same with any slope. See the diagram below.



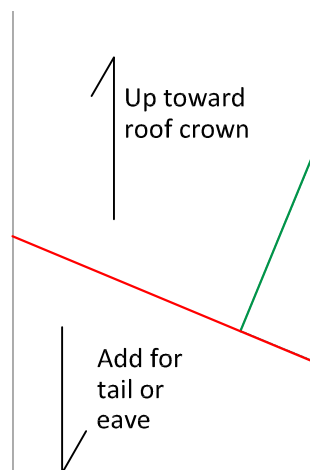
See how the red line lines up with the little notch in the back of the speed square and the number 5 in the "common". The common simply refers to a common rafter. Notice also, how the "HIP/VAL" lines up quite nicely with 7? For a $\frac{5}{12}$ slope, the corresponding hip/valley slope would be 7. Easy peasy.

2) Anyway, mark your line along the GREEN side with all the numbers. To make your seat cut, simply plumb the other side at the length you need and follow the diagram below for a nice $3\frac{1}{2}$ " seat cut.



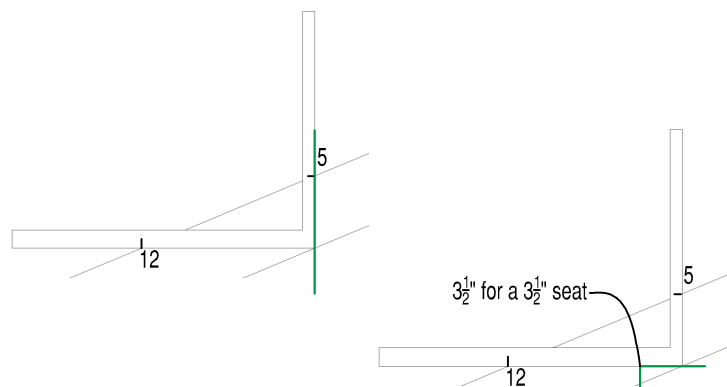
Align the diamond sight so the line cuts the sight down the center and your pivot point is flush against the outside edge of the rafter to be cut.

The RED line represents the mark you just made for plumb. Now again, mark along the green line for your seat cut. See the nice "L" shaped seat? Cut your seat out and it should look something like below.



The previous page contains instructions with a table which will help you measure the overall rafter length.

For a Framing (Rafter) Square it is basically the same principle. Align the 5 and the 12 as shown below. Mark the GREEN line shown in 1 for plumb.



To mark the seat measure the $3\frac{1}{2}$ " on the square and mark the plumb at the end as shown above in 2.