



Construction Trades Virtual Learning

Project Book 2

Lesson 34

May 21, 2020

Construction Trades

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Objective/Learning Target:

What You Will Know

- How to build a playhouse
- What tools are required to build a playhouse
- How to interpret drawings to construct the playhouse

Building a Playhouse

What skills and tools do you think we will use to build the playhouse?



Building a Playhouse cont.

What's New

Building Paper

- Specially treated
- Used in wall and roof framing



Building a Playhouse cont.

Drip Edge

- L-shaped metal used around edged or roof
- Helps water drip clear



Post Base

- Metal fastener
- Used to secure a post to a floor



Building a Playhouse cont.

Post Cap

- Metal fastener
- Used to secure a beam to the top of a post



Shingles

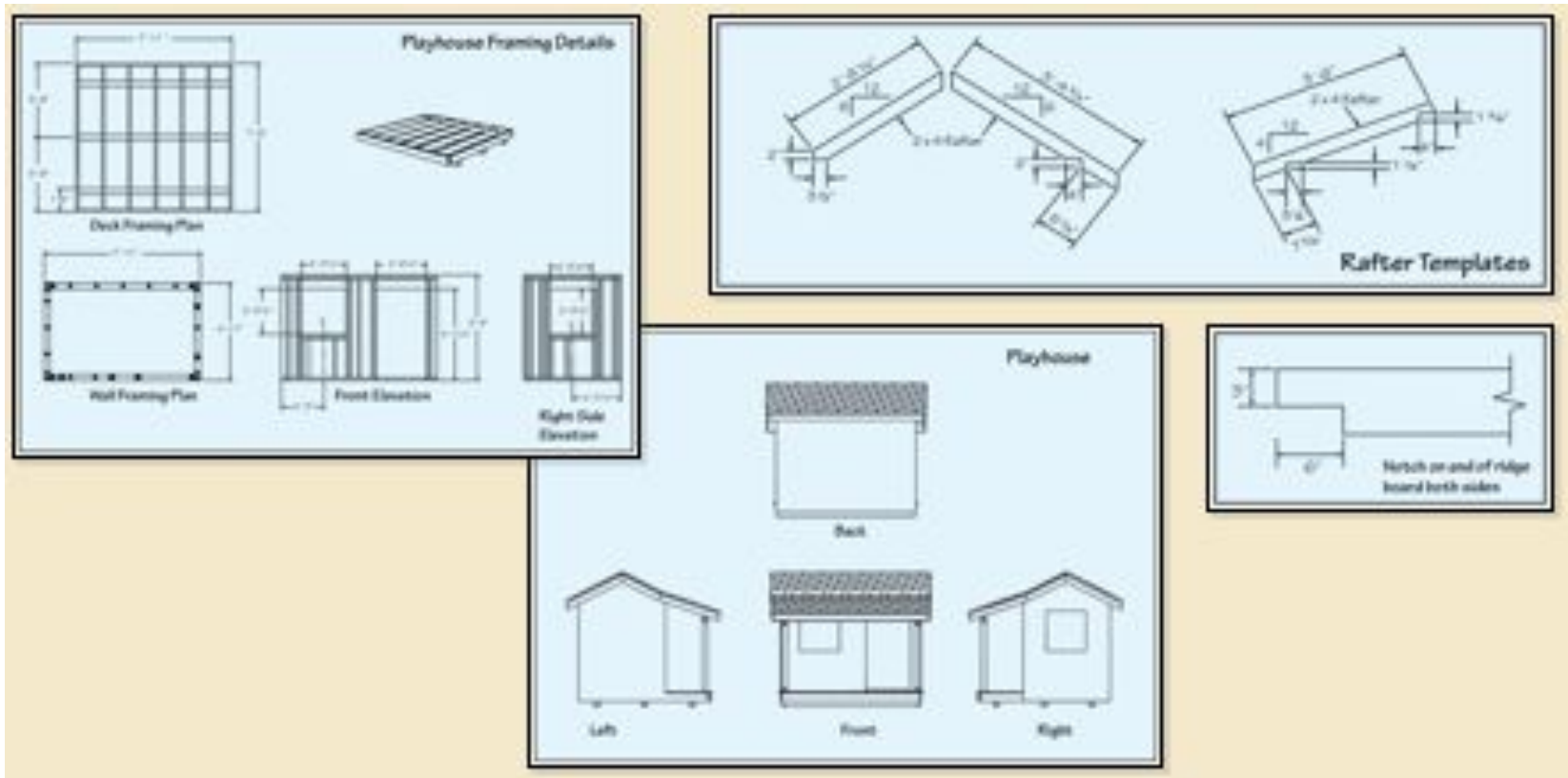
- Material placed over building paper and sheathing
- Used to protect structure from water



Building a Playhouse *cont.*

Cut List

- How many pieces should be on your cut list?



Building a Playhouse cont.

Procedure - Build the Floor Frame

- Mark the floor joist layout on the rim joists.
- Assemble the floor frame. Be sure to check each joist for crown and install with the crown edge up.

Tip

- When assembling the floor frame, the joists must be placed on layout marks and installed flush with the tip of the rim joist.



Building a Playhouse cont.

Procedure - Build the Floor Frame cont.

- Position the floor frame on top of the skids and measure the diagonals of the floor frame to make sure it is square.
- Install joist clip angles at each floor joist along the two outer skids using 1 ½" joist hanger nails.

Tip

- When diagonal measurements are equal, the frame is square



Building a Playhouse cont.

Procedure - Build the Floor Frame cont.

- Install the second piece of plywood sheathing flush with the rear rim joist and the opposite end joist.

Question

- Why is plywood typically placed with the grain perpendicular to the frame?



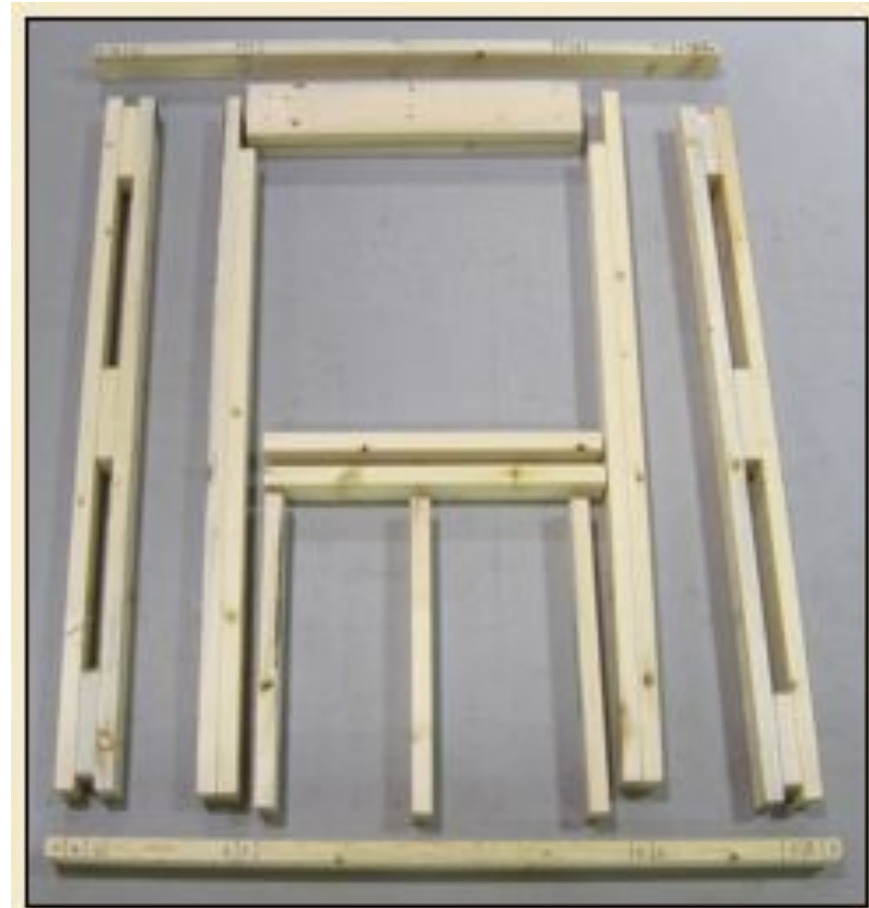
Building a Playhouse cont.

Procedure - Build the Walls

- Mark the stud and opening layouts on the plates

Question

Can you name the parts that make up a wall frame?



Building a Playhouse cont.

Procedure - Build the Walls cont

- Assemble all 4 walls
- Raise the side wall with the window and brace it in place.
- Raise the back wall and secure it to the side wall

Tip

Make sure the deck is level and square before placing the walls



Building a Playhouse cont.

Procedure - Build the Walls cont

- Raise the front wall and secure it to the two side walls. Be sure all four walls are braced, plumb, and square, and the double top plates are nailed properly.



Building a Playhouse cont.

Procedure - Build the Walls cont

- Install ½” plywood sheathing to the front wall ¾” down from the top of the top plate to the deck board.



Building a Playhouse cont.

Procedure - Install Porch Post and Beam

- Install the metal post bases 1 ½” from the front edge and end of the decking.



Building a Playhouse cont.

Procedure - Install Porch Post and Beam cont

- Fasten the post bases to the post.

Tip

It's a good idea to install only the two nails on the bottom of the sides until after the post is plumbed and braced. The remaining nails can then be added to help hold the post.



Building a Playhouse cont.

Procedure - Install Porch Post and Beam cont

- Fasten the beam to the post caps..
- Measure diagonally between the posts to ensure the posts and beam are square, and adjust as needed..
Install a temporary brace



Building a Playhouse cont.

Procedure - Frame the Roof

- Cut one pattern rafter for each rafter type.
- Test fit the front and back rafters by using a 2 x 6 spacer block in place of the ridge board.

Question:

Why do we use patterns?



Building a Playhouse cont.

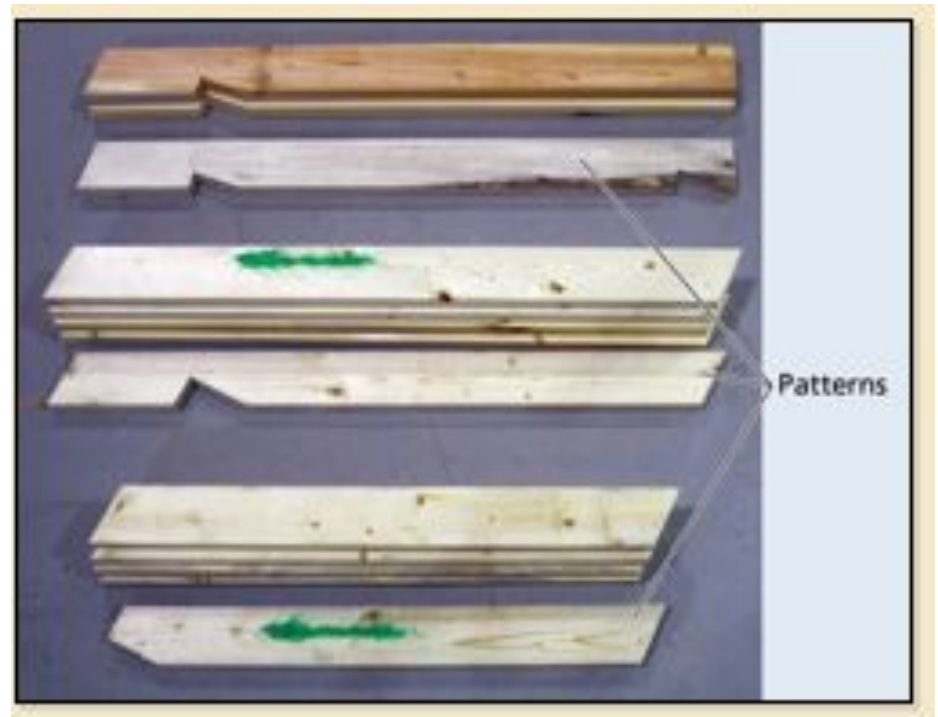
Procedure - Frame the Roof cont

- Cut the remaining back, front, and porch rafters so that you have a total of 7 of each type.

Tip

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When tracing the rafter from the pattern, make sure that the top edge of the pattern rafter is even with the pieces to be marked.



Building a Playhouse cont.

Procedure - Frame the Roof cont

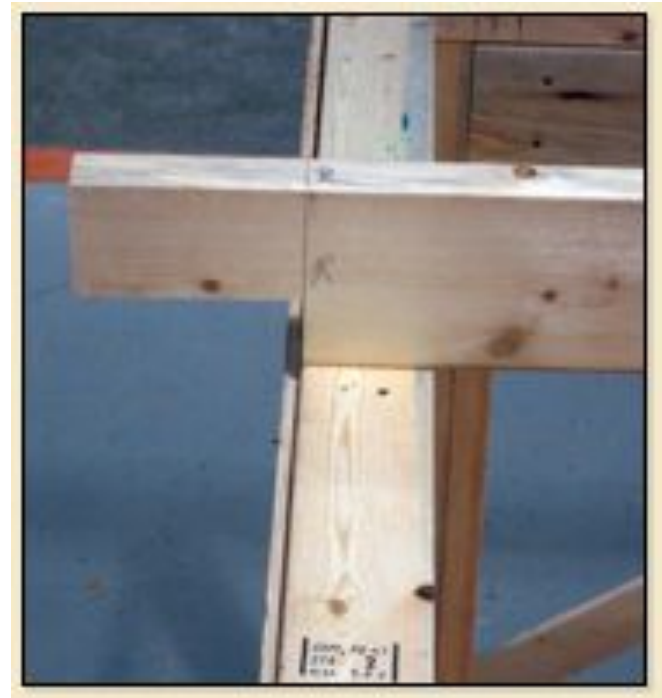
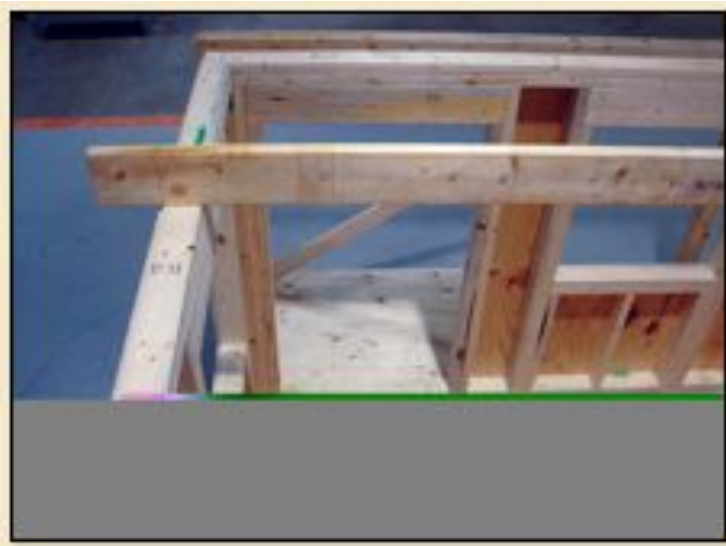
- Mark the rafter layout onto the front and rear wall plates, following the wall stud layout.



Building a Playhouse cont.

Procedure - Frame the Roof cont

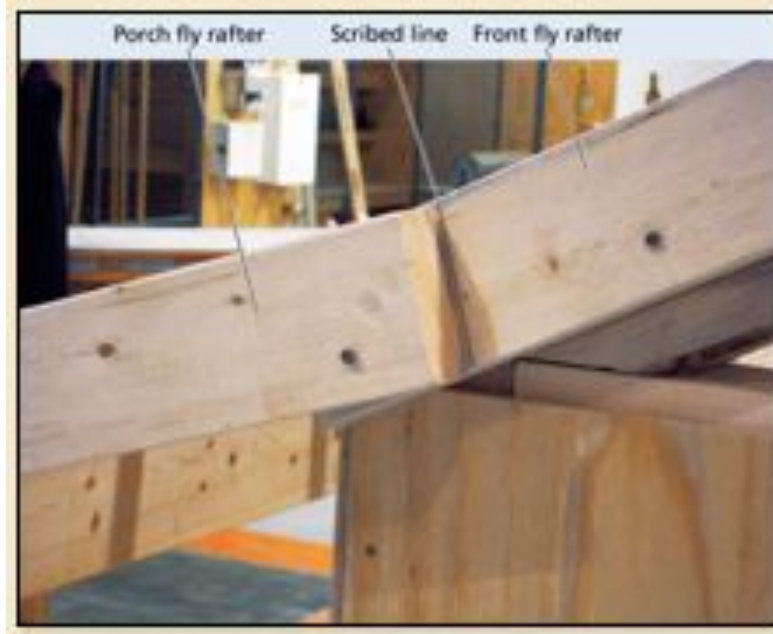
- Measure 6" in from the end of the ridge board and duplicate the rafter layout on both sides of the ridge board.
- Cut out the notches.



Building a Playhouse cont.

Procedure - Build the Gable Overhangs

- Set a porch fly rafter in position on the porch beam. Align the top edge of the porch fly rafter with the top edge of the front fly rafter and scribe a line on the front fly rafter.



Building a Playhouse cont.

Procedure - Build the Gable Overhangs cont.

- Install ½” sheathing on the gable end.
- Install the 1 x 4 laid out in stop 17 on the porch rafters as sub fascia.



Building a Playhouse cont.

Procedure - Build the Gable Overhangs cont.

- Install the second 1 x 4 on top of the front rafter just above the intersection of the porch rafter..
Nail the modified front rafters ad back rafters to the gable ends, aligning the ridge and top end of the rafter.



Building a Playhouse cont.

Procedure - Install the Sheathing and Fascia

Install the 1/2" plywood sheathing. Make sure the ends of the sheathing are installed so they bear on the half of the rafter.



Building a Playhouse cont.

Procedure - Apply Roofing Materials

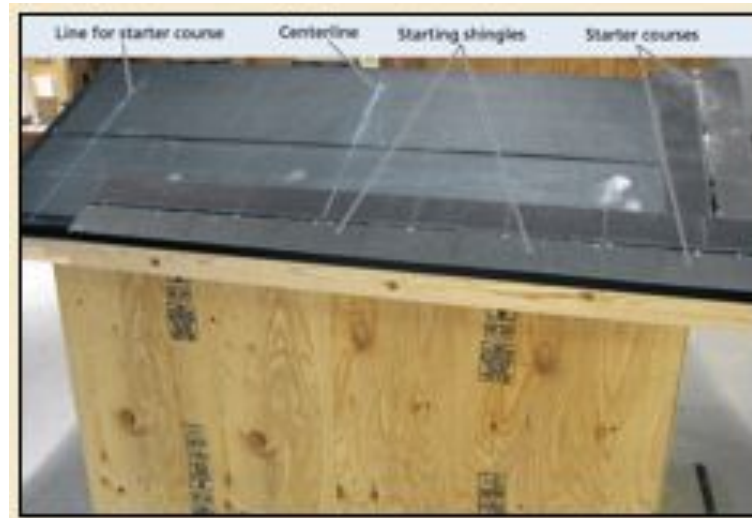
- Attach metal drip edge along the front and rear eaves
- Apply 15 pound building paper over the sheathing, maintaining a 2" overlap of the building paper.



Building a Playhouse cont.

Procedure - Apply Roofing Materials cont

- Install a reverse course of shingles aligned with the chalk line. The solid surface of the shingles will be installed along the entire length of the roof edge and the ends of the first two starting shingles will be butted against the centerline.



Building a Playhouse cont.

Procedure - Apply Roofing Materials cont

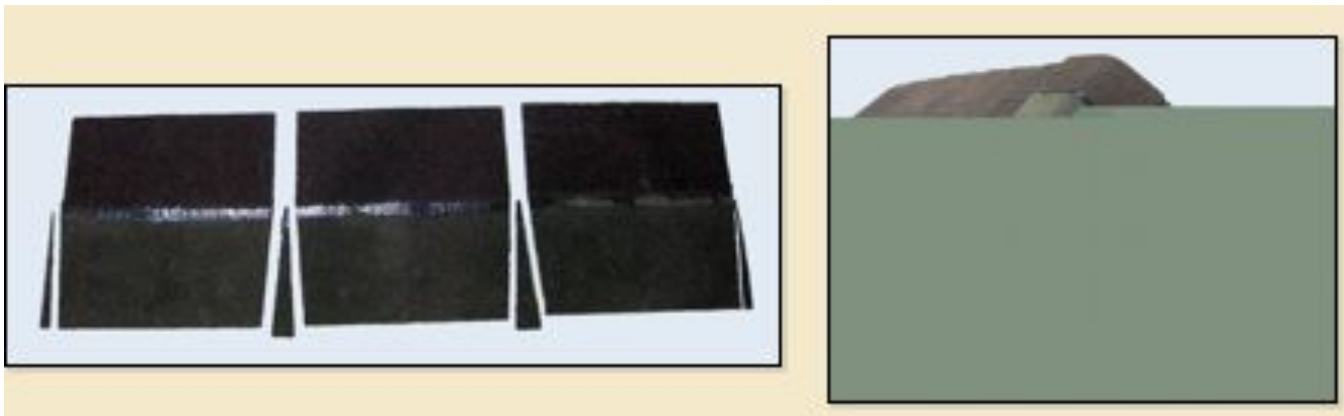
- Center your first shingle on the chalk line directly on top of the starter strip, maintaining a $\frac{5}{8}$ overhand along the drip edge, and nail the shingle in place.”



Building a Playhouse cont.

Procedure - Apply Roofing Materials cont

- Cut one shingle into three 12" shingles to begin the ridge installation.
- Overlap a 12" shingle equally on each side of the ridge and install two nails, starting on either side of the ridge, working in one direction.



Playhouse Conclusion

