

Garage Storage Shelves

Automated woodworking cut list, grouped board cutting diagrams, and step-by-step 3D assembly guide.

Specifications

Overall Dimensions	48" W × 24" D × 72" H
Total Parts Count	24 pieces (4 unique sizes)
Dimensional Stock Lumber	9 boards (7 unique cutting patterns)
Plywood Sheet Panels	4 panels
Wood Screws	88 screws

3D Project Overview

benchbuild.app

Cut List Summary

Identical pieces are grouped together. Check off each row as you cut your lumber and sheet goods.

Qty	Material	Cut Dimensions	Miter / Angle Cuts	Piece Names
4×	2x4	72"	Square (90°)	4× Uprights
8×	2x4	45"	Square (90°)	8× Rails
8×	2x4	21"	Square (90°)	8× Rails
4×	plywood	24" × 45" (0.75" thick)	Square (90°)	4× Shelves

Board Cutting Diagrams

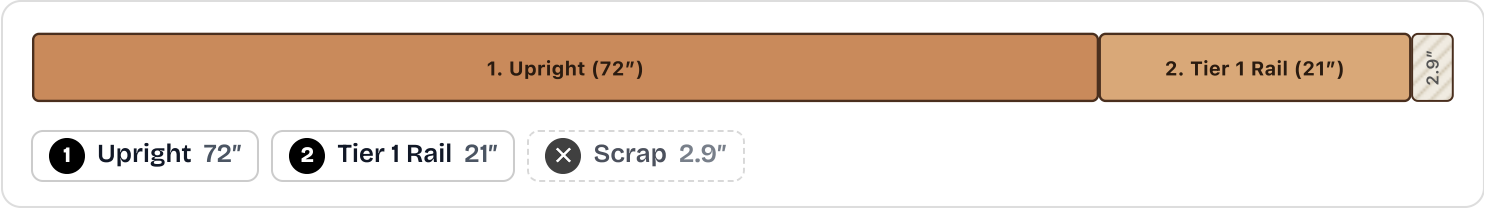
Boards with identical cuts are grouped with a multiplier badge (e.g., **5× Boards**) so you only read each cutting layout once. Includes 1/8" blade kerf.

2× Boards

2x4 (8' / 96" stock)

2 cuts/board • 93.1" used • 2.9" scrap

Cut this pattern **2 times** (2 boards total). Makes: Upright FL + Tier 1 Left Rail, Upright BL + Tier 1 Right Rail

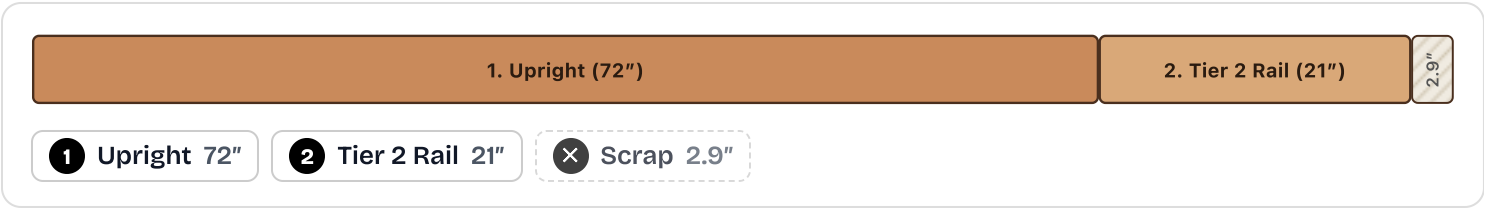


2× Boards

2x4 (8' / 96" stock)

2 cuts/board • 93.1" used • 2.9" scrap

Cut this pattern **2 times** (2 boards total). Makes: Upright FR + Tier 2 Left Rail, Upright BR + Tier 2 Right Rail

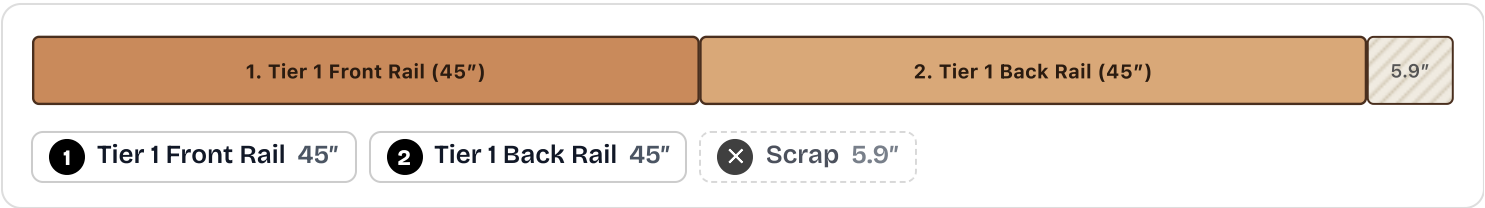


1× Board

2x4 (8' / 96" stock)

2 cuts/board • 90.1" used • 5.9" scrap

Produces: Tier 1 Front Rail + Tier 1 Back Rail

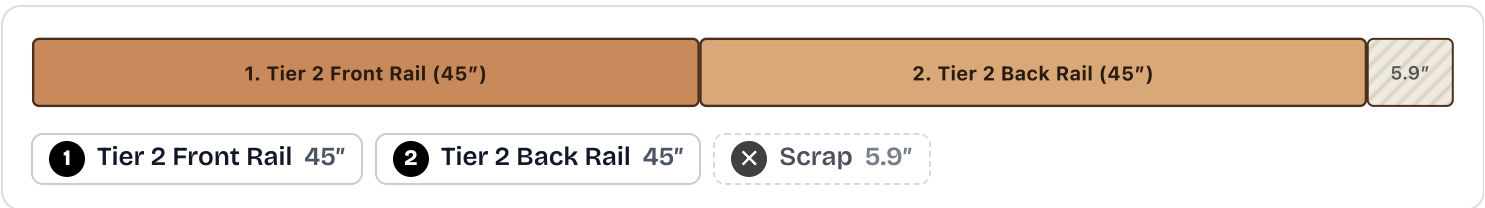


1× Board

2x4 (8' / 96" stock)

2 cuts/board • 90.1" used • 5.9" scrap

Produces: Tier 2 Front Rail + Tier 2 Back Rail

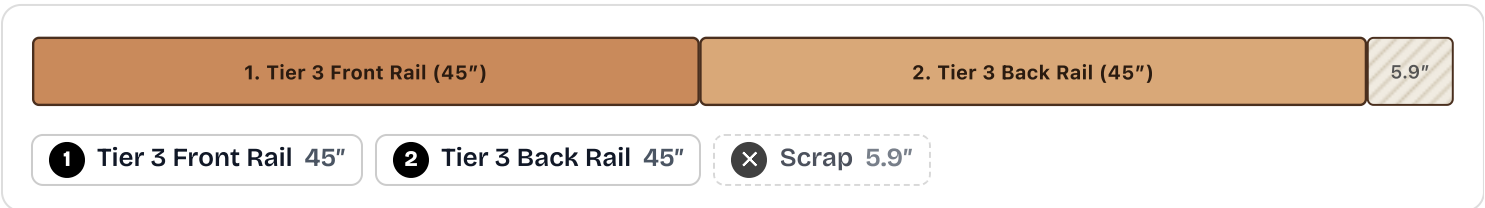


1× Board

2x4 (8' / 96" stock)

2 cuts/board • 90.1" used • 5.9" scrap

Produces: Tier 3 Front Rail + Tier 3 Back Rail

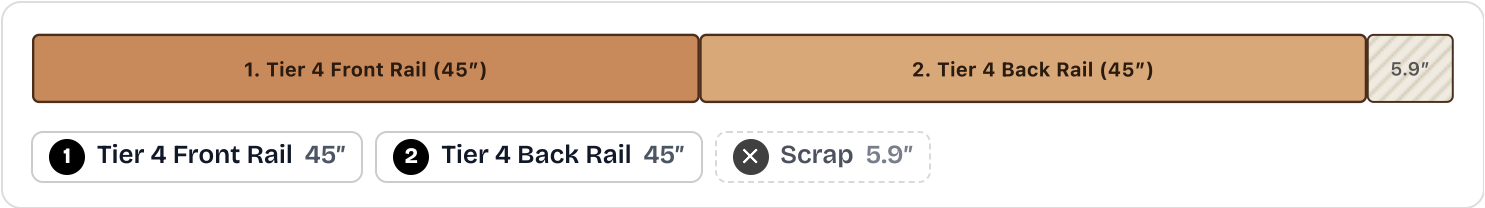


1x Board

2x4 (8' / 96" stock)

2 cuts/board • 90.1" used • 5.9" scrap

Produces: Tier 4 Front Rail + Tier 4 Back Rail

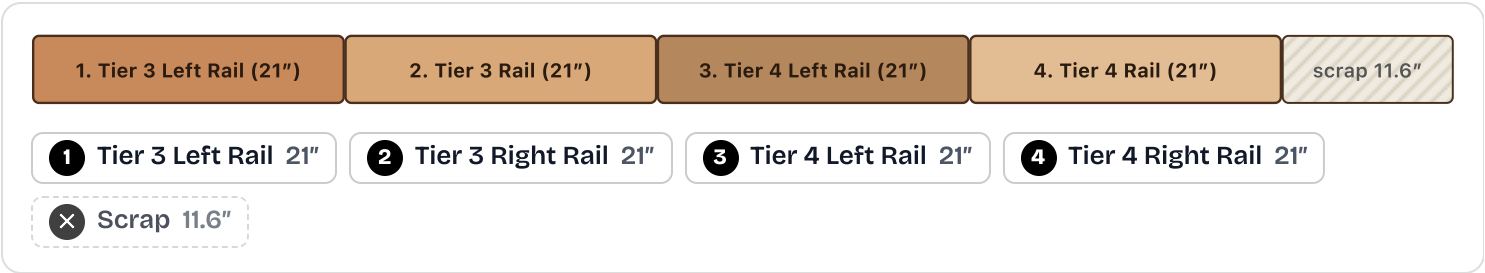


1x Board

2x4 (8' / 96" stock)

4 cuts/board • 84.4" used • 11.6" scrap

Produces: Tier 3 Left Rail + Tier 3 Right Rail + Tier 4 Left Rail + Tier 4 Right Rail



Step-by-Step Assembly Guide

Pieces highlighted in warm amber are added in the current step. Muted beige pieces are already assembled from previous steps.

1

Side Frames (×2)

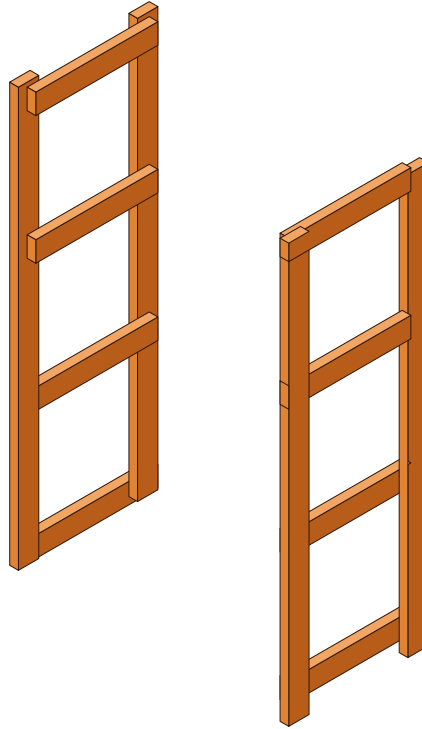
Make 2 identical units (6 pcs each): 2× Upright (2x4, 72") 1× Tier 1 Left Rail (2x4, 21")

1× Tier 2 Left Rail (2x4, 21")

1× Tier 3 Left Rail (2x4, 21")

1× Tier 4 Left Rail (2x4, 21")

- Drive 4× 2.5" screws (per unit) through **Tier 1 Rail** into **Upright**
- Drive 4× 2.5" screws (per unit) through **Tier 2 Rail** into **Upright**
- Drive 4× 2.5" screws (per unit) through **Tier 3 Rail** into **Upright**
- Drive 4× 2.5" screws (per unit) through **Tier 4 Rail** into **Upright**



2

Frame Assembly

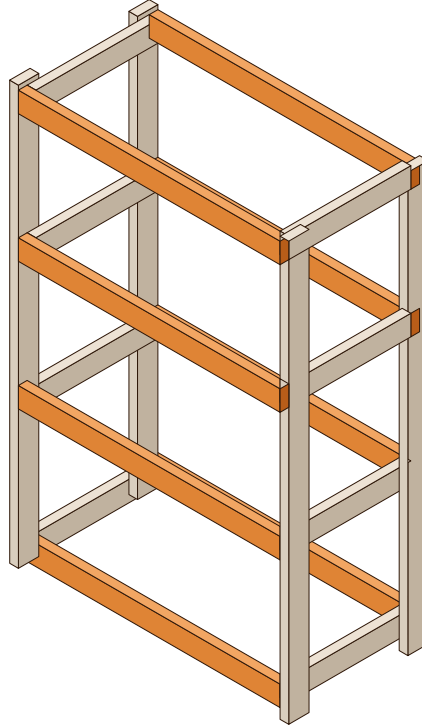
2× Tier 1 Rail (2x4, 45")

2× Tier 2 Rail (2x4, 45")

2× Tier 3 Rail (2x4, 45")

2× Tier 4 Rail (2x4, 45")

- Drive 8× 2.5" screws through **Upright** into **Tier 1 Rail**
- Drive 8× 2.5" screws through **Upright** into **Tier 2 Rail**
- Drive 8× 2.5" screws through **Upright** into **Tier 3 Rail**
- Drive 8× 2.5" screws through **Upright** into **Tier 4 Rail**



3

Top & Finishing Assembly

1× Tier 1 Shelf (*plywood, 24" × 45"*)

1× Tier 2 Shelf (*plywood, 24" × 45"*)

1× Tier 3 Shelf (*plywood, 24" × 45"*)

1× Tier 4 Shelf (*plywood, 24" × 45"*)

- Drive 6× 1.5" screws through **Tier 1 Shelf** into **Tier 1 Rail**
- Drive 6× 1.5" screws through **Tier 2 Shelf** into **Tier 2 Rail**
- Drive 6× 1.5" screws through **Tier 3 Shelf** into **Tier 3 Rail**
- Drive 6× 1.5" screws through **Tier 4 Shelf** into **Tier 4 Rail**

