

Carpentry Basics — Workbook

This workbook turns the course into shop time. Each section pairs with a course module and gives you measuring drills, cut lists, joint tests, and build checklists to run at your own bench. Work through it with real lumber and tools in hand, and keep the templates open as you go so your projects start from correct numbers instead of guesses.

Measuring, Marking, and Cutting Lumber

Drill accurate measuring, layout, and square crosscutting until clean cuts become automatic.

Exercise: Read the Tape to 1/16 Inch

Have a partner mark ten random points on a scrap board and write the locations on a hidden card. Read each mark to the nearest 1/16 inch and record your answer, then compare against the card. Repeat until you call all ten correctly without hesitating.

- Which fractions did you misread most often (1/16 vs 3/16 vs 5/16)?

- Did you account for the tape hook by burning an inch on any measurement?

- What is the actual dimension of a 2x8, and how did you confirm it on real stock?

Worksheet: Square-Cut Accuracy Log

Cut ten crosscuts at marked lengths on the miter saw using a stop block. Measure each finished piece and record the deviation from target. Note your tightest and worst cut so you can see your consistency improving.
Target length (in)

Actual measured length (in)

Deviation (+/- in)

Square check: gap under speed square (yes/no)

Tool used (miter / circular / handsaw)

Note on what caused any error

Checklist: Before-You-Cut Safety and Setup

- Safety glasses and hearing protection on
- Blade matched to the cut (24T framing vs 60-80T finish)
- Workpiece supported so the offcut cannot pinch or fall on the blade
- Reference edge identified and waste side marked with an X
- Measurement checked a second time before the saw runs

Hands and clamps clear of the blade path

Joinery Fundamentals

Cut and pull-test the five core joints so you know their strength and where each belongs.

Exercise: Cut the Five Core Joints on Scrap

Make one sample of each joint in scrap: butt with screws, miter with brads and glue, rabbet, dado, and pocket-screw. Glue and fasten each per the course, let them cure 24 hours, then break each by hand or in a vise and observe where it fails.

- Which joint failed in the wood rather than at the glue line, and what does that tell you?

- How snug was your dado fit, slide-in by hand or hammered, and how would you adjust it next time?

- For a loaded bookshelf, which two joints would you choose and why?

Worksheet: Pocket-Hole Setup Card

For each piece of stock you will join, fill in the jig and screw settings before drilling. Drill a test hole in scrap of the same thickness and confirm the screw does not blow through the face.

Stock thickness (in)

Jig drill-guide setting

Drill-bit collar setting

Screw length (in)

Thread type (coarse softwood / fine hardwood)

Test hole in scrap passed (yes/no)

Checklist: Strong-Glue-Joint Checklist

- Mating surfaces flat and dust-free
- End grain sized with thin glue first where applicable
- Full, even glue coverage on long-grain faces
- Pilot holes drilled near board ends to prevent splitting
- Clamped flush with thin squeeze-out wiped before it skins
- Joint left undisturbed 30 min minimum, 24 hr before load

Framing a Wall

Lay out, build, and prove a square, plumb stud wall using the standard residential method.

Worksheet: Plate Layout Worksheet (16-Inch O.C.)

Plan the stud layout for a wall before marking the plates. Fill in the first-stud and on-center marks, then transfer them to both plates clamped together. Use the template spreadsheet to generate the full mark list.

Wall length (in)

First interior stud near-edge mark (15.25 in)

On-center spacing (in)

Total number of common studs

Opening location(s) (in from end)

End studs marked both ends (yes/no)

Exercise: Build and Square a Short Wall Section

Frame a short practice wall (about 4 feet) flat on the floor with precut studs, a single bottom plate, and a top plate. Frame one small rough opening with king, jack, header, and cripple studs. Square it by the diagonal method before bracing.

- What were your two diagonal measurements, and how much did you adjust to make them equal?
- Did your rough opening match the door or window spec plus the recommended clearance?
- After raising and plumbing, did nailing the bottom plate pull the wall out of plumb at all?

Checklist: Wall-Raising Readiness Checklist

- Plates marked identically and studs on their layout lines
- Opening assembled: jacks to kings, header set, cripples nailed
- Diagonals measured equal and a temporary brace tacked on
- Floor cleats nailed to stop the bottom plate from kicking
- Helper and clear lift path confirmed before raising
- Level and bracing material staged to plumb the wall once up

Trim, Molding, and a Cabinet Carcass

Fit professional trim and build your first square cabinet box from a real cut list.

Exercise: Cope an Inside Baseboard Corner

Install one straight baseboard piece into a practice corner, then cope a second piece to nest against it. Cut the 45-degree inside miter to reveal the profile, follow the line with a coping saw, back-cut, and refine the fit with a file until the joint closes tight.

- Was the corner actually 90 degrees, and how did coping handle the out-of-square better than a miter would have?
- Where did your cope contact first, and what did you file back to close the gap?
- Which nails went into the plate versus the studs you located behind the drywall?

Worksheet: Cabinet Carcass Cut List

Plan every part of your carcass before cutting plywood. Fill in finished sizes for each panel and confirm matching parts share identical dimensions. Use the cut-list template to lay parts out on the sheet efficiently. Part name (side / top / bottom / back)

Quantity

Width (in)

Length (in)

Material (3/4 ply / 1/4 ply)

Joint at each end (dado / rabbet / pocket screw)

Checklist: Square-Carcass Assembly Checklist

- All parts cut from one accurate cut list, matching parts identical
- Rabbet cut around rear edges to receive the back panel
- Full dry-fit with clamps completed before any glue
- Glue applied, box assembled and lightly clamped
- Both diagonals measured and clamped equal
- Square back panel glued and stapled in to lock the box true

Your Action Plan

1. Assemble a starter kit: 25-ft tape, speed square, combination square, pencil and marking knife, circular saw, miter saw, drill/driver, and clamps.
2. Run the tape-reading and square-cut drills until ten cuts land within 1/16 inch of target.
3. Cut all five core joints in scrap, cure them, and break-test each to feel the strength differences firsthand.
4. Set up and dial in a pocket-hole jig on scrap before using it on a real project.
5. Lay out plates for a short wall at 16-inch on-center and frame one practice section with a rough opening.
6. Square the wall by equal diagonals, raise it, and brace it plumb with a level.
7. Install one run of baseboard, coping the inside corner and mitering the outside corner.
8. Hang door or window casing with a consistent 3/16 to 1/4-inch reveal all the way around.
9. Build a small cabinet carcass from a written cut list, squaring it by diagonals and locking it with a square back.
10. Review the accuracy log and joint tests, note your weakest skill, and repeat that drill before starting a real-room project.

