

Drawings are important in any furniture project, but they don't tell you where to start building.

The choice is an important one. Building in the right order helps ensure that parts fit properly, and it gives you the flexibility to work around the small variations that are bound to occur. Choose poorly and the project can get a lot more complicated.

This approach goes hand in hand with another important idea, which is to avoid precutting all of your parts to final dimension. Instead, leave them slightly oversize.

Build in the Right Order

How expert furniture makers get flawless results and avoid headaches

BY PHILIP C. LOWE

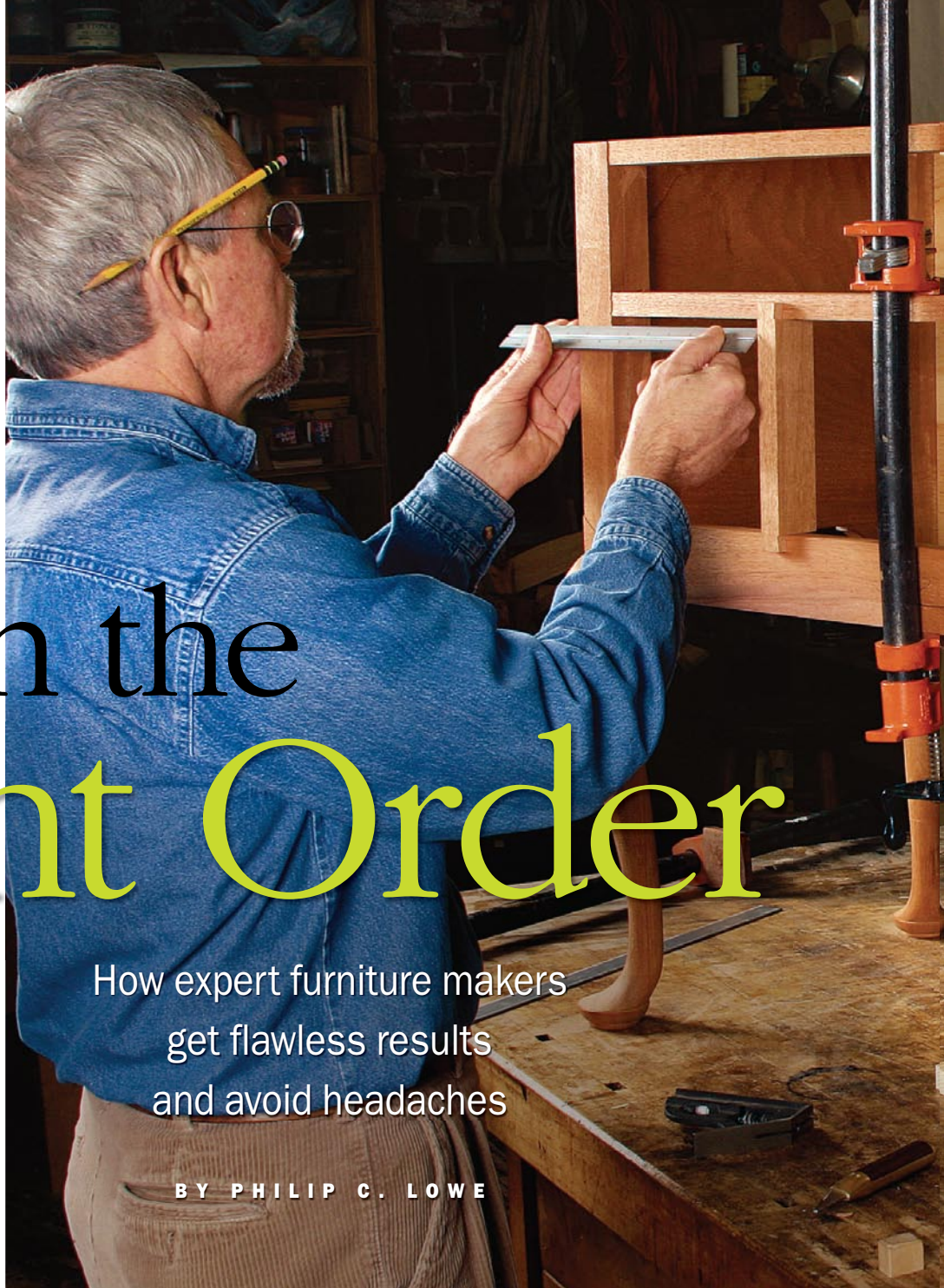
That way, you can cut them to fit the piece perfectly as it comes together.

So how do you choose where to start? The clearest general rule is to build the case first. Doing so lets you start with a single assembly that will control the dimensions of just about every other part in the project. Even in pieces that aren't case pieces, this underlying idea still applies: Look for the assembly with the most control over other parts, and start there.

Practice this and you'll find that for any piece of furniture, there's a sequence that will make the task simpler.

Here are four basic furniture types, with time-tested advice on what to build first, next, and last. If you understand these, you should be able to handle almost everything else.

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4 GAME PLANS COVER MOST PIECES

Read on for illustrated guides to four of the most common pieces.



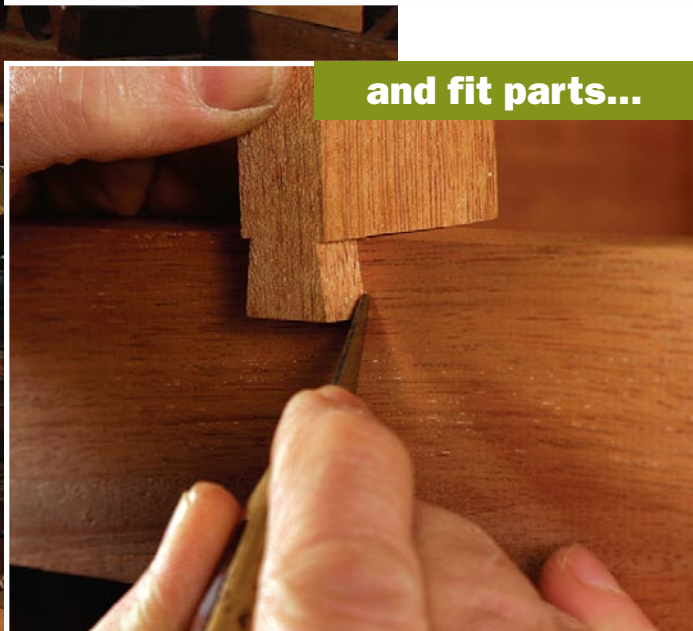
1 CABINETS



2 TABLES



Work from the outside in...



and fit parts...



...as you go



3 CASE PIECES



4 CHAIRS



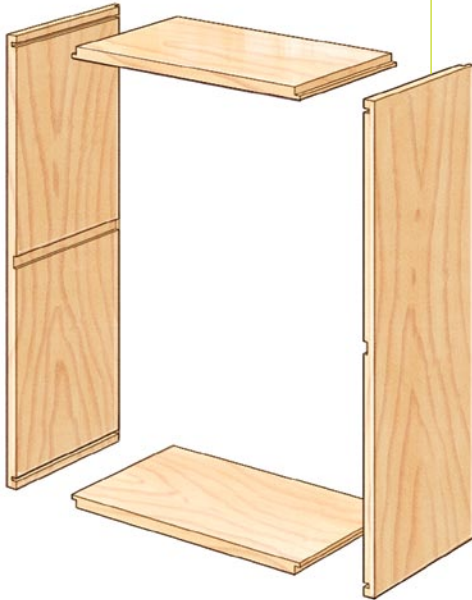
GAME PLAN

Cabinet with face frame and door

This small wall cabinet is a good example of a piece with a solid-wood face frame. The rest of the piece is solid wood, too, but it could just as easily be plywood or have more complex joinery.

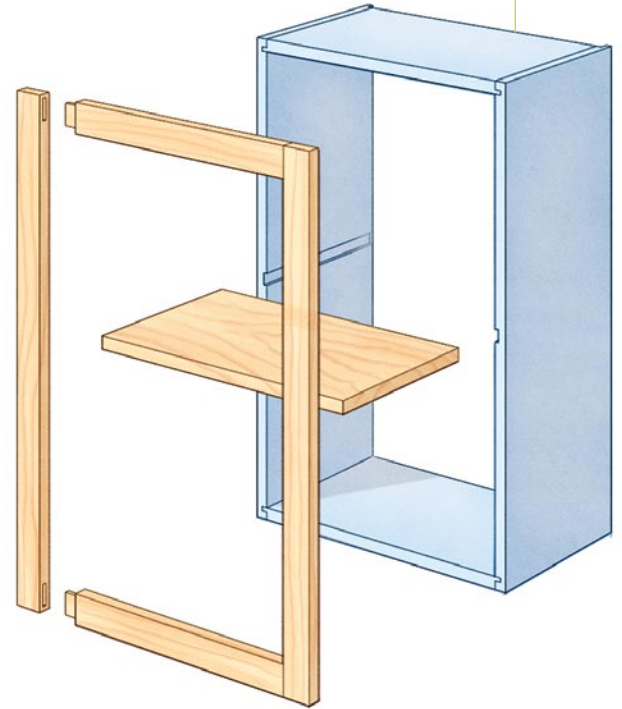
STEP 1 BUILD THE BOX

As with any case piece, the basic box comes first. You need to see the exact size of the case before you can measure for the shelf and size the face frame. Don't forget to cut the shelf dados and rabbet the case parts for the back, if need be, before gluing up the case.



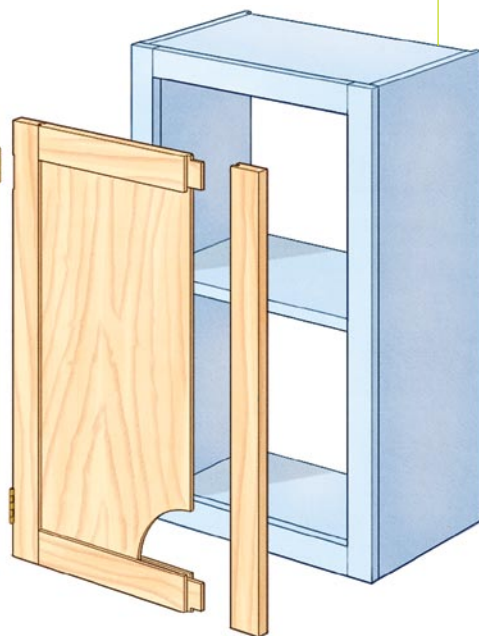
STEP 2 ADD THE SHELF AND SIZE THE FACE FRAME

With the case glued up, measure the inside width top just below the top and add the dado depths for a perfect-fitting shelf. Build the face frame slightly oversize— $\frac{1}{32}$ in. on each side—so it can be planed flush. The frame should be attached before any other work is done, as it will define the opening for the door and could even pull the case slightly out of square when it is attached.



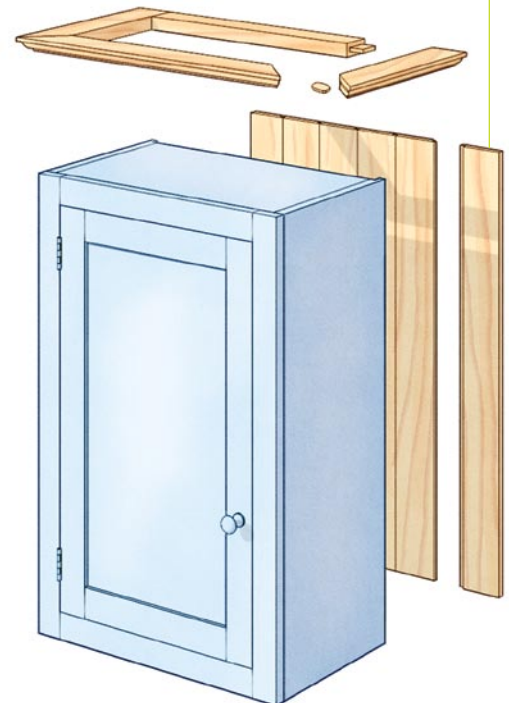
STEP 3 FIT THE DOOR

Size the door to fit the opening in the face frame. Dry-fit the door frame and measure from groove bottom to groove bottom to size the panel. Then glue up the door. Fit the door by planing the top, bottom, and one edge to fit with the correct clearance. Now install the hinges and mark the door's overlap. Remove the door, cut and plane it to size, and re-install.



STEP 4 ADD THE BACK AND THE TOP

The back and the top go on last. Leaving the back off until the end makes it easier to fit the door because you can see the gaps when the door is backlit. Rip and crosscut the boards or back panel to size, cut the rabbets for shiplaps if called for, and install the back. An exception to this approach would be a larger piece, where it's a good idea to install the back after the face frame but before the door, to add rigidity. Finally, fit and attach the top moldings.



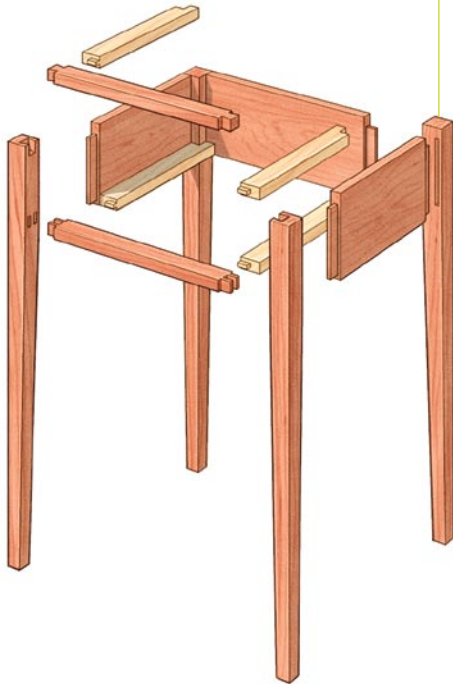


GAME PLAN Table with drawer

This project has legs and aprons joined with mortises and tenons, but the same basic rules apply.

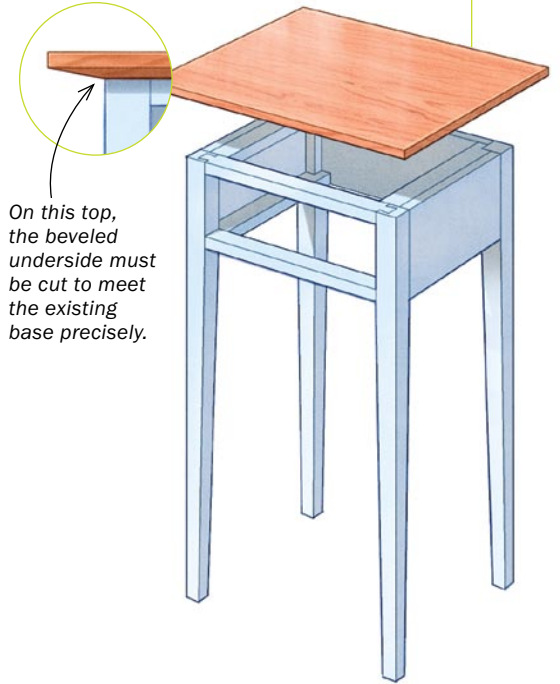
STEP 1 BUILD THE BASE

Start with the base because it controls the size of the drawer opening and the top. Mill the legs and aprons to finished dimension and mark out for the mortise-and-tenon joinery. Mortise and taper the legs, then tenon the aprons and the lower front rail. Dovetail the top rail and (with the base dry-fitted) mark out its sockets in the front legs. Cut the sockets, then glue up the front and back assemblies separately before joining them with the side aprons. The drawer kickers and runners go in last.



STEP 2 SIZE THE TOP

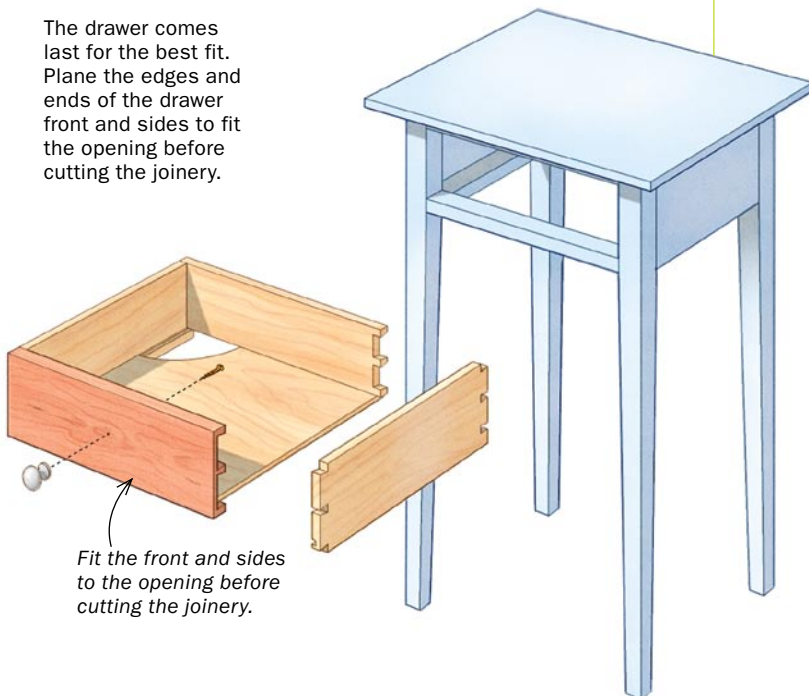
First, check the finished dimensions of the base. After gluing up and flattening the panel for the top, cut it to size and shape the edge. Then, go ahead and fasten it to the base. If any bow exists in the top front rail, attaching the top will change the shape of the drawer opening. That's why this needs to be done before fitting the drawer.



On this top, the beveled underside must be cut to meet the existing base precisely.

STEP 3 FIT THE DRAWER

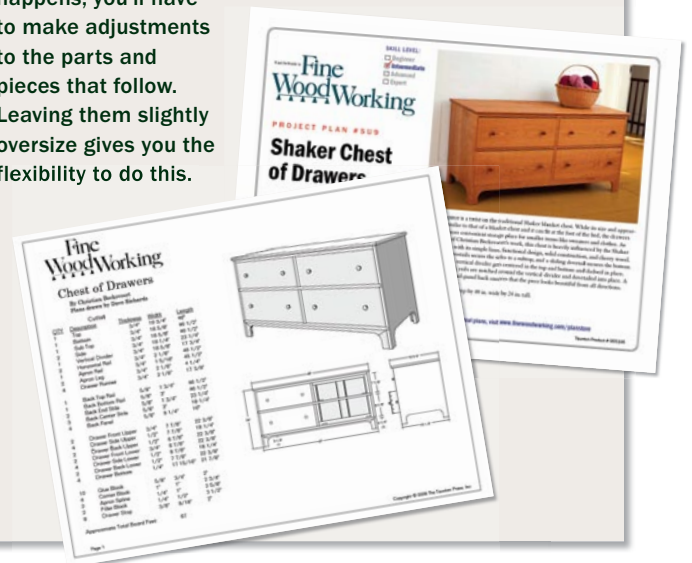
The drawer comes last for the best fit. Plane the edges and ends of the drawer front and sides to fit the opening before cutting the joinery.



Fit the front and sides to the opening before cutting the joinery.

Building from plans

Avoid the temptation to mill all your pieces to the dimensions specified in the cutlist before you start the project. On a case piece, for example, the box you build will vary slightly from your plan. It may be a little larger or smaller; it may even be slightly out of square. When that happens, you'll have to make adjustments to the parts and pieces that follow. Leaving them slightly oversize gives you the flexibility to do this.



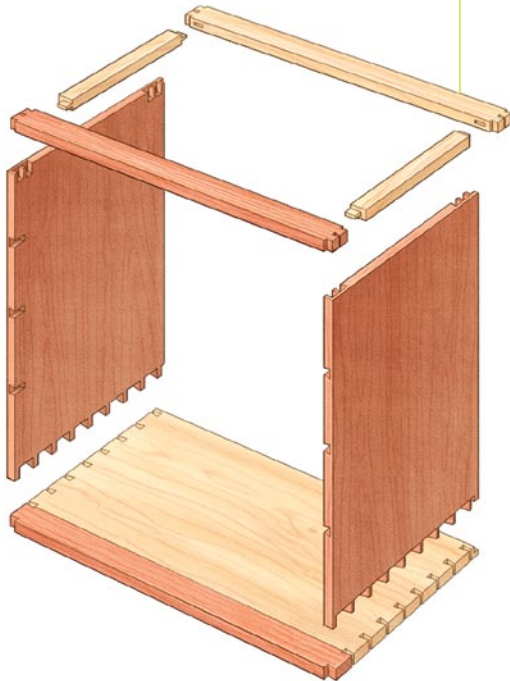


GAME PLAN Chest of drawers

You'll often hear woodworkers say that it's much easier to build a drawer to fit an opening than it is to build an opening to fit a drawer. This is even more true when multiple drawers are involved.

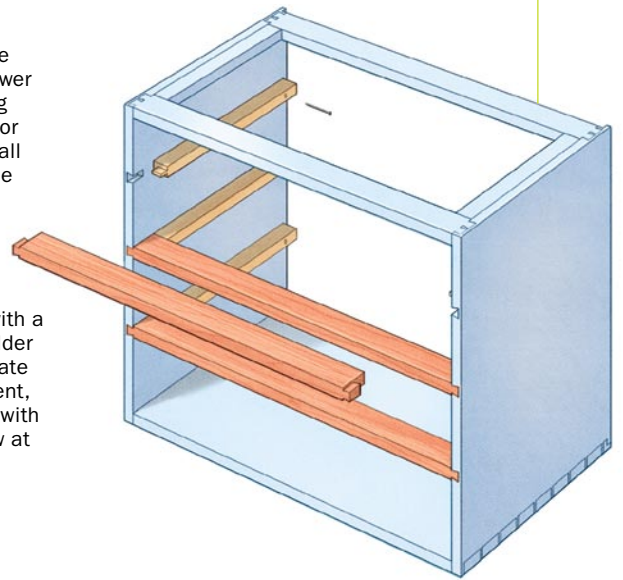
STEP 1 BUILD THE CASE

The case is first, because its final size and shape will determine the dimensions of just about every other component in the piece, and you can tailor the rest of the components for a precise fit. In this piece, the case is solid wood, with dovetail joinery. But the concept would be the same for post-and-panel construction.



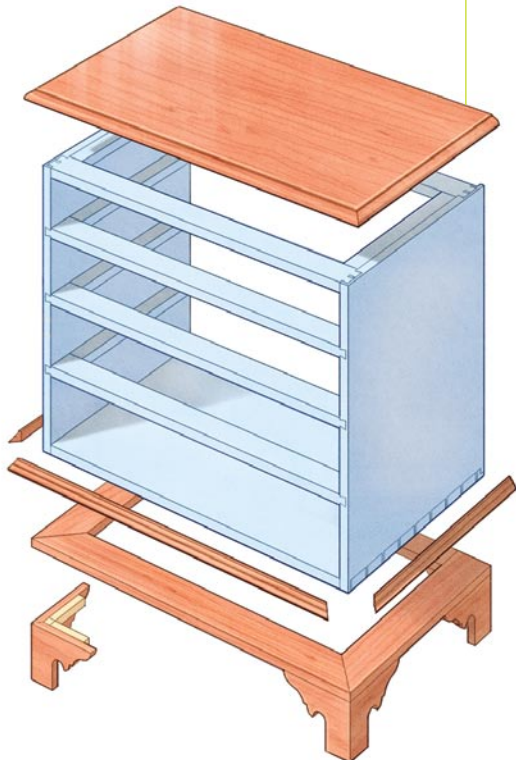
STEP 2 ADD THE DIVIDERS

After gluing up the basic box, install the horizontal drawer dividers, along with the interior components, all of which define the opening for each drawer. The runners are tenoned into the dividers with a relieved shoulder to accommodate wood movement, and held fast with a single screw at the back.



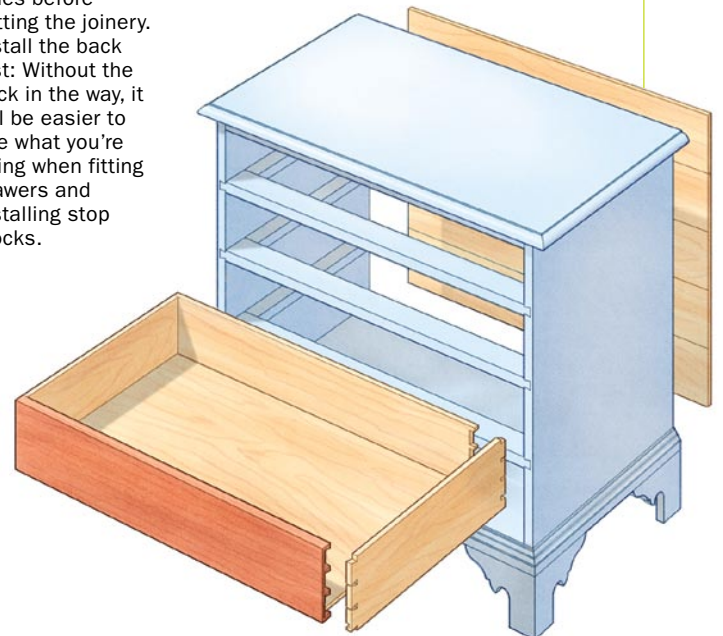
STEP 3 ATTACH THE TOP, BASE, AND MOLDINGS

Wait until the case is assembled so you can measure its bottom for the base. This lets you fit the base accurately and accommodate any imperfections, like corners that might not be precisely 90°. This will affect the fit of the base molding as well. Install the top and attach the base before fitting the drawers. As with a table, if there's any bow in the top stretchers, or twist in the base frame, attaching the base will alter the shape of the drawer openings.



STEP 4 FIT THE DRAWERS AND ADD THE BACK

Again, fit the drawer front and sides before cutting the joinery. Install the back last: Without the back in the way, it will be easier to see what you're doing when fitting drawers and installing stop blocks.



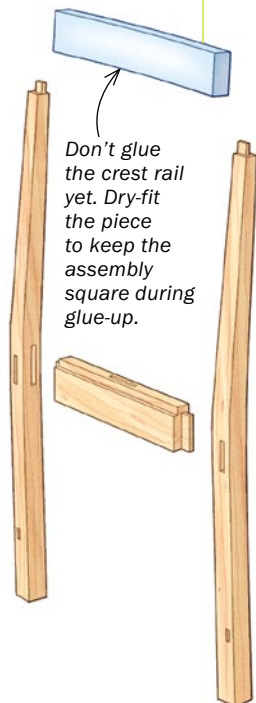


GAME PLAN Side chair

With compound angles in all directions, chairs strike fear in the hearts of many woodworkers. But if you realize that the back is the foundation and start there, you'll find you can use the fit-as-you-go principle to divide and conquer almost any chair.

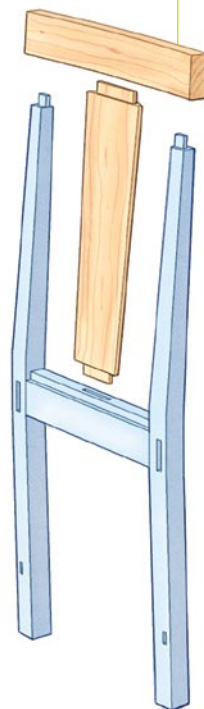
STEP 1 THE BACK ASSEMBLY

Start with the posts: Shape them, cut the seat-rail and stretcher mortises, and form the tenons at the tops. Then size the rear seat rail and cut its tenons as well as the rabbet for the seat frame and mortise for the splat. Dry-fit the assembly, mark the crest rail for an exact fit, and lay out the crest-rail mortises against the tops of the posts. To help keep the assembly straight and parallel while you glue it up, dry-fit the crest rail during the process.



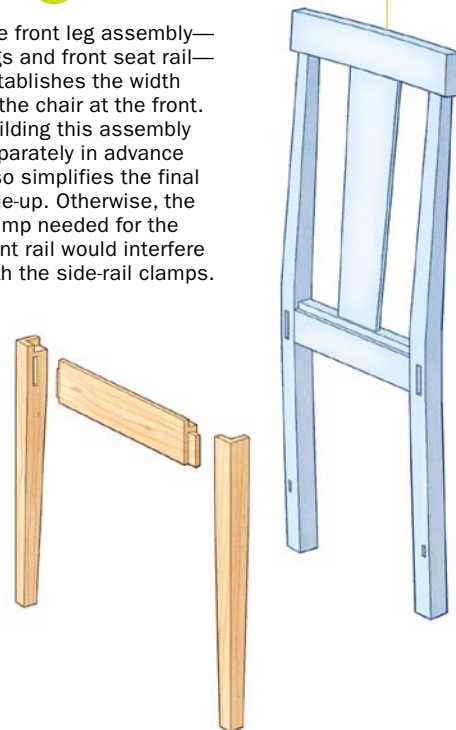
STEP 2 THE SPLAT

Together, the back assembly and the crest rail create the opening for the back splat. Install the splat now because you don't want other parts in the way when clamping it. Mortise the bottom of the crest rail for the splat. Then, fit the splat's bottom tenon into its mortise and, with the crest rail removed, use a straightedge across the tops of the posts to mark out for the top tenon. When the joinery is fitted, glue the splat and crest rail in place.



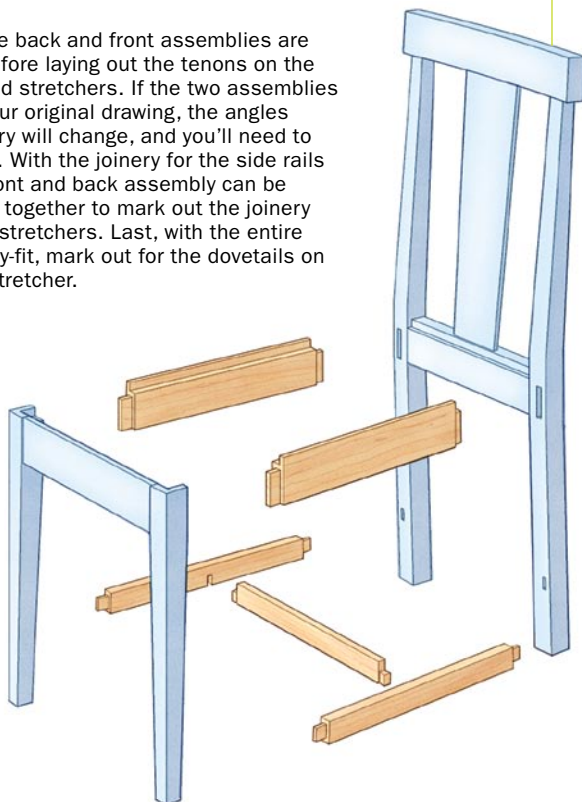
STEP 3 THE FRONT LEG ASSEMBLY

The front leg assembly—legs and front seat rail—establishes the width of the chair at the front. Building this assembly separately in advance also simplifies the final glue-up. Otherwise, the clamp needed for the front rail would interfere with the side-rail clamps.



STEP 4 SIDE RAILS FIRST AND STRETCHERS LAST

Wait until the back and front assemblies are complete before laying out the tenons on the side rails and stretchers. If the two assemblies vary from your original drawing, the angles for the joinery will change, and you'll need to adjust them. With the joinery for the side rails done, the front and back assembly can be dry-clamped together to mark out the joinery for the side stretchers. Last, with the entire assembly dry-fit, mark out for the dovetails on the center stretcher.



Styles vary, but the approach is the same

The concept of building in a particular order and fitting parts as you go isn't confined to one particular style of furniture making. The logic illustrated in these game plans can be applied to any piece, whether it's a Queen Anne lowboy, a Shaker chest of drawers, or a contemporary chest on stand.

