BUILD BEAUTIFUL CUTTING BOARDS

Step-by-Step Projects, Proven Techniques, and the Skills to Design Your Own

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Ingison Woodworks

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DEDICATION

For my wife, Jennifer—

Thank you for your constant support, your patience, and your belief in me through every idea, project, setback, and new direction.

This book would not be the same without you.

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Introduction

A beautiful cutting board can be one of the most satisfying projects you build in a woodworking shop. It can be simple or complex, bold or understated, but when the wood, pattern, proportions, and workmanship come together, the finished board becomes more than a kitchen tool. It becomes something you are proud to use, display, give as a gift, or build again with your own ideas. That is what this book is about.

Build Beautiful Cutting Boards will give you the skills to build attractive, useful boards while helping you understand why the process works. You will learn how to choose suitable hardwood, prepare the material, plan the dimensions, create clean patterns, make dependable glue-ups, flatten and sand the completed board, and apply a finish that brings out the natural character of the wood.

The projects begin with edge-grain construction, where you will see how different species, strip widths, accents, and arrangements can create very different results from the same basic method. From there, you will move into end-grain construction through the Checkerboard and Basketweave projects. Those builds demonstrate how cutting, rotating, and rearranging sections can turn a relatively simple first panel into a far more intricate finished pattern.

The goal is not merely to give you plans to copy. As you work through the book, you will learn how the decisions behind each project affect the finished board. By the end, you should be able to modify an established pattern, adjust the dimensions, choose your own wood combinations, or begin with an idea and work out how to build it.

You do not need years of woodworking experience or a shop filled with expensive equipment. You do need patience, accurate work, and a willingness to understand each step before rushing into the next one.

The techniques in this book come from real shop work, including mistakes, corrections, and lessons learned while building the boards themselves. The purpose is to give you practical methods you can use at the workbench without burying a straightforward woodworking project beneath unnecessary theory.

Start with the fundamentals and build the projects. Pay attention to why each method works, learn from the problems that appear along the way, and then use those skills to make the next board your own.

Chapter 1

What Makes a Cutting Board Work?

A beautiful cutting board should look like someone made deliberate choices.

The wood should work well together. The proportions should look right. Contrasting species and accent strips should add to the design instead of fighting for attention. Joints should be clean, the surface should be flat, and the finished board should feel solid when it is placed on the counter.

But appearance is only part of the job. A cutting board also has a job to do. It needs to stand up to repeated chopping, washing, drying, and regular care while staying flat, solid, and attractive. That balance between appearance and function is one of the ideas we will use throughout this book.

Built for Use

A working cutting board needs a flat cutting surface and enough weight and thickness to remain stable during normal use. It should be comfortable to handle and large enough to provide useful working room without becoming awkward to wash, move, or store.

The size that works best depends largely on the kitchen and the person using the board. A larger board provides more room and can remain on the counter as the kitchen's main food-preparation surface. A smaller board may be a better fit when counter space, sink size, or storage space is limited. There is no single ideal size. The right dimensions are the ones that give the user enough working room while fitting comfortably into the space where the board will be used.

Thickness also affects the board's weight, stability, and overall appearance. A thicker board feels substantial and is less likely to move during use, but it will also be heavier to carry and wash. These decisions do not need to become complicated. The board simply needs to fit the kitchen, remain manageable for the person using it, and provide enough cutting space to do its job.

Before calling a board finished, set it on a flat counter and press lightly near each corner. It should sit steadily rather than rock when pressure moves from one side to the other. Then pick it up and imagine washing it in the sink where it will actually be used. A board can have generous cutting space and still be inconvenient if it is too heavy to handle or too large to wash comfortably.

Those checks matter because the board will be handled and washed far more often than it will be admired from across the room. Size and thickness should give it a stable working surface while leaving it practical for the person who has to carry, clean, and store it.

The board also needs sound construction. Most of the projects in this book are made by joining several pieces of wood together, and those glue joints become part of the structure of the

finished board. A properly prepared joint should fit before the clamps go on. Clamp pressure holds those fitted surfaces together while the glue cures; it should not be used to force badly fitting pieces into submission.

The basic rule is simple: a strong glue-up begins with parts that fit.

The wood itself matters as well. Cutting boards are exposed to moisture, repeated knife use, and regular cleaning, so the species you choose must be suitable for that environment. Hardness is important, but harder is not automatically better. Grain structure, stability, workability, and the condition of the individual piece of lumber all affect whether it belongs in a cutting board.

We will cover wood selection in the next chapter. Before that, there is another basic choice to understand: whether the cutting surface will be face grain, edge grain, or end grain.

Understanding Grain Direction

The same piece of lumber presents three different surfaces, depending on how it is cut and oriented.

The broad surface of a board is the face grain. The narrow surface running along the length of the board is the edge grain. When the board is crosscut, the exposed ends of the wood fibers form the end grain.

Those terms describe which part of the wood is facing upward. For cutting boards, that matters because changing the orientation of the lumber changes both the appearance of the board and the way the surface performs under a knife.

Face-grain boards display the broad natural grain patterns of the lumber, which can make them especially attractive. However, that surface also shows knife marks readily. Face grain is better suited to serving boards, charcuterie boards, and presentation pieces than to a board intended for regular cutting.

Edge-grain boards make excellent everyday cutting boards. They hold up well to regular knife work, are practical to build, and can provide many years of service with proper care. Knife marks will gradually accumulate through use, but the surface can normally be sanded and refinished when the wear becomes noticeable.

End-grain boards are particularly well suited to frequent knife work and are often preferred by serious home cooks and professional chefs. Because the wood fibers are exposed at their ends, normal knife marks tend to remain far less noticeable than they do on an edge-grain surface. A properly made end-grain board can remain in service for decades when it is cleaned and maintained correctly.

End-grain construction also provides greater artistic freedom. The first panel can be crosscut into sections, and those sections can be rotated, reversed, shifted, and rearranged before the final glue-up. That process makes checkerboards, basketweaves, three-dimensional illusions, and other designs possible that cannot be created the same way with long edge-grain strips.

[SEE FIGURE 01-01]

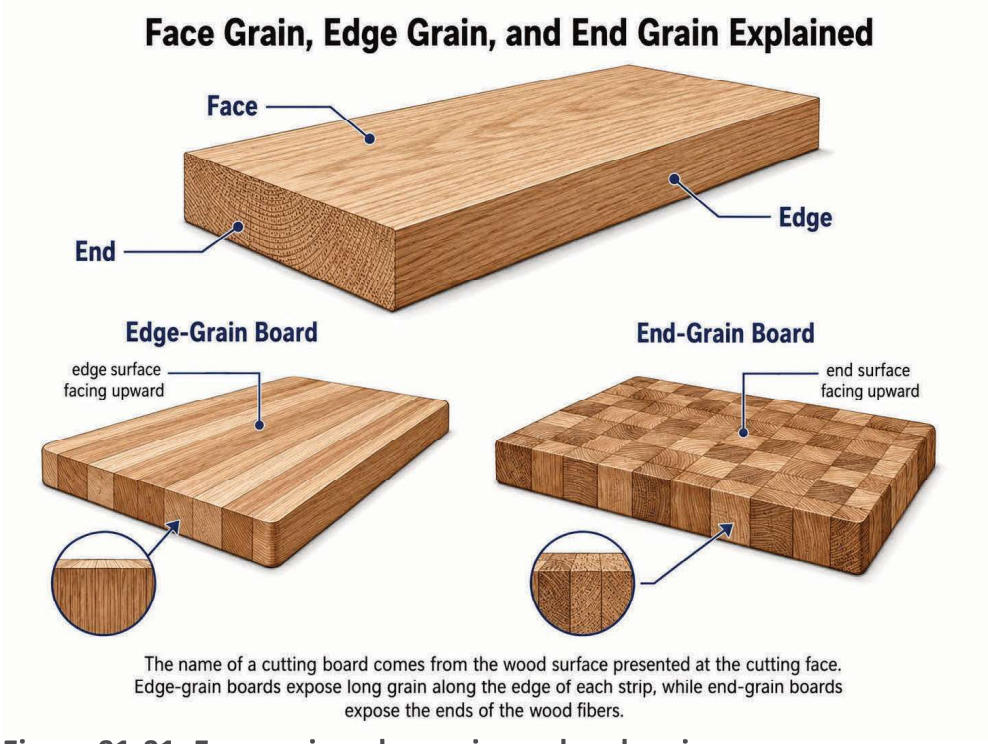


Figure 01-01. Face grain, edge grain, and end grain.

Edge Grain

On an edge-grain cutting board, the strips are turned so the narrow edges become the cutting surface.

Because the grain runs the length of each strip, edge-grain boards naturally create long lines across the surface. Those lines can be simple and uniform, or they can be used to build patterns with different species, strip widths, and accent pieces.

One of the advantages of edge-grain construction is that you can see most of the finished design before the glue-up begins. During the dry layout, strips can be moved, flipped, or rearranged until the color, contrast, and balance look right.

The construction is also direct. The lumber is prepared, ripped into strips, arranged in the desired pattern, and glued into a single panel. Once the glue has cured, the panel is flattened, trimmed to final size, shaped, sanded, and finished.

That straightforward construction does not limit the design. A well-planned edge-grain board can be simple and understated or highly detailed, depending on the wood choices and strip arrangement.

For that reason, edge grain is where we will begin the first complete build in this book.

End Grain

End-grain construction adds another major stage to the process.

The first glue-up creates an intermediate panel rather than the finished cutting board. That panel is later crosscut into sections. The sections are rotated so the end grain faces upward, arranged into the desired pattern, and glued together again.

That second stage is what makes patterns such as Checkerboard and Basketweave possible. Depending on the design, sections may also be reversed, shifted, or rotated before the final glue-up.

The extra steps make accuracy more important. A small cutting or alignment error can repeat across several sections and become much more noticeable once the final pattern comes together.

End grain also behaves differently under a knife. You may sometimes hear it described as self-healing, but that term goes too far. The wood does not repair itself. Light knife marks can become much less noticeable because the exposed fibers can move back toward their original position, but deeper cuts still remain.

End grain also tends to absorb moisture and finishing oil more readily than long grain. That becomes important later when we build, sand, finish, and care for the end-grain projects.

One Is Not Automatically Better

Edge grain and end grain each have their own strengths.

Edge grain offers a direct construction method, makes excellent use of long strips and accent woods, and produces a durable board suited to everyday use.

End grain takes more material, more cutting, and another major glue-up, but it handles heavy knife work well and allows patterns that cannot be created the same way with edge grain.

One is not simply the “better” version of the other.

The better choice depends on how the board will be used, how you want it to look, and how much complexity you want in the build.

This book teaches both methods because each develops a different set of skills. We will begin with edge grain, then build on those skills when we move into Checkerboard and Basketweave end-grain construction.

Before any of that begins, we need the right wood.

Chapter 2

Choosing the Right Wood

When buying hardwood, look for the straightest boards with as few knots, cracks, and damaged areas as possible. A beautiful piece of lumber is not much use if a large portion has to be cut away before you can build with it. What matters is how much sound material the board will actually give you.

Sight down the edge to check for bow, then look across the width for cup or twist. A slight bow can often be corrected during normal stock preparation, but badly warped lumber may require so much material to be removed that it is no longer a good choice.

Wood	Approx. Janka Hardness	Practical Role
Black Cherry	950 lbf	Primary cutting-board wood
Black Walnut	1,010 lbf	Primary cutting-board wood
Yellow Birch	1,260 lbf	Good alternative cutting-board wood
Hard Maple	1,450 lbf	Primary cutting-board wood
African Padauk	1,970 lbf	Edge-grain accent or end-grain pattern wood
Purpleheart	2,520 lbf	Edge-grain accent or end-grain pattern wood

A board can look straight at the lumber rack and still move after you bring it into the shop. Wood responds to changes in moisture, and a fresh cut may reveal movement that was not obvious in the full board. Give newly purchased lumber time in your shop before making the final preparation cuts, especially when it has come from very different storage conditions. If you use a moisture meter, check more than one area of the board; a straight appearance by itself does not tell you whether the stock is dry and ready.

This matters because the strips must meet cleanly when the board is glued. If the stock changes shape after preparation, the joints you carefully fitted may open or require heavy clamp pressure to close. Chapter 3 will show how to prepare the stock, but the first decision happens here: choose lumber that has a reasonable chance of staying stable through the build.

Check the ends for splits or cracks that may extend farther into the board than they first appear. A damaged end is not necessarily a reason to reject the lumber if there is enough extra length to remove it, but that loss needs to be considered before you buy.

Look across the faces for knots, dents, deep saw marks, or other areas that could interfere with the pieces you need. For an edge-grain cutting board, dramatic face grain is less important because those broad faces will eventually become the mating surfaces between the strips.

Color still matters. Walnut can range from rich dark brown to much lighter areas within the same board. Maple may range from pale cream to warmer tones, while Cherry develops a deeper color as it ages. Those differences can become part of the design, so pay attention to them before the lumber is cut into strips.

Choosing Species: Hardness and Grain

Hard Maple, Black Walnut, and Black Cherry are the primary woods used throughout this book. They work well together, provide a useful range of natural color, and have a long history of use in cutting boards.

Other hardwoods can also work well, but color alone should never decide whether a species belongs in a cutting board.

One useful measurement is **Janka hardness**, which compares a wood's resistance to denting and wear. A higher number means a harder wood.

The numbers are useful for comparison, but they are not a ranking of which wood makes the best cutting board. Hard Maple is considerably harder than Walnut or Cherry, yet all three perform well in regular cutting-board use.

Grain and pore structure also matter, but visible pores do not automatically make a wood unsafe or unsuitable for a cutting board. Walnut, Peruvian Walnut, and Padauk can all show more visible pore structure than Hard Maple, yet each can be used successfully when the lumber is sound and the board is properly built, finished, and maintained.

The practical concern is how coarse and open the grain becomes. Red Oak is certainly hard enough, but its large, pronounced pores make it difficult to produce the smooth, uniform working surface expected from a quality cutting board. For that reason, tighter-grained hardwoods such as Maple, Walnut, and Cherry are better choices for the main body of most boards.

Padauk and Purpleheart are normally better used as supporting woods in edge-grain designs. Their strong colors make them especially effective as accent strips rather than the main body of the board. In end-grain construction, however, they can play a much larger role. Their color, hardness, and end-grain appearance make them well suited to Checkerboards, Basketweaves, and other patterned boards.

Both woods are substantially harder than Maple, Walnut, or Cherry, which means they may cut and sand differently from the surrounding species. Purpleheart can be particularly demanding because of its hardness, while Padauk may show small natural pores in its end grain even after the

surface has been carefully sanded. Those characteristics should be understood before the wood is selected, but they are not reasons to avoid either species.

When a board combines woods of different hardness, watch the surface during sanding. A softer strip can lose material faster than a harder strip beside it, leaving the harder wood slightly proud. That is especially easy to cause if you hold the sander over one strip to remove a stubborn mark. Keep the sander flat, work across the whole surface, and inspect the joints under light coming from the side. If you can see or feel a height change between strips, correct the surface evenly rather than pressing harder on the low area.

The practical rule is to choose hardwood that is durable enough for regular use, has a grain structure appropriate for a cutting surface, works reasonably well with the other species in the board, and makes sense within the design.

Buy the Wood You Can Actually Use

The dimensions of a board at the lumber rack do not tell you how much cutting-board material it will produce.

Usable lumber also needs a known identity and history. Be cautious with reclaimed wood if you cannot establish what species it is or whether it was painted, treated, or exposed to chemicals. Sanding an unknown board does not answer those questions. Clean reclaimed hardwood from a known source may be useful, but for a cutting board, choose another piece when its history is uncertain.

Part of the width may disappear when an edge is straightened. A knot, crack, or damaged end may remove part of the usable length. Additional material will also be lost during cutting and normal cleanup.

Every saw cut removes a small amount of wood equal to the width of the blade cut. That material loss is called the **blade kerf**.

Before buying lumber, look at the board and mentally remove the areas you already know cannot be used. What remains is the material you are actually buying for the project.

This matters when a design requires a specific number of strips. Coming up one strip short after cutting has begun may mean buying another full board just to replace a small amount of material that was not accounted for.

Buy enough sound lumber to complete the design while leaving a reasonable amount for straightening, trimming, blade kerf, and normal cleanup. There is no need to buy large amounts of unnecessary extra wood, but cutting the material requirement too close can become expensive when something needs to be corrected or replaced.

Chapter 3

Planning Dimensions and Preparing Stock

Before cutting an edge-grain board, it helps to understand how the dimensions of the lumber become the dimensions of the finished board. The relationships are simple, but they affect nearly every decision that follows.

The normal process is just as important. Start with the size you want to build, rough-cut the stock a little long, prepare the surfaces that will become the glue joints, establish a straight reference edge, and then rip the strips.

How the Dimensions Work

For an edge-grain board, the **rip width of each strip determines the starting thickness of the board**. Because flattening and sanding will remove some material later, the strips should begin slightly wider than the intended finished thickness.

For the boards in this book, about **1/8 inch of extra rip width** is a practical working allowance. If a board is intended to finish at 1-3/4 inches thick, the strips would normally begin at about 1-7/8 inches wide. That extra material is there for normal cleanup. If the finished board becomes flat and smooth while remaining slightly thicker than planned, there is no reason to remove good wood simply to reach an exact number.

The **width of the finished board comes from the combined thickness of the strips after they are turned on edge**. If the prepared lumber is 3/4 inch thick, each full strip contributes about 3/4 inch to the width of the panel. A 1/4-inch accent strip contributes another 1/4 inch. The pattern and the thickness of its pieces determine the overall width.

Here is the calculation for the Legacy board you will build later. It uses fifteen full-width strips prepared to about ⅞ inch thick, plus two Cherry accents about ¼ inch thick. The full strips contribute 15 × ⅞ inches, or 13⅛ inches. The accents add another ½ inch, bringing the dry layout to approximately 13⅝ inches wide. That is a starting estimate; cleaning up the outside edges may make the finished board slightly narrower. Measure your own prepared pieces before depending on the number, because their actual thickness controls the width.

Length is handled differently. Rough-cut the stock approximately **1 inch longer than the intended finished board**. That extra length provides room for trimming damaged ends, squaring the panel after glue-up, and making the final crosscuts.

In short, rip width determines the board's starting thickness, the combined thickness of the strips determines the board's width, and the rough length begins about 1 inch longer than the intended finished length.

Preparing the Stock

Once the basic dimensions are understood, prepare the lumber for accurate ripping and a sound glue-up.

Rough-cut the boards to length first. Shorter pieces are easier to handle, and there is little reason to prepare several feet of lumber when the project requires only a much shorter section.

Next, inspect the broad faces. On an edge-grain board, these surfaces become the mating surfaces between the strips after they are turned on edge. Deep saw marks, gouges, or uneven areas can prevent the pieces from fitting together properly.

A thickness planer is the method I normally use to clean up these surfaces. Remove enough material to create flat, reliable glue surfaces, but stop once the stock is ready for the next step. If the lumber is already properly surfaced, very little cleanup may be necessary.

Check how the board sits before planing it. A thickness planer makes the upper face parallel to the face riding on its bed; it does not automatically remove cup or twist. Its rollers can press a warped board down during the cut, only for the board to spring back afterward. If the stock is badly distorted, first establish a reliable flat face with an appropriate method, or cut out a shorter sound section that can be prepared accurately. After planing, check the piece again rather than assuming that passing through the machine made it flat.

After the faces are prepared, establish one straight reference edge. A jointer can do this, or a secured straight-line ripping jig or carrier can be used. What matters is having one dependable edge to guide the stock during the rip cuts.

The strips can then be ripped to the width required for the intended board thickness. Remember that repeated cuts consume material. The width removed by the saw blade is the blade kerf, and even a small kerf adds up when several strips are being cut from the same board.

[SEE FIGURE 03-01]

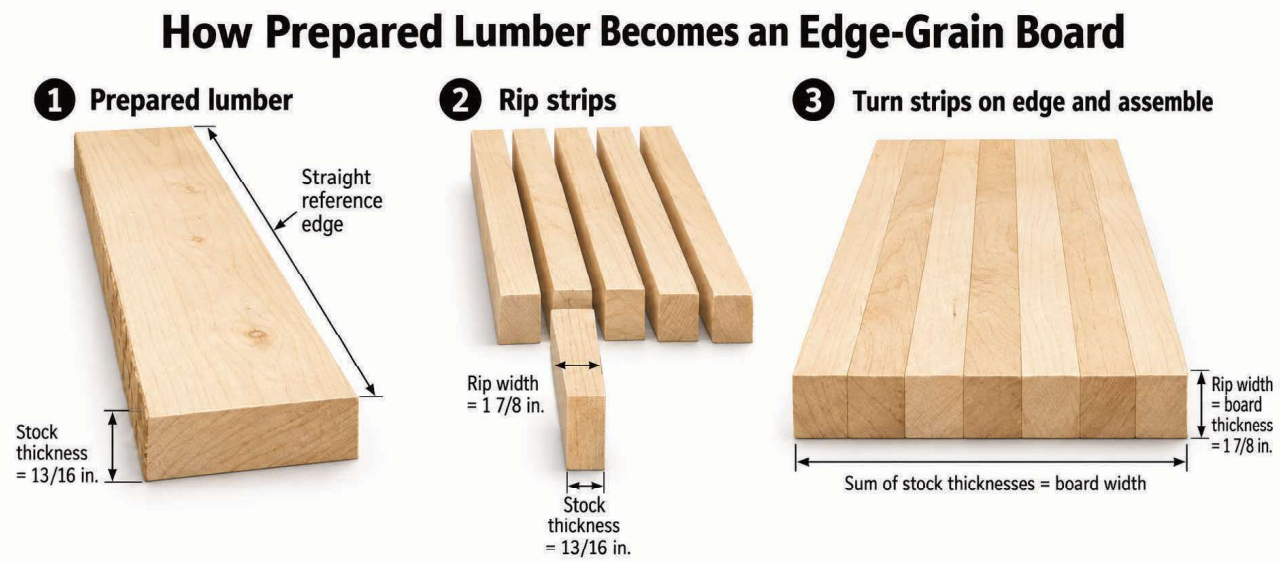


Figure 03-01. Rip width becomes board thickness when the strips are turned on edge. Each strip's original stock thickness contributes to the finished board's width.

Freshly ripped strips may have small burrs or splinters along the cut edges. A quick, light pass with about 80-grit sandpaper removes them without changing the shape of the mating surfaces. This is not finish sanding; the goal is simply to clean up the cuts while keeping the glue surfaces flat.