DREMEL

# PROJECTS & SKILLS


# The Dremel Dream Workshop

**Fixes for Wobbly Chairs, Grout, & More!**

**Scroll saw tips and puzzles**

**Perfect Trim Joints**

**5 Gotta-have-em accessories**

# CONTENTS

DREMEL
PROJECTS & SKILLS




# Welcome!!!

In this day and age where tax forms are so complicated we have to turn them over to accountants and cars so complex we need to have them analyzed by computer, I find great comfort in tackling tasks I can perform with my own two hands. After a Saturday afternoon of woodworking or making headway on some home improvement project, I love standing back and seeing real results.

And of course, anything that helps speed up or improve those "real results" is a welcome addition. That's why we think you'll love this newsletter—and the new Dremel 400 Series XPR. This newsletter is filled with tons of ideas, and the new XPR is filled with features you'll love as well. Features like a high-performance motor for better handling and control, a more ergonomic design for comfort, and new accessories—like the planer and MultiSaw attachments—that will help bring your skills and projects up a level.

So read on and work away. At the end of the day you'll be able to turn around and say with pride, "Look! I actually made—or fixed—or improved that _____." And you didn't need a computer or accountant to do it.

*Andrea Ash*
Director, Marketing Communications

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# The Dremel Dream Workshop

## Build yourself a great place to do great work.

My first workshop was more of a nightmare than a dream. It was in a basement with a low ceiling, so dark that the one bare bulb seemed worthless, and with a dirt floor that kept it permanently dank. It was then that I started dreaming of the perfect shop.

There is no such thing, of course, but over the years (and a handful of shops), I've learned that there are some elements that go into every great shop. Some of them, like character, are hard to engineer, but others you can have, even in the smallest space. Here are four of the central elements that you can use to make your own dream workshop.

# A Great Workbench

The heart, soul, and often a good deal of the guts of a great workshop are in the bench. Here are some tips on how to plan, build and improve your workbench:

■ Against the wall or out in the open? Against the wall is convenient, because you can have a wall of tools right above it, or a window, but better suited for narrow or small work. A bench out in the open, though farther from tools, can handle large pieces on top of it.

■ Build an assembly table. It may seem odd, but with another table to put your project on, it's easier to keep your workbench organized. Assembly tables can be as simple as plywood on a pair of sawhorses, or as complex as the workbench. Many people choose to make the assembly table lower than the bench, so larger work is at a more comfortable height.

■ Add a vise. Either a woodworker's vise, adjustable-base Dremel D-Vise, or a metalworkers vise, depending on your work. Typically it goes at the left front corner, if you're right-handed. If you put in a wood vise, you can mount a metal vise on a piece of wood and hold that in the wood vise.

■ Store tools below. It's an efficient use of space, it keeps tools and supplies right at hand, and it weights down your bench so it won't move around when you pound on it.

■ A strong top. A layer or two of 3/4-in. plywood or mdf, edged with solid wood, makes an excellent top. A piece of 1/4-in. mdf or hardboard tacked to the top gives you a replaceable surface if you're hard on the bench. Old solid-core doors are excellent. The best top is tough, flat and stiff.

**Locking casters make this bench mobile. It also has a low shelf at one end that allows the bench to double as an outfeed table for a table saw. Shelf hardware makes it even more adaptable.**

**A classic workbench for small shops is one that folds down from the wall. This one uses a solid-core door for a top, and 1-1/2-in. pipe for legs. The pipes screw into pipe flanges on the door.**

**This bench maximizes storage. The bench's top folds down on special hardware, and the two side wings swing in on piano hinges to close up and lock. Hooks hold the open doors securely to the wall.**

# A Place for Everything

Though sometimes great work can come out of a shop that looks like a storm blew through, most people find it easier to work in a shop where everything is neatly stored. Here are some tips to make your shop an organizational wonder:

■ Use a sample for a label. If you're storing screws in an opaque container, glue one screw to the outside with hot-melt glue to tell you what's inside.

■ Line your walls with wood. Strandboard or plywood, that's 3/4 in. thick, makes great shop walls because you can attach anything anywhere without having to worry about finding a stud. It doesn't have to go all the way to the floor or ceiling. Just working height.

■ Doors for deep storage. Use shelves for the things you get at regularly, but closed storage for the rest. The dust won't accumulate so quickly.

■ Buy a plastic parts cabinet. You know, the ones with a bunch of small plastic drawers. They're invaluable for bringing order to those small screws and bits of hardware.

■ Make wooden bins. An afternoon spent making bins out of pine and plywood will give you years of service. You can make a pile out of a small amount of material.

**On the new Dremel 400 Series XPR, slide-out plastic trays keep all the bits perfectly organized and accessible.**

**Pegboard rocks. Mount it 1/2 in. from the wall so the hooks have room. In this garage shop, there are two layers, with the outside hinged so it reveals the one inside, doubling the storage space.**

**Use commercial hardware. These broom holders are perfect for paint brushes and other handled tools. Magnetic knife racks are wonderful, as are fishing tackle trays and plastic parts bins.**

**Reuse leftovers. Plastic pipe. Scrap lumber. Coffee cans. Detergent jugs. Baby food jars. Anything you can get a bunch of is fair game.**

# Make it Comfortable

A great workshop must be a pleasant place to be. Everyone will have a different wants-list, but here are a few things to consider:

■ A comfortable chair. Whether it's a folding lawn chair an old recliner, it's good to have a place for a visitor to feel comfortable, or for you to admire your work.

■ Task lighting. You should have lots of light—the more the better. And when working in confined spaces or on projects requiring fine detail, use a Dremel FlexLite attachment (#FL400).

■ A bulletin board. It doesn't have to be fancy, but everyone needs a place to keep an inspiring photo or two, shopping lists, and important phone number.

■ A good ventilation fan. It's not the item that most people would want to spend their dough on, but it's worth it. Blow the dust out, keep it cooler, and most importantly, get rid of toxic fumes from finishes or solvents. When you use it, make sure there's a source of incoming air somewhere on the other side of the shop. Cross ventilation is best.

■ Tunes and TV. Gotta have em!!

■ Good clean-up tools. Too many people skimp on these, to spend their hard-earned cash on more exciting tools. But for us non-saints, if cleaning up is hard work, it doesn't happen as much.

■ Safety equipment that works. We all know it's better to wear safety glasses, hearing protection and a dust mask. But they're such a pain! The solution is to find some comfortable ones. Trust us, they're out there. It's much easy to wear safety gear if they feel good.

**Task lighting is crucial. You can't do a good job on what you can't see. This rig can be adapted to just about any work surface. A flood lamp on the wall or ceiling can do wonders.**

**Cut the dust. Collect dust at the tool whenever you can. In this setup, a miter saw has a small, inexpensive shop vacuum as a dedicated dust collector. Both are plugged into the same power strip.**

**Pamper your feet. Standing for hours on a concrete floors is no fun. Soften the floor with rubber tiles like these, rubber mats, a piece of plywood with beveled edges, or even a sheet of building foam.**

# Make Everything Portable


When it comes to portability, few tools compare to the Dremel XPR system. The tool, all accessories, and every bit and blade you'll ever need in one easy-to-carry case.

In the real world, we fight for space in our shops, no matter how big they are. Here are some survival tips:

■ Get double use out of anything you can. If a stool can function as a work support, you just saved some space.

■ Consider benchtop power tools. These have come a long way, and are now more powerful, more accurate, and more fully featured than ever.

■ Commercial mobile bases. Woodworking suppliers sell super-strong rolling bases for $50, that are sturdy enough to hold anything, and lock in place rigidly. Some can even be customized to hold large workbenches or table saw/outfeed setups.

■ Know your casters. Larger casters generally roll easier, especially if your floor is less than perfectly flat. Normal locking casters that you can get in any home center are great for most uses. However, they only lock the wheel, not the swivel, so they can still wiggle. When you want complete rigidity, look for locking casters that lock both parts.

■ Think wheelbarrow. Many items can be made portable by putting two non-swiveling casters at one end, and two handles at the other, so the rig acts like a wheelbarrow. When you set it down, it's very stable.

■ Organize your scraps. Make some bins to hold useable wood, and throw out whatever doesn't fit.

Clamping tables are a great way to make portable power tools handier. Mount each on a piece of plywood, with some 2x2 cleats on the bottom. Clamp the cleats in the Workmate.

Locking casters can be added to many tool bases. Often, two locking casters with swivels, and two non-locking casters are the easiest solution. Larger wheels are always better.

Some of my favorite portable tools are folding metal sawhorses. A piece of 2x4 screwed to the top makes sawing safer. Here they are attached to a piece of plywood for an easy-to-store assembly table.

# Regrout Bathroom Tile

## New-looking tile in an afternoon

Does the grout in your bathroom look mildewy and gross? Pieces of it falling out?? In the past, renewing old grout has involved long hours of hacking away at it with a tiny grout saw. You can simplify the job by purchasing a $20 grout removal attachment that attaches to a Dremel rotary tool. It has a high-speed carbide bit that effortlessly chews away old grout, and guides that keep you from chipping the tile edges. Make sure to wear safety glasses while grinding (Photo 1). You'll still need to purchase a grout saw ($15). Use it to scrape out edges and corners and to clean out the joints.

The first step is to protect the surface of your tub. Use a plastic tarp or drop-cloth, held in place with masking tape, with cardboard or thin plywood on top.

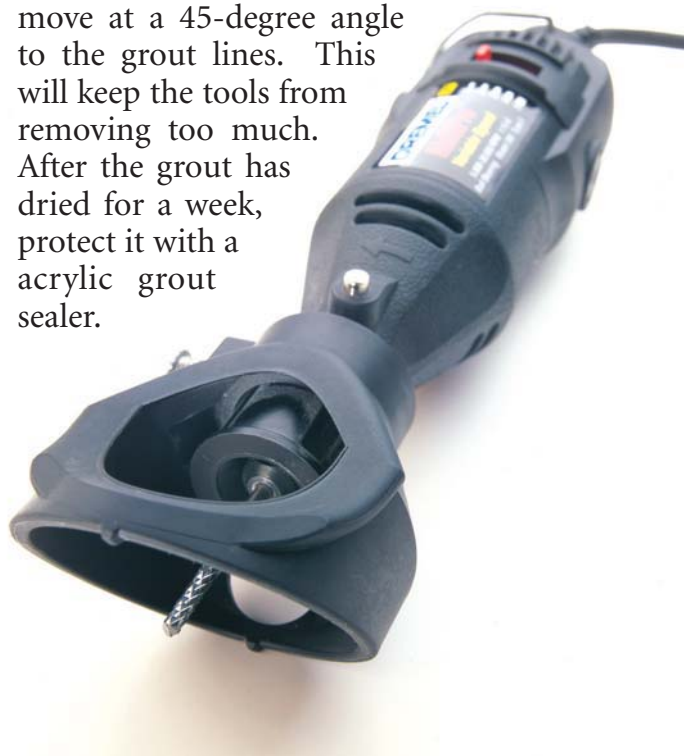
**1** Remove areas of chipped or stained grout using a Dremel tool grout removal attachment and 1/16-in. grout removal bit.

**2** Mix new grout to peanut butter-like consistency, then use rubber grout float to work grout into seams and clean face of tile.

**3** Once grout has firmed, use a sponge to smooth grout lines and remove grout haze from face of tile.

**4** Use a coarse cloth to remove remaining grout haze and to buff the tile. Seal grout seams following manufacturer's directions.

Then grind and scrape all the old grout you can get out. Vacuum up any dust or debris left after the grinding process. Take a chunk of your current grout to a home center or tile shop to find a match. While you're there, buy a latex additive to mix into the new grout to make it more durable. Mix the grout slightly thicker than peanut butter and then apply it to the tiles, using a grout float (Photo 2). Let the grout set up for approximately 20 minutes until a film develops over the tile, then clean the area as shown in Photos 3 and 4. This is not a good time to go on a break and get distracted, because if the grout dries too long, it can be difficult to remove from the tiles. When using the float and the sponge, move at a 45-degree angle to the grout lines. This will keep the tools from removing too much. After the grout has dried for a week, protect it with a acrylic grout sealer.



# Scroll Saw Puzzles

## Turn your favorite photo into a puzzle.

Is there a puzzle fancier among your family or friends? Maybe a puzzle addict?

If so, here's a great gift project: a "custom" puzzle made from a vacation photo, school photo, or even a thick magazine page. It's easy to make, once you get the knack, and even a beginning woodworker will be making great puzzles in just a few hours.

You do need a scroll saw, however, to cut out the puzzle pieces. Scroll saws used to be expensive tools for specialists, but several models are on the market now that sell for under $250, and according to our tests, they work fine for cutting puzzles.

You can make a puzzle from almost anything that's printed on good-quality, heavy paper. Enlargements of photographs work fine, but stay away from pictures printed on thin paper, like newspaper, because they wrinkle easily when glued.


**1** Apply three coats of any wood finish to one side of a piece of thin plywood. This will be the back of the puzzle.

**2** Press the picture into the glue with a squeegee. Use light pressure to work out any air bubbles trapped under the paper.


**3** Apply two coats of clear acrylic floor wax with a paper towel wetted with the wax. Apply the wax with straight, light strokes.

## PUZZLES FOR ADULTS OR CHILDREN

Preschool children can assemble puzzles consisting of 25 larger size pieces. For adults, a puzzle with 250 to 400 pieces makes for a moderately challenging evening of entertainment. However, don't try to cut more than two pieces per square inch—it's too hard to cut and handle such tiny pieces.

You can easily cut an 11 x 14-in. photo into 300 pieces using a scroll saw with a throat depth of about 15 in. A 16 x 20-in. picture can be cut into 600 pieces, but the saw must have a throat of about 20 in. The saw's throat depth is the distance between the blade and the back of the arm that holds the blade.

**Caution:** Puzzle pieces that are smaller than 2 x 2-in. are a choking hazard to children under 3, so either make the pieces larger, or warn the recipients of your puzzles not to let the pieces get in the hands of children under 3 years old.

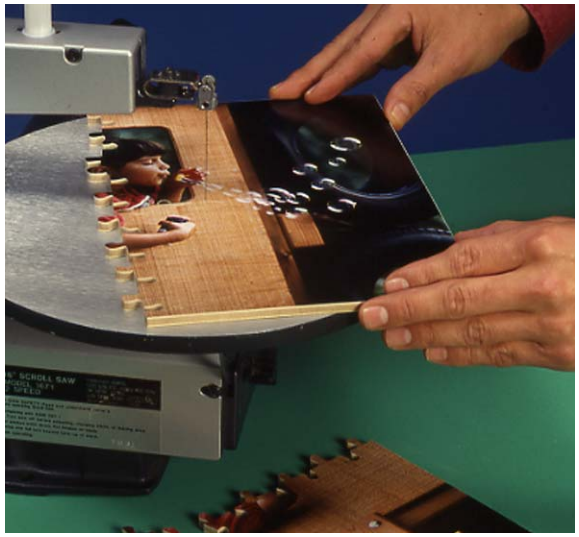
## SCROLL SAWS AND BLADES

Besides a scroll saw, you'll need at least 10 thin, fine-tooth blades ($3) for every puzzle. The blades break frequently as they get dull or pinched, and though the noise will startle you the first few times, after a while you get used to it. We found that common 5-in. plain-end blades like Dremel's 16440 worked well. Visit www.dremel.com for more information. Use blades that are less than .030 in. wide and .011 in. thick, with 25 to 30 teeth per inch.

It's important to adjust the blade tension correctly. If you cut some scrap plywood into practice puzzle pieces, you can experiment to find the right tension. Before you start cutting, adjust the saw's table so it's exactly perpendicular to the blade.

## USE THE RIGHT KIND OF PLYWOOD

Your photo must be glued to a plywood backer. The best material is 1/8-in. or 5mm plywood that's flat and smooth on both sides. The core should be made



**4** Cut the picture into large pieces on the scroll saw, making a series of random "balls" and "sockets" as you cut.

**5** Cut the puzzle pieces by eye, with one ball-and-socket joint on each side of a piece. Make a small practice puzzle first.

from a soft wood like lauan, and have no voids. Unless the manufacturer specifically state that the core is "no-void", don't use it. Hardboard is also unsuitable. For our puzzles, we ordered 1/8-in. basswood plywood through the mail.

To mount your picture to the plywood, you'll need white glue, a small paint brush, a plastic squeegee (all from the hardware store), and a few spring-loaded binder clips that you can buy at office supply stores.

## PREPARING THE PLYWOOD

Measure the length and width of your picture. Cut the plywood backer 1 in. wider and 1 in. longer than the picture; you'll trim away this excess plywood later. Sand both sides smooth with 180-grit sandpaper. Choose the better side as the back of the puzzle and seal it with your favorite wood finish. We chose a clear spray lacquer (Photo 1).

## MOUNTING THE PICTURE

Before you mount your chosen picture, practice first with scrap plywood and paper that's about the same weight as your picture. Save your test pieces to practice cutting pieces out later.

Wipe the unfinished (front) side of the plywood and the back of the picture with a clean rag to remove the dust. For pictures other than photographs, lightly wet the back of the paper with a damp sponge to reduce wrinkling. Using a 2-in.-wide, fine-bristle paint brush, apply a thin, even coat of white glue to the unfinished side of the plywood (Photo 2). Place one end of the picture on the glue and gradually roll the rest of it down. Then use a plastic squeegee to lightly press the picture into the glue and remove any air bubbles and wrinkles (Photo 3). Work from the center of the picture outward.

If the paper curls at the edges, clamp them with binder clips. The binder clips will dent the paper, so you'll have to trim away the damaged edges after the glue has dried overnight.

After the glue is dry, apply two coats of an acrylic, non-yellowing floor wax and let it dry overnight. The wax protects the photo during cutting and afterwards during use.

## PLAN YOUR CUTTING PATTERN

There are two different ways to cut your puzzle: "random cutting" (Fig. A) and "strip cutting" (Fig. B). When strip cutting, you first cut the picture into strips, and then cut each strip crosswise to get individual pieces. Strip cutting results in a simple grid-like pattern of pieces, with almost all pieces being four-sided and square. This is fine for children's puzzles, but not much fun for adults.

Random cutting is done without a set pattern. Instead, you develop the pattern as the puzzle is cut out, and each puzzle piece ends up with a unique shape.

Random cutting is slower, but more fun to do, and it makes puzzles that are more challenging to assemble. Try both ways.

With either method, you should first determine the average size of the puzzle pieces by dividing the area of your picture by the number of puzzle pieces you want. Don't cut more than two pieces per square inch.

Good puzzles have pieces that lock together with little "ball-and-socket" joints (Fig. A). As you cut your puzzle, try to have at least one ball or socket on each side of every piece. A puzzle piece with four sides, for instance, should have at least four balls or sockets.

## CUT OUT THE PUZZLE

It's easy to describe how to cut out your puzzle, but it does take practice. Use the test picture you mounted earlier, and perhaps some scrap plywood, for practice.

Make all your scroll saw cuts with the picture side facing up. Start by cutting away the excess plywood and picture borders, and any edges damaged by the binder clips. If you've chosen strip cutting, follow the steps shown in Fig. B.

If you decide to random-cut your puzzle, start by cutting the picture into four smaller sections (Photo 4), making plenty of balls and sockets as you cut. Knowing the average size of the final pieces will help you gauge the number and placement of these joints. Then, working with one section at a time, cut off each puzzle piece to its final size (Photo 5), just cutting balls and sockets freehand. As you cut off the pieces, reassemble them on a piece of cardboard or plywood so you won't misplace a piece.

If you break a blade, replace the blade and start cutting from another edge until you meet the point where the blade broke.

Once the entire puzzle is cut, place a piece of cardboard or plywood on top of the puzzle and flip the puzzle over. Inspect the puzzle back for any rough saw cuts, and sand them smooth.

Put the pieces in a good box, and the puzzle is ready to gift wrap.

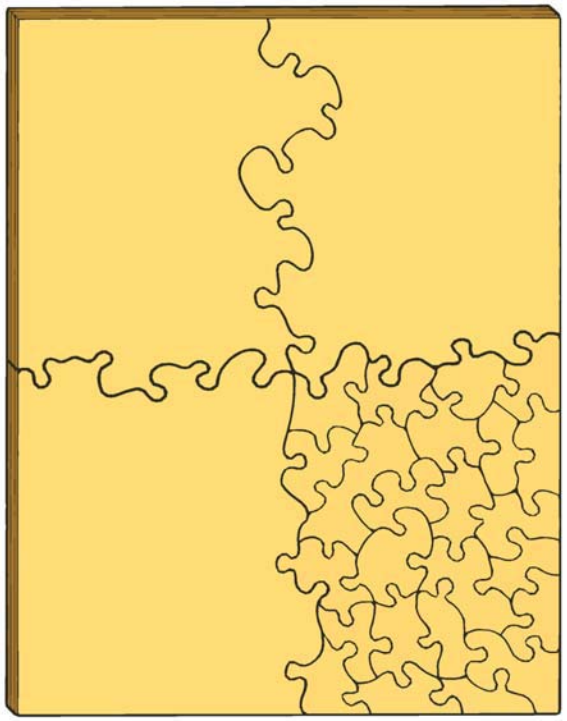


**FIGURE A** Random Cutting

**Begin by cutting the plywood into four pieces. Then cut each piece into smaller ones, by eye, so there is a ball-and-socket joint on each side. This method takes practice, but produces a challenging puzzle.**

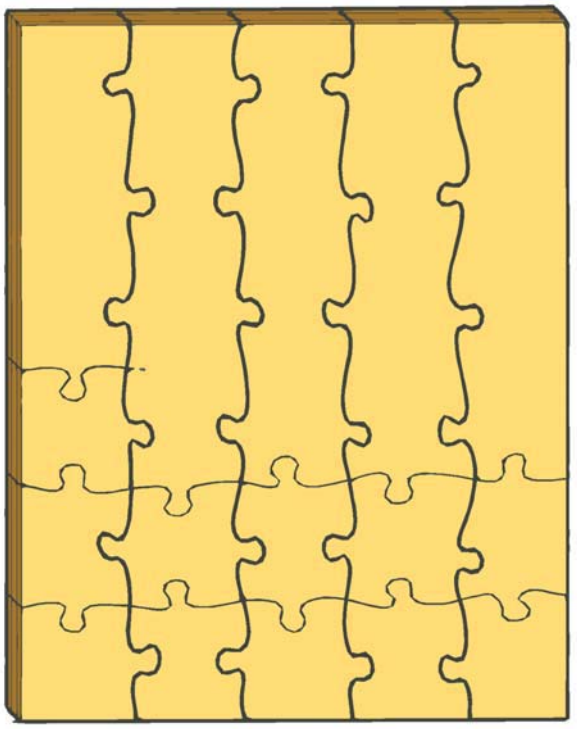
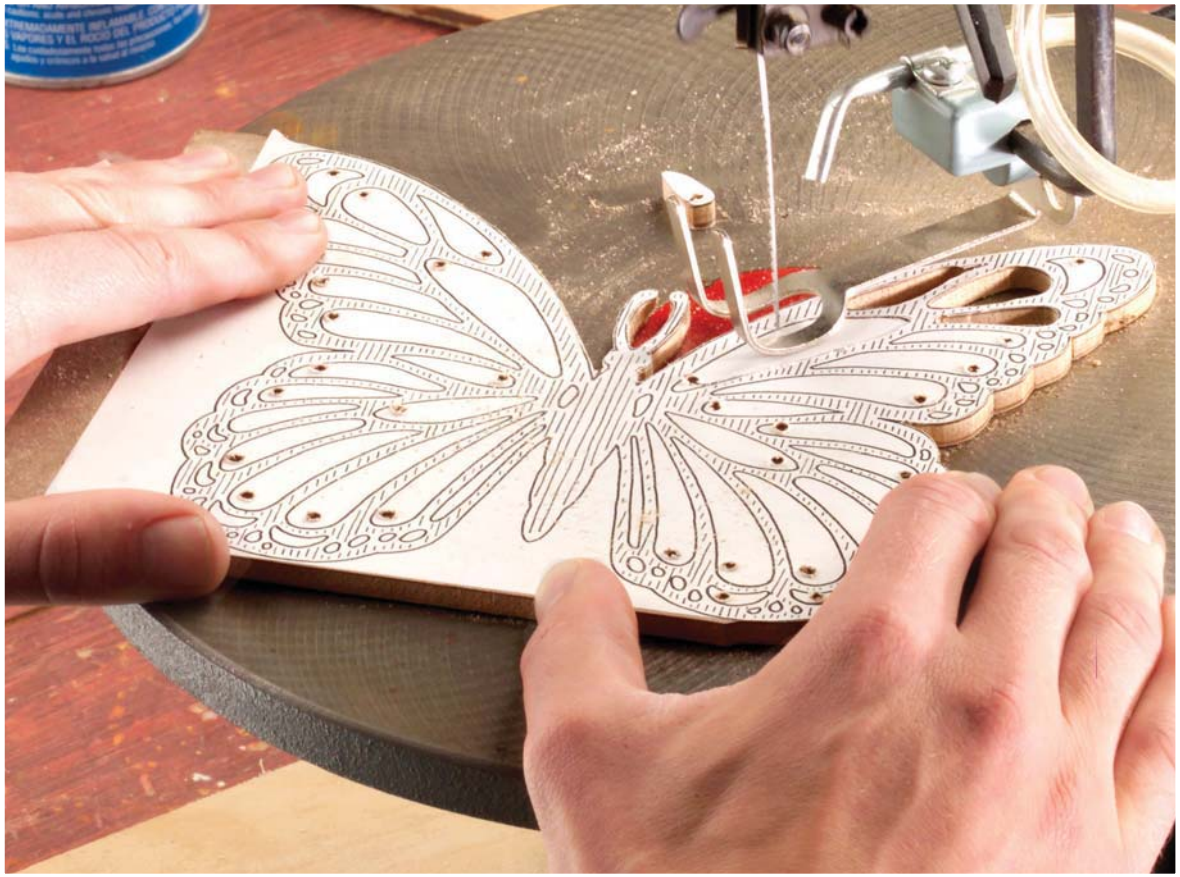


**FIGURE B** Strip Cutting

**With this method, cut the plywood into strips, making a ball-and-socket joint at regular intervals. Then cut each strip into pieces, making a joint on each piece. This method is easier, but so is the puzzle.**

# Scroll Saw Hints & Tips

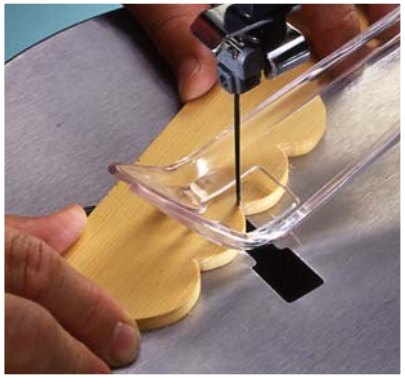


## Stay-in-place scroll saw patterns

Here's a great way to speed up scroll sawing jobs. Apply all-purpose spray adhesive in a light, uniform layer on the back of the pattern, then pick it up and immediately apply it to the wood you'll be sawing. The pattern remains adhered as you saw but easily peels off when you're done.

## Iron On a Photocopy

If you normally use spray adhesive to attach patterns to the wood for scroll sawing, consider this alternative. With an iron set on high and no steam, transfer a photocopied pattern right onto the wood.

## Sanding with the Scroll Saw

Here's an ingenious way to sand intricate scroll saw work. Take a strip of emery cloth (a gray sanding cloth used by plumbers and machinists), 1/16 to 1/2 in. wide, and clamp it in your scroll saw just as you would a blade. You may have to fiddle a bit to get the length of the strip just right, but once you do, it works like greased lightning.

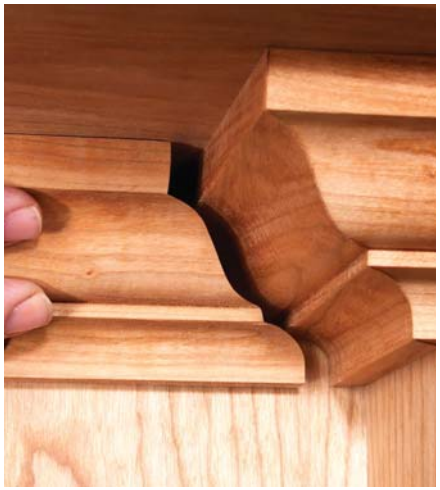
## Blade Caddy

Here's a handy tote for Scroll Saw blades fashioned from a scrap of 2x6, a piece of plywood, and two peg-board multiple-tool holders. Cut the curved tips off the multiple-tool holders with a hacksaw so they would sit flat against the plywood. Attach the holders to the caddy with cable staples. These small plastic tubes are perfect for holding Scroll Saw blades. Wrap some masking tape around each tube and write the blade size on it.


## Scrollwork Finishing Bath

For all you scroll sawers out there, here's a slick finishing tip. You know how tough it can be to brush or spray finish into all those tiny sawed-out areas? Well, give your handiwork a bath instead! The finish will get into all those little areas and seal the wood nicely. Wipe off drips and excess finish with a clean shop cloth and set your project aside to dry. Then, brush or spray the final coats on the faces and sides only. Trying to build up the finish on the inside areas is unnecessary.

# Crown Molding Simplified



## Tips and techniques for elegant results

Few things can transform the look of a room as quickly as crown molding; and few tools can transform crown molding as quickly as a Dremel tool. You can use the Dremel tool to cut, sand and fine tune. Here are a few tips for perfect results:

### COPING—THE SECRET TO GREAT-LOOKING INSIDE CORNERS

You might think the best way to install crown molding on an inside corner is to miter both pieces at a 45 degree angle and butt them to one another. The problem is, most inside corners aren't square or straight, making it almost impossible to get a clean looking joint that way.

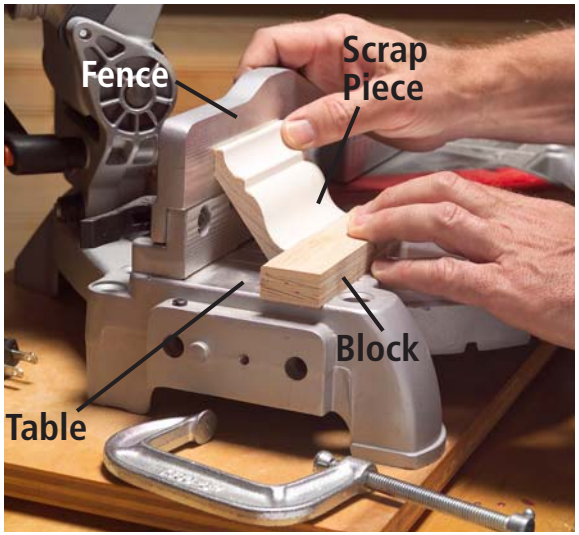
The secret to tight inside corners is to

run one square-end piece all the way into the corner, then cope the end of the piece that butts into it. This allows you to fine-tune both the angle of the piece on the wall as well as the end of the piece butting into it.

Begin by creating a simple jig that will hold the crown molding on your miter saw table at the same angle it will sit against the wall. When you cut your molding, cut it upside down. Cut a 45 degree angle, then use the profile on the face of the molding as a guideline for coping.

You can use a coping saw, file and sandpaper to create the profile, but a Dremel tool with the XPR MultiSaw attachment and drum sanding accessory will allow you to work faster and more accurately.


**Dremel XPR MultiSaw attachment**




**1** Hold a scrap of molding upside down in the saw at the same angle it will rest against the wall. Clamp a block of wood to the table to hold it at the correct angle.

**2** With the molding positioned upside down, cut a 45-degree angle on one end of the piece. Hold the piece securely and keep fingers well away from the blade.

**3** Use your Dremel XPR MultiSaw attachment and fine tooth blade to cut along the edge left by the miter cut. Hold the saw at an angle to undercut the wood at the back side.

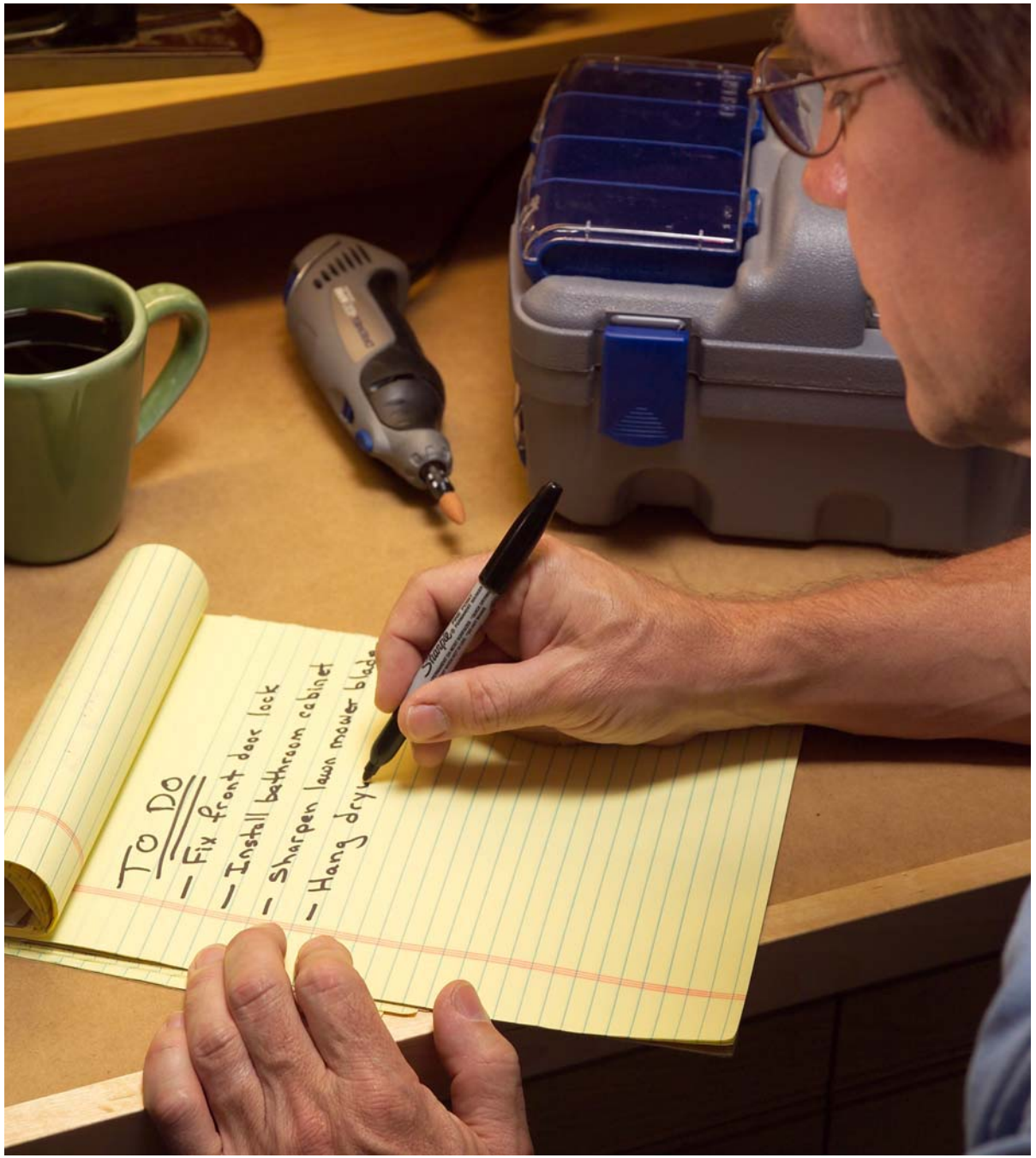
**4** Use a sanding drum to fine-tune your cut. Test the piece in place, fine-tune the profile using smaller bits or a wood file , then mark the other end and cut it to length.

# My Weekend With an XPR

## A tool so busy it needs a Palm Pilot

My wife is a queen of multitasking, running her business, being there for our not-quite adult kids, and managing our busy household. But if she's the queen of multitasking, our Dremel XPR is the king. It seems like every weekend I'm using it for home improvement, woodworking and furniture repairs. This one little tool can grind, cut, clean, sharpen, smooth, engrave and more.

I'm a weekend warrior, and have been for about a thousand weekends. And since our latest house is over 150 years old, there's no end in sight. In our house, there isn't a floor, wall or ceiling that's level, plumb or straight. That means lots of fine-tuning when it comes to installing new stuff or fixing the old. Here's how a weekend of home improvement went for me recently, and some of the jobs I did with with this new Dremel XPR.



## Friday, 8:24 PM


### FIX AN OUT-OF-ALIGNMENT DOOR STRIKE

When doors don't latch, chances are the tongue or "throw" of the doorknob or deadbolt doesn't align with the strike plate; another common old house ailment. My first step was to tighten the screws holding the hinges to both the door and door jamb. Two holes were stripped, so I replaced the screws with longer ones that could bite into the 2x4 framework beyond he jamb.

That helped, but didn't completely remedy the problem, so I enlarged the opening in the strike plate so the tongue would fit. I used a small grinding stone to enlarge the lower edge of the opening in the strike plate, tested, then repeated as needed.

One down, six more tasks left to go.

## Saturday, 9:08 AM

### PLANE DOORS AND INSTALL CABINET

No matter how many shelves we install or how much stuff we get rid of, we never have enough storage space; especially in the bathroom. Installing a simple cabinet and laminate top seemed to be the perfect solution; we could store supplies below and fold clothes above.

The double doors on the cabinet we were installing rubbed one another when closed. (Okay, okay, doors on a new cabinet should align, but the price at the cabinet outlet store was just so irresistible!) The solution? Break out the XPR Planer and shave a little off the edge of each door where they meet. Back-beveling—angling the planer in order to remove a little more wood off the back than front of the door edge—created a smaller-looking gap while still allowing the doors to swing freely.

Few (if any!) walls in our old house are straight or plumb, so to get a tight fit when installing a cabinet, scribing an edge to fit the contour of the wall was necessary. I butted the cabinet to the wall, used a compass to transfer the angle to the scribe strip on the edge of the cabinet, then used the XPR Planer to remove wood right up to the line.

Ahh, perfect fit.


**After butting the cabinet against the wall and scribing the angle along the edge, use the XPR Planer to remove wood until the cabinet fits tightly.**

**Remove an equal amount of wood from the edges of both doors until the gap between the two is even. Apply a clear finish to the planed edges for protection.**

## Saturday, 10:32 AM


### SHARPEN LAWN TOOLS

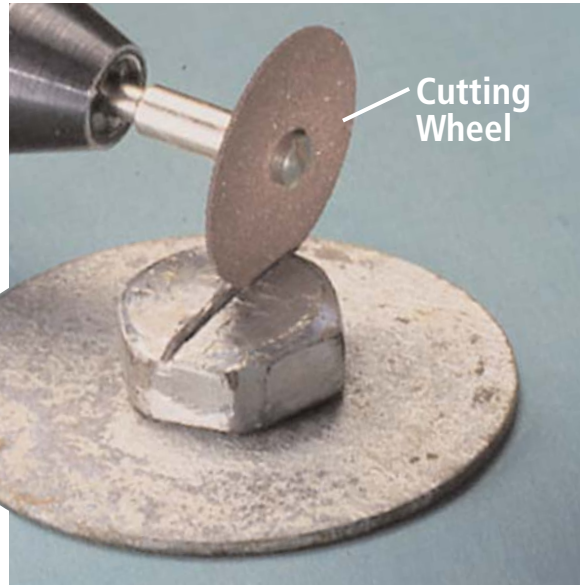
Sharp tools work faster and produce better results. I've finally learned that a few minutes spent sharpening now will save time and frustration down the road.

My know-it-all neighbor tells me a sharp mower blade is critical for a healthy, attractive lawn. Dull blades shred grass, leaving it more susceptible to disease and in need of more nutrients and water to repair the damage. He says sharpening a blade three times a year is usually enough to maintain a good cutting edge; unless you mow lots of rocks! Balancing a blade, so it's of equal weight on each side, is also critical. The Dremel Lawn Mower Sharpener (model 675) along with an aluminum oxide grinding stone made the job a snap. For information on removing and balancing the blade, visit www.dremel.com/projects-display/Display.asp?ID=151.

And since I really "dig" sharpening, I tuned up a few other tools while I was at it. I customized my shovel by cutting a root-cutting notch into the tip, then sharpening the blade for easier working. My know-it-all neighbor tells me now it will be even easier for me to cut through his cable television line for the third time.

## Saturday, 1:27 PM

With an old house there's one guarantee: Every bolt in the joint will either be rusted or rounded over. When I encounter hard-to-remove bolts, I use this trick: I use my Dremel with a fiberglass-reinforced cutting wheel to cut a slot into the head of the stubborn bolt. Then I use the biggest straight-slot screwdriver I can find to loosen it. If that doesn't do the trick, I apply penetrating oil to the threads, wait a while, and try again.




## Saturday, 3:37 PM

I know this was supposed to be a whole weekend of home improvement, but a guy's gotta have a little time to relax. So this evening, I'm putting my XPR away to watch a movie with the family.

## Sunday, 1:19 PM

### KEEP PLUGGING AWAY ON THE FAMILY ROOM

The thought of finishing the family room (before the kids head off to college and we still have a family) seems like a logical goal. So I love tips and tools that make the job go faster.

The task at hand this weekend was hanging drywall and installing paneling. Again the Dremel XPR was a real time saver.

In the past when I've installed drywall, the most time consuming part—and the part where I was most likely to make a mistake—was cutting holes for the electrical boxes. I'd measure and mark the location of each box, cut the opening with a keyhole saw, then install the drywall and hope the opening was the right size and in the right place. But I've learned an easier way is to simply mark the approximate center of the box with an X, then use a Dremel tool to do the job. I install the cutting guide shroud (model 565) and drywall cutting bit and plunge it into the center of the X. I move the tool until the bit touches the inside edge of the box, then hop over to the outside and trace the edge of the box in a counterclockwise motion. I get a perfect cutout each time.

**Start in the center, find the inside edge with the bit, hop 1/8-in. over to the outside of the box and trace around it counterclockwise.**

For cutting the electrical box openings in the paneling, I simply trace the outline of the electrical box onto the panel, then use a multi-purpose bit to cut out the opening freehand. For larger tasks—like cutting out heat register openings or curves—I install the MultiSaw attachment (left) and cut away. The XPR has plenty of power for cutting the paneling and is much more maneuverable than my big jigsaw. It's very good for complex shapes, like the edge I had to cut where the paneling meets the stone around the fireplace.

**Mark out the location of the box, then use the cutting guide and multipurpose bit to saw out the opening.**

## Sunday, 6:37 PM

OK, that's it. I'm done for this weekend. I've still got the trim to put up, but I've gotta leave something for next week!

# 3 Furniture Fixes

## 1 Fix a Wobbly Chair

## 2 Replace Veneer


## 3 Reupholster a Slip Seat

# Fix a Wobbly Chair

A wobbly chair means one thing: Joints between the legs and the rungs have broken free. Not just one—several. The only fix is to completely disassemble the chair and reglue it.

You'll save time and avoid frustration if you label every part to make it easier to put them back together). Use masking tape and a simple numbering and lettering pattern on the rungs, with all numbers and letters facing forward. Left and right are as you face the front of the chair.

A deadblow hammer ($14; Photo 1) is a must for easy chair disassembly. Some joints easily fly apart. Others refuse to let loose. Always start lightly and increase the force as needed. You'll clearly see, and feel, the joint move when the glue bond breaks.

Many legs have nails or screws holding them to the seat. Not all are obvious; look for small screw or nail holes filled to match the chair finish. You're likely to break the rung if you miss a well-hidden fastener. You may have to dig them out.

New glue won't bond with old glue, so sand down to bare wood in the joints. The key to reassembly is to work quickly, because the glue begins to set in a few minutes. When you're finished, your chair will be as solid as it was when new.

**1** Hold chair upside down. Strike the seat firmly with a dead-blow hammer. Work around the chair, slowly loosening each joint.


**2** Remove dried glue from mortise using a drum sander and Dremel tool. Don't overenlarge the mortise or the joint will be loose.

**3** Apply a light coat of yellow carpenter's glue to both the ends of the rungs and the mortises (holes). Reassemble quickly.

**4** Clamp legs, rungs and seat all at once. Draw joints tight and wipe off glue with a damp cloth. Check alignment on a flat surface.

# Replace Veneer

Chipped or missing pieces of veneer can be replaced—it just requires patience and careful fitting. You can use your Dremel for prep work (Photo 1), cutting the replacement piece (Photo 3), or shaping the veneer once it's in place (Photo 4).

The contact glue applied to the veneer and furniture surfaces makes pieces hard to reposition once contact is made, so work carefully.

**1** Cut a straight-lined edge on the chipped veneer using a utility knife or Dremel tool. Cut parallel to wood grain to hide the seam.

**2** Test stains on a scrap piece of veneer to get a good color match. Sand the back of the veneer if you need to adjust the thickness.


**3** Cut a replica of the damaged area from a template. Make the template from a paper rubbing of the chip-out using the side of a pencil.

**4** Test-fit patch and trim as necessary. Apply contact cement to both surfaces, allow to dry, then install and press patch firmly in place.


**5** Hide the seam with a furniture touch-up putty stick. Varnish the patch beforehand since finish won't adhere to the oily putty.

# Reupholster a Slip Seat

Chairs with removable seats can usually be reupholstered with the old fabric in place. If the screws securing the seat to the chair frame are stripped or stuck, cut through them using a Dremel tool and cutting wheel. If the old material is shot, remove it, cut a piece of 1-in. foam the exact shape of the seat bottom, then apply it along with the new batting and upholstery as shown. Be sure to mark center lines on both chair bottom and fabric, and line up the marks.

**1** Cut new batting, 2 in. oversized on all sides, using the seat bottom as a pattern. Most large fabric stores carry batting.

**2** Secure the batting by pulling it tight around the chair bottom and fastening it with 1/2-in. staples. Trim the excess.

**3** Mark center lines on chair bottom and fabric, then match them so fabric pattern runs straight from front to back.

**4** Staple fabric, completing front edge first, back edge next, the two sides last. Start stapling at center and work towards corners.

**5** Fold fabric at corners, then secure with staples. Trim excess fabric with sharp scissors after all corners are complete.

# 5 For the Shop

## Gotta-have-'em woodworking accessories

Our old house doesn't have room for a big workshop with a lot of large stationary tools, but that doesn't mean I can't tackle my favorite pastime: woodworking. I've found lots of ways to optimize space in a small area (see page 7 for some examples), and if I pick the right project and tools I can cut, carve, sand and create to my heart's content.

The most critical accessory to have in woodworking is good old common sense. Wear safety goggles, dust mask and hearing protection, and always keep your hands and body away from spinning bits. Keep blade guards—like those shown on these two pages—in place. Here are a few other great Dremel tool woodworking accessories.

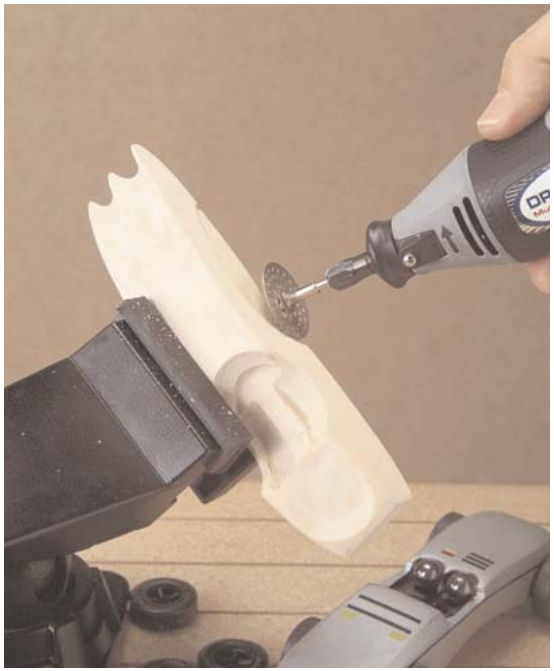
### 1 Router Table

Routers are a fun, versatile tool; they can take a ho hum project and turn it into something with flair. They can create decorative edges and add grooves and other profiles to picture frames, signs and toys.

Using the Dremel tool in a shaper/router table (#231) allows for good visibility while working. It's also the most accurate way to add decorative edges to narrow pieces where a hand-held router would be difficult to hold level.


### 2 Plunge Router Base

This handy little gizmo allows you to turn your rotary tool into a plunge router; super handy for carving signs or cutting grooves. The clear base provides good sight lines, while a special edge guide helps you cut decorative grooves parallel to the edges. Guides for cutting circular patterns are also available.



## 3 Shaper Wheels

When the amount of wood you need to remove is too much for sanding, but not enough for cutting, grab a shaper wheel; they remove wood aggressively, yet accurately. They're unmatched when it comes to their ability to carve curved or scooped shapes, or work in tight spaces.

## 4 Right-Angle Drill Attachment

This is one of those attachments you may not use very often, but when you do need it, you REALLY need it. It excels at working in hard-to-reach places like in between stair or chair spindles. And if you need to drill a small hole in an awkward space, it can be a real life saver.



## 5 Circular Saw Attachment

While you can't renovate your house with this circular saw accessory, you can entertain the idea of remodeling a doll house with it! Small, accurate and simple to use, it's the ideal accessory when it comes to cutting straight lines through thin material. The clear blade guard keeps fingers safe while providing good sight lines.

# Dremel Saves the Day

## My kingdom for a brad point drill bit!!

The bookshelf was late. It was Sunday. I was supposed to be done with it the week before, but one little problem after another slowed it down, and now I was facing a roadblock. I only needed to drill some holes for shelf pins in the sides of the bookcase. But wouldn't you know it, I couldn't find my 1/4-in. brad-point bit.

Now I don't know if you've ever tried to drill a hole in hardwood plywood, where the face veneers are only about three atoms thick. An ordinary twist bit will tear the veneer to shreds. But a brad-point bit, with its sharp point and spurs on the outside edges, makes a clean hole. At this time of night, though, where would I find one?

My Dremel rotary tool saved the day. I took an ordinary twist bit and carefully ground the edges with a conical grinding bit so each edge rose to a point. Voilà, a brad point bit! It drilled cleanly, and I got the job done! Thanks to my Dremel tool.

*Jean Bartholome*

P.S. Now I keep a Dremel brad point bit set (#631) close at hand. I reach for this quartet of small bits whenever I need a crisp, clean hole.