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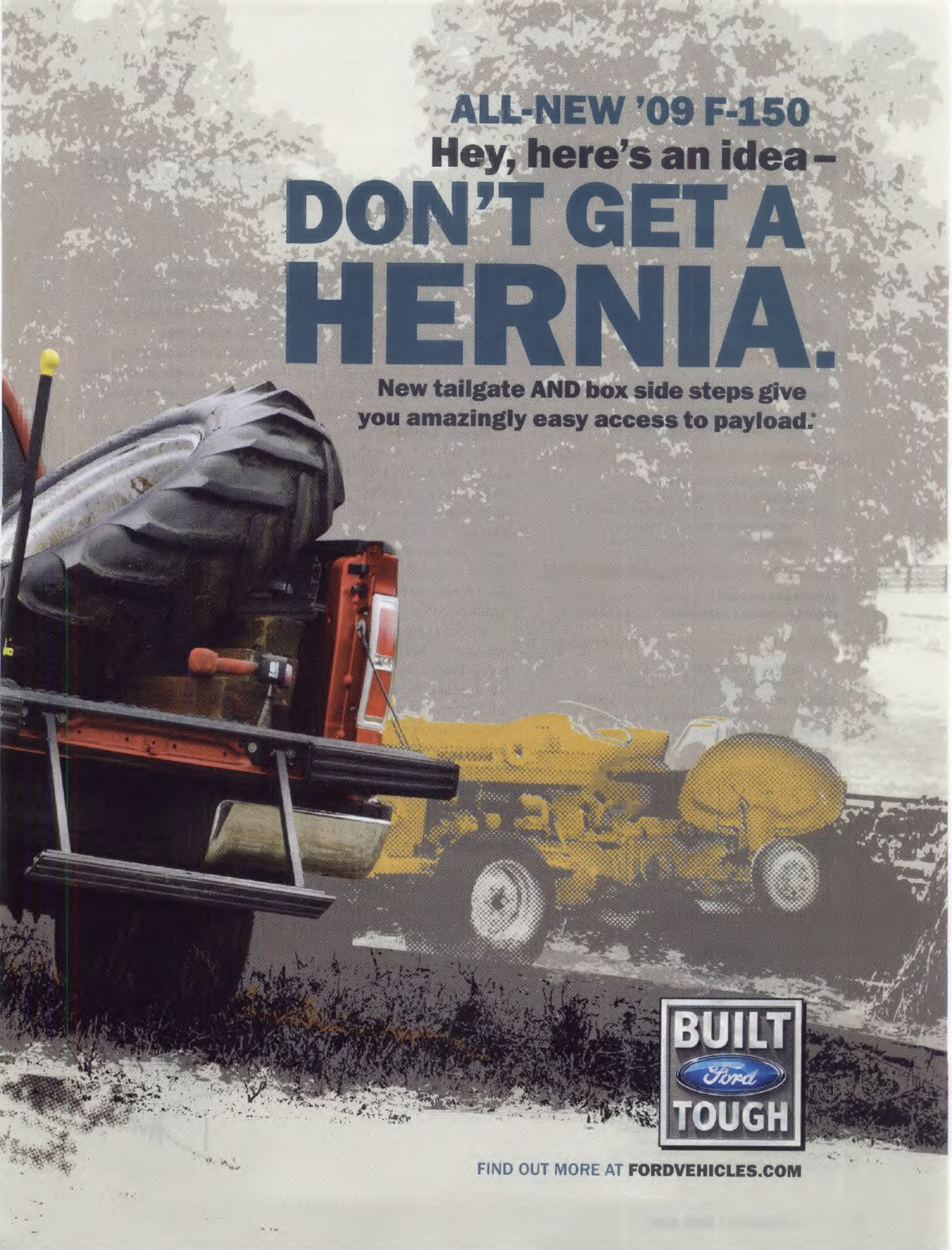
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EDITORIAL
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EDITOR'S NOTES

These days most of the people I know are spending a lot more time at home. Rather than going to restaurants or spending money on evenings out, they're choosing to stay at home and come up with ways to entertain themselves.

To me, this is one of the positive side effects of the economic downturn. After all, though a great dinner out or a night on the town serves as a wonderful treat, it's hard to beat spending some quality time at home with your family or friends.

Family Activity Center — That's exactly why we developed the hobby and craft room that you'll find on page 28 of this issue. This room is the perfect place for the whole family to gather and work on projects, play games, tackle homework, or just hang out. As a family man, I love the idea of having a room devoted to those kinds of whole-family activities.

As a do-it-yourselfer, I love that the hobby room is easy and economical to put together. The storage cabinets are inexpensive but look wonderful with just a simple coat of paint. All the work surfaces, including the big island, are made from MDF, which is downright cheap yet attractive and durable. We even incorporated pegboard — one of the original economical storage systems — on the walls. This simple addition gives the room loads of extra storage space and a unique look.

Build a Better Workbench — Another project that gets my DIY blood moving is the workbench on page 38. A workbench is a tool no do-it-yourselfer can do without, and this one is as attractive as it is functional. You can build one for yourself in just a weekend or two, but you'll use it for a lifetime.

In addition to these great projects, you'll find a bunch of other practical ideas in this issue that prove you can still improve your home and its livability even when money is tight. Just apply a little ingenuity, and you can turn your home into the place where you, your family, and your friends will want to hang out rather than go out.

Dave

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ON THE COVER

Heirloom projects usually take months to build, not days. But with this one-of-a-kind "dream" workbench, you'll get a tool to serve your family for generations with just a couple of weekends' worth of work.

— page 38

ONLINE

WorkbenchMagazine.com

Get even more information about the projects and articles in this issue:

- **Builder's Plans:** Corner Cabinet, Workbench
- **Slide Shows:** Wood Care, Milk Paint, Garage Door Installation, A Tour of the Family Activity Center
- **Bonus Articles:** Crown Molding, Pocket Holes
- **Online Video:** Making Coped Cuts

easy weekend **projects**

Family Activity Center
Create a room that the whole family can use for crafts, hobbies, and homework in a basement or spare room. We provide all the details for the conversion here.

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Hobby & Craft Island
Keep the dining room table clean by creating this work station devoted to the family's hobbies. You can put it together in just a few hours.

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Molding Magic
It's easy to give an unpolished room a beautiful new look with just a few basic trim boards from the home center.

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home storage **solutions**

DIY Tips: Fold-up Storage Rack
See how two 2x4s and a few pieces of hardware can create a unique garage storage solution. Plus, six more great readers' tips.

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Weekend Workbench
A workbench is an indispensable DIY tool. This one has classic great looks, the brawn to back them up, plentiful storage, and a simple design.

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Corner Buffet Cabinet
Give your dining room — or any other room in your home — a bit of traditional flair by building in this classic corner cabinet.

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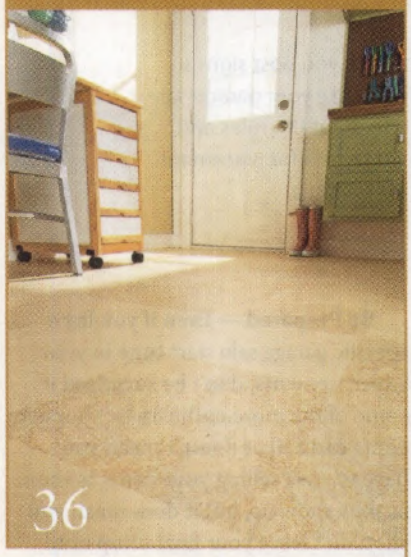

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Make the most of your activity room by outfitting it with the right flooring, lighting, and accessories.

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Paint Power: Milk Paint

Rediscover the original "green" paint — milk paint. We'll explain everything you need to know to add its distinctive finish to your next project.

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DIY 101: Basement Finishing Basics

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Before you post signs to advertise your garage sale, check out the rules and limitations for placement in your area.

CLEAR OUT THE CLUTTER WITH TIPS FOR SUCCESSFUL

Garage Sales

When your house is full of unwanted items, a garage sale can help you get rid of them — and make a little money, too.

Your closets are overflowing. There's no room in the living room to live. It's time to get rid of the things you don't need, and your best bet is to get them out of your house completely. Since it's a lot "greener" to reuse items instead of throwing them away, you can hold a garage sale to see if anyone else can use your unwanted items. Putting a sale together is a big endeavor, though, so here are a few tips to keep you sane and make your sale a success.

Be Realistic — Everyone wants to make as much money as possible by selling their unwanted items, but sometimes that goal can backfire. People go to garage and yard sales to find bargains, and they'll probably move on to the next sale if your items are overpriced. Plus, it's easy to get caught up in sentimental value when you're setting prices (it used to be *your* stuff, after all). If you're not sure where to start when you're making price stickers for your items, spend a Saturday morning browsing through other sales in your area. The prices that other sellers set for similar items provide excellent reference points for pricing your items.

Be Marketing-Savvy — Shoppers often look for multi-family sales. More sellers mean more items, and shoppers appreciate this convenience. Try to get the neighborhood involved in a block sale, or ask family members or friends if they have items to contribute to yours. Then advertise the sale in newspapers and on classified Web sites. On the day of the sale, post signs directing traffic to your home. As you're setting up, spread your items out and group similar items, so shoppers can find what they're looking for quickly.

Be Prepared — Even if you list a specific garage sale start time in your advertisements, don't be surprised if some of the more enthusiastic shoppers come early. That doesn't mean you have to start selling your items as soon as they show up, but it does mean you shouldn't leave your final setup until the last minute. And be sure to stock your money box ahead of time — you don't want to miss out on a sale just because you couldn't make change.

Be Flexible — Seasoned garage sale shoppers know they can probably get a lower price if they bargain with the seller. If you're getting toward the end of your sale and there are still items that you want to get rid of, it may be in your best interest to let them go for lower prices. On the other hand, if someone offers you a much lower price on one of your best items at the beginning of your sale, you have to decide if you think you can get more from another shopper.

Be Safe — It's always better to have more than one person running a sale. If things get busy, then you'll have more people to help shoppers. It also means there will be more people around to make sure the items and money you have on hand are safe.

Be Generous — You may think your stuff is great, but some of it will probably still be around at the end of the day. When the sale is over, load all of the extra items into your car, so they will no longer clutter your house. Then haul it over to your local charity thrift store. Your items may be able to catch someone's eye there, and you'll be helping others, too.

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Thanks to Pocket-Screw Joinery and a tool called the Kreg Jig®, just about anyone can build quality woodworking projects in less time – and with less effort – than ever before. The Kreg Jig® simplifies woodworking, and helps make your projects more fun to build!

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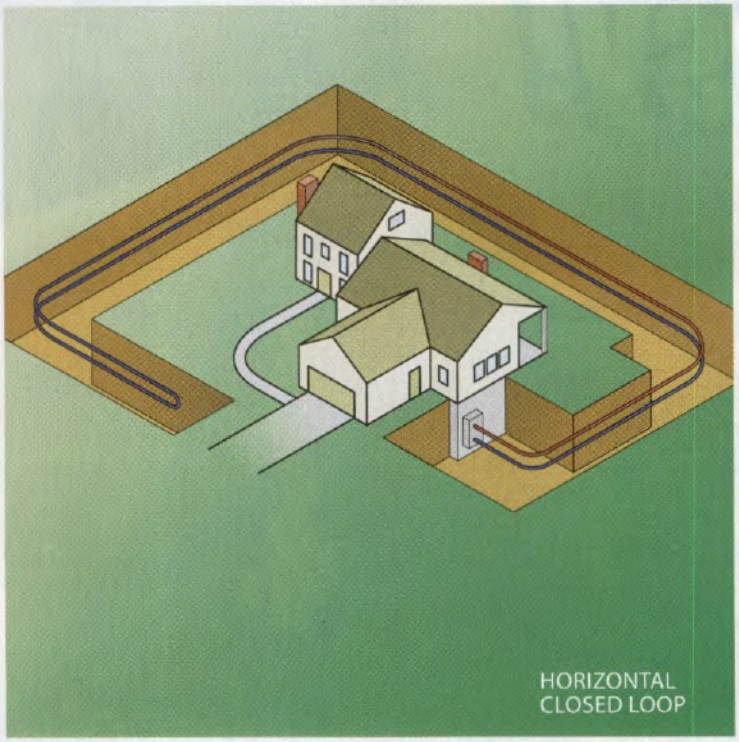

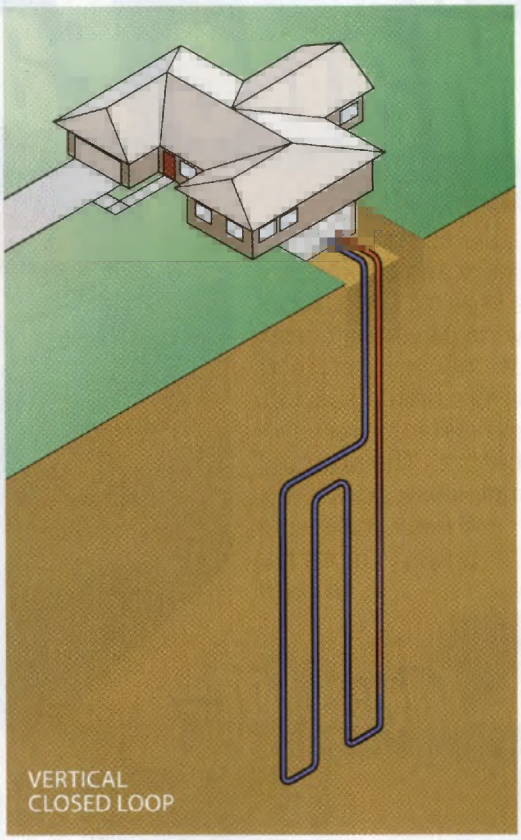

TAP INTO EARTH'S TEMPERATURE CONTROL WITH

Geothermal Systems

You may not realize it, but there's a temperature-controlled environment right under your feet. Whether it's hot or cold above ground, Earth's underground temperature stays constant at about 50 to 55 degrees. Geothermal systems take advantage of this natural temperature control to regulate the temperature in your own home. That means the system won't have to raise the temperature as much as it would with a conventional heating system, which makes it much more efficient.

In a geothermal system, fluid runs through underground loops and then back to the house. A compressor and a heat exchanger focus the energy and send it into the home at a higher temperature to heat the space. The system only has to heat the air from the higher underground temperature instead of the outside temperature. To cool the house, geothermal systems collect heat from the house and transfer it to the ground.

Closed-loop geothermal systems are the most common type, with pipes that can be installed horizontally or vertically underground. In a horizontal system *(Illustration, above left)*, workers use backhoes to dig trenches 3 to 6 feet deep to accommodate the piping. If your land isn't big enough for a horizontal unit, you will need to dig deeper and install a loop of pipe vertically *(Illustration, above right)*. The holes for vertical systems usually run 150 to 450 feet deep.

It should come as no surprise that one of the biggest factors keeping these systems from widespread use is the initial cost. According to the U.S. Department of Energy, a typical residential geothermal heat pump system costs about $7,500. The biggest expense, however, comes from digging to install the pipes. That cost will vary depending on your site. For example, if your lot can accommodate a horizontal system, your digging costs will be lower because the trenches are easier to dig than the deep holes required for the vertical systems.

There is some good news for those who want to install the systems: You may be eligible for a tax credit of up to $2,000 toward a geothermal heat pump.

By the Numbers:
Percentage of people who would choose one home over another based on energy efficiency:

69% in 2007 | **81%** in 2008

SOURCE: 2008 ENERGY PULSE STUDY BY THE SHELTON GROUP

FIND OUT HOW YOU COULD BE AFFECTED BY

Regional Home Problems

Many home improvement problems are universal, but other major problems can be tied to the region where you live. The American Society of Home Inspectors (ASHI.org) has identified some common issues in each region.

Northeast — The biggest concern for people living in this region is framing. If you live in the Northeast, you should be wary of under-framing, which means that beams are too small or have too much space between them. Older homes with new heating systems can also cause problems for homeowners in this region.

Southeast — If you live in the Southeast, you're probably more concerned about your roof than people living in most other regions. That's because sun and heat cause roofing to deteriorate quickly here. And although termites are any homeowner's nightmare, they're especially prevalent here.

Midwest — People who live in the Midwest are often concerned about water intrusion in their homes. This makes sense given the high number of basements in this region's homes. Decks are also very popular in the Midwest, and botched deck projects can lead to headaches later.

Northwest — Homes in this region may be susceptible to moisture intrusion. Basements and crawl spaces are particularly vulnerable because of exterior grading concerns. Higher rainfall in the Northwest can also complicate some building projects.

Southwest — The heat and sunlight in this region could pose problems for people with vinyl windows and siding. These factors can also take a toll on your roof's life expectancy. Another problem in this region is that its homes may experience water buildup under their foundations, which could put pressure on their structures.

Moisture intrusion in basements is a common problem in the Midwest.

PHOTO COURTESY OF GARET DUNLOP/THE AMERICAN SOCIETY OF HOME INSPECTORS, INC.

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Product Information Number 362

BEFORE: A bulky TV cabinet and an excess of cords and accessories made this room look too cluttered.

AFTER: Wilson helped the homeowners take advantage of the fireplace, which serves as the room's focal point.

PHOTOS COURTESY OF LG ELECTRONICS

INTEGRATE TECHNOLOGY WITH THESE

"Techorator" Design Tips

As entertainment technology improves, homeowners are often left with uncertainty about how to incorporate it into their decor. LG Electronics teamed up with designer Doug Wilson, whose credits include TLC's "Trading Spaces," to help consumers find the best solutions. As LG's "Techorator" (LGUSA.com/techorator), Wilson offers these tips to help homeowners use technology without sacrificing style:

Doug Wilson

1. The place that looks perfect for your television, such as the space above the mantel, may actually be the right spot. But don't forget that design elements like fireplaces and large mirrors can compete with the TV.

2. Of course, an HDTV will have more impact when its center is right at eye level. If you're a true home theater enthusiast, you'll want to make sure your stand or wall-mounting system puts your TV in this position.

3. The TV doesn't have to detract from your room's design. Paint the wall behind your flat screen a darker color than you normally would. For example, a dark charcoal color helps a black flat-screen TV frame blend in.

4. If you have a flat-screen TV on your wall, it shouldn't be the only thing mounted there. Hang matching pictures with high-gloss frames that mimic the television on either side of the screen to achieve balance and symmetry.

5. Fill the space below a wall-mounted TV with a credenza or a long table. This will draw your eye into the larger design, plus add storage space.

Best of the Web:

DesignMyRoom

(DesignMyRoom.com)

Now it's easy for homeowners to see how their home design projects will look before they even start them. DesignMyRoom.com lets you select and drag actual products like appliances and furniture onto a design board. The Web site then compiles a personal shopping list based on the items that you select.

Home Center Moving Sites

(HomeDepotMoving.com and LowesMoving.com)

Home centers are great places to get ideas — even online. This is especially true if you need moving tips. HomeDepotMoving.com, for example, provides everything from information about choosing a home to printable house-warming invitations. And if you need moving checklists to help you get organized, LowesMoving.com provides these, as well as a timeline to keep your move on schedule.

The Tile Doctor

(TheTileDoctor.com)

If you need help with a tile project, visit the Tile Doctor for installation and repair tips and instructions. The site even includes a calculator that will help you determine how much tile you'll need for your project.

U.S. Government Recalls

(www.Recalls.gov)

This one-stop shop gives you information about products that have been recalled through federal agencies. The Web site includes categories like food, medicine, and consumer products. You can sign up for email alerts to find out what products have been recalled recently in the categories that interest you.

Getting the Lead Out

The EPA has issued a rule to cut down on harmful lead exposure during home improvement projects. Starting in April 2010, contractors hired to work on renovation, repair, or painting projects that disturb lead-based paint will have to be certified in lead-safe practices by the EPA. Professionals will also have to follow specific procedures when working on these projects. This rule affects homes built before 1978, which was the year the government banned the use of lead paint in housing.

Lead exposure can cause health problems like high blood pressure and kidney damage. Lead also has the potential to cause even more serious health complications for children.

To find out if lead paint is present in your home, you can hire an inspector to identify whether it was used and where it is located. You can also purchase a testing kit to check for lead yourself, but the EPA cautions that studies have found such tests to be unreliable.

If an inspection or testing measure comes back positive for lead in your home, it is possible to remove it. You should always work with someone who is properly trained in lead removal because the process can do more harm than good if it isn't performed safely.

While the project is under way, clean surfaces in the work area every day to prevent contamination to other parts of your home. All contaminated items should be covered in at least two layers of plastic between uses. For more information about the new lead rule, visit EPA.gov/lead.

HOMEWORDS: Windows

CASEMENT: A window sash that opens and closes with a hinge on the side.

DOUBLE-HUNG: A window style with upper and lower sashes that can be moved past one another.

JAMB: A groove in the side of the window that lets the sash slide up and down.

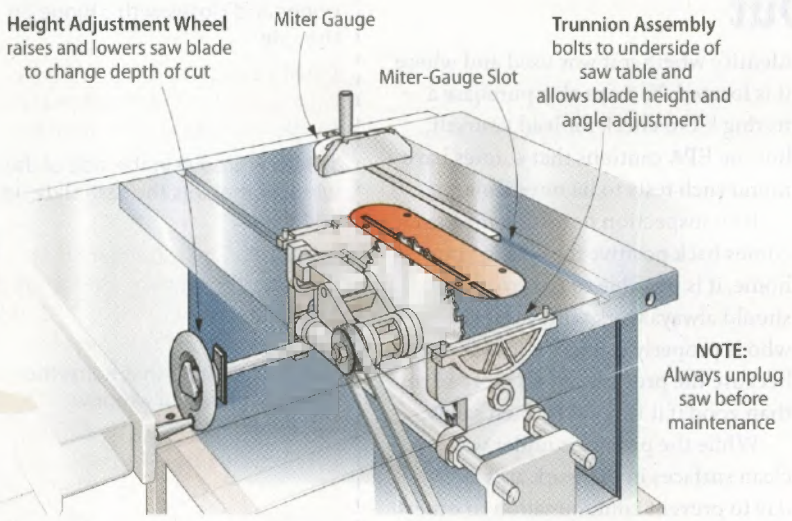
R-VALUE: A measurement that indicates the amount of resistance to heat flow (look for windows with high R-values).

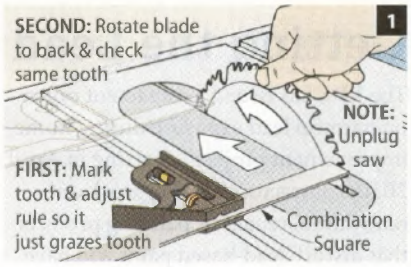
SASH: The frame that holds the panes of glass in a window.

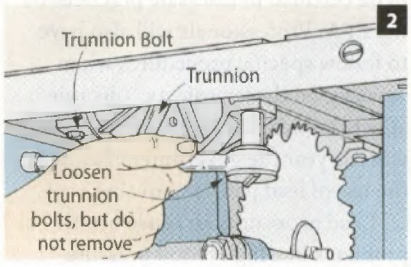
TRANSOM: A stationary window that is often used as a decorative element and can be installed above a door or another window.

U-VALUE: A measurement that shows the rate of non-solar heat loss or gain (look for windows with low U-values).

Product Information Number 172







MAKE SURE YOU CAN MAKE THE CUT WITH A

Table Saw Tune-Up

Q: I bought a used "contractor-style" table saw, and the blade seems to be way out of alignment with the fence. Can this be fixed, or did I buy junk?

Frank Hammond
Phoenix, AZ

A: It sounds like the saw probably just needs a little tune-up. My guess is that the assemblies that hold the blade, called the trunnions, have simply been knocked out of alignment. If that's the case, you should be able to realign the blade easily and get the saw back into good working condition.

Before you dive into doing that, though, you need to familiarize yourself with the components of a typical contractor-style saw. Those are shown in the *Illustration*, above.

Also, be sure that the saw is unplugged before you work on it. And install a reliable blade that you know is in good working condition.

The easiest way to realign the trunnions is to align the blade with the miter-gauge slot. A quick way to check this alignment is with a combination square. Just adjust the square so the end of the square's rule touches a tooth at the front of the blade, and the square body sits against the edge of the miter-gauge slot *(Fig. 1)*. Now mark that tooth with a permanent marker.

Next, slide the square to the back of the blade, and rotate the blade to check the marked tooth again. If the tooth does not touch the rule, or it binds against the rule, then you'll have to adjust the trunnions to bring the blade into alignment.

That process is easy. Just reach under the table and loosen the bolts that hold the trunnions in place *(Fig. 2)*. There are usually four bolts, and they fit into oversize holes that allow you to reposition the trunnions as necessary.

Once you have the blade aligned, you need to double-check the fence. Again, you can use the miter-gauge slot. Just lock the fence down flush with the edge of the slot, and then "eyeball" the fence to see how square it looks. Now feel along the edge with your fingers to make sure it's dead flush with the slot across the entire face of the fence.

If it's not aligned, most fences can be adjusted. The methods for doing this vary widely depending on the fence design. There may be set screws on the fence, or you may have to shim the fence's guide rail.

GOT QUESTIONS? WE HAVE ANSWERS!

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HOW TO SEND YOUR QUESTIONS:

Email: Ask@workbenchmag.com
Forums: forums.woodnet.net
Mail: Ask Workbench, 2200 Grand Ave., Des Moines, IA 50312

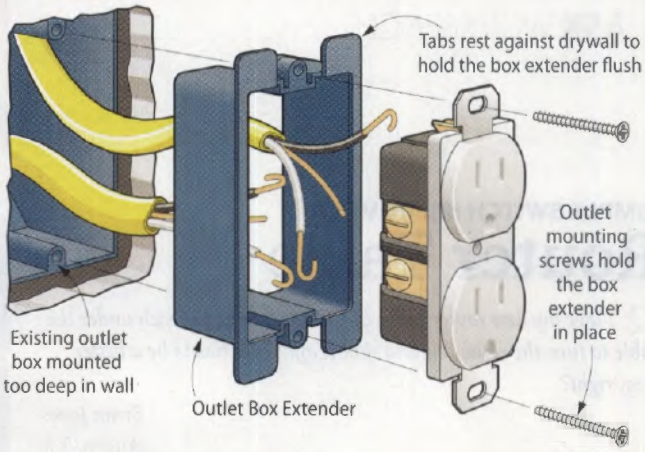
Tighten a Loose Outlet

Q: I have several electrical outlets that always come loose because the boxes they're in are mounted way back in the wall. The only things that hold them in place are the cover plates, and I can only tighten them so much without cracking them. What's the best way to keep these outlets tight?

Kurt Statton
West Des Moines, IA

A: The problem you have is common. The box that the outlet is mounted in should be flush with the outside face of the wall. But because the boxes get attached to the studs before the drywall goes on, they often end up set too deep. This isn't safe and actually can violate electrical code.

Luckily, you can bring the box flush by using a box extender. To install one, first shut off the power to the outlet. Then remove the two screws that hold the outlet in, slip the box extender in place, and reinstall the outlet *(Illustration)*.



WANT TO LOSE THE PAINT PAN?

If you tire of refilling and cleaning a paint roller pan, do what professional painters do: Skip the pan and use a roller screen in a 5-gallon bucket *(Photo)*. Just pour your paint into the bucket, and then hook the screen on. Dip the roller into the paint, and then roll off the excess on the roller screen.

Product Information Number 202

SIMPLE SWITCH IMPROVES A
Router Table

Q: I love my new router table, but I hate having to reach under the table to turn the router on and shut it off. There has to be a better way, right?

Brian Jones
Austin, TX

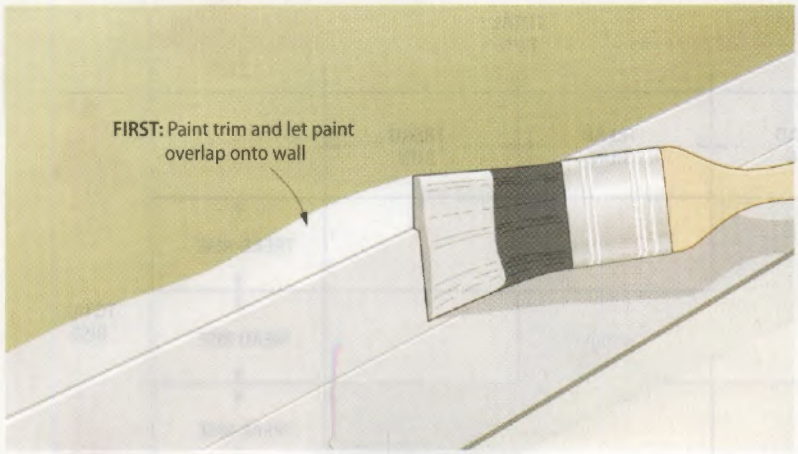
A: There is a better way: If your router table didn't come with one, you can install a switched outlet on the table. They're available through numerous woodworking catalogs.

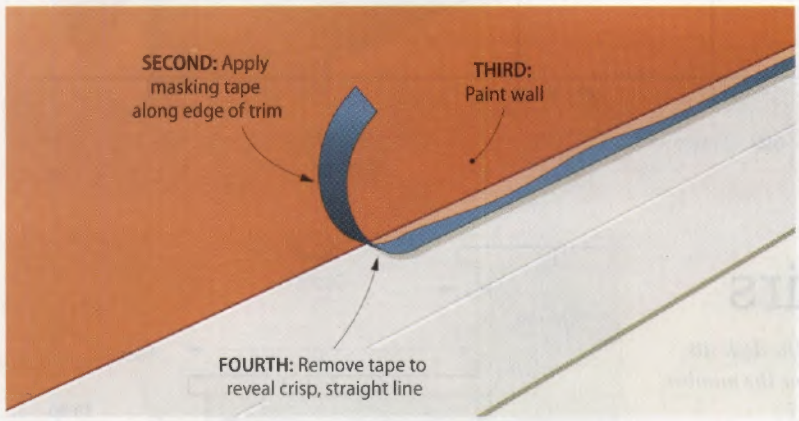
The way the outlet works is simple. Just mount the switch to your table in a place that's easy to reach, and then plug it into the wall outlet. Then plug your router into the switch. With the switched outlet turned off, flip the power switch on the router to "on." Now you can just flip the switch on the outlet, and the router will turn on.

Just remember that the router switch will always be turned on. So if you ever remove your router from the table to use it hand-held, you'll need to shut the router switch off before you plug it in.

A switched outlet offers increased convenience and safety by allowing you to turn a table-mounted router on and off without having to reach under the table.

By the way, some switched outlets allow you to plug two devices in. Then you can plug the router into one and your shop vacuum into the other. That way you can rout and collect the router's chips with the flip of a single switch.





FOUR EASY STEPS ENSURE

Perfect Painted Trim

Q: I'm repainting a room that's had the walls and trim painted several times. Since there's no crisp line between the trim and walls anymore, how do I paint to get straight, good-looking lines?

Laura Parker
San Francisco, CA

A: Though there are a few different ways of doing this, I recommend painting the trim first, and then the walls. Here's why.

Often after several repaints, a good deal of paint is built up on top of the trim. So if you mask the wall, you may see a wavy line on the trim when you look at it. Plus, on textured walls it's not always easy to get masking tape to stick.

If you forego the masking tape and paint the trim first, however, you can just over-paint and let the trim color cover an inch or so of the wall.

Then, once the trim paint dries, mask off the trim. You can easily establish straight lines with the tape. Even if the tape isn't located exactly where the trim meets the wall, it will appear that way in the end. By the way, I've found a new tape called Frog Tape (FrogTape.com) that works great for this. It prevents the paint from seeping under the tape.

The only other consideration you'll have is about wall and trim color. If you're painting light trim and a darker wall color, go ahead and paint. If the walls are lighter than the trim, it's a good idea to hit the over-painted area with stain-blocking primer first. Then you can paint and peel away the masking tape to reveal great-looking trim and walls.

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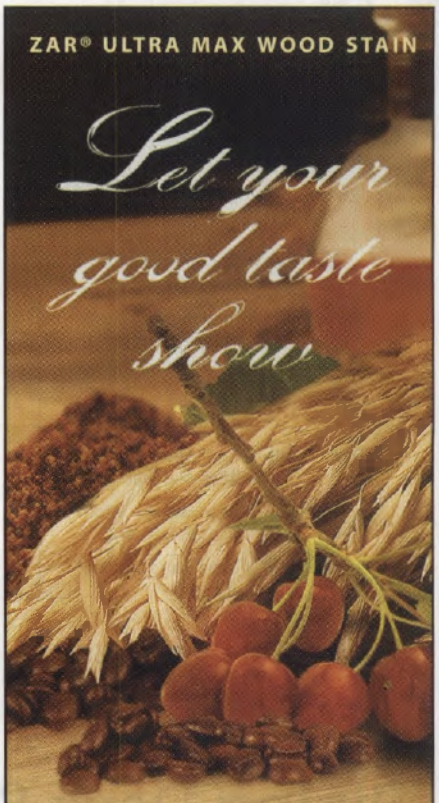

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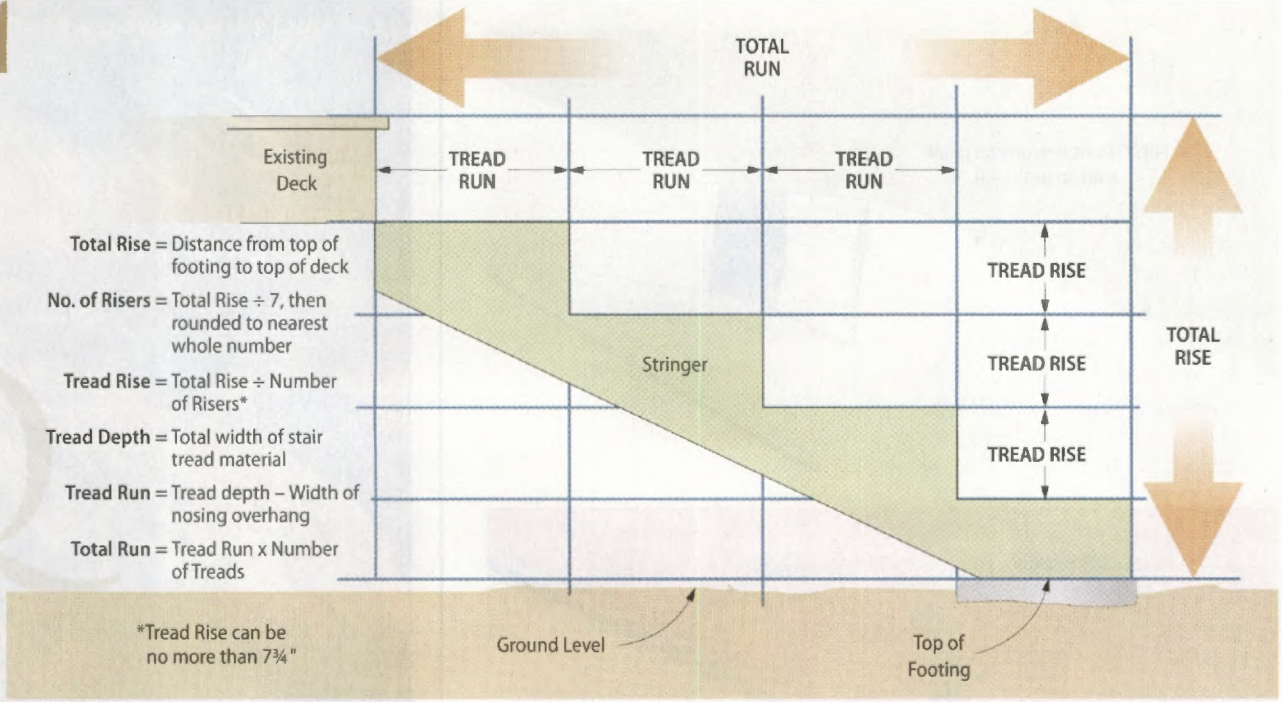
Product Information Number 246



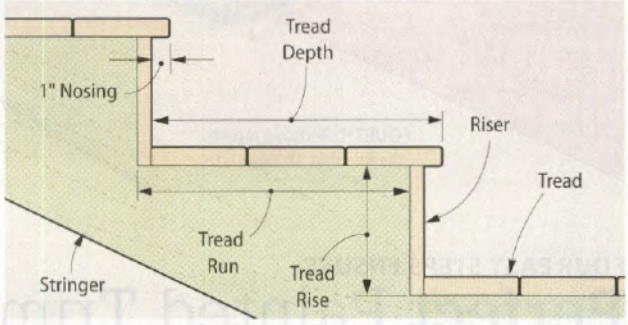
SOUND STRATEGIES FOR
Sizing Deck Stairs

Q: I want to build stairs off my deck this spring. The deck sits about three feet above the yard. How do I determine the number of steps, the angle, and the dimensions of the stairs?

Mark Peroni
Memphis, TN

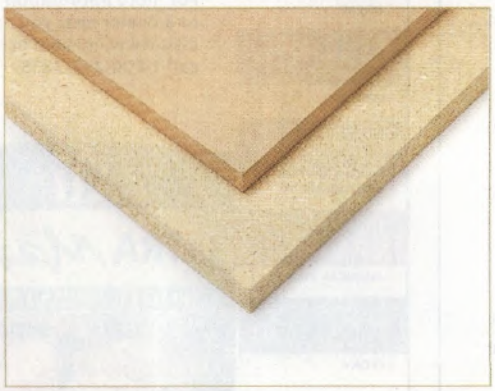
A: You'll get into a bit of math when laying out deck stairs, but it's pretty easy to work it all out because there are standards that dictate the rise (height) and run (depth) of each step. These standards ensure that the stairs will be safe and comfortable to use.

First you need measure the distance from the ground to the top of the deck. This is the total rise of the stairs. With that, you can use the sequence of formulas in the *Illustration* above to figure everything else out.



Tread depth, known as run, is more arbitrary than the rise. A tread depth of 10" is pretty standard for deck stairs, but you can increase the depth if you want a more dramatic look. In any case, be sure you account for the stair riser and overhang, called nosing, when you plan your cuts in the stringer *(Inset Illustration)*.

Of course, if this process seems confusing, consult a professional to ensure that your stairs are properly designed.



WHAT'S THE DIFFERENCE? MDF & PARTICLEBOARD

Particleboard *(on bottom in Photo)* is made by gluing together fine chips (particles) of wood. It's used in a lot of cabinets and ready-to-assemble furniture because it's inexpensive. Particleboard has some limitations, though. It doesn't take a crisp edge when cut or routed, and it doesn't have great screw-holding ability or take paint well. That's why it's usually covered with a decorative layer of paper or melamine.

MDF (medium density fiberboard) is made by gluing together fine wood pulp *(on top in Photo)*. That gives it a finer texture and denser structure than particleboard. Like particleboard, it's inexpensive (about $25 per sheet). MDF can be cut and routed well and paints up very nicely, especially if you seal the edges prior to painting. It can even be stained.

When finishing or refinishing a workbench, choose a finish that's easy to apply and easy to recoat later. A penetrating finish works better than one that builds up a thick film on the surface.

Best Bench Finish

Q: I inherited my grandfather's workbench, and it needs to be refinished. What's the best finish to use?

Andre Rethman
Des Moines, IA

A: Before you refinish the bench, try to remove any grease or other contaminants that might interfere with the new finish. Then sand the benchtop.

With that done, you can add a new finish. The best finish to use is one that soaks in (a penetrating finish) rather than one that sits on top (a film-building finish). That's because a bench inevitably gets scratched and beat up as you use it. A film finish will get chipped and will have to be removed entirely before you can apply a new coat. With a penetrating finish, you can simply spot-sand and touch-up as needed. Plus, you don't have to worry about runs.

When you eventually want to refinish the benchtop, all it takes is a light sanding and wiping on a new coat. I'd choose either straight oil or a finish that blends oil and urethane. Just make sure it says "penetrating" on the label.

PAINTING TREATED WOOD

Pressure-treated (PT) lumber can be painted once it's dry. But you need to keep in mind that while paint will hold up fine on fences and other structures, it isn't recommended for decks. That's because it tends to wear quickly due to foot traffic, weather exposure, and seasonal wood movement.

If you plan to paint fences and other structures, though, the Southern Pine Council, a group that represents manufacturers of pressure-treated lumber, recommends the following:

- Let the lumber dry for up to two months.
- Coat all surfaces, including ends and cuts, with a paintable water-based sealer. Then let it dry for two warm, dry days before painting.
- Apply a coat of stain-blocking acrylic-latex primer.
- Apply two coats of acrylic-latex exterior paint.

If you're after a painted look, but want less effort, consider a solid-color stain. It gives a similar look, but it soaks in rather than sitting on the surface, so it lasts longer than paint. It also works great on decks.

Product Information Number 228

GET SIMPLE STORAGE WITH THIS

Folding Rack

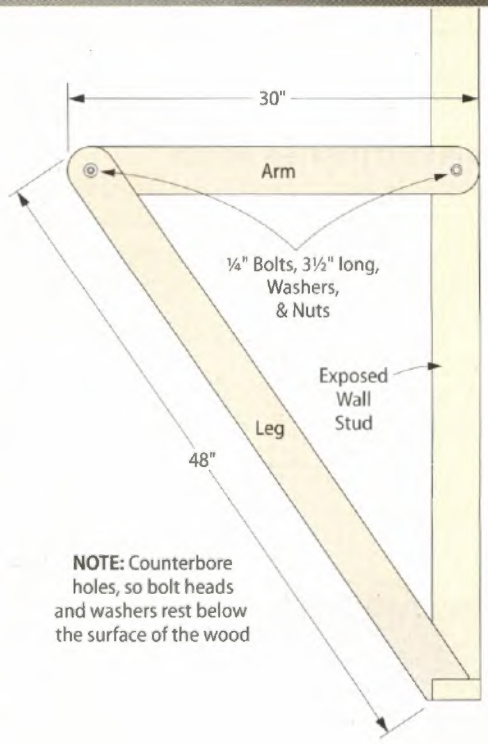
When your garage is splitting time between storing cars and housing DIY projects, space can get tight. Kent Schulman of Knoxville, Iowa, faced this situation in his shop, which is why he came up with this simple storage rack.

Most of the time, the rack remains folded away against the exposed studs of his garage *(Inset Photo)*. But when he needs it to hold lumber and materials off the ground, it folds out to serve as a storage shelf. Add a plywood panel, and it even becomes a simple work station for small projects *(Photo, above)*.

The rack couldn't be much simpler to build. It consists of a pair of arms and a pair of legs made from 2x4s. Each arm and leg set gets bolted together, and then the arms get bolted to the stud wall. (Place washers under the bolt heads, between the boards, and beneath the nuts to allow the parts to move smoothly.)

You'll also want to add a pair of keeper blocks that get screwed to wall studs to hold the rack in place. When you need to use the rack, the arms pivot out from the wall, and then the legs pivot down to bear against the garage sill plate.

The easiest way to make the rack is to cut all the parts slightly long. Then you can clamp the pieces in their rough positions and measure and mark the final length. After cutting them to length, it's a good idea to add a notch where the legs meet the sill plate. While you're at it, round off both ends of the arms and the top ends of the legs to soften them. Both cuts are easy with a jigsaw, and we even offer a bonus tip on laying out the radiuses on the 2x4s *(page 22)*.



GIVE PLIERS A

Fine Touch

Pliers aren't tools that are usually known for their finesse. But sometimes, finesse is exactly what you want from a pair of pliers — especially when you don't want to damage a plated or painted nut, or one made from soft metal such as the nut shown on this chrome P-trap.

You could buy a fancy, expensive pair of pliers that can tighten nuts without scratching the surface, but Joshua Shirey of York, Pennsylvania, found a simple solution that will work just as well in a pinch. He just cuts two fingers off an old work glove and slips them over the jaws. Now he can tighten that nut without worrying about scratches.

BEST TIP PRIZE WINNER!

For this issue's award-winning tip, Joshua Shirey will receive a Black & Decker Smart Select Jigsaw and 18-volt Cordless Drill valued at over $200!

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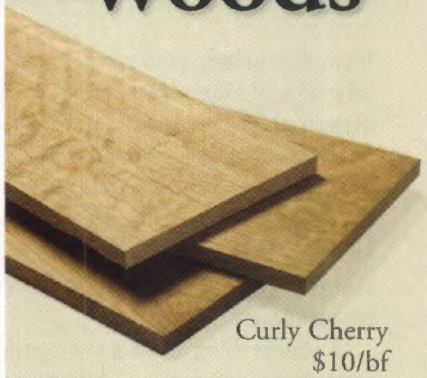

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Product Information Number 214

KEEP GARAGES TIDY WITH A

DIY Dam

If you like to keep your garage clean, then winter can be a frustrating time of year. Your vehicle brings in snow and ice on its tires, which melts in the warm garage and spreads all over the place.

This winter, Doug Stoner of Adel, Iowa, decided to put a stop to the flood of unwanted water by constructing a simple dam around the footprint of his truck with vinyl molding strips. These ¼"-thick, 12'-long strips are available at home centers for under $5 and hold back the water without creating a tripping hazard. Doug just cut them to size to surround his truck.

The only thing missing was a good way to temporarily attach the strips to the garage floor, so they could be removed easily in the spring. Doug accomplished that with Seal 'n' Peel caulk from Dap. This removable caulk is intended to seal doors and windows in the winter, but it worked great for temporarily sticking these strips to the garage floor.

Product Information Number 248

Basement Waterproofing !

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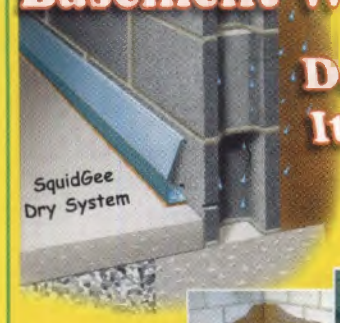

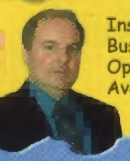

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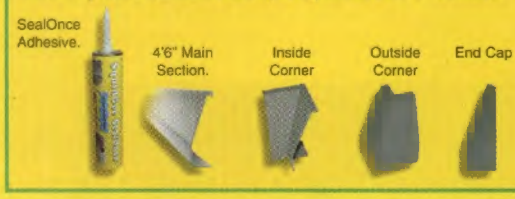

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Product Information Number 262

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Product Information Number 358

CONQUER CURVES WITH

Coffee Cups

While building the shop storage rack shown on page 18, Kent Schulman realized that he had the perfect tool for marking circles on a 2x4 sitting right next to him — it was holding his morning coffee.

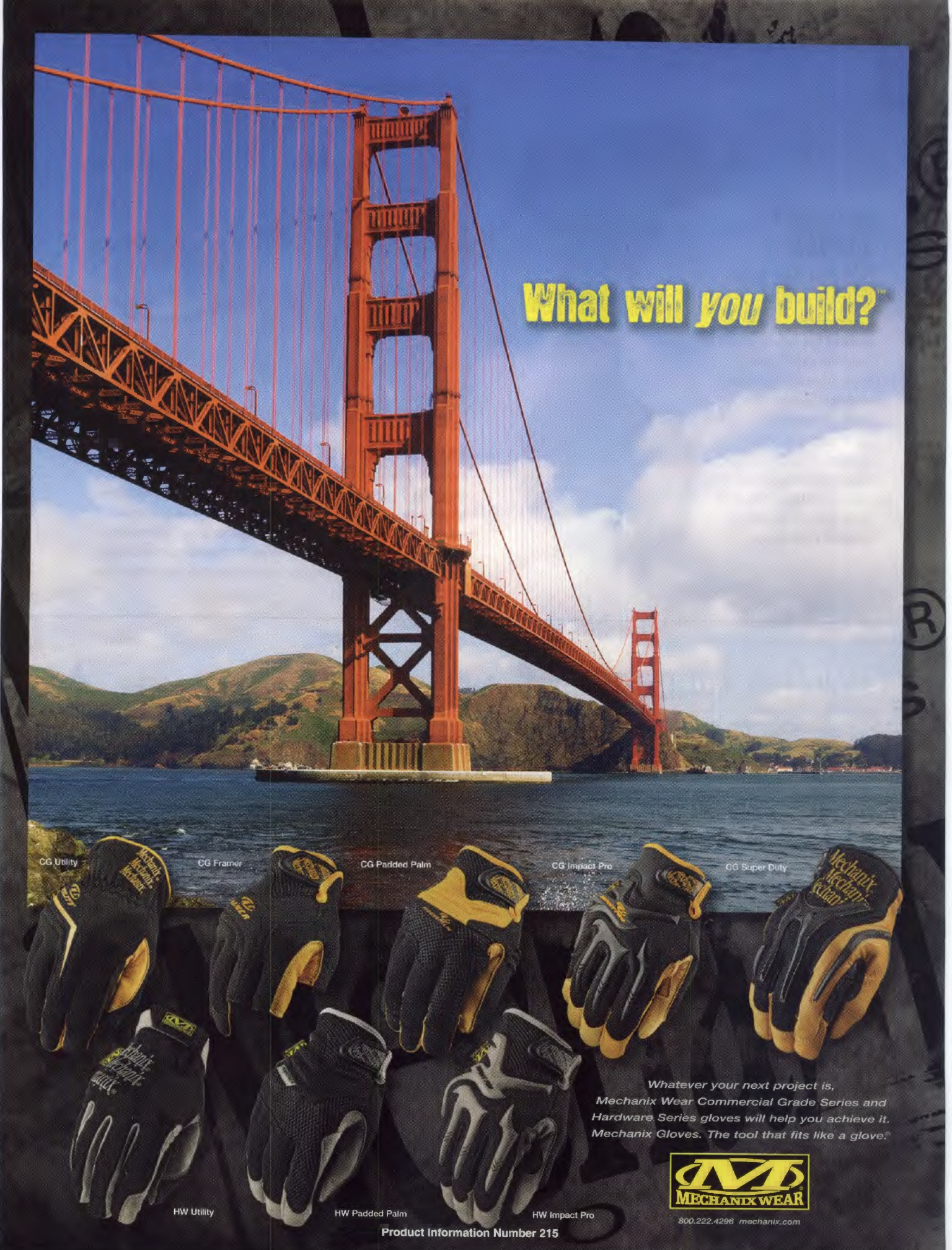
The diameter of the average coffee mug happens to be just a hair under 3½". So whether you just need to round the end of a 2x4 or make a complete circle, all you have to do is trace around the base of the cup with a pencil, and then cut to the line with a jigsaw.

Product Information Number 296

PAIN-FREE GROUT CLEANUP

One of the final steps in any tile job is to smooth the grout lines and clean the haze off the tiles with a sponge and water. But who says you have to hurt your knees and back to do this?

Susan Drake of Perry, Georgia, discovered that a sponge mop works just as well for cleaning up grout, without putting you on your hands and knees. The newest mops even feature a big sponge, so they can clean a larger area without rinsing.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DEAD-SIMPLE

Drill Storage

Few tools get more use around the house than the cordless drill... and few tools are more awkward to store. Joshua Shirey of York, Pennsylvania, came up with the answer: Just tighten an eye bolt into the drill's chuck, and you can easily hang the drill from a hook anywhere around your shop.

TAKE A TIME-OUT FOR CHARGING

Most people are hesitant to leave their cordless batteries charging unattended. Robert Boecking of Morganville, New Jersey, came up with a simple way to overcome this shop safety risk. He just plugs the chargers into a light timer. That way, he can set the amount of time that the batteries charge, and he doesn't have to worry about them the rest of the time.

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Product Information Number 273

DEMYSTIFYING

Wood Care Products

What you need to know about them . . .

Is furniture polish good or bad for your wood? What about wax? Let's take a closer look at wood care products, so you'll know the truth about caring for the wood around your house.

For some strange reason, few products are the subject of more mischaracterizations and misunderstandings than wood care products. Finding the truth about wood polishes, waxes, and cleaners is a bit like trying to find the truth about eating eggs: Some say they're good for you, some say they're bad, and others say they're good in moderation.

Wood care products have been represented in much the same way. Some people see them as a good way to preserve your furniture's finish, believing they actually restore the wood's moisture and extend its life. Others perceive polishes as the cause of waxy buildup and furniture deterioration.

The reality about these products, however, is that neither of these things is true. Polishes, waxes, and wood cleaners aren't all good, and they aren't all bad... but they do have a place in caring for and preserving the wood around your home. Here's what you need to know.

Examples: Old Masters Lemon Oil, Orange Oil, Liquid Gold, Old English

The Myths: "Good" myths purport that liquid polishes moisturize and add essential oils to a finish. "Bad" myths contend that the polish will cause a film buildup on wood and make the finish hazy over time.

The Truth: Liquid polish doesn't really affect the wood itself positively or negatively. Think of it a bit like Armor All for your finish: It temporarily adds luster and makes it smoother so it's a bit more scratch-resistant. It also aids in picking up dust and dirt from the surface.

When & How to Use It: To remove dust, just barely dampen the cloth so it doesn't leave significant wetness on the surface of the wood. To enhance the sheen of the wood, saturate the cloth completely, and then wipe it over the surface.

Examples: Pledge, Endust, Old English, Favor, Swiffer Dust & Shine

The Myth: Spray polishes cause a hazy buildup and damage the finish.

The Truth: Most spray polishes contain silicone, so they last longer and produce a slicker surface on wood. Despite the rumors, though, silicone poses no danger to wood or to finish. If you have plans to refinish a piece, however, avoid these polishes, as they can be difficult to remove with chemical strippers later on.

When & How to Use It: To remove dust and dirt and preserve the glossiness of your finish, spray just a small amount on the surface of the wood, and then wipe it with a clean, dry cloth.

Examples: Minwax, Briwax, Old Masters, Howard Citrus-Shield

The Myths: Wax prevents the finish from "breathing," which can cause damage to the finish. It also can build up and create a haze or cause dirt and debris to collect on the finish.

The Truth: Finish doesn't breathe, so wax doesn't prevent moisture exchange or harm the finish in any way. If applied properly — by thoroughly buffing off all the excess — it creates no haze and doesn't collect dirt.

When & How to Use It: Wrap a lump of wax with a clean, dry cloth, and then let the wax seep through the cloth as you rub the surface. Switch to a new clean cloth to remove the excess and buff the finish.

Examples: Minwax Hardwood Floor Cleaner, Murphy's Oil Soap, Orange Glo, Hope's Floor Revive

The Myth: You should clean your hardwood floors as often as is needed with these products.

The Truth: These mild cleaners are better for wood floors than other types of soap, but they still can leave a slight residue behind. Some get mixed with water, which can further damage floors over time.

When & How to Use It: When possible, rely on sweeping and vacuuming to clean your wood floors. When they do need deeper cleaning, definitely choose one of these mild soaps recommended for hardwood floors over another type of cleaner.

A HOME FOR Crafts and Hobbies

This clever space provides a place for the whole family to gather and work on projects together. Plus, abundant storage options keep supplies from cluttering your house.

A family's crafts and hobbies can take up a substantial amount of space in the home. Whether family members spend their time sewing, building models, scrapbooking, or doing homework, they all need some room to spread out. Those activities are often relegated to the dining room table or the desk in a home office, which isn't a problem — until the spaces are needed for something else. Then it's a hassle to move all of the supplies and find a place to store them.

When juggling storage and hobby work stations becomes an issue for your family, this activity room is the perfect solution. It eliminates the problem of finding space for everyone's hobbies and keeps supplies from cluttering other areas.

One of the best aspects of this project is that it's mostly made from budget-conscious components and supplies. The cabinets we used are just unfinished stock cabinets purchased from a home center, and the work surfaces are made from inexpensive MDF.

You may think you don't have the space for this practical activity room in your home, but you probably have more options than you realize. Spare bedrooms and bonus rooms above garages are good candidates for an activity room makeover. You could also convert an underused portion of your basement, which would provide the perfect excuse to get started on a basement finishing project *(page 64)*.

On the next few pages, we'll provide you with some activity room inspiration and how-to advice, so you can build a space that works for how your family will use the room.

Adaptable Desk

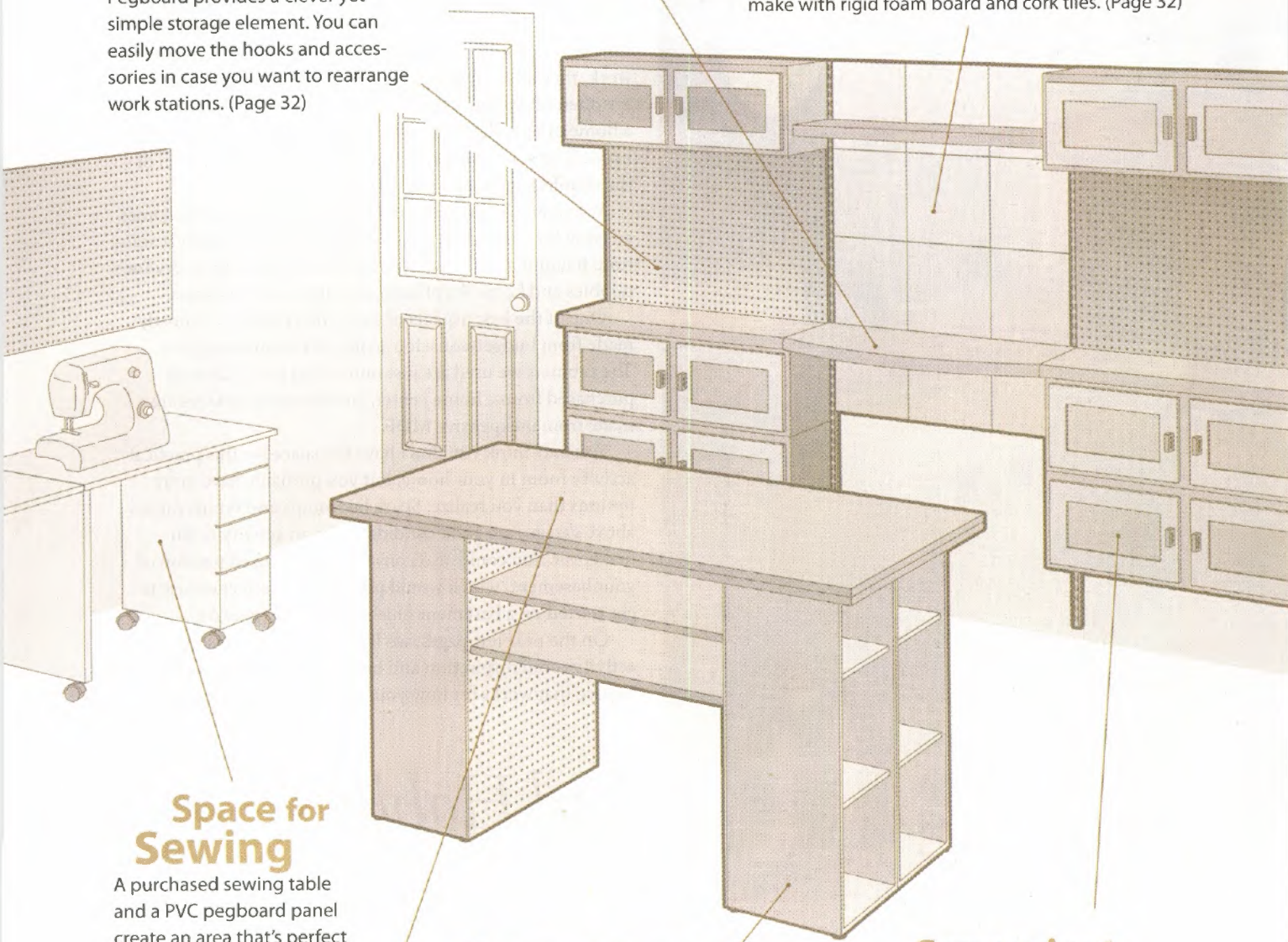
The moveable desk feature can be adjusted up or down on shelf standards. That way, it's at just the right height no matter who is working there. (Page 33)

Wall Storage Wonder

Pegboard provides a clever yet simple storage element. You can easily move the hooks and accessories in case you want to rearrange work stations. (Page 32)

Tack It Up

A board where you can pin supply lists or instructions is a handy addition. This one is easy to make with rigid foam board and cork tiles. (Page 32)



Space for Sewing

A purchased sewing table and a PVC pegboard panel create an area that's perfect for the activity. (Page 35)

On The Island

The easy-to-make island offers plenty of storage thanks to its base, which is made from four purchased organizers. (Page 34)

Convenient Cabinets

Cabinets offer lots of space to store the family's project supplies. These came unfinished from a home center and then got a bright coat of paint. (Page 31)

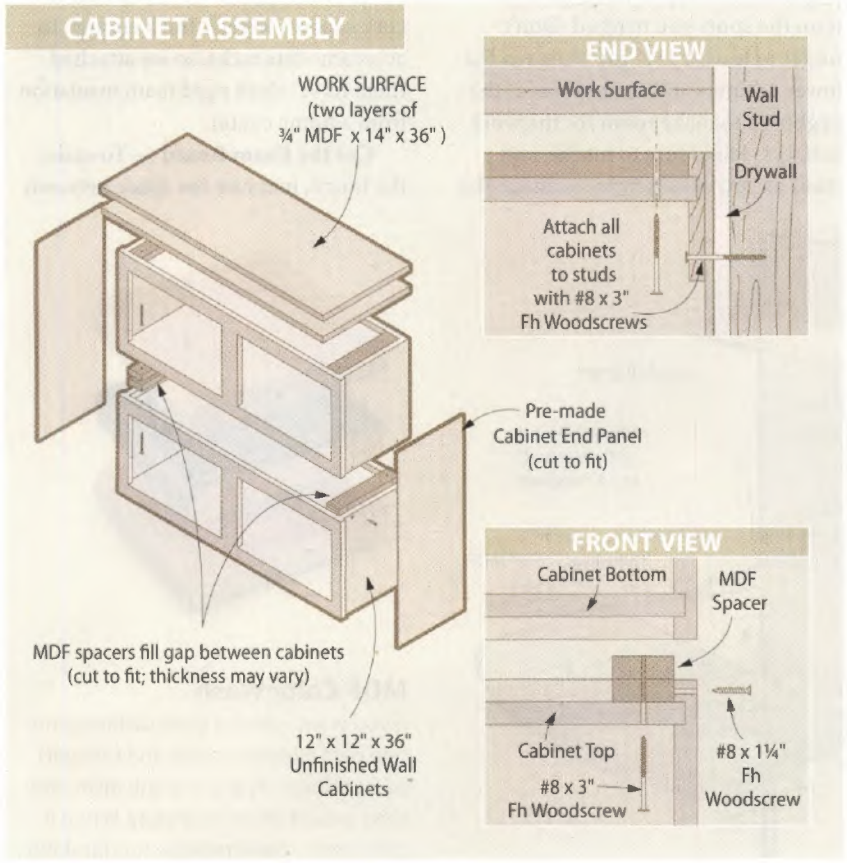
Stunning Surfaces

Work surfaces in this room need to be tough. These are made from sturdy but economical MDF, which only costs about $25 for a 4' x 8' sheet. (Page 33)

FAMILY-FRIENDLY CABINETS

Cabinets will have the biggest impact on the room when it comes to storage space. This activity room plan calls for six unfinished 12" x 12" x 36" wall cabinets. They are all stock cabinets, which you can buy right off the shelves at a home center. As you can see in the *Illustration* at left, four of them are screwed together in pairs to form the lower cabinets, and two others finish off the wall above.

Join the Lower Cabinets — Once you have your cabinets, prepare them for painting and installation. Your first step is to join the lower cabinets. Many cabinets have a recess between their tops or bottoms and the edges of the trim, which presents a challenge when you're ready to screw the lower cabinets together. To fix this, cut MDF blocks to fill in the gaps *(Illustration, below)*. The size of the gaps may vary depending on the cabinets you purchase, so you'll have to adjust the blocks to fit the space. Then drive screws up through the top of the lower cabinet and the filler and into the bottom of the upper cabinet to join them together.



Now you can apply cabinet end panels, which are sold at home centers alongside the stock cabinets. The panels dress up the ends of the cabinets and make them look like one unit. Glue and nail these panels to the cabinets.

Paint the Cabinets — Next, prime the cabinets, allow the primer to dry, and then apply the paint. We painted ours a fresh green to serve as a contrast to the natural tones we planned to use for other components in the room.

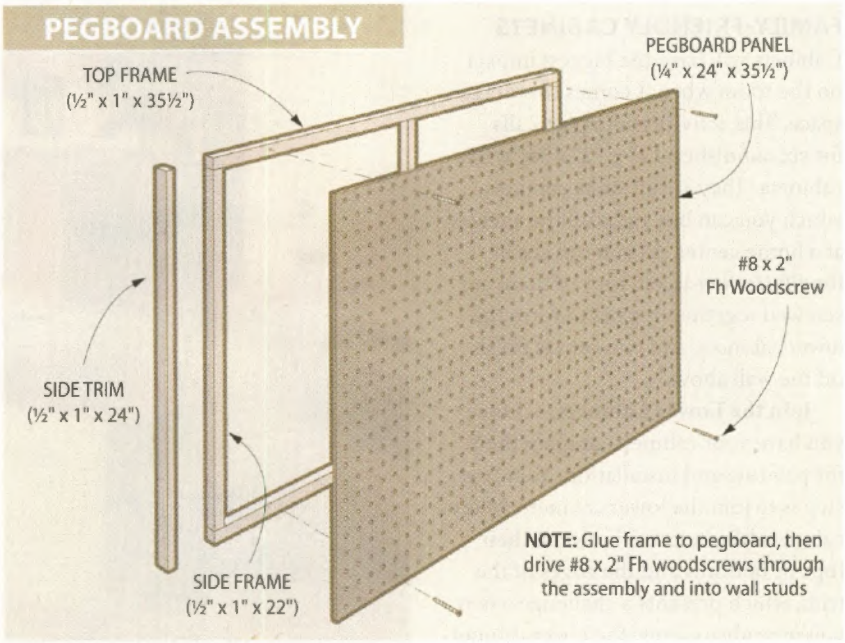
Attach the Shelf Standards — While you're waiting for the paint to dry, mark the cabinet mounting locations on the walls. The tops of the lower cabinets' work surfaces will be 36" from the floor, and the upper cabinets will be mounted 24" above them.

Before you mount the cabinets, it's a good idea to attach the shelf standards to the wall first. The standards extend to the tops of the upper cabinets and allow you to mount the adjustable desk and MDF shelves *(Photos, page 33)*.

By attaching the standards before you mount the cabinets, you'll be able to simply slide the cabinets up against the standards when you hang them.

Mount the Cabinets — To add visual interest to the cabinets before you mount them, cut cork panels to the same size as the upper door panels, and glue them in place on the doors.

Attach the cabinet hardware, and then you're ready to hang the cabinets. Position them on the wall and make sure they're level. Mount them by driving screws through the hanging rail on each cabinet and into the wall studs. Try to hit two studs with each cabinet. If you can only hit one, use heavy-duty hollow wall anchors for added support.



HANDY PEGBOARD PANELS

Your wall storage possibilities certainly aren't limited to the cabinets. The pegboard is a great element that provides versatile hanging storage for your craft tools and supplies.

Cut the Pegboard — We mounted pegboard in the areas where convenient wall storage was needed most: near work surfaces. Simply measure the areas where you want pegboard, and then cut the pegboard to size.

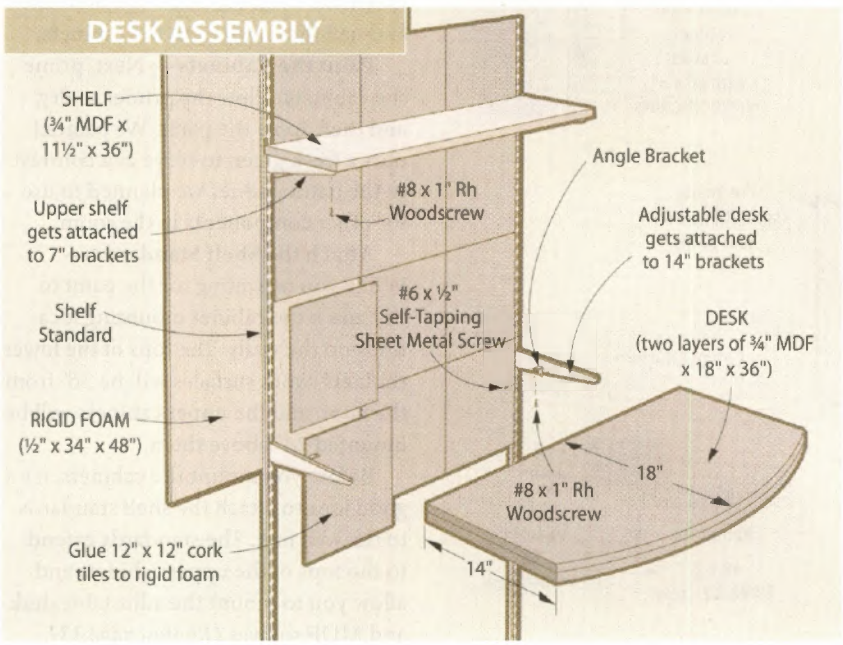
Create the Framework — Now make a frame to provide a gap between the pegboard and the wall, so the hooks can slide through. Use the pegboard's dimensions to cut the framework pieces to size *(Illustration, above)*. Then glue them to the back of the pegboard, and drive finish nails through the front.

Attach the Pegboard — When the pegboard is ready to hang, position it on the spots you marked. Don't forget to leave a 1½" gap between the lower cabinets and the bottom of the pegboard to make room for the work surfaces. Make sure to hit the wall studs as you drive screws to attach the pegboard to the wall. Cut trim strips to cover the exposed edges, paint the strips, and attach them with finish nails.

CONVENIENT CORK BOARD

The room's cork tack board is another clever wall feature. We found that the cork squares weren't thick enough to accommodate tacks, so we attached them to ½"-thick rigid foam insulation from a home center.

Cut the Foam Board — To make the board, measure the space between



MDF Color Wash

If you want colorful work surfaces, mix one part oil-based paint and one part paint thinner. Apply it to the MDF, and then wipe it off immediately. When it dries, apply polyurethane for durability.

the shelf standards. The board doesn't have to extend all the way to the floor, but it should reach down to the lowest level that you would place the adjustable desk. Cut the foam board to size.

Mount the Board — Next, you'll add the cork tiles to the foam board. You may have to cut the tiles to fit the board's size. Then use spray adhesive to attach the cork tiles to the foam board, and mount the whole assembly to the wall with paneling nails.

SURFACE APPEAL

Every room needs an element that ties everything together, and for this room it's the work surfaces. The MDF's natural color coordinates with the other neutral tones used throughout the room. The durable material is especially important for the room's desk, which can be adjusted to different heights.

Cut and Assemble the Surfaces — All told, you'll make these MDF components: two cabinet work surfaces, the adjustable desk, and the wall shelves that go above the desk. (You can add as many of the shelves as you want to customize your storage space.) The work surfaces and desk are made from two layers of MDF, while the shelves are each made from one.

Cut all the parts, and then glue the layers for the work surfaces and desk face to face. Once the glue is dry, create a slight chamfer on the front edges of the cabinet work surfaces and the adjustable desk.

The adjustable desk is another feature that makes this activity room a family-friendly space. The shelf standards allow you to move the shelf brackets up or down depending on what is most comfortable for each user.

Finish the MDF — Once the work surfaces, desk, and shelves are assembled, you're ready to finish them. We applied polyurethane to our surfaces to maintain a natural color palette. If you'd like to add color, use the simple color wash shown on page 32 or paint the shelves.

Attach the Surfaces — After the work surfaces, desk, and shelves are dry, you can attach them. Line up the work surfaces on the lower cabinets, and then attach them with screws *(Illustration, page 31)*. Screw the desk and wall shelves to shelf brackets, and attach them to the shelf standards.

This easy island offers plenty of space for crafts and hobbies that require large work surfaces.

CRAFT AN Island *with storage*

Storage and workspaces in the activity room get a boost thanks to the center island, which is sure to be a well-used feature. This convenient piece provides plenty of space on top for activities that require larger surfaces. It's tall enough to allow you to stand while you work, or you can purchase stools to sit on.

The island's durable work surface and shelves are made of ¾" MDF, just like the ones on the activity room's cabinet wall *(page 33)*. The work surface is made of two layers glued together, as shown in the *Illustration* on page 35. You should make these MDF components before you begin assembling the island.

In addition to the great work surface on top, the island also takes advantage of the opportunity for storage underneath. The base is made from four ClosetMaid organizers (ClosetMaid.com), which come with adjustable shelves that are perfect for storing supplies *(Illustration, page 35)*.

To supplement the organizers' ready-made storage space, you can make some of your own modifications for more convenience and spots to stash supplies. For example, the organizers came with doors, but we decided to leave those off for easier access to the shelves.

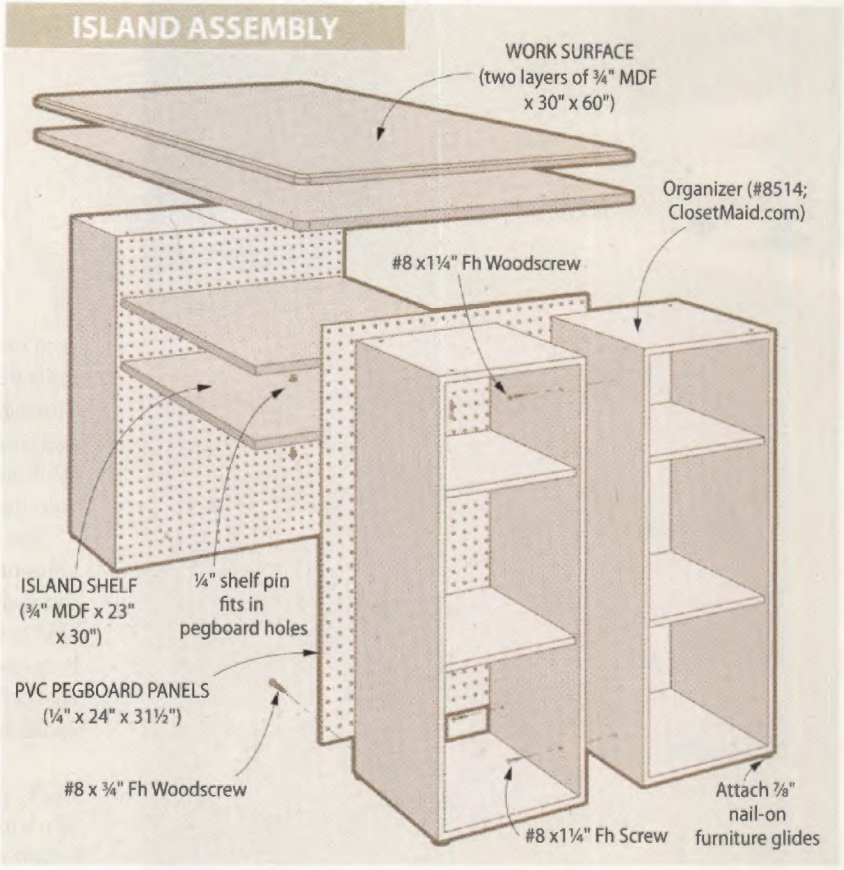
You'll also leave off the cardboard backing that comes with the organizers and attach pegboard instead. The pegboard adds interest to the island, and the holes are convenient for hanging accessories. But rather than using the natural-colored pegboard that we used on the cabinet wall, we decided to add white PVC pegboard to match the organizers and give the piece a clean look.

Then we added a wide MDF shelf under the work surface that's perfect for large, flat projects that need to be stored out of the way, like jigsaw puzzles and scrapbook pages. The shelf rests on

shelf pins that fit right into the PVC pegboard's holes. You could add more shelves underneath the island for additional storage.

Assemble the Organizers — To create the island's base, you'll first need to assemble the ClosetMaid organizers using the included instructions. Don't forget to leave off the pre-cut backing that comes with them, so you can install the pegboard instead. Once all four organizer units are assembled, screw them side-by-side in pairs.

Create the Backing — Now you can add the PVC pegboard to the base assemblies. Measure the backs of the organizer pairs, and cut the PVC pegboard panels to size. Then use screws to attach the pegboard to the backs of the organizer pairs.



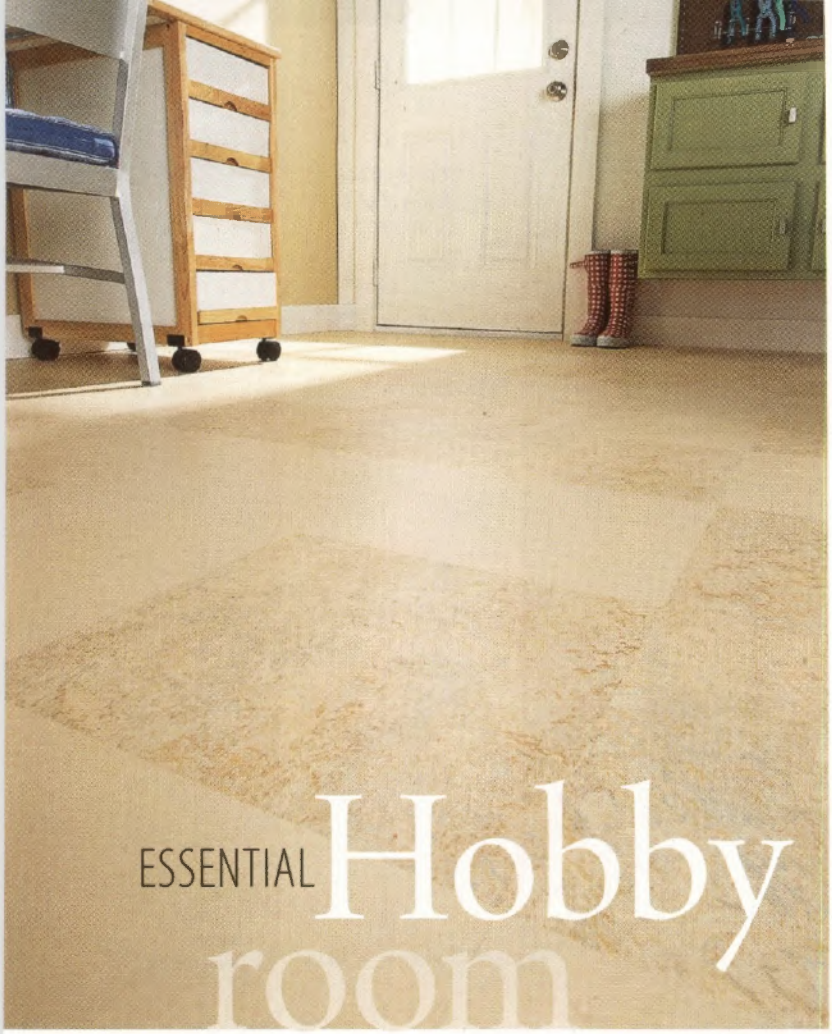
This sewing area is equipped with a sewing cart that can fold down (#518513; Target.com). The pegboard above is the same PVC pegboard that was used on the island, with nylon spacers behind it to hold it away from the wall.

Put the Island Together — Once the base pieces are assembled, you're ready to put the island components together. Position the island's work surface so the finished side is facing down. Then turn the organizer pairs upside down on the work surface, and drive screws through the organizers' tops and into the MDF work surface. Turn the island right-side up, and use shelf pins to mount the shelves underneath the work surface.

Island Options — We decided to apply polyurethane to all the work surfaces, but you could use a different finish on the island work surface to turn the piece into a dramatic focal point. One way to do this is to use the color wash described on page 32.

You could also pick a different organizer to fit your decor and storage needs. There are a variety of other size and style options available.

— Written by Alyssa Schmitt, illustrated by Erich Lage, project designed by James R. Downing



ESSENTIAL Hobby room components

The details make all the difference in this inviting space created for the hobbyists and crafters in the family. You can make the most of the area by choosing the right flooring, lighting, and storage accessories.

Craft and hobby rooms are often some of the most-used spaces in a home. So when you're setting up your own, it's worth taking some time to select the most durable and versatile accessories possible. Three types of components — flooring, lighting, and storage options — are especially essential. Well-targeted choices for these systems can take your hobby room to the next level of convenience.

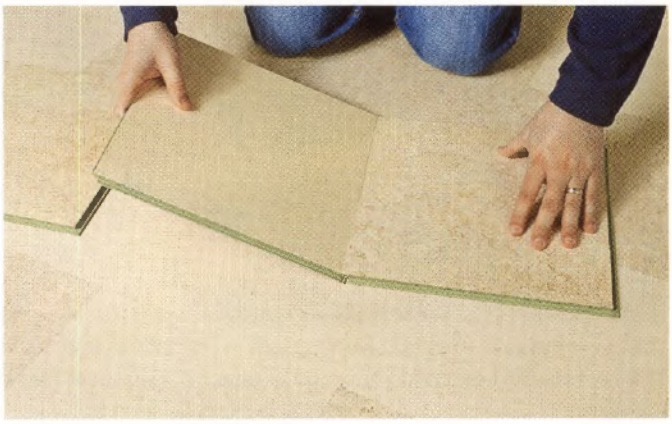
Since your family will spend a considerable amount of time working in this space, an activity room should be comfortable, easy to clean, and able to take some abuse. Here are some of the long-lasting, multi-functional, and easily customized products that can help your family activity room live up to its full potential.

FUN, FRESH FLOORING

Since many hobbies tend to be messy, you'll need a floor covering that's tough and stain-resistant. We chose Forbo's Marmoleum Click for our craft room because it holds up well in high-traffic areas and is easy to keep clean. Just dust it with a mop and wipe up any spills with a damp cloth.

Marmoleum Click is an engineered flooring with linoleum on the top and cork on the bottom. The pieces simply click together, so it's easy for a DIYer to work with. And since no glue is used, you can walk on it as soon as it's installed.

Marmoleum Click's 12" x 12" squares and 12" x 36" panels are available in 18 colors, so you have endless design possibilities. Prices range from $5.50 to $7.50 per square foot. You can check



Marmoleum Click flooring slots together with a tongue-and-groove system that lets you simply "click" the panels into place. Start by laying out your design to make sure you like the effect.

out the available colors and see some sample floor layout patterns at TheMarmoleumStore.com. Place your order by locating a nearby dealer through the Web site or by calling 866-627-6653.

ILLUMINATING SOLUTIONS

Lighting can be divided into four categories: ambient, task, accent, and informational. Ambient lighting illuminates the whole room and diffuses light over surfaces. Task lighting, like a desk lamp, is usually directional and allows a certain activity to be done comfortably. Accent lighting, such as a spotlight, is designed to focus on decorative elements in an interior. Informational lighting, like a night-light, helps us safely see our way.

Lighting is key to the functionality of any interior space and is especially important in an activity room. A single-bulb fixture just isn't sufficient for many hobbies, especially detail-oriented ones like sewing and building models. When choosing light sources, remember to take into account the various types of activities that you'll be doing in the room, and meet those needs with a combination of different lighting types.

When developing our activity room lighting plan, we selected a highly versatile track lighting system and LED under-cabinet lights from the local home center and a desktop lamp from OttLite (OttLite.com).

A track lighting system is ideal for this space because of its ability to perform many different functions. Track lighting can illuminate a work space, brighten a dark corner, or highlight a piece of art. The track supplies power all along its length, so you can place and direct the heads anywhere you wish. Heads are available in a wide variety of sizes and styles, from ultra-modern to traditional, so they can fit the decor of any room. And it's simple to retrofit your existing ceiling fixtures with track lighting components.

Track lighting *(left)* offers a lot of flexibility and is easier to install than you might think. Most home centers carry a good selection of track lighting components and accessories, so you can customize a system that will meet your unique lighting needs.

Under-cabinet lighting eliminates the "dead zone" that naturally occurs beneath cabinets. They provide an abundance of light where you need it most: on countertops that get heavy use.

For activities that require color matching, like quilting and scrapbooking, you need task lighting that mimics daylight. That's why we chose a desktop lamp from OttLite *(Photo, top)* that makes colors appear true to life. OttLites are also designed to balance brightness and contrast, which reduces eye strain so you can work longer without feeling fatigued.

FLEXIBLE PEGBOARD ACCESSORIES

Many accessories that are marketed for use with garage or shop pegboards also work great for storing supplies in a craft and hobby room. For example, a pegboard jar that was intended for storing screws can be used to hold beads or sequins. Metal racks that were made for hanging tools are perfect for organizing sewing and scrapbook scissors. Clutter-busting bins can hold paper punches and stickers.

Just keep your mind open to dual uses as you outfit your activity room pegboards. We found these and other handy accessories at Lowe's (Lowes.com).

HUSKY
IRWIN
STACK-ON
RYOBI

This bench offers sturdy support, generous work space, and ample storage. And its rugged good looks make it a tool you'll be proud to own. Best of all, it's easy to build.

do-it-yourself *workbench* in a weekend

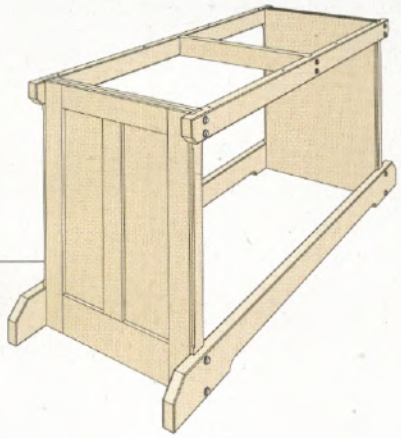
Serious DIY projects demand a serious workbench. The bench, after all, often serves as the base of operations for many tasks, so it has to be versatile, adaptable, and tough. But a bench should also be attractive and well-built to show your pride in your craftsmanship.

This bench delivers on all counts. It features rock-solid construction and a top with plenty of space to spread out. For storage, the bench can be outfitted with a simple shelf *(Photo, lower left)* or with a bank of drawers. It even has wheels that make it easy to move around.

As for appearance, this bench goes far beyond the pre-made bolt-together benches found in home centers or the ones you might bang together from 2x4s in a weekend. This one has classic good looks that make it worthy of display in any garage or shop. I daresay it's a bench that's worthy of being passed down to your kids someday.

If all these attributes aren't enough to convince you that this is the bench you need, consider that you can you can build one this weekend. That's possible because we came up with clever ways to simplify the process without making sacrifices.

begin at the base



Before you set about building this bench, you'll want to take a look at a few of the features that make it attractive, sturdy, and simple to build.

Let's start with the base. It has the classic look of frame-and-panel ends, but those ends are built simply from two layers of ¾" plywood that get clad with thin hardwood stock to create the look *(Illustration, below)*. The ends are joined by stretchers cut from fir "2x" stock, and the shelves are plywood.

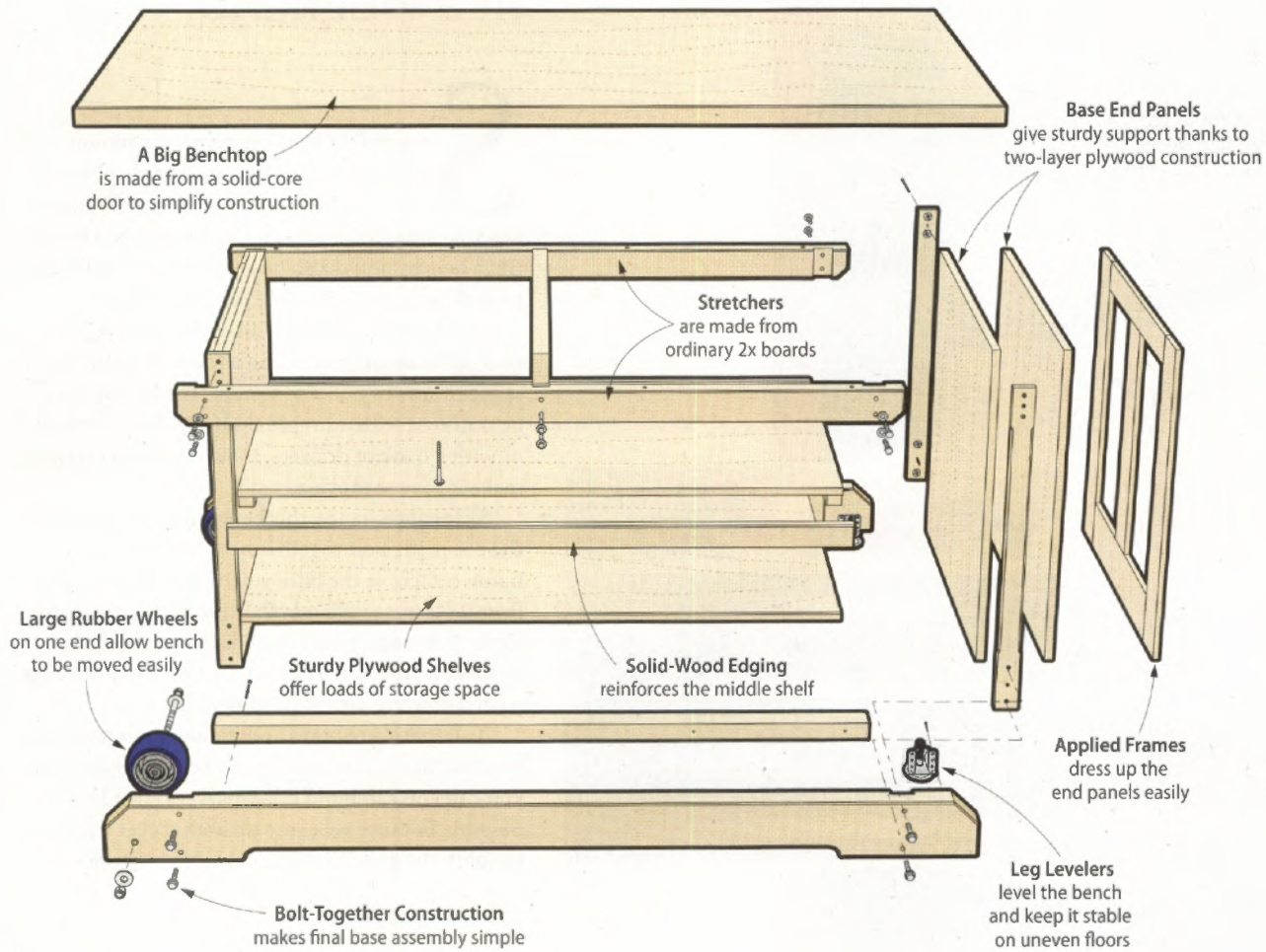
The benchtop itself couldn't be simpler. It's a solid-core door that you can pick up at any home center. That means it's sturdily built, and there's no construction required.

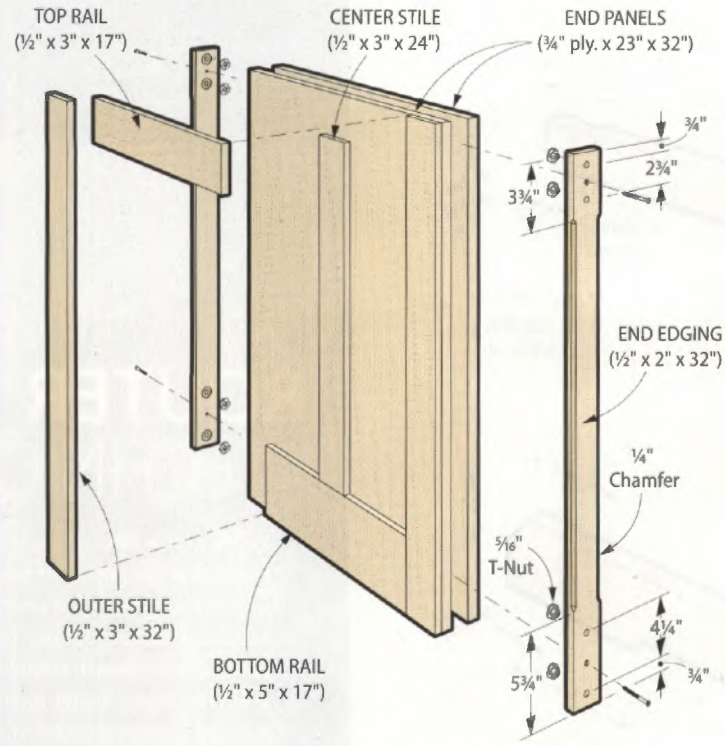
If you want to add the drawer box instead of the simple center shelf, it's straightforward, too. The details start on page 44. You can build it now or easily go back and add it later.

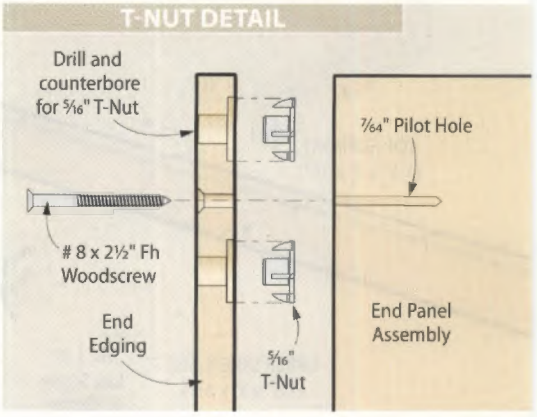
Build the Base — Now that you're familiar with the features and construction of the bench, you can get started building it. To make that easier, you can download a complete set of free builder's plans at WorkbenchMagazine.com. They have dimensioned views of all the parts.

The end panels come first. To make them, cut two panels for each end to size from ¾" plywood *(Illustration, right)*. Now glue each pair together face to face, making sure to keep the edges aligned.

Creating the frame-and-panel look on each end comes next, and it's easy. The "frames" are just illusions







created by overlaying strips of ½" poplar on the outer face of each end panel. You can cut all the pieces to size now. Each end gets two outer stiles, a center stile, and top and bottom rails. These get glued in place on the outside face of the end panel assemblies.

Next, you need to create a pair of edging strips to go on each end assembly. These cover up the plywood edges for a more finished look. And they hide the clever joinery used to bolt the base together.

You can start by cutting the edging strips to size. Then you'll need to do a few things to them before you glue them to the bench ends.

Most important, you'll drill holes for special pieces of hardware called T-nuts. These will later accept bolts that attach the stretchers to the bench ends. The T-nuts go in counterbored holes that get drilled in the *inside* face of each edging strip. Those holes are easy to drill using a two-step process *(Photo, below left)*.

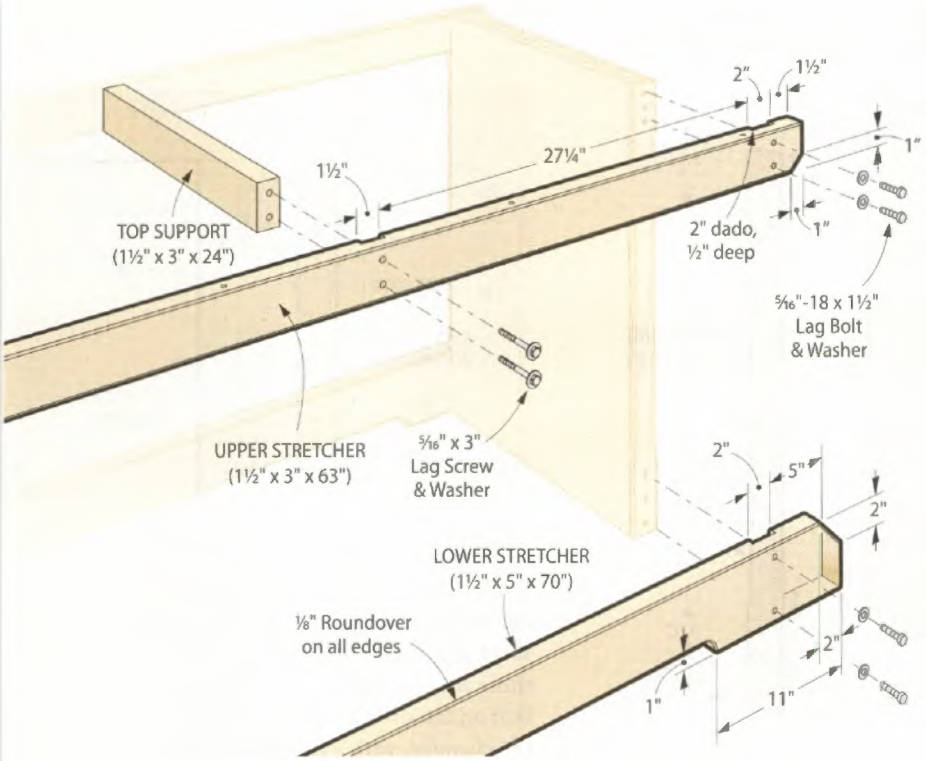
Now you can add one more decorative touch: chamfers that ease the sharp corners of the strips. The chamfers stop short of the ends of the edging since those areas will get covered when you bolt on the stretchers. You can create the chamfers with a handheld router, but a router table really simplifies the process *(Photo, below)*.

After that, you can insert the T-nuts, and then install the edging strips *(T-Nut Detail, above)*. Just glue and clamp the edging onto the end panel assemblies, making sure to align the edges, top, and bottoms.

Once the glue dries, drive in long screws. There's one at the top and one at the bottom. These reinforce the edging and will get covered by the stretchers, which you'll make next.

It's easy to drill the counterbored holes for the T-nuts. First, drill a shallow recess with a spade or Forstner bit. Then use the center point to align the smaller through-hole in this recess.

A router table makes quick work of the stopped chamfers on the end-panel edging. Just lay out the "start" and "stop" points on the fence, and all the chamfers will be identically aligned.



Make the Stretchers — You can now turn your attention to the stretchers. The first step in making them is to rip down fir 2x4s for the upper stretchers and 2x6s for the lower stretchers to get rid of the rounded edges. Just place the straightest edge against your table saw fence, and rip off ⅛". Next, flip the board, reset the rip fence, and then rip it to final width. Now cut the stretchers to final length.

While you're at it, cut a top support to size. This spans between the upper stretchers to stiffen the base and to add more support under the benchtop.

Next, you'll need to cut dadoes in the stretchers *(Illustration, above)*. These interlock with the end panels. The upper stretchers also get a centered dado for the top support. The *Box* at right shows how to make these.

Now you can drill holes for the mounting bolts to pass through. This is also a good time to drill counterbored holes in the top stretchers for the lag screws that will be used to mount the benchtop later. Then make an angled cut on each end of the stretchers to remove the sharp corners.

The bottom stretcher also gets a decorative relief along the bottom edge. A jigsaw makes quick work of that. After that, rout or sand a ⅛" roundover on all the edges of the stretchers to ease the sharp corners. You don't need to round over the top support.

Now you can assemble the base. Start by securing the stretchers to the ends by driving lag bolts into the T-nuts. To attach the top support, hold it in place between the upper stretchers. Then use the holes in the stretchers as guides to drill pilot holes into the ends of the support, and drive in lag screws.

Get Set for Shelves — With the base standing proud, it's time add the shelves. There's a lower shelf that sits between the bottom stretchers, and an upper shelf that spans the bench ends. The shelves, as well as the bench top, get clear finish instead of paint. It provides a nice contrast with the painted base and won't get scratched through like paint.

The lower shelf gets installed regardless of how you outfit the bench. If you plan to build the drawer unit, though, you don't need to make the upper shelf. By the way, if you put in the upper shelf now and then decide to add the drawer unit later, you can just remove the upper shelf and slip the drawer unit in easily.

Create Cleats — Whether you plan on the shelves or the drawers, the first step is the same. You need to build mounting cleats. Long cleats get added

gang-cutting dadoes: ROUTER TECHNIQUE

While a table saw and dado blade work great for cutting some dadoes *(see page 44)*, it's not the easiest technique for long, narrow pieces like the bench stretchers.

In this case, a better method is to use a router equipped with a straight bit. To guide the router, you'll need a straightedge. Another advantage of using this technique is that you can "gang" the pieces together side by side, which ensures that the dadoes will align exactly in each piece.

To rout the dadoes, clamp the stretchers together, so the dado locations align. Then rout multiple passes with a ½" straight bit. Instead of repositioning the edge guide after each pass, just add ½" spacers.

add a top and shelves

to the lower stretchers for the lower shelf, while short upper cleats get mounted to the bench ends to support either the upper shelf or drawer box.

You can make the cleats by simply cutting 2x2s to length. Or you can cut all the cleats from a single 2x6 board.

Next, drill holes for mounting screws. When you mount the lower cleats, note that they're positioned so the shelf will sit slightly above the lower stretchers *(Lower Cleat Detail)*. That way, you won't scrape the paint off the stretchers.

When you install the upper cleats, just be sure you get them level and aligned from side to side so that the upper shelf will sit flat.

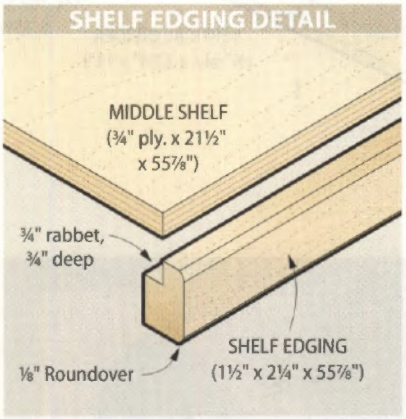
Put on a Coat — Once the cleats are in, it's time to give the bench base a coat of paint. We primed ours, and then applied two coats of matte black.

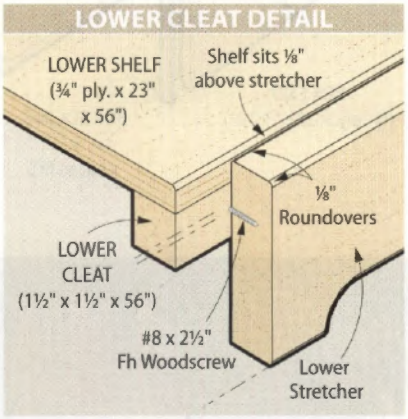
If you don't plan to add wheels, the base is done. If you want the base to be mobile, though, adding wheels is easy. We used 5" rubber wheels and made axles from bolts and metal sleeves picked up at the home center *(Wheel Assembly Detail)*. At the other end, we added a pair of adjustable leg levelers (#01S08.01; LeeValley.com), as shown in the *Illustration* on page 40. They simply get screwed in place.

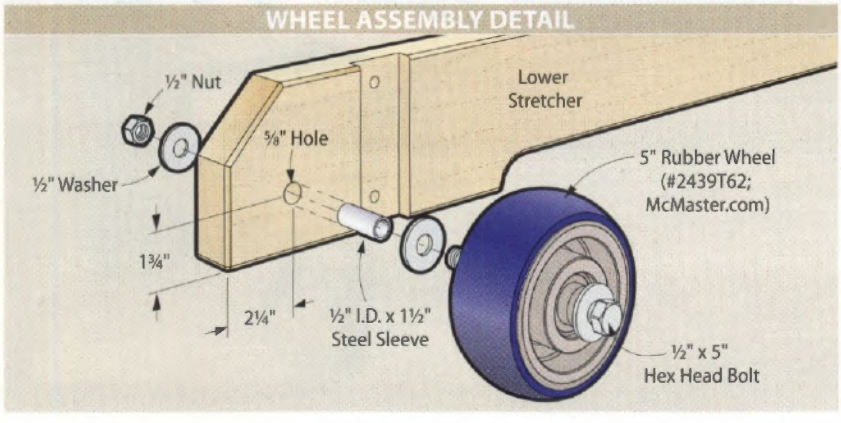
Bring on the Shelves & Top — The bench is just about done. To complete it, first cut the lower shelf to size from ¾" plywood. Then sand or rout a slight roundover on the top edges, and add a coat of finish. When the finish dries, drop the shelf in place. We just set it on the cleats, but you could attach it by driving in a few screws.

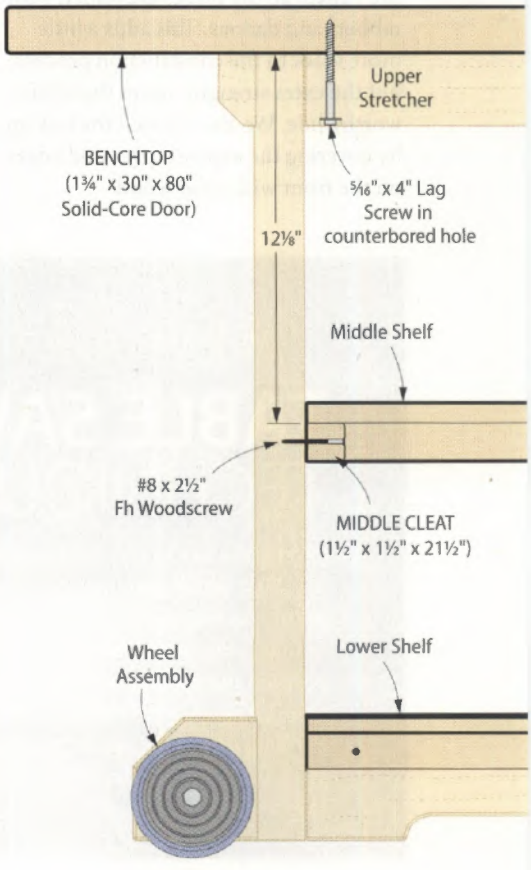
Because the upper shelf has a long span, it needs additional support to prevent sagging. That support comes from wide pieces of edging that get rabbeted and then glued onto the plywood shelf *(Shelf Edging Detail)*. Then finish the shelf, and set it on the middle cleats.

Finally, you can add the top. It's just a 30"-wide solid-core door. Finish the door, and then lay it on so it overhangs evenly. Use the mounting holes in the upper stretchers as guides to drill pilot holes, and then attach the top, as shown in the *Illustration* below.







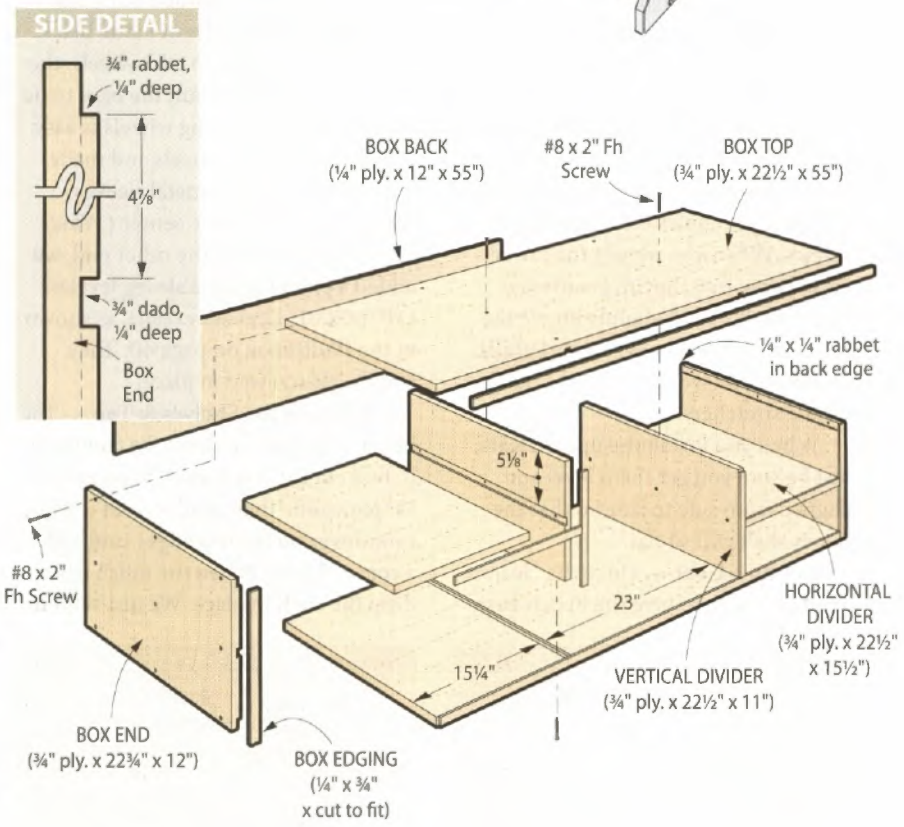


optional drawer box

The basic bench, with its wide shelves, offers a lot of space for storing tools, totes, and toolboxes. But you may prefer to add enclosed storage drawers to hold hand tools, hardware, and other small items.

If that's the case, this drawer box fills the bill. It takes the place of the middle shelf and sits right on the same cleats. That means you won't have to make any modifications to add the drawer box, even if you first build the bench with the middle shelf and then decide to add the drawer box later.

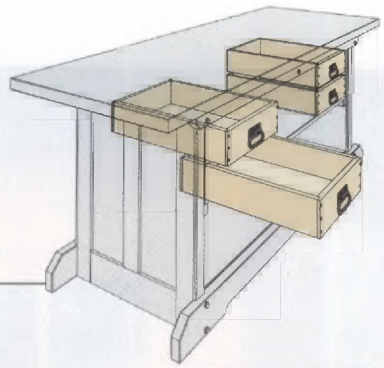
Construction Details — You can see in the *Illustration* at right that the drawer box is made from ¾" birch plywood, just like the shelves. To make sure it will hold up to long-term use and the long distance it spans under the bench, all the pieces are joined with rabbets and dadoes. This adds a little more work to the construction process, but the extra strength makes the effort worthwhile. We also dressed the box up by covering the exposed plywood edges on the front with solid wood.



wide workpiece dadoes:
TABLE SAW TECHNIQUE

Cutting dadoes in plywood panels is easy at the table saw. First install a dado blade set to the correct width of cut. As long as the piece is at least about 12" wide or long, you can use the fence as a stop. So set it to position the dado correctly on your workpiece. Then pass the piece over the blade to cut the dado.

For long panels, be sure to use a support to hold the piece flat before, during, and after the cut. A long 2x4 atop a sawhorse can easily do the job.



simple, sturdy drawers

Build the Box — The first step in building the box is to cut all the parts to size. We have builder's plans to help you at WorkbenchMagazine.com.

Then you'll need to cut all the rabbets and dadoes *(Side Detail, left)*. Here, we found it a lot easier to use a table saw and dado blade instead of a router *(Box, below left)*.

Once all the pieces are dadoed, you can glue and screw the box together. Then rip ¼"-thick edging strips, and glue them to the front of the box.

Add Drawers — Now you can build the drawers. They're made from ¾"-thick solid wood — maple works great. They get rabbeted corners for extra strength, and screws for extra joint reinforcement. A ¼"-thick plywood drawer bottom slips into simple grooves *(Illustration)*.

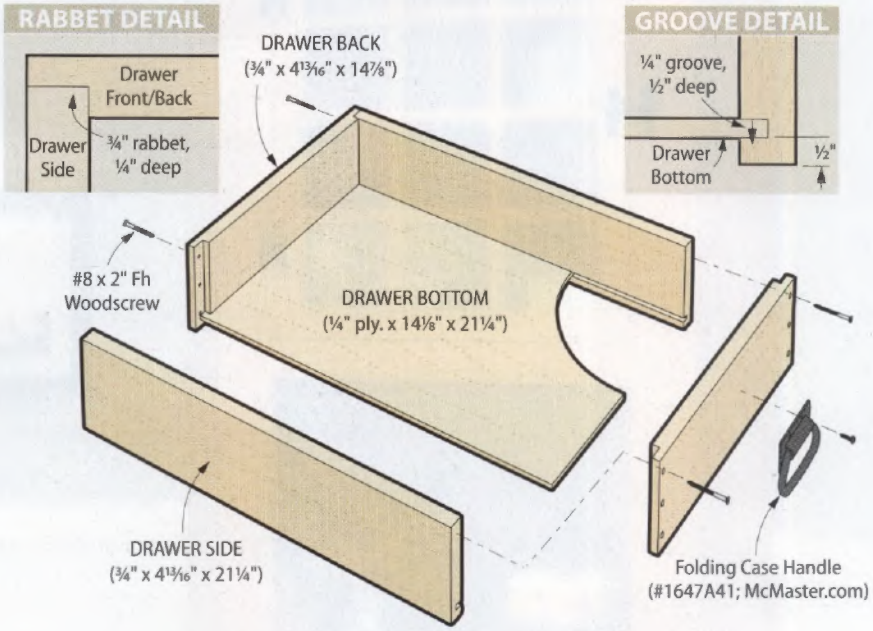
Start by cutting drawer fronts, backs, and sides for each drawer, plus a plywood bottom.

Next, rabbet the ends of each drawer front and back. You can use the table saw and dado blade again. Just set up the blade, use the fence as a stop, and then push each piece over the blade using the miter gauge for support.

After that, reset the dado blade and fence, and then cut the groove in each drawer piece for the bottom.

To assemble each drawer, start by gluing the drawer back to the sides. Then slip in the drawer bottom. Next, glue on the drawer front, clamp the assembly together, and double-check that the assembly is square. Once the glue dries, drill countersunk pilot holes, and drive in screws to reinforce the joints. Add the pulls, coat everything with finish, and you're done.

— Written by David Stone, illustrated by Erich Lage, project designed by Kent Welsh.



Behind its elegant doors, the cabinet features ample space for dishes, glasses, and more. An open serving area in between is perfect for either storage or display.

Classic Corner

Buffet Cabinet

Long a tradition in dining rooms, the corner buffet cabinet is as good an idea today as ever. We'll show you an easy way to add its great looks and abundant storage to any room in your home.

Space is at a premium in every home. That's why it's so surprising that one of the best places to add storage to a room so often goes unused — the corner.

Though they were common in the dining rooms of Colonial houses, corner buffet cabinets have largely disappeared from modern homes. And we're not quite sure why. After all, what area provides a better place to store dishes and other dining items out of the way than the corner? We suggest a corner cabinet renaissance, and we have the perfect project plan to make that a reality.

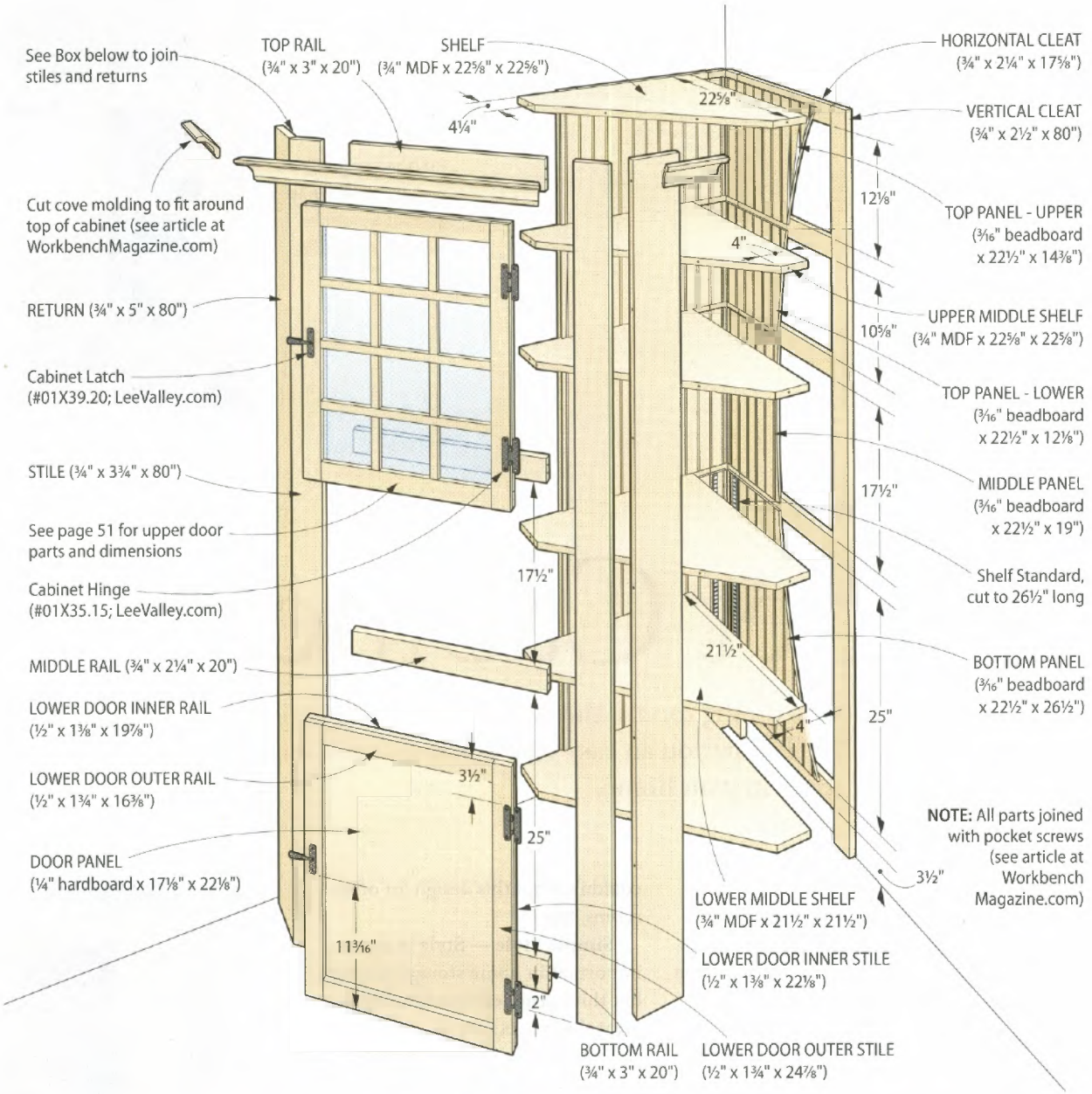
Clever Corner — Our version of the corner cabinet has a traditional appearance, but it's a look that can fit any home style from Craftsman to contemporary. It offers plenty of space for storage, serving, and display *(Photo, above right)*. Though we show it here in a dining room, there's no reason you couldn't adapt this design for other rooms, too.

Simple Style — Style is always important in home storage projects, but this corner cabinet has another great thing going for it — a design so basic that anyone can build it. It starts as a series of cleats, shelves, and beadboard panels that get attached to the walls first. Then a face frame gets positioned in front to hide the contents from view *(Photo, right)*.

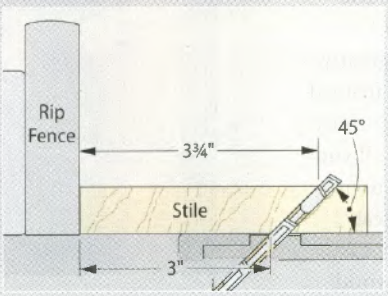
This two-part construction greatly simplifies building the cabinet. Instead of fussing to fit a cabinet in the almost-never-square corner of a room, all you have to do is get the face frame to fit.

As for this cabinet's other great-looking features, they're equally easy to create. From the decorative wood strips on the upper glass door to the bold painted finish, we'll provide all the details you'll need to make this cabinet your own on the following pages.

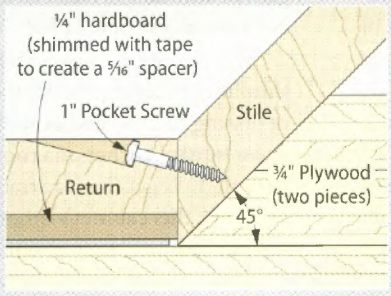
Simplicity is the key to the cabinet's design. Most of the parts, like this face frame, go together with pocket screws.



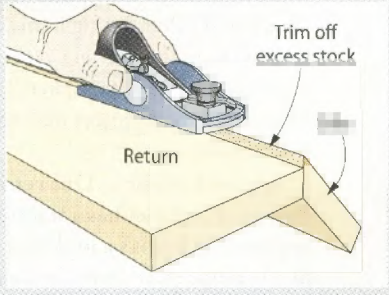
ANGLED JOINTS MADE EASY **WITH POCKET SCREWS**



1] First, rip a 45° bevel on the edge of each stile where it will meet the return. A table saw makes quick work of this.



2] Now drill holes and drive in pocket screws to connect each stile and return. Make this simple jig to hold the parts.



3] A small lip of wood on the stile will extend past the joint. Use a block plane to trim this edge flush.

The secret to building this unique cabinet is the two-part construction. The first part is a "carcase," an underlying structure made up of cleats, shelves, and beadboard, that gets attached to the walls first. Then, a face frame that consists of rails, stiles, and "returns" covers up the carcase.

Face the Frame— Though it gets attached last, you actually want to build the face frame first. That's because once you fit the frame in the corner, you can then size all the carcase pieces that go in place behind it.

The face frame consists of two long stiles joined to four shorter rails with pocket screws. The face frame also has two "returns" — pieces that get joined to the stiles at a 45° angle so that they'll rest square with the wall.

After cutting the pieces to size, the first step in making the face frame is to connect the stiles with the returns. The three-step process for joining the stiles and returns is shown in the *Box*, below left. Now you can finish the face frame by connecting the stiles and rails with pocket screws. Just drill the holes, carefully align the parts, and drive in the screws.

Secrets of Scribing — Next up is the process of fitting the face frame to the walls. This is accomplished with "scribing," which is a technique for marking the contour of the walls onto your project parts. For this cabinet, you'll want to start by establishing the approximate location of your face frame on the walls. You can see how to do that in *Figs. 1 and 2*.

Now you can just run a compass along the wall, marking the contour onto the edge of each face frame return as you go *(Fig. 3)*. Once you scribe both returns, you can trim the face frame to fit. We only had a little trimming to do, so we used a block plane *(Fig. 4)*.

To position the face frame, first measure and mark 30" from the corner on each wall. Then position the frame, so it's an equal distance from each mark *(Fig. 2)*. Once it's in position, scribe and cut the face frame to fit tightly to the walls *(Figs. 3 and 4)*.

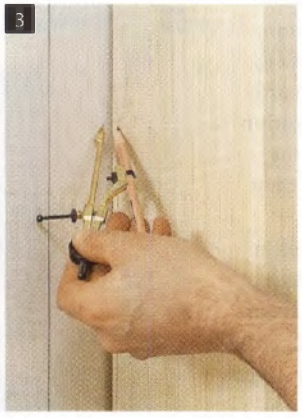
Create the Carcase— At this point, construction of the face frame is essentially complete, but you'll still need it to help size the carcase parts — the cleats, shelves, and beadboard panels. So move the face frame into position on the wall, and take measurements for all these parts.

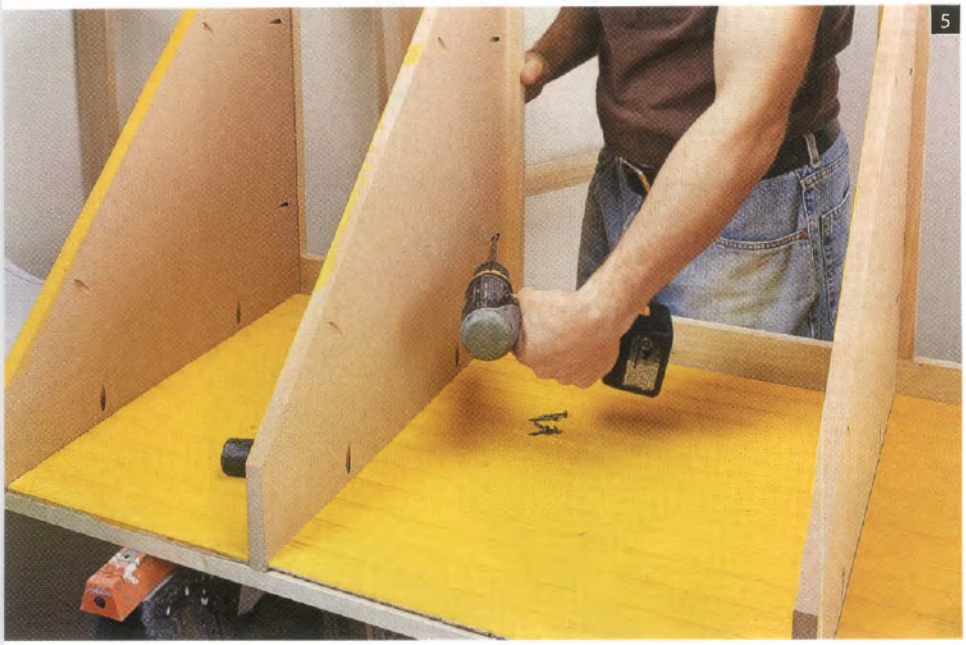
Start by making the cleats. The cleats get joined into two frame assemblies that each consist of two vertical cleats and five horizontal cleats *(Illustration, left)*. After cutting all the cleats to size, build each frame with pocket screws.

Next up are the six shelves. Four of the shelves are identical, but the upper and lower middle shelves are slightly smaller so that they can fit behind the doors. The lower middle shelf is also adjustable. (Complete builder's plans are available at WorkbenchMagazine.com.)

After measuring carefully, cut the shelves using a jigsaw and circular saw. Then drill pocket holes in the underside of the shelves. These holes will be used to attach the shelves to the cleat frames and face frame later on.

That just leaves the beadboard panels, which get cut to size to fit between the shelves. Then, you'll want to paint all the beadboard and shelves before you





By building the carcase on a pair of sawhorses, you can easily align all the cleats and shelves using the beadboard panels as spacers. Then screw the carcase to the wall, nail the beadboard in place *(Fig. 6)*, and attach the face frame *(Figs. 7 and 8)*.

assemble the carcase. Now is also a good time to paint the face frame *(page 52)*.

We found it was easiest to assemble the carcase before moving it into the corner. So start by laying one of the cleat frames down on a pair of sawhorses, and then position the top shelf flush with the top of the frame. Drive in pocket screws to attach that shelf to the horizontal cleat beneath it. Now lay in a beadboard panel (but don't attach it) to establish the location of the next shelf, and screw that shelf in place, as well. You can work your way down the cleat frame this way, using the beadboard to position each shelf before attaching it.

Once the shelves are attached to one of the cleat frames, you can move the second cleat frame into position, and attach it with pocket screws *(Fig. 5)*. After that, remove the beadboard panels, move the carcase into position on the wall, and attach it by driving screws through the cleats where they align with the wall studs.

Now nail the beadboard panels in place *(Fig. 6)*. Finally, move the face frame into position *(Fig. 7)*, and secure it by driving pocket screws through the pocket holes in the front of the shelves and into the face frame *(Fig. 8)*.

To accommodate the adjustable shelf in the lower cabinet, we installed shelf standards. The shelf rests on supports attached to these standards.

Dead-Simple Doors — Now all that's left to complete the cabinet is a pair of doors. The doors are built almost identically to each other, except the lower door has a hardboard panel while the upper door has a glass panel with wood muntin strips attached to it.

One of the trickiest things about making any door is joining the rails and stiles. We simplified that process here by making each door from two layers of ½"-thick pieces glued face to face. As you can see in the *Illustration* at right, the joints between these two layers are offset, which creates a super-strong "half-lap" joint once the pieces are glued together. You'll also notice that the outer rails and stiles are wider than the inner rails and stiles. Once the doors are assembled, this difference in width creates a rabbet for holding the panels.

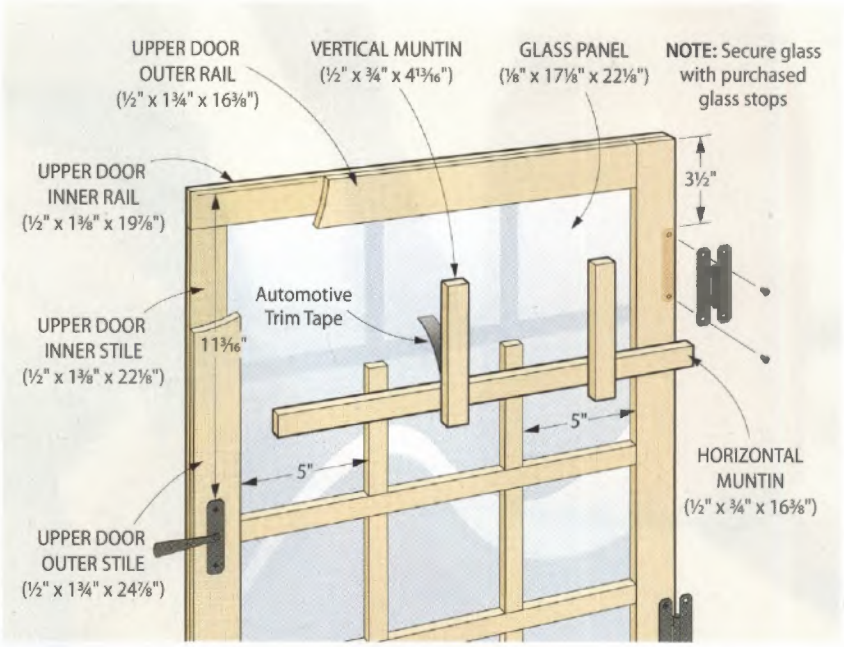
To make the doors, start by cutting out all the pieces, but leave the inner rail pieces and outer stile pieces extra-long. Then glue up a two-layer "sandwich" of the inner and outer pieces for each side of the door. Just position one edge flush on each set, and let the extra-long pieces overhang to create the individual rails and stiles you see in *Fig. 9*.

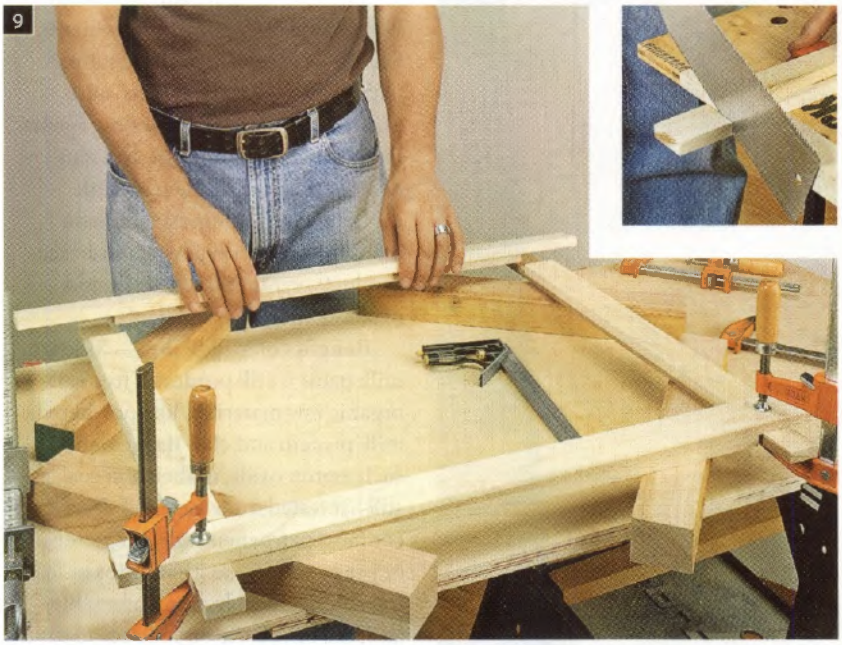
Next you can assemble the door frames as shown in *Fig. 9*, leaving the overhanging ends extending past the

assembly. Once the glue dries, simply cut off the overhanging pieces with a handsaw *(Inset Photo)* to complete the door frame assemblies.

For the lower door, you'll want to cut and glue a hardboard panel in the door frame, and then paint the door. For the upper door, paint the frame first, and then secure a glass panel in the frame with glass stops.

That just leaves the decorative muntin strips on the upper door, which are cut to size from leftover ½" stock. You'll want to paint these strips before adding them to the doors. To attach the strips, we used automotive trim tape that's available at any automotive supply store. This tape is super-sticky, so make sure you have the strips positioned exactly where you want them before sticking them in place. We used wood spacer blocks to establish the exact location of the strips *(Fig. 10)*.





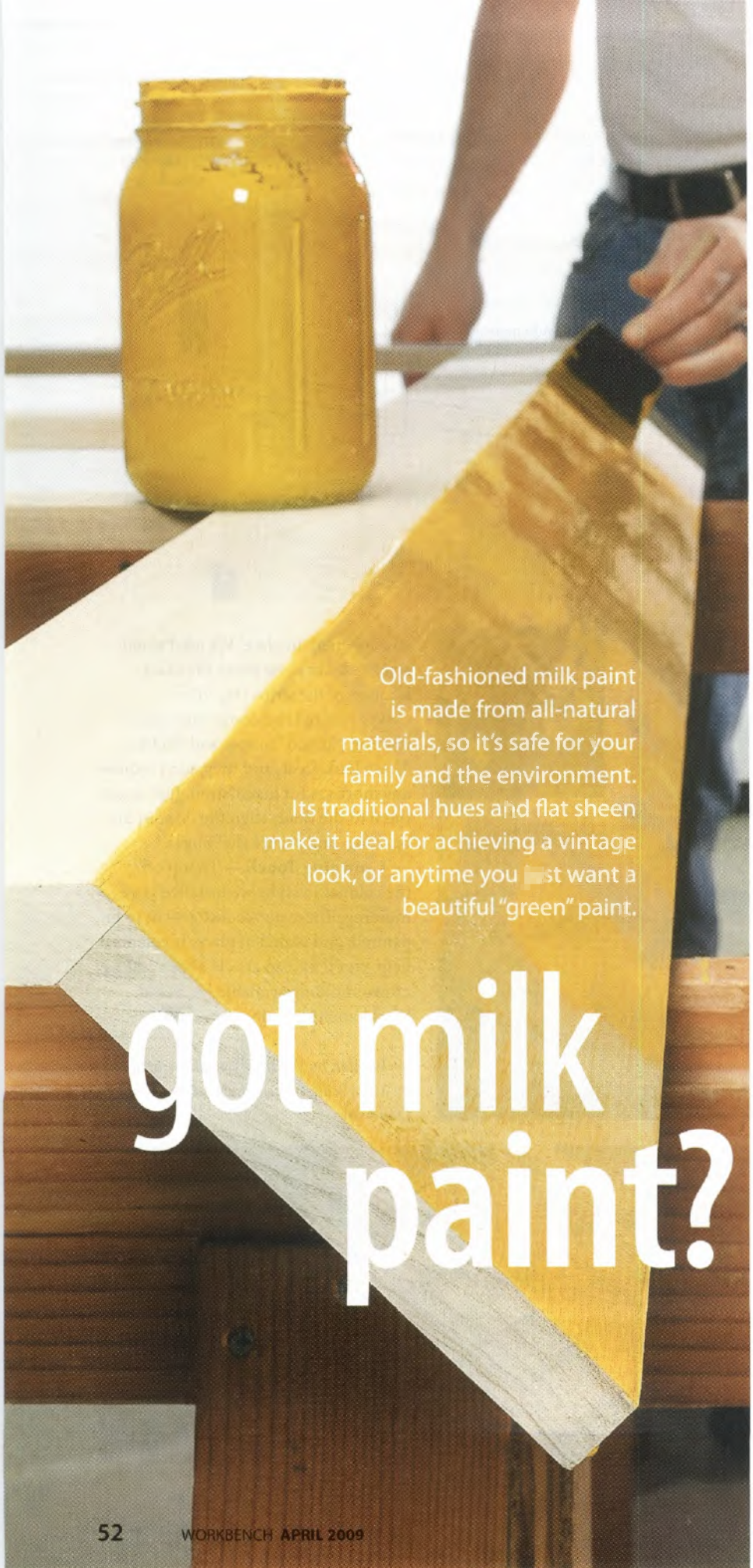
By leaving the ends on the door rails and stiles extra-long, you can prevent alignment problems and simply trim the ends to size when the glue dries *(Inset)*.

We secured the doors with reproduction "forged" hinges and latches. These look great, and they don't require any mortises for installation. Just attach them to the door, align the door in the opening, and secure the hinges.

Crowning Touch — To top off the cabinet in style, we installed cove molding. These pieces just get cut to fit, painted, and nailed in place. If you need help, you'll find an article about cutting crown molding available for free at WorkbenchMagazine.com.

— Written by Wyatt Myers, illustrated by Matt Scott, project designed by Mike Donovan

Two types of spacers come in handy for installing the muntin strips: One pair of spacers helps establish the location of the strips, while a second set of ½"-thick spacers support the glass from underneath while you press them in place.



Old-fashioned milk paint is made from all-natural materials, so it's safe for your family and the environment. Its traditional hues and flat sheen make it ideal for achieving a vintage look, or anytime you just want a beautiful "green" paint.

got milk paint?

When you want an eco-friendly finish that looks great, give milk paint a try. It first gained favor with artisans in the 16th century for its rich, fade-resistant colors. More recently, antique furniture restorers discovered that milk paint accurately recreates an aged look. And now that we're more aware of environmental concerns, milk paint's safe, "green" formula is finding new fans.

Not so long ago, paint was always homemade from natural ingredients. People tinted their simple solutions with earth pigments, insects, and plants. Common paint binding agents included linseed oil, eggs, and glue. All that changed in the mid-19th century, when paints started to be manufactured with petroleum-based products, synthetic additives, and ozone-damaging propellants.

Benefits of Milk Paint — Modern milk paint is still produced from all-organic raw materials, like powdered milk protein and clay. Its pigments, such as iron oxide, umber, and coal, are still harvested from the earth. It never contains petrochemicals, fungicides, or preservatives, so it's non-toxic, lead-free, biodegradable, non-flammable, and free of volatile organic compounds.

Milk paint is also exceptionally colorfast and durable. It won't bother people who are allergic to modern paints, and it's even safe enough to use on children's toys, furniture, and bedroom walls. When using milk paint on walls, choose a product that is formulated for that purpose, like SafePaint from the Old-Fashioned Milk Paint Company (MilkPaint.com).

Milk paint is available in an array of vibrant colors. We tried "Marigold Yellow" on a newly built, traditional-style corner hutch *(Photo, left)* with

appealing results. The finish exhibits milk paint's distinctive flat finish and slightly rough texture, and the color is deep and rich.

Using This Unique Paint — Milk paint is easy to use, but keep these tips in mind for ideal results. It adheres best to porous surfaces, such as raw wood, plaster, drywall, and unsealed brick and concrete. That said, a bonding additive is available from milk paint suppliers that helps it adhere to most non-porous or previously painted surfaces.

When it's kept sealed and dry, milk paint powder has an indefinite shelf life. However, once the powder is mixed with water, it should be applied while it's fresh because milk paint contains no preservatives. "Pot life" ranges from 24 hours to two weeks, depending on the brand, so read the directions carefully.

Since milk paint contains calcium hydroxide (lime), you might choose to wear protective gloves when preparing and applying it. Rest assured, though, that the alkaline lime will be rendered completely inert by a chemical reaction with the slightly acidic milk.

Tips for Mixing—Milk paint powder dissolves best in lukewarm water. Choose a glass or plastic container twice as large as seems necessary to allow for vigorous stirring. To mix, measure equal amounts of water and milk paint powder into separate containers. A one-pint package contains about 1½ cups of powder and, when mixed with 1½ cups of water, will make about one pint of paint.

Achieving a smooth mixture can sometimes be a challenge when using milk paint. A flour sifter works great for removing any lumps from the powder. Just sift the powder onto a piece of paper *(Fig. 1)*, and then pour the powder into your container *(Fig. 2)*.

Mixing Large Amounts — For making larger batches of milk paint, measure the powder and water and then mix them using a wire paint paddle on a drill *(Fig. 3)*. Old blenders and mixers also work well for achieving a smooth mixture. No matter which mixing tool you choose, use the lowest speed, since high speeds can create foam.

Add the powder to the water gradually, only adding more powder when the mixture has become fairly smooth. Mix thoroughly for 2-3 minutes. If you still have some small, stubborn lumps, you can use a piece of cheesecloth or nylon stocking to strain the mixture. Then let the mixture stand for 10-15 minutes to allow the paint particles to completely disperse.

It's very easy to create custom tints using milk paint. For example, to turn "Federal Blue" into pale blue, just mix nine parts of white milk paint powder with one part of blue powder. For a more saturated tint, make a mixture with equal amounts of blue and white powder. The possibilities for creating tints and custom paint shades are truly endless.

For Smaller Batches — You don't have to make large amounts of milk paint—it's easy to measure and mix small batches, too. Just make a paste by mixing the powder with a little water and stirring it until smooth (pretend you're making gravy). A rubber spatula works well for mixing and helps you stir up any powder that sticks to the bottom of the container. Gradually add more water until the mixture reaches the consistency you desire.

The fact that milk paint comes in powdered form also allows you to control the viscosity of the paint. You can create a thin wash by adding a higher percentage of water, or make a thicker paint by adding less water. You might notice a faint milky odor while the paint is in liquid form, but it's completely odorless when dry.

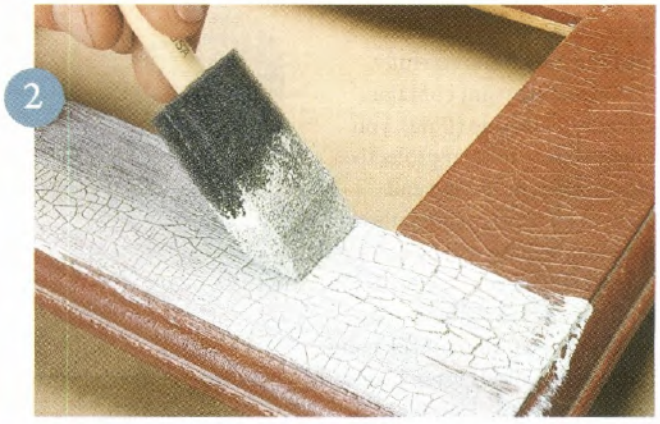
Milk paint feels dry to the touch in 30 minutes and can be re-coated in two hours. It hardens over time, and once it's cured, most modern strippers won't touch it. The finish reaches maximum hardness after several weeks.

It's Time to Paint — Begin by wiping down the item you're painting with a damp rag to remove any dust and pre-dampen the surface. No primer is necessary—the first coat acts as one. Then use a foam or natural-bristle brush to apply your first coat.

While you're applying the paint, stir it every 10 minutes or so. If the mixture

milk paint v.2: CRACKLED

To use a crackle product, start by brushing on a base coat of milk paint (either light or dark), and let it dry. Then apply an even coat of the crackle medium *(Fig. 1)*, and allow it to dry until cracks form. Next, apply a contrasting color of paint, without over-brushing *(Fig. 2)*. The cracks will quickly appear.



starts to gel up or thicken, stir in a little more water. Don't worry if your brush marks show a bit—that's part of milk paint's appeal. Also, brush marks diminish after the second coat.

After a couple of hours, lightly rub down the first coat with 240-grit sandpaper or a Scotch-Brite pad. Then apply the second coat. If you like milk paint's natural texture and flat sheen, you're done. However, if you prefer a smoother or glossier surface, lightly sand the second coat when it's dry, and then apply a coat of clear finish. Varnish, lacquer, tung oil, and wax are all compatible with milk paint.

Protecting Your Project — Since milk paint is porous and "breathes," it is susceptible to water damage. Any painted surface that might be subjected to spills, and surfaces in high-humidity areas like kitchens and baths, should be sealed. The sealers that are available from milk paint manufacturers will protect surfaces against water spotting, abrasions, and dirt. If you choose another sealer, just be sure to test the product first on a painted scrap.

It's fun to experiment with other products made specifically for use with milk paint, like Antique Crackle from the Old-Fashioned Milk Paint Company. This natural gelatin is brushed on before the final coat of paint and provides an almost-instant "alligator" look *(Sidebar, left)*. It can give any craft project an interesting antique look.

If you've never worked with milk paint, you're in for a unique finishing experience. With its primitive pigments and organic binders, milk paint reminds us that painting has long been an art form, not a science. And while you work, you can rest easy knowing that the Earth will be as safe when you're finished as when you started.

— Written by Louise Ritchhart

milk paint v.3: DISTRESSED

Sometimes, a time-worn finish suits an item better than a brand-new one. To achieve this vintage look, first apply a dark green base coat, and let it dry. Next, brush on a lighter shade of green *(Fig. 1)*, and allow this coat to dry. Then use an abrasive pad to burnish areas that normally show wear, like edges, until the dark coat shows through *(Fig. 2)*. Sandpaper also works for distressing paint *(Fig. 3)*.

Simple Molding Makeover

Plain walls provide the blank slate for this easy molding transformation. Armed with some trim and paint, you can turn a once-boring area into the most elegant space in your home.

If you're like a lot of homeowners, you probably have a room in your house with blank walls that could clearly use a makeover. The room may have a lot of potential, but it just needs something to break up the monotony.

One wall treatment option to consider is wainscoting — paneling that covers part of an area's walls for a dramatic look. It is often used to add an upscale, formal touch to spaces like dining rooms and entryways.

Our faux treatment lets you get the classic look of frame-and-panel wainscoting without the expense and sometimes-difficult installation of the real thing. You simply add a chair rail and use pre-made molding to make the frames rather than installing full panels. These will allow you a lot more flexibility to adjust your spacing to accommodate obstructions like electrical outlets and windows.

We'll also give you tips on how to enhance the look of a room with molding by trimming out a plain drywall pass-through, which will make the room seem more cohesive. Adding baseboards and crown molding can also make a big impact in a previously bare room. With these changes, you can turn a boring room into a formal space in a just a couple of weekends.

You don't have to incorporate all of these elements into the same room, but they do share some techniques. We'll explain these over the next few pages.

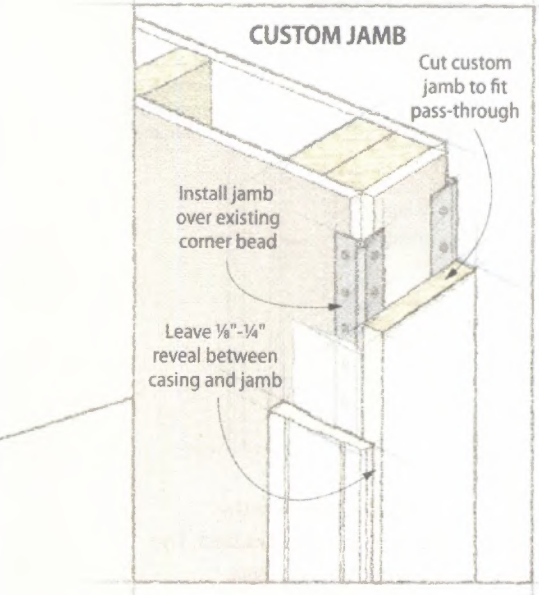
TIPS FOR SUCCESS

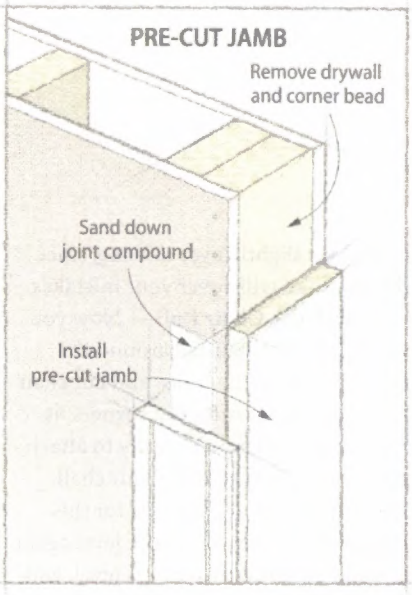
1] Before you begin this project, find all the studs and mark them with painter's tape to save time when you're attaching molding.

2] In addition to a miter saw for making cuts quickly, it will also be handy to have a nail gun to attach the molding pieces. A nailer isn't mandatory, but it will save you a lot of time and increase accuracy.

3] Purchase molding pieces that are as long as possible for the baseboard, chair rail, and crown molding to avoid making joints along the wall spans. If you do need to join molding pieces together, though, you can use a scarf joint. Cut the pieces at a 45-degree angle so they overlap as shown in the *Illustration* at right.

4] Although measuring the lengths of molding will help you, it really comes down to how the pieces fit together. Cut and install the first pieces, then measure and cut the pieces that join with these for accurate results.





Make the Molding *Transformation*

Before you begin the project, survey your space to decide which molding elements will work best. Then mark all of the studs, and you're ready to start your project.

DOOR TECHNIQUE

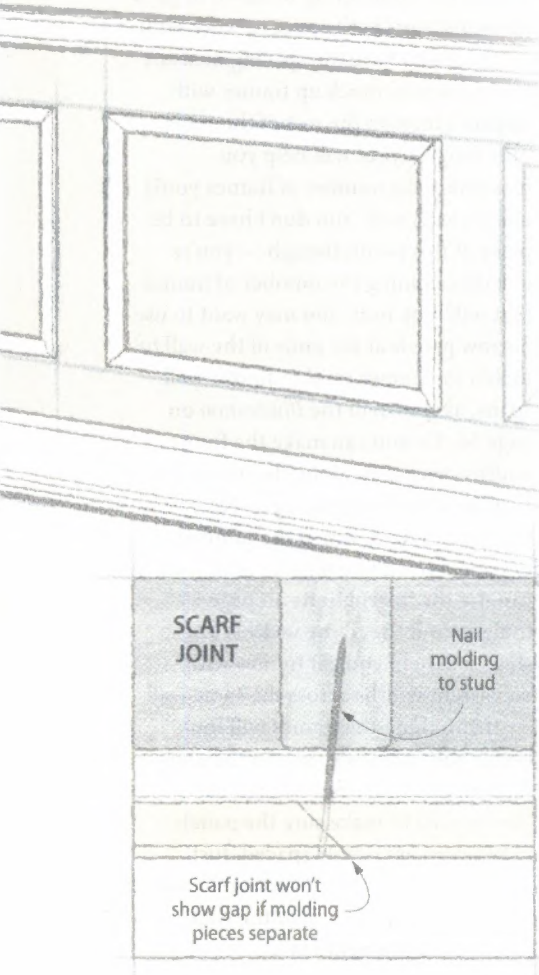
Many homes were built with a simple drywall pass-through to transition from one room to another. If you're adding the traditional appeal of molding and faux wainscoting, the room will look better if you tie the pass-through to the other molding used throughout the space. To do this, you'll add a jamb and install casing around the opening. You want to complete the pass-through work first, so you can fit the other molding pieces around the new trim.

Install the Door Jamb — You have a couple of options for installing your jamb. You can custom-cut your own to fit the pass-through opening, or you can buy a manufactured jamb *(Illustrations, above)*.

The problem with manufactured jambs, however, is that they're designed to be installed as a room is built, rather than retrofitted later. That means the jamb may not quite fit the existing pass-through. Once you have your jamb, you'll probably have to remove the corner bead from the pass-through before you install it. The corner bead is the piece, usually made of metal, that covers the outside corners where two walls meet to protect them from damage. Use a pry bar to carefully work the corner bead free. Then fit the jamb into the pass-through *(Illustration)*.

Cut and Install the Casing — Next, you'll add the door casing. The casing isn't installed flush with the face of the jamb. Instead it gets set back, usually ⅛" to ¼", to create a "reveal" that lets you position the casing level, plumb, and square even if the jamb isn't.

Mark the reveal first, and then miter the door casing pieces. Since the top trim piece has two miter cuts, it's easiest to cut that piece first and then cut the side panels to fit. Once your trim pieces are cut, you can simply use finish nails to secure the casing.



BASEBOARD UPGRADE

You may not give your baseboards much thought, but when you install new ones, the change to your room will be dramatic and well worth the effort. You may want to consider changing your baseboards if they don't match the style of the other molding you plan to install, if they're too small in relation to the new chair rail and frame molding, or if they're damaged.

Remove the Old Baseboards — To get rid of your old baseboards, use a putty knife to loosen them, and then switch to a pry bar to pull them away from the wall. If you're not careful, though, the pry bar can damage the drywall. That's why you should set your putty knife against the wall, and work the pry bar against the putty knife's blade instead of the wall. If you have quarter-round molding in place, you'll need to remove that first, and then take the baseboards off the walls.

Cut the New Baseboards — Next, cut the new baseboards, making them slightly longer than necessary to allow you some flexibility for fitting the joints. After you have cut them, use a coping saw to get a tight fit in the corners. (For more on this technique, see the *Box* on page 59.)

Attach the Baseboards — Finally, use finish nails to attach the baseboards to the studs. If you plan to paint your baseboards, apply a bead of paintable caulk in the seam between the top of the baseboard and the wall to provide a smooth transition between them.

EASY FAUX WAINSCOTING

Now you're ready for the faux wainscoting treatment, which gives your walls an upscale look for a relatively modest price tag.

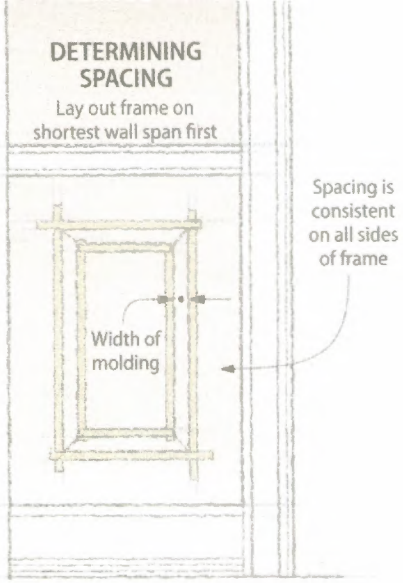
Prepare for the Chair Rail — A chair rail caps the wainscot 32" to 36" above the floor. Don't just measure up from the floor to mark the chair rail's position, though. The floor may not be level, and then your chair rail will be crooked, too. Your best bet is to use a level to get the line straight. Then snap a chalk line at the chair rail height.

If you want to change the room's color, you should paint the walls above the chalk line before you install the chair rail. Don't worry if you accidentally paint slightly over the line, since the chair rail will cover your mistakes.

Install the Chair Rail — Now you can install the chair rail around the room. Measure the walls, and cut chair rail pieces to fit. After the corners fit together snugly, you're ready to attach the chair rail to the wall. Your chalk line can provide a guideline for this step, but you should use the level again to make sure the chair rail is level, and then nail it to the studs.

Plan the Frame Spacing — Next, you'll determine the frame spacing, which can be challenging. While the height is consistent for all of the frames, their widths will give you a bit more trouble. Ideally, you'd be able to make all of the frames the same width on every wall. But each wall is different, so the frames on one wall may be wider than those on another. It's more important to keep consistent spaces between the frames, because you won't notice the variations in frame width as much as you'll notice spacing differences.

Start by mocking up some frames on the walls with masking tape, so you can decide how much space you'd like between the frames. That way, you can use the same spacing above and below the frames, too. Start with the shortest wall span, such as the one between a corner and a doorway *(Illustration, above)*. Change the tape "frame" dimensions until you're satisfied, and then measure the space from the end of the wall to the frame's edge. This will give you a rough spacing measurement. Round this number up or down to get a measurement that's easier to work with.



Use the shortest wall to find the horizontal spacing that looks best. This will be consistent on each wall.

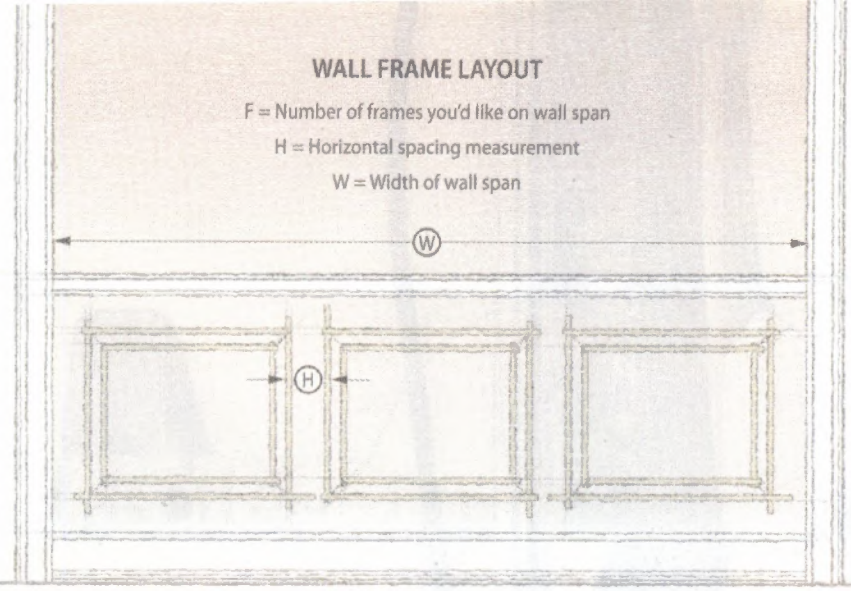
Once you have the spacing measurement, use it to mock up frames with painter's tape on the rest of the walls. This rough layout will help you determine the number of frames you'd like on each wall. You don't have to be picky at this point, though — you're just determining the number of frames that will look best. You may want to use narrow panels at the ends of the wall to match the frames on the shorter wall spans, as shown in the *Illustration* on page 56. Or you can make the frame widths consistent along the entire wall.

Calculate the Spacing — Now that you've determined the number of panels you'd like on each wall, you can use the instructions on page 59 to figure out the frame widths. Those steps will help you get frames with consistent widths across the same wall.

If you think the frames will look better with narrow panels at the ends, tape off these panels and then use the formula to make sure the panels in between are evenly spaced. Just measure between the edges of the two narrow end panels to find the wall length measurement (W).

Molding Options

You won't have trouble finding choices for your room's makeover, whether you want hardwood trim or molding made from synthetic materials.



How to:
Calculate the Frame Widths

1] Add 1 to F.
2] Multiply that number by H.
3] Subtract the result from W.
4] Divide your calculation by F.

NOTE: *H and W must be in the same units (for example, inches).*

Example:

When W = 120" (10'), H = 3", and F = 3:

1] 3 + 1 = 4
2] 4 x 3 = 12
3] 120 - 12 = 108
4] 108 ÷ 3 = 36

For this example, each of the three wall frames will be 36" wide.

Note that you won't need to use the molding's thickness to help you determine the wall frame's width. That's because the measurement you're calculating is actually the outside dimension of each wall frame.

Make the Final Layout — When you have your measurements, you're almost ready to cut the frame pieces. But once you have the molding cut, you're stuck with the layout you've chosen. Mock up all of the room's frames on the walls with painter's tape again, this time measuring carefully. When you're done, step back and look at the layout. If you're satisfied with it, you can move on to the cutting. You can leave the tape on the wall as a guide for attaching the frame pieces.

Cut the Frame Molding — You'll use a miter saw to cut the frames. There are a lot of cuts to make, but once you have the technique down, you'll be able to get through them quickly.

Even if you feel confident about making the cuts, it's a good idea to cut the frame pieces for one wall at a time, attach them, and then move on to the next wall. This will help you keep track of the number of pieces you need.

Attach the Frames — Conduct a final check on the frame pieces to make sure all the joints fit together well. Then begin attaching the frame pieces. It's easiest to glue them on with high-tack glue, and then nail the frames one by one, starting with the top horizontal pieces for each of the frames.

Caulk and Paint — Now that all the pieces are attached to the wall, apply paintable caulk to the seams between the trim and the wall. Inspect the frames and chair rail joints for gaps, and fill those with caulk, too. Finally, fill all the nail holes to conceal them. To get the most authentic-looking wainscoting, paint the chair rail, baseboards, frames, and the spaces in between. The faux wainscoting is often painted a lighter color than the wall above.

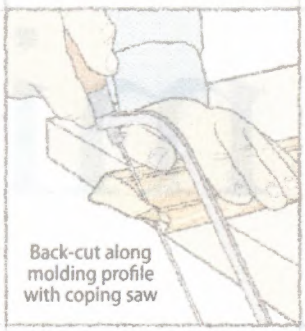
TOP IT WITH CROWN MOLDING

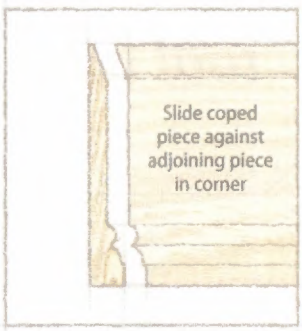
Crown molding has a reputation of being difficult to work with, but many of the techniques used to cut it are the same as those used for the chair rail and baseboard. You can download a free article about installing crown molding at WorkbenchMagazine.com, which includes tips to help you make the molding fit tightly at the corners.

— Written by Alyssa Schmitt, illustrated by Kurt Schultz, project designed by Kent Welsh

How to Cut Coped Joints

Coped cuts help the molding pieces fit together tightly at the inside corners of a room *(Illustration, far right)*. First, fit one piece of molding against the wall. Then miter the adjoining molding piece at a 45-degree angle to reveal its profile. Use a coping saw to back-cut along that profile *(Illustration, right)*, and then make adjustments with a rasp for an even tighter fit. You can see a video demonstration of a coped cut at WorkbenchMagazine.com.





tool basics:

miter saws

Few tools do as much in the DIY arsenal as a miter saw. This tool can take on everything from rough crosscuts in deck boards to precise compound-angle cuts in crown molding. A miter saw is a real jack of all trades and is a must-have tool.

If you don't already have a miter saw, though, you'll quickly find that purchasing one is no easy task. That's not because they're hard to find. In fact, the opposite is true. You'll find miter saws in several sizes, at wide-ranging prices, and from many manufacturers. That makes it a real challenge to find the miter saw that's right for you.

Thankfully, we're here to help. But we're not going to simply tell you to go buy a specific saw. We're not even going to tell you which manufacturer you should choose. And we wouldn't dream of telling you how much you need to spend. With prices ranging from less than $100 to $700 and more, how much you should spend on a miter saw is largely driven by your budget, how much you'll use the saw, and what level of precision you demand.

What we will do is help you understand the types of miter saws that are available, as well as what that means in terms of capacity and capability. Then, for those of you who are new to miter saws, we'll walk you through the types of cuts they can make. Armed with that knowledge, you'll be able to select the right miter saw for you.

Select a Size

The first thing you'll notice when shopping for a miter saw is that they're available in three basic types, based on blade size. Those are shown in the *Photos*, below. Most common are 10"

8½" SLIDING MITER SAW

10" SLIDING MITER SAW

12" STANDARD MITER SAW

THE MITER CUT

A miter is a cut made at an angle across the face of a board. To make this cut, simply rotate the miter saw table to the desired angle, which is shown on a gauge below the table, and lock it in place.

and 12" blades. And there are smaller miter saws with either a 7½" or 8½" blade. These small saws are less common, especially in low price ranges.

Wide-Ranging Thoughts — In general, a bigger blade has a larger cutting capacity. That means a 12" saw will cut a wider board than a 10" saw, and so on. So one of the first things to consider is the capacity you'll require in a miter saw.

But there's more to capacity than just blade size. Some miter saws have the motor and blade mounted on long rails. These are called sliding miter saws, and they're capable of cutting wider boards than non-sliding saws with the same blade size. For example, a standard (non-sliding) 10" miter saw can usually crosscut a 2x6, while a 10" slider can crosscut a 2x10 or 2x12.

Sliding has no bearing on how thick a piece you can cut, though. Blade diameter determines that. So, a 12" blade will cut a thicker board than a 10" blade will. But in practical terms, figure that a 4x4 post (which is actually 3½" thick) is the thickest piece of dimensional lumber you'll cut with either saw.

Of course, a saw that will cut thick, wide stock will cut smaller, thinner stock, too. So if you plan to build a deck, do some landscaping, cut trim and molding, and maybe frame up a few walls, then you'll want to look for a 10" or 12" saw.

About the Small Saws — But what about the small (7½" or 8½" blade) saws? Where do they fit into the equation? These saws are favorites of trim carpenters because they're lightweight and easier to carry around a job site. The small-diameter blade won't cut through thick stock like a bigger saw, but the sliding capability gives width capacity that rivals a 10" slider. So if you simply don't need to cut thick stock, a small saw might be worth a look. Just understand that most of these are priced for the pros.

Final Sizing Considerations — Of course, if you're buying a miter saw, you want it to do more than simply crosscut. This type of saw is designed to make miter and bevel cuts, as well. So when deciding on the right size saw, you need to take those capacities into account, too. The *Chart* on page 63 makes it easy.

Considering all this, you may be inclined to just choose the biggest saw out there. Sure, that would give you the greatest capacity, but you need to consider a few things.

First, a 12" slider is a very big saw. It's heavy, which is okay if you plan to mount it permanently. If you'll need to move your miter saw around, though, a big one is awkward.

Also, the rails that give a slider its extra capacity make the saw extra deep, as well. That means you'll need a big benchtop to accommodate the rails. You can't tuck the saw up against the wall like you can with a non-sliding saw

I said I wouldn't recommend a specific saw, but I do think a 10" slider

THE BEVEL CUT

A bevel is a cut made at an angle through the thickness of a board. To make this cut, tilt the blade to the desired angle, which is usually shown at the back of the saw, and then make the cut.

offers a great combination of size and capacity for the do-it-yourselfer. And you can find 10" sliders with decent precision priced as low as $150.

Make the Cuts

Armed with all this information, you should be well-equipped to go out and buy a miter saw. But if you've never used one, an overview of the cuts that a miter saw makes might prove helpful. There are four: a crosscut, a miter, a bevel, and a compound miter.

Crosscut — A crosscut is easy to understand. It's a cut across the width of a board, perpendicular to the edges. A crosscut is used to trim a board to final length.

Miter — A miter cut is also made across a board, but at an angle other than 90 degrees *(Photo, top of page 62)*. Miter saws can cut 45 degrees in either direction, and a few can go beyond 45 on one side or both. That extra capacity comes in handy when fitting molding around corners that aren't square.

You won't be able to cut through as wide of a board when making a miter cut. That's because the blade moves closer to the fence when you rotate the table.

Bevel — A bevel cut is also made across a board, but this time the blade is tilted *(Photo, bottom of page 62)*. Bevel cuts are used all the time when installing moldings and in a lot of other cutting tasks. Some miter saws allow the blade to be tilted to one side only. Others, called dual-bevel saws, can be tilted in either direction.

Compound Miter — When you turn the miter table and tilt the blade, you create a compound bevel *(Photo, below)*. The most common application for cutting a compound bevel is when installing crown molding. In fact, most miter saws have preset miter and bevel stops for that very task. That way, you can lock in the exact angles you need to make accurate cuts every time

— Written by David Stone with Bill Link

safe sliding

When cutting with a sliding miter saw, you should always push the blade through the cut. That means you'll pull the blade forward as far as necessary, pull the trigger, and then wait a second or two for the blade to get up to full speed. Now slowly press down on the handle until the blade is down as far as it can go. Then just push the blade back toward the fence to make the cut.

The workpiece will let you know how much force to use. Never force the blade. Give it time to work.

Hold the workpiece down with your free hand, but for safety's sake, be sure to keep that hand several inches away from the blade.

THE COMPOUND MITER

A compound miter is made when the table is turned and the blade is tilted at the same time. This cuts a compound angle across the board's width and through its thickness.

SAW TYPE	MAXIMUM CUT CAPACITY			
	0° Crosscut	45° Miter (0° bevel)	45° Bevel (0° miter)	Compound Miter (45° bevel/45° miter)
7½"-8½" Slider	2x12	2x8	2x12	2x8
10"	2x6, 4x4	2x4	2x6	2x4
10" Slider	2x12, 4x4	2x8	2x12	2x8
12"	2x8, 4x4	2x6	2x8	2x6
12" Slider	2x14, 4x6	2x12	2x14	2x12

DIY 101:

BASEMENT *finishing*

the basics

PHOTO COURTESY OF DRICORE SUBFLOOR SYSTEM

Finishing your basement can improve your home dramatically, and more great products are available to help you with the job than ever before. Whether you decide to do it yourself or hire a pro, here's everything you need to know.

HOME OFFICE

PHOTO COURTESY OF BASEMENT SYSTEMS, INC.

Today's basement is a far cry from the damp, dungeon-like space of yesteryear. While that basement's main purpose was to house the washer, dryer, and furnace — not to mention protect your family from tornadoes — the modern basement can be everything from a place of business to a dream home theater.

Just a handful of the many great uses you can find for a finished basement can be seen here. Also be sure to check out page 28 for complete plans for another perfect basement project — the family activity center.

If you've considered finishing your own basement, you're not alone. Owens Corning estimates that 60 percent of homeowners with unfinished basements plan to finish them in the next five years. They have plenty of good reasons for making this choice, too. A basement finishing project lets you add useful space to your home without the cost and headache of building an addition. It makes financial sense, too. On average, a basement remodel will recoup 85 percent of its cost upon resale.

Before you make the leap into your own basement makeover, though, you have a lot of important decisions to make, such as whether you want to do it yourself or hire a pro, how you can get your basement ready for finishing, and what types of materials you want to use to transform the basement from dank dungeon to dream space. We'll show you how to do all that over the next few pages.

HOME GYM

PHOTO COURTESY OF OWENS CORNING BASEMENT FINISHING SYSTEM

GAME/REC ROOM

IMAGE COURTESY OF BASEMENTIDEAS.COM

CHILDREN'S PLAYROOM

PHOTO COURTESY OF OWENS CORNING BASEMENT FINISHING SYSTEM

before YOU FINISH

A finished basement is a great addition to any home, but it does present a few obstacles you won't find with other room renovations. Because basements are underground, moisture is almost always an issue. And before you can even consider finishing your basement, you have to get that moisture under control.

There is some good news, though. Even basements with extreme moisture issues, such as the one shown at right, can be waterproofed using the right combination of crack repair techniques, foundation adjustments, and drainage systems.

Managing Moisture — Most of the time, handling the moisture issues in a basement is fairly straightforward. The water is actually just roof runoff or groundwater that makes its way to the foundation. Then, the pressure difference between the inside and outside of the foundation causes the water to seep through.

Keeping this in mind, step one in managing moisture is to make sure your gutters are in good repair, and that they are channeling water away from the foundation rather than toward it. You'll also want to take a look at the soil around the foundation. It should be sloping away from the home. If not, you may need to enlist help to regrade the soil.

PHOTO COURTESY OF BASEMENT SYSTEMS, INC.

Even the dampest and dingiest of basements aren't a lost cause when it comes to basement finishing. You'll just need aggressive waterproofing tactics to solve the problems, and that starts with filling cracks with an epoxy sealer *(below)*.

Inside, you can help yourself by getting rid of any cracks in the walls or floor. This process involves filling the crack with a patch. Silica or hydraulic cement are two common solutions here. Companies such as Emecole (Emecole.com) offer crack fillers made from heavy-duty adhesives such as epoxy and urethane that get pumped into the crack *(Photo, right)*. Then, a waterproofing sealer, which is sort of like a heavy-duty paint, gets applied over the crack to provide further protection from future leaks.

PHOTO COURTESY OF EMECOLE, INC.

Other times, aggressive moisture management is needed to get water under control. One possibility here is a drainage system, such as the WaterGuard from Basement Systems (Basement Systems.com) shown at left, and a sump pump. More extensive work,

PHOTO COURTESY OF BASEMENT SYSTEMS, INC.

PHOTO COURTESY OF BASEMENT SYSTEMS, INC.

The WaterGuard *(left)* prevents moisture infiltration by capturing it at the wall and channeling it to a sump pump. The SaniDry *(right)* is like a dehumidifier on steroids, removing excess moisture from the basement air and creating a more comfortable environment.

such as foundation repairs, might also be needed. Whatever the problem, these fixes will require the help of a professional.

Moisture isn't just the water in the ground, but also what you find in the air. And the very nature of basements means there is probably a lot more moisture in the basement air than in the rest of your home.

Creating a dry environment requires dehumidification. A number of small dehumidifier models are available at any hardware store or home center, but for a truly dry, comfortable space, you may want to consider investing in a larger, more powerful dehumidifier such as the SaniDry from Basement Systems *(Photo, below left)*.

The SaniDry costs almost $2,000 to install, but the unit ensures a mold- and mildew-free basement thanks to the vast amounts of water it removes from the air. Plus, the SaniDry is a high-efficiency Energy Star appliance, which is a trait you'll want to look for regardless of the dehumidifier you choose.

Whatever your moisture problems may be, it's worth talking to an expert about how to fix them. A waterproofing specialist will be able to help you assess the situation and come up with the best solution. In the meantime, the *Box* below will show you some of the most common basement moisture problems and solutions.

A great basement remodel needs to start with a good plan, such as this drawing from David Schrock of BasementIdeas.com. Note the careful arrangement of each room, as well as the location of lights and outlets (in red).

Have a Plan — Of course, like any home remodel, you need a plan for your basement space. You can rely on a professional to help with this *(Illustration, above)* or sketch your own.

In your plan, you'll want to account for any plumbing and electrical issues, making sure to place light switches, outlets, and water lines where needed. You also need to come up with creative solutions for working around common basement obstacles, such as sump pumps and furnaces.

Before you begin, make sure to check your local codes to see what is and isn't allowed in a basement, says Dennis Lewis, owner of Affordable Basement Solutions in Plainville, Connecticut. Some codes specify the placement of a bedroom and the use of egress windows to ensure safe evacuation in case of a fire, just to name a few examples. Also, kitchens are typically prohibited in basements.

Problem:	*Possible Solutions:*
1) A small amount of water seeps through cracks in your basement walls.	*Make sure your gutters are clean and functioning properly, and that the soil slopes away from the foundation. Then patch and seal cracks in the walls.*
2) Water seepage is more serious and may even include flooding.	*Talk to a professional about a drainage system, sump pump, or a combination of the two that might resolve the problem.*
3) Your basement walls are bowed or falling inward.	*Consider installing anchors or rebuilding your foundation walls.*
4) Your basement feels humid.	*Invest in a dehumidifier to clear moisture from the air.*

PHOTO COURTESY OF HILTI, INC.

A powder-actuated tool is the easiest way to anchor studs in a concrete floor *(left)*. The tool works thanks to a blast of gunpowder that drives the fastener into the floor.

PHOTO COURTESY OF DRYCORE SUBFLOOR SYSTEM

Standard drywall construction *(right)* and basement finishing systems *(below)* each have unique pros and cons that are outlined in the chart below.

PHOTO COURTESY OF OWENS CORNING BASEMENT FINISHING SYSTEM

With the moisture managed and planning complete, now it's time for the fun part: seeing your new basement space come to life. And that includes assembling walls to make the basement feel more like part of the home.

There are two schools of thought for basement walls. One is to approach the construction process like you would with any other room in the home: by building walls with studs (wood or steel), sheets of drywall, and insulation *(Photo, above right)*. The other is to install the insulated wall panels that are part of a basement finishing system kit, such as those made by Owens Corning (OwensCorning.com) or Total Basement Finishing (TotalBasement Finishing.com). For a head-to-head comparison of the pros and cons of each approach, see the *Box* at right.

The Conventional Approach — As long as moisture is under control, most contractors see no problem with using studs and drywall for finishing a basement. It's important to realize, however, that attaching walls to a concrete basement floor is a little different than installing them elsewhere in the home. The best solution for this is a powder-actuated tool *(Photo, above left)*.

Panel Possibility — The other option, "insulated wall panels," are essentially solid wall panels with layers of rigid foam insulation already attached. These panels lock to each

Basement Finishing: *Studs & Drywall vs. Basement Systems*

	Pros:	*Cons:*
Studs & Drywall	*–Less expensive to install.* *–More contractors can do the work, so you can take more bids.* *–Creates a look that blends nicely with the rest of the home.*	*–Takes longer to install.* *–Requires more workers and creates more mess.* *–More prone to damage from moisture, mold, and mildew.*
Basement Systems	*–Very easy and quick to install.* *–Creates less mess than conventional construction.* *–Virtually impervious to moisture, mold, and mildew damage.*	*–Expensive.* *–Has seams between the wall panels.* *–Requires professional installation from a specialized contractor.*

other and to channels mounted to the basement floor and ceiling to make installation simple *(Photo, middle left)*.

Fixing the Floor — Moisture creates the same concerns for basement floors as for basement walls. Of course, just because your room is in the basement doesn't mean you need to settle for a bare floor. You can still install tile, wood, or even carpet in the basement without worrying about moisture issues. The trick is to install a "membrane" layer first.

A number of manufacturers have made that process simple with systems that are designed specially to create a moisture barrier between the concrete and your flooring of choice. They come in two different types, rolls or panels, but they both feature a plastic grid that goes over the concrete. This grid allows moisture to escape from the concrete floor while preventing it from damaging the flooring above.

Delta-FL (DeltaFL.com) is one membrane that comes on a roll. With this product, you just roll it out over the concrete floor, tape the pieces together, and install plywood and your flooring of choice above it.

Manufacturers such as Dricore (Dricore.com) have combined the membrane and the plywood subfloor into one product with their panels. These 2-ft. x 2-ft. square panels feature a dimpled plastic membrane on the underside of a piece of OSB. They also have tongues and grooves on the edges, so each panel simply locks in place with the one next to it *(right)*.

To install these panels, all you have to do is lay them down and lock them to each other, trimming them where necessary to fit the walls. Shims are available to level them out on uneven floors. Then simply install the flooring of your choice over these panels, and you're all set.

The other nice thing is that these subfloor panels really aren't too much more expensive than the plywood itself. Prices are around $1.50 per square foot.

PHOTO COURTESY OF DRICORE SUBFLOOR SYSTEM

With a plastic membrane on one side and a wood subfloor on the other, Dricore panels are a great way to protect flooring from moisture.

Ceiling Considerations — When people think of a ceiling for a finished basement, the unattractive drop ceiling is usually the first thing that comes to mind. The main reason for installing a drop ceiling is functionality: It provides easy access to any wires or pipes overhead. Of course, it usually leaves a lot to be desired in the style department.

Dramatic Drops — With some of the drop ceiling options available now, however, you might not mind having one in your basement. Armstrong (Armstrong.com) offers decorative ceiling panels and tiles in a wide range of styles, colors, sizes, and textures. With 143 different patterns available, you're sure to be able to find something to your liking. Also of interest is Armstrong's "Metallaire" series, which features tiles and panels available in metallic colors such as Steel, Chrome, Brass, and Copper *(Photo, left)*.

PHOTO COURTESY OF ARMSTRONG RESIDENTIAL CEILINGS

These "Metallaire" ceiling panels from Armstrong are a refreshing twist on the traditional dull drop ceiling that you'll often find above you in a basement.

Do It with Drywall — If the rest of the basement is finished with drywall, though, it makes sense to finish the ceiling the same way. This gives your basement ceiling the same great look as the ceilings in the rest of the home.

The only drawback to a drywall ceiling is that you'll have to cut a hole in it to get access to pipes or wires. Basement contractor David Schrock gets around this by installing a drywall access door (such as those made by Stylemark; ISCSupply.com) that blends seamlessly with the drywall. That way, you can use the door rather than having to tear up your nice finished drywall.

— Written by Wyatt Myers, illustration by David Schrock

More Than A Miter Gauge

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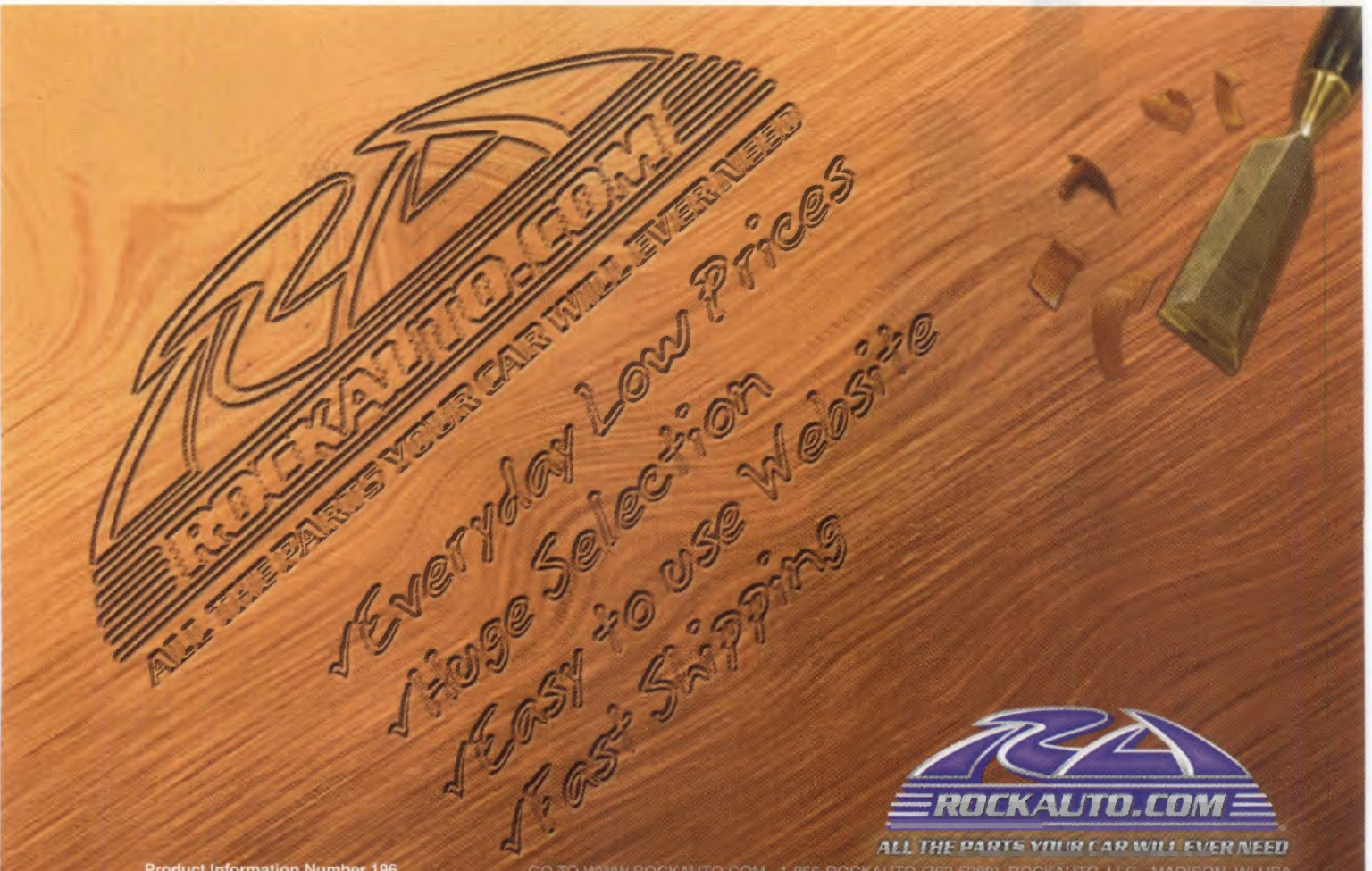

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Dremel's new Multi-Max puts the power of oscillating tools in the hands of price-conscious DIYers. The speed, power, and accessories of this affordable little tool actually equal the category leader. And it delivers all the same functionality to sand, cut, scrape, and grind.

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2) How much do you plan on spending on home improvement projects in the next 12 months?
(306) None (307) Under $100 (308) $100-$499 (309) $500-$999 (310) $1,000-$1,999
(311) $2,000-$2,999 (312) $3,000-$3,999 (313) $4,000-$9,999 (314) $10,000 or more

3) Which of the following types of power tools do you plan to purchase in the next 12 months?
(315) Stationary power tool (316) Portable power tool (corded) (317) Portable power tool (cordless) (318) None

4) How much in total do you plan on spending over the next 12 months on the following:
Stationary power tools:
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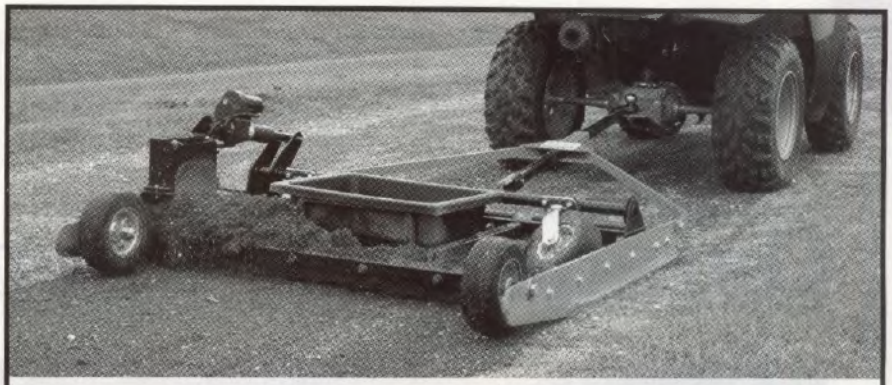

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SAFELY INSTALL YOUR NEW

Garage Door Opener

The newest generation of garage door openers is faster, quieter, safer, and more secure than ever before. If you've decided that it's time to upgrade yours, we'll give you all the hands-on tips you need to replace your noisy old opener this weekend.

A new garage door opener might be in order if your current one is more than five years old. The updated openers feature state-of-the-art technology that offers more convenient features than ever, like wireless, keyless entry and standby power systems that ensure operation even when your power fails.

But more important, safety and security features are also better than ever. Federal law mandates that all new openers reverse the door if it hits an object. Most models include an infrared beam system that reverses the door if anything crosses the beam while the door is operating.

For better security, new openers also feature rolling code technology that changes the code every time the opener is used. Rolling codes are vastly better than the old fixed codes, which could be stolen by anyone near your house with a code grabber device.

If you've decided the time is right for a new model, we'll help you decide which opener is right for you and explain how the parts of an opener work. We'll also take a look at the general installation process and point out some things to watch for so your installation goes smoothly and safely.

CHAIN, SCREW, OR BELT?

There are three different kinds of standard residential garage door openers: chain drive, screw drive, and belt drive. You should understand their pros and cons before shopping for an opener.

BATTERY BACKUP SYSTEM

Some new openers have a cool battery backup feature that will continue to operate the door even when the power is out. This one will supply power for up to two days and perform 20 full open-and-close cycles.

Chain-drive systems are the most popular and usually the least expensive. They have a motor that hangs in the center of the garage ceiling and use a metal chain to lift and lower the door. The biggest drawback to this type of system is that they make a lot of noise.

Screw-drive systems replace the chain with a long, threaded steel bar. As with chain-drive openers, the body of the unit is attached to the garage ceiling. Screw-drive models are relatively slow, but they're powerful and require less maintenance than chain-drive systems.

Belt-drive systems are similar to chain drives but use durable, steel-reinforced rubber or polyurethane belts to open the door. They are generally the most expensive kind of opener but are also the quietest. The belts won't stretch or break and need no lubrication.

Keep in mind that many door openers are designed to be installed by professionals. To locate models that a homeowner can successfully install, check product packaging or manufacturer Web sites. Or you can just ask your sales representative which models are DIY-friendly. Genie (GenieCompany.com), Chamberlain (Chamberlain.com), and Craftsman (Sears.com) all have product lines that are aimed at the amateur installer.

HOW AN OPENER WORKS

The focal point of a garage door opener is the motor, which hangs from the ceiling or rafters. Motor sizes are usually ⅓ or ½ horsepower.

You might assume it is the motor that raises and lowers your door, but the heavy work is actually done by the door spring system. These powerful springs are under very high tension, so they have the strength to lift the weight of a garage door.

Other major opener components are the rail, trolley, and lift arm. The rail runs between the motor and the wall above the door. This supports the chain, belt, or screw mechanism. The trolley is a moving part that connects the lift arm to the drive mechanism. The lift arm connects the door to the trolley. The motor pulls the trolley along the rail to raise and lower the door. All of these parts work together to create a smoothly operating system.

BEFORE YOU BEGIN

After you purchase your opener, you'll need to check out a few things. Do you have a grounded receptacle within three feet of the opener? If not, you'll need to have one installed. Is your garage ceiling finished? If so, you'll need a support bracket and additional hardware.

Is your garage door balanced? To check this, raise the door about halfway, and then let go. It should stay in place, supported entirely by its springs. If it doesn't, you'll need to call a trained door technician.

If you have a lightweight fiberglass or aluminum door, or one with lots of glass panels, you'll also need to reinforce the door to prevent damage. You can buy reinforcing plates, or make your own.

Once you've determined that your door is up to the task, you can

LEARNING REMOTE

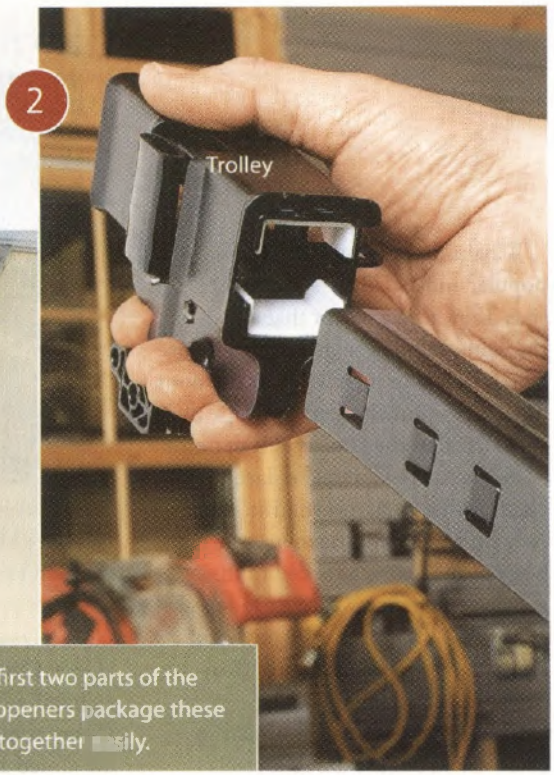
It's easy to program the keyless entry remote by pressing the "learn" button on the motor unit. When the motor's lights blink, you'll know that it has learned the code. Remote control sensor/receivers are another popular new feature. These are installed inside your home and indicate if the garage door has been left open.

get ready to install the new opener. Unpack it, lay out all of the parts and hardware, and carefully check them against the packing list to see if anything's missing. By obtaining any additional supplies required before you begin, you'll prevent frustrating, time-consuming interruptions during the installation process.

The opener we selected is a Chamberlain Premium Whisper Drive Plus. This is a belt-driven model with a ½-horsepower motor. Its bonus features include three-function remote controls, an outside keyless entry pad, and a glowing wall panel.

Keep in mind that the installation instructions for openers will vary depending on the type and brand of unit. Even if you've installed openers before, read through the new manual to get familiar with the steps and part names. While this article focuses on a belt-driven opener, the basic elements of installation are similar for the three different systems.

It's a lot easier to connect the rail and opener motor together on the ground, before you move them into position on the ceiling.



The rail and trolley are the first two parts of the opener to assemble. Most openers package these parts in sections that snap together easily.

ASSEMBLING THE OPENER

At this point, you should be ready to start the installation process. There are really only five major steps to installing a garage door opener:

1. Secure the rail to a header bracket on the garage wall above the center of the door.
2. Use the supplied hanging brackets to attach the motor to the garage framing overhead.
3. Secure the opener's lift arm to a bracket attached to the door.
4. Run wiring from the motor to the wall-mounted control switch.
5. Set up any extra features like infrared beams and keyless entry pads that came with your opener.

The first order of business when putting together most door openers is assembling the rail and the trolley. These are two of the most important parts of any garage door opener. When you open the door, the motor will pull the trolley along the rail, raising the door.

Luckily, modern door openers have made this assembly process easy. As you can see in *Fig. 1*, the railing comes in sections that just snap together. Similarly, the trolley fits right in place over the rail once it's assembled *(Fig. 2)*. With our opener, we had to slide the trolley onto the rail at the "door end," and then push it all the way down toward the "motor end" of the rail.

Once the trolley and rail are put together, attach the rail to the motor now, before mounting the motor to the ceiling of your garage. That way it's easy to make sure everything slides smoothly and functions properly before it's permanently installed on the ceiling.

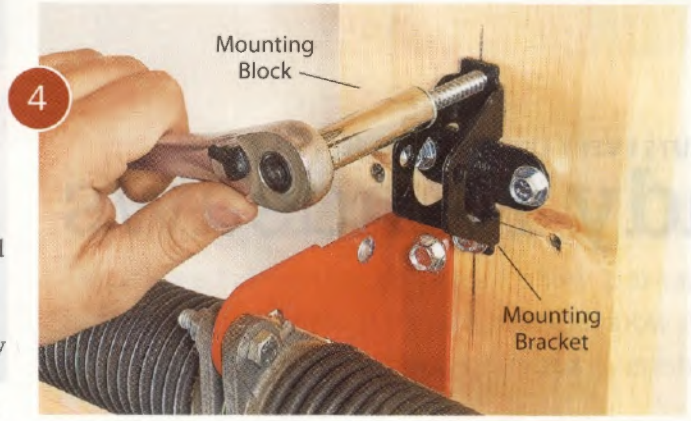
Our motor came with a U-shaped bracket that accepts the rail piece. We just bolted that bracket to the motor first, and then snapped the rail in place on the motor *(Fig. 3)*.

With the motor, rail, and trolley all put together, you can now turn your attention to the opposite end of the opener — the header wall above the garage door. Here, you'll be installing a bracket that later on will accept the "door" end of the rail.

An opener produces substantial torque as it raises and lowers the door. That's why the header bracket must be fastened securely to the framing of the garage. If it isn't, the

opener will eventually vibrate loose and fall to the floor.

This bracket needs to be centered along the width of the door, so carefully measure and mark the location of the bracket. Then attach a mounting block to accept the bracket above the door if necessary, and install the bracket with heavy-duty lag screws *(Fig. 4)*.



The header bracket that holds the rail above the door must be very secure, so use heavy-duty lag screws to attach it.

HANGING THE OPENER

At this point, you're finally ready to put the rail and motor assembly into position. You'll definitely want to recruit a helper for this part and have a stepladder handy, as well.

With our garage door opener, we mounted the "door" end of the rail to the header bracket first. This made things a little easier because we could leave the heavy motor on the ground while we lifted the end of the rail into position and secured it to the header bracket.

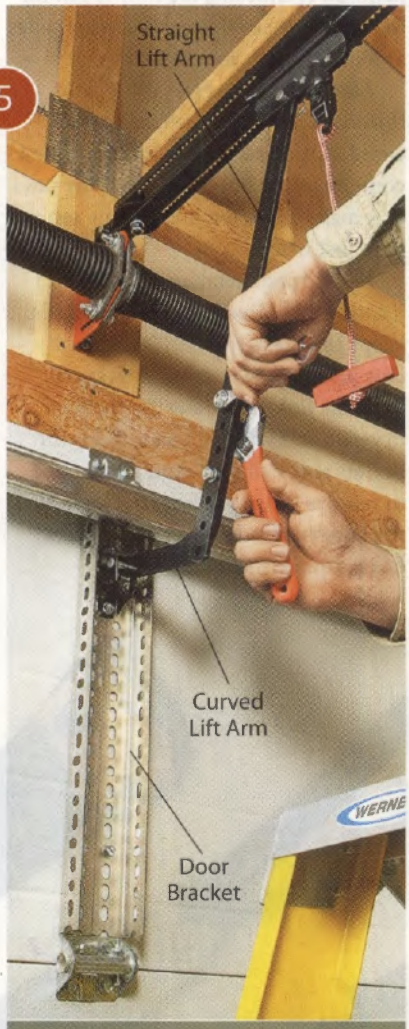
Next comes the heavy lifting part, where you actually raise the motor into position. You'll probably want to set it on top of a stepladder for this part, as it takes a little bit of time and patience to align the opener properly. (Your instruction manual should help with this process.) Once you get it aligned, drive lag screws through the hanging brackets and into joists to secure the motor on the ceiling, as shown in the *Main Photo* on page 76.

You're almost finished, but you still need to actually connect the garage door itself to the opener assembly to make it all work. That's accomplished with the lift arm. It gets mounted to both the trolley and a bracket on the garage door, as shown in *Fig. 5*. This arm is what pulls the door along with the trolley when you open and close the door.

Now that the opener is mounted properly, you'll want to set up the motion sensors on either side of the garage door *(Fig. 6)*. Next, run the door through several open-and-close cycles to set the force limits. To check the force, place an obstruction, like a cardboard box, beneath the door. The door must reverse immediately upon striking it. If your door fails the safety test and you're not able to correct the problem, call a door technician.

If your opener came with any cool add-ons, like a battery backup *(Photo, page 77)*, you can set those up now. Then your safe, secure, and convenient garage door is ready to roll.

— Written by Louise Ritchhart



The two-piece lift arm connects the trolley to the garage door. Connect the curved section to the door, the straight section to the trolley, and then join the two.

Install a bracket on each side of the door track to hold the safety sensors. You may have to use blocks to position the sensors correctly.

MAKE CLEAN CUTS EVERY TIME WITH THESE

Handy Handsaws

In today's power-tool world it's easy to assume that an electric saw will always work best. But that's not always true. Handsaws definitely still deserve a starting position on your tool team.

The key to getting great results with a handsaw is choosing the proper saw for the job. Here are eight of the many types available to help you make the cut.

Material Matters — When you think of a handsaw, the traditional wood-cutting saw at top right may first come to mind, but there are many saws that make quick work of cutting more than just wood.

For cutting metal, nothing beats a hacksaw [1]. This high-tension model keeps the blade true. A PVC saw [2] cuts plastic pipe without melting or burning. Poke a jab saw [3] through drywall, and you can create holes for outlets and switches. And if you need to remove old grout from between tiles, the abrasive blade on a grout saw [4] does it quickly and cleanly.

Good for Wood — Of course, no saw arsenal would be complete without saws that cut wood, as well. Here are a few that you'll want to have on hand.

For trimming molding to size for seamless corners, a coping saw [5] is the tool of choice. To cut boards to length or width, try a carpenter's saw [6]. They're available in many sizes and types. If you want an extremely precise cut, a pull saw [7] may be the right saw. These saws cut as you pull instead of as you push. That gives you increased control, and allows for a thin, flexible blade. But if you need a stiff blade, go for the support offered by a back saw [8]. This one is designed for flush trimming, which makes it great for cutting door trim to fit around flooring. It even features an offset, reversible handle.

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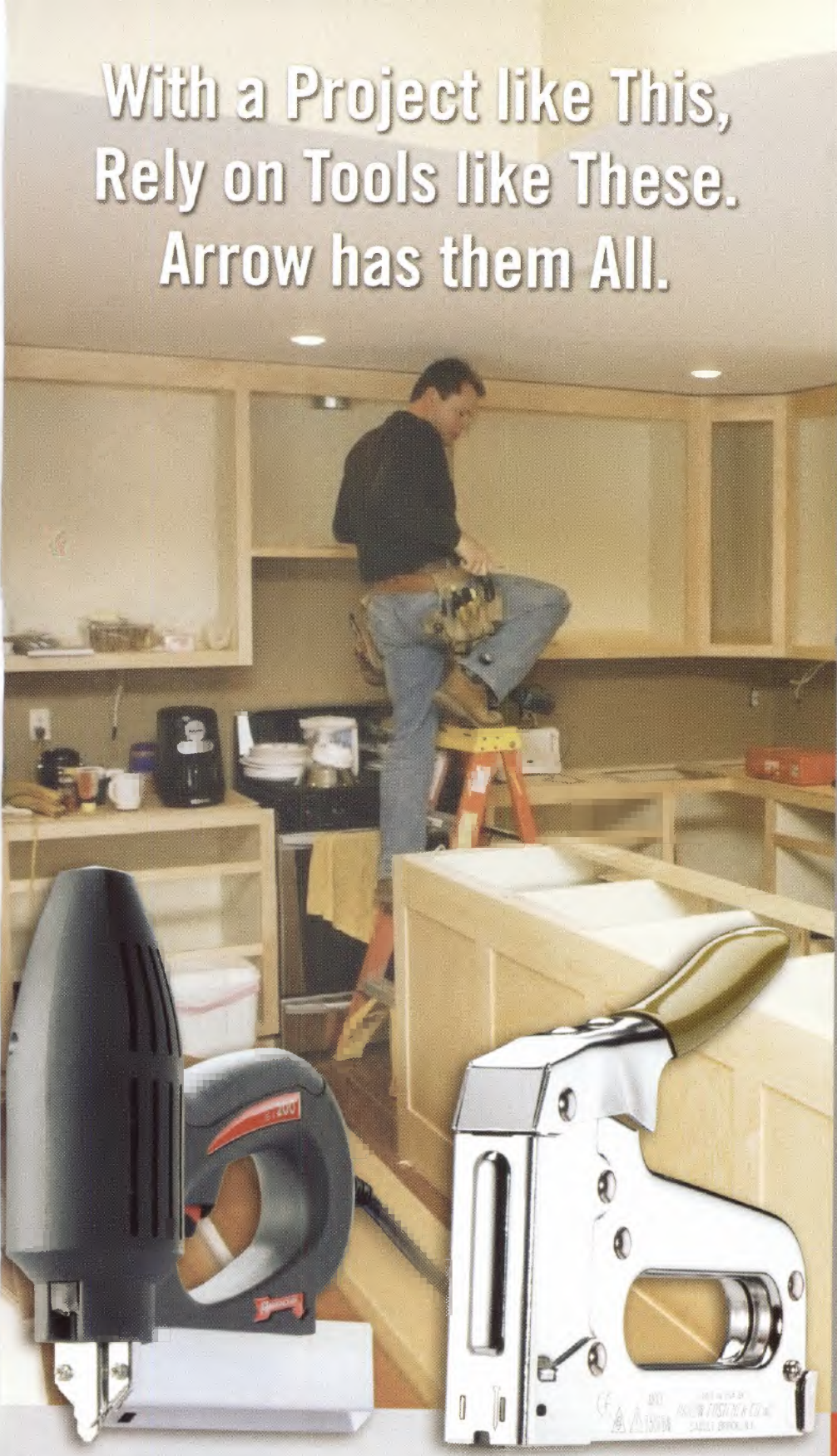

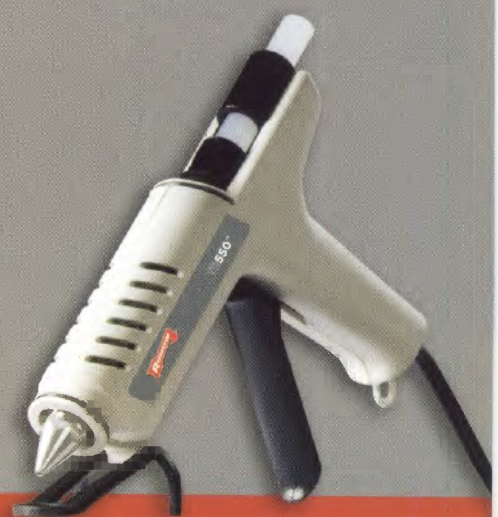

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