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COVER PHOTO: Whether it's a full monty makeover or simply a fresh coat of paint, resurfaced cabinets, or upgraded appliances, there are ways to spruce up your kitchen that fit your budget. **For ideas, see "Same Space, New Look," p. 82. PHOTOGRAPH BY MICHAEL LUPPINO**

VISIT THIS OLD HOUSE ONLINE AT www.thisoldhouse.com or AOL Keyword: This Old House

PHOTOS (CLOCKWISE FROM TOP R. LEFT) REVAN WALKER, MATTHEW HILLMAN, GEOFFREY SIMON

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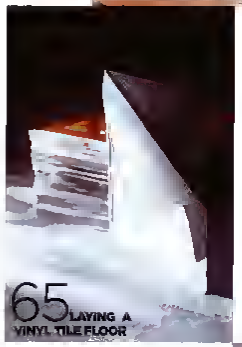

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PHOTOS: (CLOCKWISE FROM TOP) BARB H. HASSAN; MATTHEW BOURGEOIS; TIMOTHY BELL; ANTOSH

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ThisOldHouse.com bonus article: A 19th-century Irish gatekeeper's lodge gets a new identity as a 21st-century guest cottage. Find it in the Design and Planning section of Homeowner Know-how

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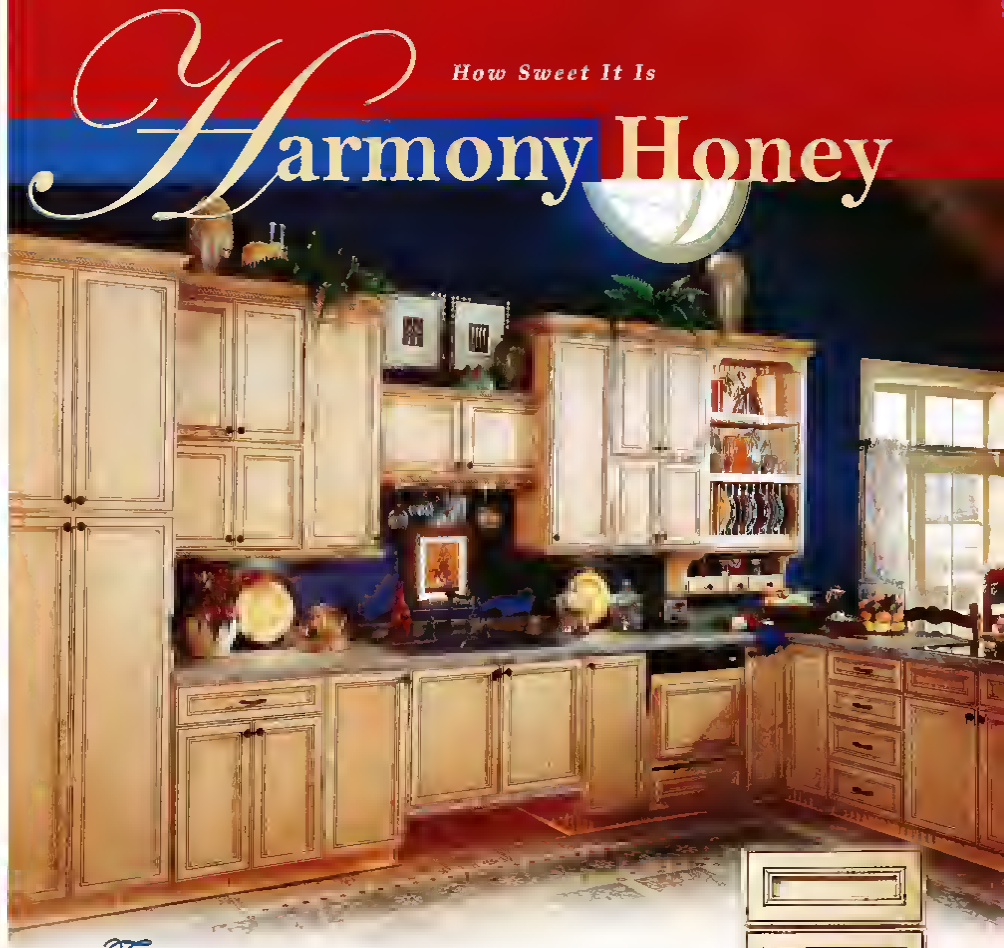

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EUROPEAN EFFICIENCY

My wife and I loved Richard Trethewey's Letter From This Old House "Why Not Here?" [December 2003]. Having lived in Germany and traveled extensively throughout Europe, my wife and I agree with Richard's observations. The Europeans are way ahead of the U.S. in many of their construction techniques, not the least of which is their very efficient windows, to which Richard referred. We also observed how efficient their toilets are, to the point that when we left Germany we considered bringing three toilets home to the States. The newer toilets save water by providing the user a choice of two different flushes. Let us hope that U.S. homes may someday include many of the environment-friendly construction practices that our European friends have devised.

JAMES J. MCGILVRAY, OAKTON, VA.

I have worked in the oil and gas industry for over 50 years. I must say that Mr. Trethewey's column on energy conservation and its many applications (or lack thereof in the U.S.) hits more nails squarely on the head than almost anything I have read for many years. My hat is off to him.

JOHN MCPHAUL, BY E-MAIL

Richard's column is timely and important, if a little too polite. Not only are Americans considered unimaginably greedy by the rest of the world when it comes to energy consumption, but we tend to buy into the line we're fed by the energy-consuming industries that our technology is first rate and that any further attempts to regulate energy consumption (and its contingent industrial waste) will unduly hamper our economy. Our cousins across the pond have proven this to be hogwash. Consumers need to vote with their dollars until industry and government decide to listen!

MIKE AND LAURA KEYSER, STURGEON BAY, WISC.

DRILLING HOME A POINT

Re "Drilling Into Steel," Norm's Notebook, December 2003: I am a former full-time distributor rep specializing in cutting tools. When drilling in metal [I] use bits with a 135-degree split point, [a standard tip on all Vermont American bits sized above 1/8 inch; see *www.vermontamerican.com*]. The split point has four cutting surfaces (as opposed to two on a 90-degree point) and is self-starting.

JOHN WILDER, ROSEMOUNT, MINN.

THINKING AHEAD

Re "Unlimited Access," On the Job, December 2003: The floor drain for a future shower [at the *TOH* project house] is a good idea, but what was done to prevent sewer gases from entering the bathroom? All drains need a trap, and a trap without water is no trap at all. If the drain is used on a regular basis, the water level is maintained. If not, the water evaporates.

N. S. MATTSON, BLAIRSTOWN, N.J.

RICHARD TRETHEWEY REPLIES: At the Concord cottage there is a trap for future use that is installed below the floor and is plugged off. If it wasn't plugged and was used as an area drain, then a trap primer would have been installed. This device puts a slight bit of water into a trap every time a selected fixture in the room (usually a toilet) is used, to keep its water seal.

punch list

definition: a list of items incorrectly done or remaining to be finished on a construction job

Some photo credits were inadvertently omitted from the Jan./Feb. issue: "From the Ground Up: Foundations," page 45, Tom Silva portrait by Keller & Keller; construction photo by Bernd Auers. "Find!" page 54, Leslie and Leigh Keno portrait by Peter Rose, room photo by Solvi Dos Santos.

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SWITCHIN' THE KITCHEN

BY KEVIN O'CONNOR

TOH host Kevin O'Connor, who knows firsthand how disruptive a full kitchen makeover can be, recommends making simple cosmetic changes for a fresh look.

PHOTO: BRYAN WALKER

Late last April—Easter weekend, to be exact—after months of tearing out our kitchen and then rebuilding the space, my wife and I were finally ready to hang the new maple cabinets. It had been four months since we started on the room, and we'd been eating takeout every night. Which is why, on Friday evening, just as we were ready to head out to join our family for the holiday weekend, my wife was able to talk me into helping her hang one of the cabinets. Just *one*, she promised. She wanted to see how it would look on our newly drywalled and freshly painted walls.

Well, one cabinet turned into two, and then into five, and the next thing we know it's Sunday, we've hung all the cabinets, and I'm picking up takeout pork-fried rice at the only restaurant that's open.

That's how compelling a kitchen makeover can be. We gave up delicious home-baked ham to get a jump start on our own cooking space. But while the kitchen is one of the most popular home renovation projects, it doesn't always need to be such a production. There are alternatives to the expensive, time-consuming, disruptive (did I mention expensive?) work that a total overhaul entails, and you might find them easier on your wallet—and on family relationships.

Consider a simple face-lift instead. Put on a new coat of paint, change the countertops, replace the hardware or appliances. There are numerous cosmetic changes you can make that will save you time and money as well as the aggravation of having your most used room temporarily rendered useless. A good friend of mine is currently pursuing this kinder, gentler approach. He started by painting all of his shabby-looking oak cabinets white, instead of refinishing them, and then putting on new hinges and pulls. He added a new light fixture that works better in the room's design and also improves the ambience. With the arrival of his next paycheck he'll replace his counters with granite and add a backsplash, new sink, and faucet. Eventually, he'll add a tin ceiling for a nice decorative touch.

When all is said and done my friend will have a nearly new kitchen for a fraction of the cost—and hardly any of the hassle—of a gut renovation, which is why a face-lift is so appealing. So be sure to consider all your renovation options (for some ideas, see "Same Space, New Look," page 82). Because once you tear out your stove and dismantle your plumbing you run the risk of missing, well, Easter dinner.

COMING IN THE APRIL ISSUE

- How to get a perfect lawn
- TV project finale
- Distinctive house plans
- Refinishing a deck
- Oriental rugs
- Planting a tree

ON SALE MARCH 22

ON THE JOB

Pocket Picks

Whether at home or on the job, the *TOH* show guys are never far from their pocketknives. Here's what each of them carries—and why

RICHARD TRETHEWEY
Leatherman PST II
"It's absolutely amazing how often I use it. I even wear it when I have a suit on."

TOM SILVA
Victorinox Swiss Tool
"It's got a thousand and one uses, right down to the nail file, which keeps me looking my best."

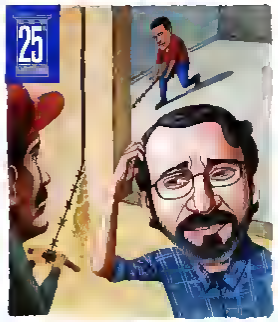
ROGER COOK
Wichard Half-Serrated Knife
"It's big, strong—and I haven't lost it yet."

NORM ABRAM
Laguiole With Blade and Corkscrew
"The gift from my wife is a little too nice for the job site, but it's just the thing during picnics on the boat."

KEVIN O'CONNOR
Leatherman Wave
"It does a lot more than the hunting knife I carried for twenty years. But you know what, since joining *This Old House*, I'm doing a lot more too."

[FLASHBACK]

Norm Abram: 1990



There have been a lot of "I thought I'd seen it all" moments at *This Old House*, though this one from the Santa Fe TV project really stands out. We were about to shoot a scene when the show's producer came racing over. "You've got to see this, Norm," he said. I followed him to a back room where a couple of local carpenters were cutting a hole in the adobe wall for a window. Only instead of a reciprocating saw or, for that matter, anything power-operated, they were using the most curious hand tool I'd ever seen. It consisted of maybe a 10-foot length of barbed wire wrapped around two sticks they'd found in the yard. One guy was on the inside of the house and one on the outside, and like a game of tug-of-war they were pulling the wire back and forth, cutting a perfect line in the adobe. I'd honestly never seen anything like it. When I asked them if they didn't have anything a little more high-tech, they just shrugged and said this is what they'd always used. And you know what, I'm not sure a modern power tool would have done the job any better.

PRODUCED BY DAN DICLERICO

PHOTOS: BRYAN WALKER; ILLUSTRATION: CHARLIE POWELL

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[BEFORE & AFTER]

Gothic Revival Revived

With its twin-gable roof, ornate bargeboard, and single-story porch, this 1868 house in Shelburne Falls, Massachusetts, is the epitome of Gothic Revival architecture. Colorful exteriors were another common flourish of the era, though this paint job happened in 2000, culminating a nearly 20-year-long restoration by homeowners Harriet Paine and Alan Dargis. A vibrant palette replaces the barn-red exterior, including cream yellow on the body and five different shades along the trim. In addition, they swapped out the leaky tin roofs over the bay windows for historic copper. Even the finials that crown the gables were hand-turned to match the originals.

Have you dramatically altered the look of your home? If so, send before and after snapshots, plus a brief description of the project, to: This Old House/DD, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036.

One-handed Wrench

Operating an adjustable wrench under a sink can be like shooting pool in a straitjacket. Not so with RapidGrip, the Ridge Tool Company's new 14-inch self-adjusting pipe wrench. With a quick flip of the thumb, the spring-loaded, forged-steel jaw grips onto all types of pipe. That leaves the other hand free, perhaps to keep track of all the time you're saving. Available for $28.95. To order, call 800-769-7743.

[LESSON LEARNED]

Bowl Busters

BY CHRISTOPHER R., STATEN ISLAND, NY

A few years ago, my father decided to replace the toilet seat in the main bathroom of our home. I played the part of helper. After gathering the available tools from the garage, we got down to business. First order was to loosen the metal bolts on the old toilet seat. Unfortunately, our pliers and adjustable wrench were no match for the corroded bolts and rounded-over nuts.

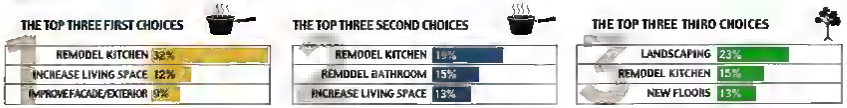
We quickly became frustrated that such a simple project was taking so long. So we resorted to Plan B: gently tapping the nut to break it free from the rust in order to pry the bolt loose. We decided a hammer and flat-head screwdriver would do the trick. After a few "gentle" taps, the nuts finally cracked in two. Problem was, so did the toilet bowl, spilling water across the bathroom floor. After cleaning up the mess, we resorted to Plan C: driving to the home center and buying a whole new toilet bowl.

EDITOR'S NOTE
Rusted toilet seat bolts really are a pain in the neck. We recommend cutting them loose with a hacksaw blade.

Get your own lesson to share? It could be worth $100 if we publish it. Send it in writing (200 words or less) to: This Old House/DD, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036.

TOH ONLINE SURVEY

WE ASKED: IF MONEY WERE NO OBJECT, WHAT ARE THE FIRST THREE THINGS YOU WOULD CHANGE OR IMPROVE ON THE HOUSE YOU LIVE IN?
HERE'S WHAT YOU TOLD US:



HOUSE ICON: RANDY BIGGS. ILLUSTRATIONS: RPC, HANSON

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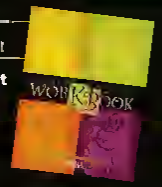

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Habitat Building Blitz

BY ALEXANDRA BANDON

Last June I traveled to Anniston, Alabama, to help Habitat for Humanity International build houses for deserving families. This was my third Habitat build, and second with the Jimmy Carter Work Project—a weeklong "blitz build," which this year resulted in 92 new homes for low-income families in two states. To me, the experience was like construction fantasy camp. I get to do everything we cover in this magazine, from framing to roofing to carpentry, all in one back-breaking week.

Nearly 4,500 volunteers took part in the event. Thirty-eight of us built House 32 for Jo Nell Gorman and her disabled son, Christopher. The amazing part was that we did it all in five days. By the end of Day One, the pile of lumber that greeted us that morning was already looking like a house—framed and sheathed and ready for a front door. By the afternoon of Day Five, we were down to the laundry-room shelves and flowers out front. Though I volunteered for the fun of playing construction worker, the best part of the experience was the hug of thanks I got from our proud new homeowner, not to mention the high-fives all around from my new friends.

This year's Jimmy Carter Work Project will take place in Vera Cruz and Puebla, Mexico, from October 24 to 29; registration begins in March. Go to *www.habitat.org* or call 800-HABITAT x2272 for information.

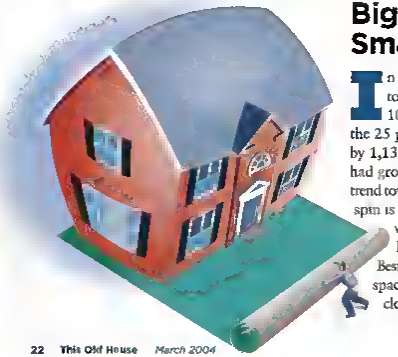
TOP: This Old House editor *Alex Bandon in between homeowner Jo Nell Gorman (left) and her sister-in-law Johnnie Rhea Halpin.* **ABOVE:** *By the end of day one, House 32 was already taking shape, thanks to the use of preassembled walls, not to mention the 38-person volunteer crew.*

For more on this Habitat for Humanity project, including "How to Build a House in Five Days" and an exclusive interview with former president Jimmy Carter, go to www.thisoldhouse.com/shortcuts.

[TOH TIP]

A Stronger Chalk Line

Tom Silva and Norm Abram both replace the cotton cords in their chalk lines with woven nylon fishing line, available at tackle shops. "Fishing line holds a little less chalk, but you can pull it tighter, so your snap lines come out clean," says Tom. Plus, it doesn't break. The only drawback: Fishing line is slow to take chalk. Tom helps it along by pulling the line across a piece of solid chalk before fitting it into the chalk box.



Bigger Houses, Smaller Yards

In 1992, the average American home took up 20 percent of its overall lot. Just 10 years later, that figure was nearing the 25 percent mark. Lot sizes had shrunk by 1,138 square feet and the average house had grown by almost 200 square feet. This trend toward zero-lot housing—the real-estate spin is "patio homes"—shows Americans value living space over expansive yards. But there are negatives to consider. Besides the loss of privacy and recreational space, fires can spread quickly between closely packed houses.

[THEN & NOW]

Oh, what a difference a quarter century makes. Here's a comparative look at housing statistics from *TOH's* first season—and today

SINGLE-FAMILY HOUSES BUILT IN THE U.S. EACH YEAR.
THEN: 852,000 NOW: 1,480,000

AVERAGE PRICE OF A NEW HOME
THEN: $76,400 NOW: $256,000

AVERAGE INTEREST RATE ON FIXED 30-YEAR MORTGAGE
THEN: 13.77% NOW: 6.26%

NUMBER OF HOME DEPOT STORES
THEN: 1 NOW: 1,500

Sources: National Association of Home Builders; Home Depot

PHOTO: (RIGHT) DAVID HANDLEY; ILLUSTRATION: ROB SCOTT

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Long Division

Custom cabinets create rooms in a long, narrow space

PHOTOGRAPHS BY TIMOTHY BELL

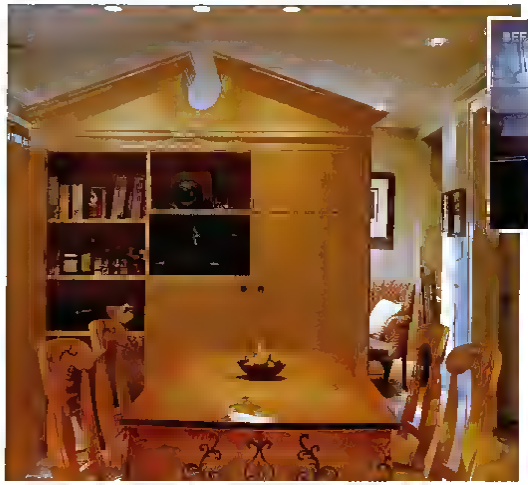
Larry and Kathleen Murrix knew they would have to knock down walls if they were going to turn their 8-by-11-foot kitchen into a bigger, brighter space that would open up to an eating area and a family room. The dark, isolated kitchen was situated in a back corner of their 1931 Cape in Alexandria, Virginia. "It wasn't obvious how to open it up because we had this strange, choppy floor plan with small adjoining rooms," says Kathleen. That's when they sought local designer Patrick Sutton's advice. Sutton saw the potential in the 11-by-41-foot space that could be created by gutting the kitchen, adjoining dining room, and two unused small bedrooms, which were all in a neat row on one side of the house. He drew up a plan that moved the kitchen to the middle of the reconfigured space, with a formal dining area on one side and an informal family room on the other.

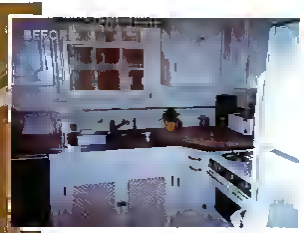
To set the three areas apart while retaining an open plan—and taking into consideration both Larry's love of hardwoods and Kathleen's interest in period furniture—Sutton designed custom cabinetry dividers that incorporate column, broken-pediment, and arch motifs. Says Kathleen, "You feel like there are three separate rooms without ever having that closed in feeling."

The range-wall room divider separates the kitchen from the adjoining formal dining room. It is anchored by columns and houses crimson painted cabinets that fit into a graceful cherry arch along the top. A large, hand-painted writing desk found at an antiques store serves as the kitchen table, with new chairs decorated to match.

Open But Separate

A new, open floor plan, with three distinctive areas, was created out of four dinky rooms





ABOVE. *Small and dark, the outdated kitchen was isolated from the rest of the house, and it had no room for a table.*

LEFT. *Putting the kitchen in the middle of the space gives it more prominence and makes room for casual dining. The 7½-by-6-foot Chippendale-inspired divider, with its broken-pediment top, separates the kitchen and family rooms. In addition, it houses the microwave, cookbooks, and ample pantry shelves behind the doors.*

WHAT THEY DID

① **GUT** Knocking down walls that separated the old kitchen, dining room, and two adjacent bedrooms resulted in one long, narrow 11-by-41-foot open space

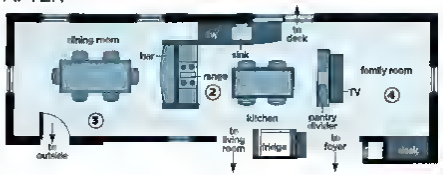
② **RECONFIGURE** The new kitchen was moved to the middle of the space, with three built-in room dividers defining its 11-by-15-foot footprint. One holds the range and forms an L-shaped work zone with the sink wall. Another houses the microwave and a pantry. The third accommodates the fridge and creates a passageway on either side of it, to the living room and the foyer

③ **CREATE A DINING ROOM** The 11-by-16-foot dining room is served by the other side of the range-wall room divider. It provides a bar for guests to hang out at and serves as a pass-through and serving station

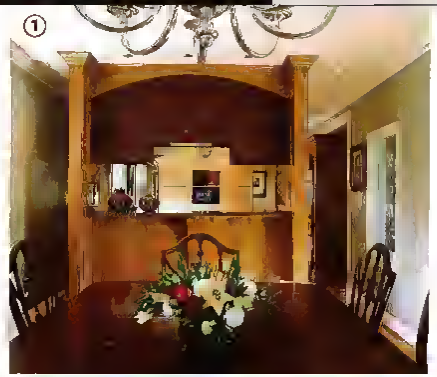
④ **CREATE A FAMILY ROOM** The flip side of the pantry-room divider backs up to the media cabinet, housing the TV, VCR, and stereo, to define the 11-by-10-foot family room. A desk tucked into another wall taps underutilized space

BEFORE

AFTER



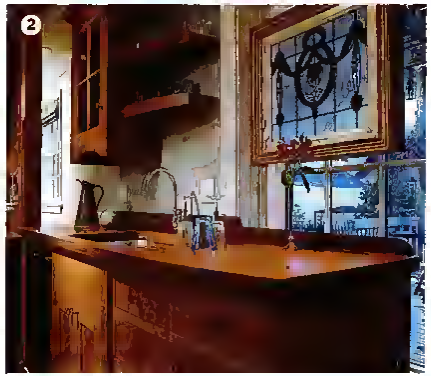
FLOOR PLANS: IAN WORPOLE



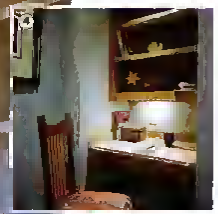
The Details

A mix of furniturelike pieces in a variety of woods helps define the eating, cooking, and living areas

① DINING ROOM
The dining room side of the kitchen's arched cherry room divider has a curved granite countertop that serves as a handy pass-through and serving station as well as a bar where company naturally gathers. The counter is higher on this side to hide the stove from view. The crimson painted cabinets overhead—holding china and serving pieces—are accessible from both sides



② SINK
The countertop and integral backsplash and the open shelves above the sink are made of teak that has been treated with a tung-oil-based, water-resistant finish. Holes drilled in the lower shelf allow just-washed glassware to drain into the sink, shelves are canted to prevent water from running back toward the wall.



③ FAMILY ROOM
On the family-room side the maple divider backs up to the media unit, which holds the TV, VCR, and stereo. Made of reclaimed wormy chestnut, the 4-by-6-foot media cabinet features a travertine top and decorative butterfly key joinery on the side panels.

④ DESK
A built-in desk makes smart use of a 27-by-36-inch nook in the family room. Topped with the same travertine stone used on the media unit, the desk is wrapped in a white-oak apron and lit by a halogen strip on the underside of the bookshelves above.

For more kitchen design ideas, trends, and products, go to www.thisoldhouse.com or America Online Keyword: This Old House and select "Kitchen" in the Know-how section.

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TOM SILVA
GENERAL CONTRACTOR

RICHARD TRETHEWEY
PLUMBING & HEATING EXPERT

ROGER COOK
LANDSCAPE CONTRACTOR

NORM ABRAM
MASTER CARPENTER

FINISH FOR IPE WOOD DECKING

I'm planning to build a deck using Ipe for the decking. But I've been getting many different opinions about what type of finish I should put on the wood. What would you do?

TOM HOWLEY, ROCKVILLE, MD.

TOM SILVA REPLIES: I wouldn't finish it at all. Ipe is a Brazilian hardwood that's so dense it doesn't absorb finish as well as the softwoods on most decks. In fact, none of the deck finishes I've tried on Ipe has lasted to my satisfaction. But that's okay: the wood is so durable it doesn't need a finish to protect it. If you just let it weather to a silvery gray, it's about as close to a zero-maintenance deck surface as you can get and still have real wood.

SLOW-FLOW CLOTHES WASHER

We live in a farmhouse that's well over 100 years old. The washing machine is much newer, but the cold water only dribbles in, so it takes forever and a day for the drum to fill. Is there a simple solution to this?

HELEN WITTKOP, EDEN, WISC.

RICHARD TRETHEWEY REPLIES: Problems in Eden? I had no idea. What's happening is that the clothes washer inlets are clogged with particles of sand, flakes of rust, and various other contaminants that can creep into any household water supply. Old houses, and those supplied by wells, are particularly prone to this problem, which slowly chokes off the water flow.

First, turn off the hot- and cold-water supply valves and move the washer just enough so you can disconnect the hose connections at the back of the washer. Water will drain out of the hoses as you do this, so have a bath towel or small bucket handy. Now take a look at the filter screen on the washer—that's where the water is being blocked. If you can remove the screen, flush it out in a sink and put it back in place. If the screen doesn't come out, you can suck out the debris with a vacuum cleaner or pick it out with a toothpick. Whatever you do, be careful to leave the screen intact because any debris that gets into the washer itself can eventually damage it. (If the hose ends have filters, clean them also.)

Once the screen on the machine is clear, reconnect both hoses, slide the washer back into place, and turn the water back on. Now run a load. Water should pour, not dribble, into the drum. Watch the hose connections during the next couple of loads and tighten them if you notice any leaks.

This Old House *general contractor Tom Silva glues down Ipe decking at the Manchester, Massachusetts, TV project. Ipe doesn't need a finish to protect it.*

UNSAFE STEPS

We recently had our front entrance rebuilt, but my daughter and I have been tripping on the new wood steps as we enter the house. My contractor says steps always vary a little. Is that true? The height of our bottom step is 7⅝ inches, followed by 6⅞ inches, 7⅛ inches, and 6½ inches. What do you think?

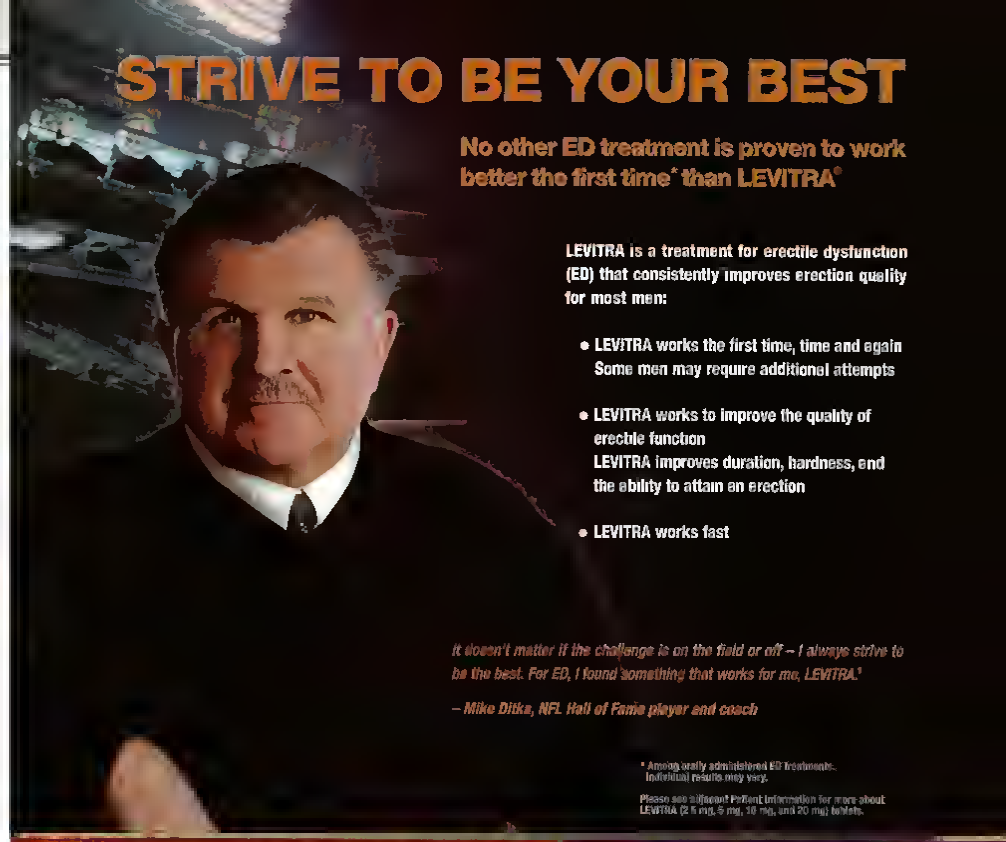
CHERYL DETMERS, LADD, ILL.

TOM SILVA REPLIES: No wonder you're tripping—those steps are way off. The International Residential Code, which is gradually replacing the various regional codes in the U.S., says that step height shouldn't vary by more than ⅜ inch over an entire stair run. I can't imagine the codes in your area would permit steps like yours, so have a building inspector come out and take a look.

The inspector should check the stair handrail, too. (Codes call for at least one handrail wherever there are more than two risers.) With steps like yours, there's no telling what the handrail is like.

Once you've documented all the problems, have your contractor come back and fix those steps right.

PHOTOS: KELLER & KELLER (LEFT #1); RAY BY CARMACK (BELOW)



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WHAT IMPORTANT INFORMATION SHOULD YOU KNOW ABOUT LEVITRA?

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LEVITRA does not:
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• protect a man or his partner from sexually transmitted diseases, including HIV. [illegible]
• serve as a male form of birth control

HOW DOES LEVITRA WORK?

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WHO CAN TAKE LEVITRA?

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WHO SHOULD NOT TAKE LEVITRA?

[illegible]

WHAT SHOULD YOU DISCUSS WITH YOUR DOCTOR BEFORE TAKING LEVITRA?

[illegible]

CAN OTHER MEDICATIONS AFFECT LEVITRA?

[illegible]

HOW SHOULD YOU TAKE LEVITRA?

[illegible]

WHAT ARE THE POSSIBLE SIDE EFFECTS OF LEVITRA?

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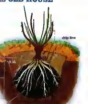


THE ROSE HOLE

TRANSPLANTING ROSES

I realize that it's probably cold and snowy where you are, but maybe you could help me with a garden question. When is the best time to transplant roses?

Perry Young, Deming, N.M.

ROGER COOK REPLIES Roses are best transplanted in late winter or early spring, when they are just coming out of winter dormancy. But timing isn't everything. Here are the steps to follow for a successful transplant.

First, water the plant every day for a week. Then dig the receiving hole approximately 18 inches wide and 15 inches deep. Roses love soil rich in organic matter, so mix generous amounts of organic matter into the soil dug out of the hole. Now put on your gloves and prune back the rose as much as possible, following pruning guidelines for the particular type of rose you have.

Dig a circle around the plant about 9 inches beyond its drip line. If you encounter any roots, cut them off cleanly with loppers or hand pruners. Continue to dig down about 15 inches until you can slip your shovel under the plant. Once you've undercut the rose, you'll be able to remove it easily.

When you lift the plant, you'll find that most of the soil will drop off the roots, leaving them exposed. In the receiving hole, make a mound of amended soil, spread out the roots, and set the plant on the mound. Be sure the mound is tall enough to hold the crown at the same level it was originally. Now backfill the hole halfway with amended soil and flood it with water. When that drains, add more soil to fill the

ILLUSTRATION: ARI WEINZWEIG

Ask THIS OLD HOUSE

hole and make a ring around the rose with additional soil. Flood the area again; the ring will hold the water on the planted area. After that water soaks in, add more soil to establish the finish grade. Finally, dress the soil with a light amount of rose fertilizer and top that with some organic mulch. Give the rose about 1 inch of water a week after that, and enjoy the flowers.

ICE CAPADES

Our house sits only 11 feet from our property line, and our neighbors' house is so close to the line that their gutters are almost right over it. Last year, they added another story to their house and installed a metal roof. Now, when the ice on their roof begins to melt, it slides past their gutters and sails into the side of our house where our bedroom is. Can you please help us?

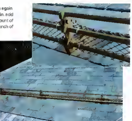
Lisa Hoffman, Austin, Tex.

TOM SILVA REPLIES I've never encountered that problem, but there is a straightforward solution. Ask your neighbors to install a snow guard on their roof near the eaves. These guards effectively halt roof avalanches and hold the ice in place until it melts. The type of guard that best suits your situation has two or three pipes mounted parallel to the eaves and a screen on the pipes to catch flying ice (as shown).

CUSTOM WINDOWS

I live in a saltbox-style house built in 1762. I replaced windows in the back of the house some time ago with units that fit into the ex-

PHOTO: COURTESY OF ALPINE SNOW GUARDS


Snow guards with rails and a screen mesh **(INSET)** *halt the slide of snow and ice off slate and metal roofs.*

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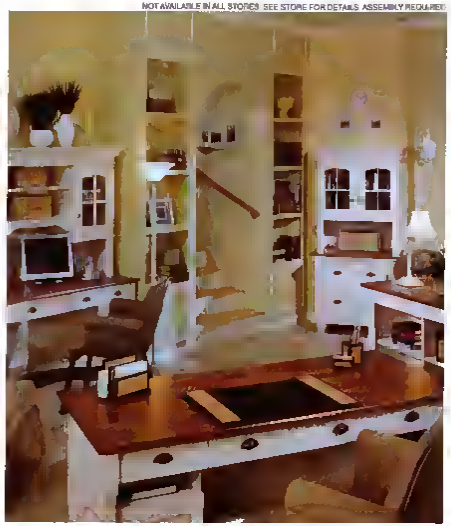

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5 [illegible]st chair from $299
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can you spot the office in this home office?

Office DEPOT.

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Ask THIS OLD HOUSE

isting openings. The front windows, however, are such an odd size that I haven't been able to find replacements, and I don't want to change the size of the openings. What options do I have?

VERA HARRIS, NORTH BRANFORD, CONN.

NORM ABRAM REPLIES: I applaud your efforts to maintain the original look and structure of such an old house. But unless you're lucky enough to find some matching windows through an architectural salvage yard, you'll probably have to hire a millwork shop to make new ones for you.

If the entire window does have to be replaced, including the frame, then the work, including installation, will be expensive. But if the window frames are still in good shape, which is usually the case, you can remove just the existing sash and have new ones made. This option will have the least effect on the exterior of the house and on your bank account. Even if the windowsills are rotted beyond repair, you can replace them and install new single-glazed sash without replacing the rest of the window frames. Then, to improve the energy efficiency of the new sash, you should also consider having the same millwork shop make storm windows to fit the openings.

DRILLING INTO PLASTIC

I need to drill a 2-inch-diameter hole through a sheet of ¾-inch Lexan. Do you have any suggestions about how to do this?

ALAN SEDELL, PINE BROOK, N.J.

TOM SILVA REPLIES: Lexan is a polycarbonate plastic with high-impact strength and unusual clarity, which make it useful for security glazing, power-tool guards, and the like. But drilling holes larger than an inch into Lexan dramatically reduces its strength. If that's not a problem on your project, here's how to do it.

The basic strategy in drilling into any plastic is to use a sharp twist bit at a slow speed to minimize heat. (If the bit creates shavings, the speed is okay. If it's gumming up, let it cool, then go slower.)

A 2-inch hole calls for something bigger than a twist bit; I'd use a hole saw with carbide teeth—not just carbide grit. You could easily spend $70 for such a tool—look for it in supply houses that cater to tile setters, countertop fabricators, or plumbers—so it might be cheaper to have someone from those trades drill the hole for you.

If you do tackle the job yourself, run the hole saw at a slow speed and clamp the plastic to a benchtop so it won't spin like a propeller if the saw binds.

FUSEBOX FORENSICS

Our home is 50 years old and in excellent condition, except for one problem. At odd times the electricity goes off in just one part of the house, affecting the lights and the garage door opener. We've learned that if we open the fuse box and slam it shut, the lights go back on. We've had electricians here but we can never duplicate the problem so they're not sure what to do. Can you suggest a solution?

RUTH AND BOB COLVIN, SYRACUSE, N.Y.

ALLEN GALLANT REPLIES: I can guess how you learned that slamming the door helps; those intermittent problems are always frustrating. I suspect you have a loose or corroded connection somewhere in the panel, and if so, it will eventually get so bad that slamming the door won't solve the problem.

Figuring out exactly what's wrong will involve some detective work inside the fuse box, and that isn't something a homeowner should do. But given the age of the box and the fact that any corrosion problem you fix now is likely to crop up in another area, it probably makes more sense to replace it with an up-to-date circuit breaker panel. Just think, you'd never have to replace another fuse.

Allen Gallant is an electrical contractor who has worked on several This Old House *projects.* ●

To send a question to **Ask This Old House**, go to **www.thisoldhouse.com/asktoh** or write to:

Ask This Old House
This Old House Magazine
1185 Avenue of the Americas, 27th floor
New York, NY 10036

Include a complete address and daytime phone number. Published questions will be edited for clarity and length and may be used in other media. We regret that due to volume of mail received, we're not able to reply to unpublished questions.

MITER SAWS

BY JOHN KELSEY PHOTOGRAPHS BY DARRIN HADDAD

A power miter saw is one of the handiest tools around. Nothing beats it for making totally accurate 90-degree crosscuts, the most common cut. But it can also pivot to make perfectly angled miter cuts, and some models even tilt to make compound angle cuts.

Precision is what makes miter saws so indispensable. Because the blade is fixed to a sturdy arm on a heavy body, cuts can be fine-tuned to the width of the blade. "You can shave off little bits until you get a perfect fit," says Tom Silva, *This Old House* general contractor. That stability, along with built-in blade guards, also makes miter saws safer than other power cutters.

There are some things miter saws can't do. They can't rip lumber to width or cut very wide stock, and many only tilt one way. But sliding arms can increase cutting reach, and some tilt two ways to make complicated cuts easier. Keep in mind that with added features come more weight and higher cost. Turn the page to see which saw has the features you want, and Tom's tips for using miter saws correctly.

There's a week's worth of work to do.
When there's only Saturday to get it all done,
and two kids are waiting on you. Nothing runs like a Deere.™

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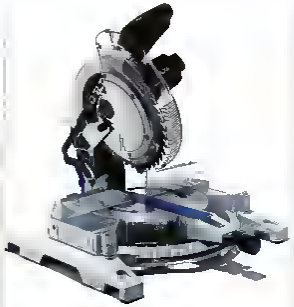
The Tools

BASIC MITER SAW

Crosscuts and miters but does not tilt for bevel cuts.
PROS: Good basic job-site saw Relatively inexpensive, lightweight for easy hauling and setup.
CONS. Can't cut bevels. Width and depth of cut are limited to blade reach.
SHOWN: Makita LS1030N, $780



COMPOUND MITER SAW

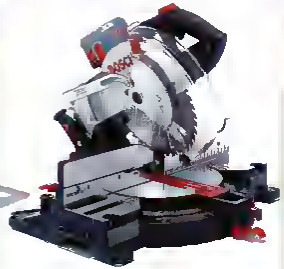
Crosscuts, miters and tilts to one side to cut bevels Some tilt both ways.
PROS: Makes all the basic cuts
CONS: Width and depth of cut are limited to blade reach. One-way tilt means you have to make some bevel cuts with the workpiece upside down.
SHOWN: Delta 36-255L TwinLaser with double-laser guide lines for accurate cuts, $350

SLIDING COMPOUND MITER SAW

Crosscuts, miters tilts to one side, and slides.
PROS: Makes all the basic cuts. Slide mechanism increases cutting capacity
CONS: One-way tilt means you have to make some cuts with the workpiece upside down.
SHOWN: Porter-Cable 3807 $470

DOUBLE-BEVEL SLIDING COMPOUND MITER SAW

Crosscuts, miters, bevels to both sides, and slides.
PROS: Makes all straight, mitered, and beveled cuts. No need to turn work upside down.
CONS: Numerous adjustments to get right; more expensive
SHOWN: Dewalt DW708, $600



CORDLESS SLIDING COMPOUND MITER SAW

Crosscuts, miters, bevels to one side and slides all on battery power
PROS: Battery means it can be used on sites where the electricity has not yet been connected.
CONS. Biggest 24-volt battery still might not be big enough for a full day's work without recharging
SHOWN: Bosch 3924 $350

MITER SAW STANDS

Most lumber stock is long, which means you need to support the wood's ends when cutting with a miter saw Consider getting a bench or stand The Delta Kickstand below, folds to become a wheeled cart. Or build your own infeed and outfeed tables with planks on sawhorses (see *www.newyankee.com* for Norm Abram's "Chop-Saw Station plans); outriggers to catch the wood must match the saw table height or else the blade will bind or kick back Whether or not you use a stand, be sure to screw the saw down tight to whatever surface it's on.

For more information on power tools, from circular saws to sanders
Go to www.thisoldhouse.com or America Online Keyword: This Old House and select Tools & Materials in the Know-how section.

Fighting Back with Aricept®

I love my life way too much to just hand it over to Alzheimer's.

*When my memory started failing, I knew I had to see my doctor. He put me on ARICEPT.® Now I'm doing better.**

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There is no cure for Alzheimer's But a prescription drug called ARICEPT® has been used by millions of people to help their symptoms

In studies ARICEPT® has been proven to work for mild to moderate Alzheimer's It has helped people improve their memory over time It has also helped them to keep doing everyday things on their own longer

Ask your doctor if ARICEPT® is right for you or your loved one It is the #1 prescribed drug for Alzheimer's in the world The sooner you know it's Alzheimer's the sooner ARICEPT® can help

ONCE-A-DAY
ARICEPT®
(donepezil HCl)
5 MG AND 10 MG TABLETS

Strength in the face of Alzheimer's™

To learn more and to receive a memory checklist, **call 800-760-6029 ext 99 or visit www.aricept.com**

ARICEPT® is well tolerated but may not be for everyone! Some people experience nausea, diarrhea, not sleeping well, vomiting, muscle cramps, feeling very tired, or not wanting to eat In studies, these side effects were usually mild and went away over time. Some people taking ARICEPT® may experience fainting. People at risk for ulcers should tell their doctor because their condition may get worse

Please see additional important product information on accompanying panel

*Individual responses to ARICEPT® can be different people may get better stay the same or not get better

ONCE-A-DAY
ARICEPT (donepezil HCl) 5-mg and 10-mg tablets
STRENGTH IN THE FACE OF ALZHEIMER'S™

ARICEPT® (Donepezil Hydrochloride Tablets)

Brief Summary—see package insert for full prescribing information. **INDICATIONS AND USAGE** ARICEPT® is indicated for the treatment of mild to moderate dementia of the Alzheimer's type. **CONTRAINDICATIONS** ARICEPT® is contraindicated in patients with known hypersensitivity to donepezil hydrochloride or to piperidine derivatives. **WARNINGS** ***Anesthesia:*** ARICEPT®, as a cholinesterase inhibitor, is likely to exaggerate succinylcholine-type muscle relaxation during anesthesia. ***Cardiovascular Conditions:*** Because of their pharmacological action, cholinesterase inhibitors may have vagotonic effects on the sinoatrial and atrioventricular nodes. This effect may manifest as bradycardia or heart block in patients both with and without known underlying cardiac conduction abnormalities. Syncopal episodes have been reported in association with the use of ARICEPT®. ***Gastrointestinal Conditions:*** Through their primary action, cholinesterase inhibitors may be expected to increase gastric acid secretion due to increased cholinergic activity. Therefore, patients should be monitored closely for symptoms of active or occult gastrointestinal bleeding, especially those at increased risk for developing ulcers, e.g., those with a history of ulcer disease or those receiving concurrent nonsteroidal anti-inflammatory drugs (NSAIDS). Clinical studies of ARICEPT® have shown no increase, relative to placebo, in the incidence of either peptic ulcer disease or gastrointestinal bleeding. ARICEPT®, as a predictable consequence of its pharmacological properties, has been shown to produce diarrhea, nausea and vomiting. These effects, when they occur, appear more frequently with the 10 mg/day dose than with the 5 mg/day dose. In most cases, these effects have been mild and transient, sometimes lasting one to three weeks, and have resolved during continued use of ARICEPT®. ***Genitourinary:*** Although not observed in clinical trials of ARICEPT®, cholinomimetics may cause bladder outflow obstruction. ***Neurological Conditions:*** Seizures: Cholinomimetics are believed to have some potential to cause generalized convulsions. However, seizure activity also may be a manifestation of Alzheimer's disease. ***Pulmonary Conditions:*** Because of their cholinomimetic actions, cholinesterase inhibitors should be prescribed with care to patients with a history of asthma or obstructive pulmonary disease. **PRECAUTIONS Drug-Drug Interactions** ***Drugs Highly Bound to Plasma Proteins:*** Drug displacement studies have been performed in vitro between this highly bound drug (96%) and other drugs such as furosemide, digoxin, and warfarin. ARICEPT® at concentrations of 0.3-10 µg/mL did not affect the binding of furosemide (5 µg/mL), digoxin (2 ng/mL), and warfarin (3 µg/mL) to human albumin. Similarly, the binding of ARICEPT® to human albumin was not affected by furosemide, digoxin, and warfarin. ***Effect of ARICEPT® on the Metabolism of Other Drugs:*** No in vivo clinical trials have investigated the effect of ARICEPT® on the clearance of drugs metabolized by CYP 3A4 (e.g. cisapride, terfenadine) or by CYP 2D6 (e.g. imipramine). However, in vitro studies show a low rate of binding to these enzymes (mean Ki about 50-130 µM), that, given the therapeutic plasma concentrations of donepezil (164 nM), indicates little likelihood of interference. Whether ARICEPT® has any potential for enzyme induction is not known. ***Effect of Other Drugs on the Metabolism of ARICEPT®:*** Ketoconazole and quinidine, inhibitors of CYP450, 3A4 and 2D6, respectively, inhibit donepezil metabolism in vitro. Whether there is a clinical effect of these inhibitors is not known. Inducers of CYP 2D6 and CYP 3A4 (e.g., phenytoin, carbamazepine, dexamethasone, rifampin, and phenobarbital) could increase the rate of elimination of ARICEPT®. ***Use with Anticholinergics:*** Because of their mechanism of action, cholinesterase inhibitors have the potential to interfere with the activity of anticholinergic medications. ***Use with Cholinomimetics and Other Cholinesterase Inhibitors:*** A synergistic effect may be expected when cholinesterase inhibitors are given concurrently with succinylcholine, similar neuromuscular blocking agents or cholinergic agonists such as bethanechol. **Carcinogenesis, Mutagenesis, Impairment of Fertility** Carcinogenicity studies of donepezil have not been completed. Donepezil was not mutagenic in the Ames reverse mutation assay in bacteria. In the chromosome aberration test in cultures of Chinese hamster lung (CHL) cells, some clastogenic effects were observed. Donepezil was not clastogenic in the in vivo mouse micronucleus test. Donepezil had no effect on fertility in rats at doses up to 10 mg/kg/day (approximately 8 times the maximum recommended human dose on a mg/m² basis). **Pregnancy** ***Pregnancy Category C:*** Teratology studies conducted in pregnant rats at doses up to 16 mg/kg/day (approximately 13 times the maximum recommended human dose on a mg/m² basis) and in pregnant rabbits at doses up to 10 mg/kg/day (approximately 16 times the maximum recommended human dose on a mg/m² basis) did not disclose any evidence for a teratogenic potential of donepezil. However, in a study in which pregnant rats were given up to 10 mg/kg/day (approximately 8 times the maximum recommended human dose on a mg/m² basis) from day 17 of gestation through day 20 postpartum, there was a slight increase in still births and a slight decrease in pup survival through day 4 postpartum at this dose; the next lower dose tested was 3 mg/kg/day. There are no adequate or well-controlled studies in pregnant women. ARICEPT® should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. **Nursing Mothers** It is not known whether donepezil is excreted in human breast milk. ARICEPT® has no indication for use in nursing mothers. **Pediatric Use** There are no adequate and well-controlled trials to document the safety and efficacy of ARICEPT® in any illness occurring in children. **ADVERSE REACTIONS Adverse Events Leading to Discontinuation** The rates of discontinuation from controlled clinical trials of ARICEPT® due to adverse events for the ARICEPT® 5 mg/day treatment groups were comparable to those of placebo-treatment groups at approximately 5%. The rate of discontinuation of patients who received 7-day escalations from 5 mg/day to 10 mg/day, was higher at 13%. The most common adverse events leading to discontinuation, defined as those occurring in at least 2% of patients and at twice the incidence seen in placebo patients, are shown in Table 1.

Table 1. Most Frequent Adverse Events Leading to Withdrawal from Controlled Clinical Trials by Dose Group

Dose Group	Placebo	5 mg/day ARICEPT®	10 mg/day ARICEPT®
Patients Randomized	355	350	315
Event/%Discontinuing			
Nausea	1%	1%	3%
Diarrhea	0%	<1%	3%
Vomiting	<1%	<1%	2%

Most Frequent Adverse Clinical Events Seen in Association with the Use of ARICEPT® The most common adverse events, defined as those occurring at a frequency of at least 5% in patients receiving 10 mg/day and twice the placebo rate, are largely predicted by ARICEPT®'s cholinomimetic effects. These include nausea, diarrhea, insomnia, vomiting, muscle cramp, fatigue and anorexia. These adverse events were often of mild intensity and transient, resolving during continued ARICEPT® treatment without the need for dose modification. There is evidence to suggest that the frequency of these common adverse events may be affected by the rate of titration. An open-label study was conducted with 269 patients who received placebo in the 15- and 30-week studies. These patients were titrated to a dose of 10 mg/day over a 6-week period. The rates of common adverse events were lower than those seen in patients titrated to 10 mg/day over one week in the controlled clinical trials and were comparable to those seen in patients on 5 mg/day. See Table 2 for a comparison of the most common adverse events following one and six week titration regimens.

Table 2. Comparison of Rates of Adverse Events in Patients Titrated to 10 mg/day Over 1 and 6 Weeks

Adverse Event	No titration Placebo (n=315)	No titration 5 mg/day (n=311)	One-week titration 10 mg/day (n=315)	Six-week titration 10 mg/day (n=269)
Nausea	6%	5%	19%	6%
Diarrhea	5%	8%	15%	9%
Insomnia	6%	6%	14%	6%
Fatigue	3%	4%	8%	3%
Vomiting	3%	3%	8%	5%
Muscle cramps	2%	6%	8%	3%
Anorexia	2%	3%	7%	3%

Adverse Events Reported in Controlled Trials The events cited reflect experience gained under closely monitored conditions of clinical trials in a highly selected patient population. In actual clinical practice or in other clinical trials, these frequency estimates may not apply, as the conditions of use, reporting behavior, and the kinds of patients treated may differ. Table 3 lists treatment emergent signs and symptoms that were reported in at least 2% of patients in placebo-controlled trials who received ARICEPT® and for which the rate of occurrence was greater for ARICEPT® assigned than placebo assigned patients. In general, adverse events occurred more frequently in female patients and with advancing age.

Table 3. Adverse Events Reported in Controlled Clinical Trials in at Least 2% of Patients Receiving ARICEPT® (donepezil HCl) and at a Higher Frequency than Placebo-treated Patients

Body System/Adverse Event	Placebo (n=355)	ARICEPT® (n=747)
Percent of Patients with any Adverse Event	72	74
Body as a Whole		
Headache	9	10
Pain, various locations	8	9
Accident	6	7
Fatigue	3	5
Cardiovascular System		
Syncope	1	2
Digestive System		
Nausea	6	11
Diarrhea	5	10
Vomiting	3	5
Anorexia	2	4
Hemic and Lymphatic System		
Ecchymosis	3	4
Metabolic and Nutritional Systems		
Weight Decrease	1	3
Musculoskeletal System		
Muscle Cramps	2	6
Arthritis	1	2
Nervous System		
Insomnia	6	9
Dizziness	6	8
Depression	<1	3
Abnormal Dreams	0	3
Somnolence	<1	2
Urogenital System		
Frequent Urination	1	2

Other Adverse Events Observed During Clinical Trials ARICEPT® has been administered to over 1700 individuals during clinical trials worldwide. Approximately 1200 of these patients have been treated for at least 3 months and more than 1000 patients have been treated for at least 6 months. Controlled and uncontrolled trials in the United States included approximately 900 patients. In regards to the highest dose of 10 mg/day, this population includes 650 patients treated for 3 months, 475 patients treated for 6 months and 116 patients treated for over 1 year. The range of patient exposure is from 1 to 1214 days. Treatment emergent signs and symptoms that occurred during 3 controlled clinical trials and two open-label trials in the United States were recorded as adverse events by the clinical investigators using terminology of their own choosing. To provide an overall estimate of the proportion of individuals having similar types of events, the events were grouped into a smaller number of standardized categories using a modified COSTART dictionary and event frequencies were calculated across all studies. These categories are used in the listing below. The frequencies represent the proportion of 900 patients from these trials who experienced that event while receiving ARICEPT®. All adverse events occurring at least twice are included, except for those already listed in Tables 2 or 3, COSTART terms too general to be informative, or events less likely to be drug caused. Events are classified by body system and listed using the following definitions: *frequent adverse events*—those occurring in at least 1/100 patients; *infrequent adverse events*—those occurring in 1/100 to 1/1000 patients. These adverse events are not necessarily related to ARICEPT® treatment and in most cases were observed at a similar frequency in placebo-treated patients in the controlled studies. No important additional adverse events were seen in studies conducted outside the United States. **Body as a Whole:** *Frequent:* influenza, chest pain, toothache; *Infrequent:* fever, edema face, periorbital edema, hernia hiatal, abscess, cellulitis, chills, generalized coldness, head fullness, listlessness. **Cardiovascular System:** *Frequent:* hypertension, vasodilation, atrial fibrillation, hot flashes, hypotension; *Infrequent:* angina pectoris, postural hypotension, myocardial infarction, AV block (first degree), congestive heart failure, arteritis, bradycardia, peripheral vascular disease, supraventricular tachycardia, deep vein thrombosis. **Digestive System:** *Frequent:* fecal incontinence, gastrointestinal bleeding, bloating, epigastric pain; *Infrequent:* eructation, gingivitis, increased appetite, flatulence, periodontal abscess, cholelithiasis, diverticulitis, drooling, dry mouth, fever sore, gastritis, irritable colon, tongue edema, epigastric distress, gastroenteritis, increased transaminases, hemorrhoids, ileus, increased thirst, jaundice, melena, polydipsia, duodenal ulcer, stomach ulcer. **Endocrine System:** *Infrequent:* diabetes mellitus, goiter. **Hemic and Lymphatic System:** *Infrequent:* anemia, thrombocythemia, thrombocytopenia, eosinophilia, erythrocytopenia. **Metabolic and Nutritional Disorders:** *Frequent:* dehydration; *Infrequent:* gout, hypokalemia, increased creatine kinase, hyperglycemia, weight increase, increased lactate dehydrogenase. **Musculoskeletal System:** *Frequent:* bone fracture; *Infrequent:* muscle weakness, muscle fasciculation. **Nervous System:** *Frequent:* delusions, tremor, irritability, paresthesia, aggression, vertigo, ataxia, increased libido, restlessness, abnormal crying, nervousness, aphasia; *Infrequent:* cerebrovascular accident, intracranial hemorrhage, transient ischemic attack, emotional lability, neuralgia, coldness (localized), muscle spasm, dysphoria, gait abnormality, hypertonia, hypokinesia, neurodermatitis, numbness (localized), paranoia, dysarthria, dysphasia, hostility, decreased libido, melancholia, emotional withdrawal, nystagmus, pacing. **Respiratory System:** *Frequent:* dyspnea, sore throat, bronchitis; *Infrequent:* epistaxis, post nasal drip, pneumonia, hyperventilation, pulmonary congestion, wheezing, hypoxia, pharyngitis, pleurisy, pulmonary collapse, sleep apnea, snoring. **Skin and Appendages:** *Frequent:* pruritus, diaphoresis, urticaria; *Infrequent:* dermatitis, erythema, skin discoloration, hyperkeratosis, alopecia, fungal dermatitis, herpes zoster, hirsutism, skin striae, night sweats, skin ulcer. **Special Senses:** *Frequent:* cataract, eye irritation, vision blurred; *Infrequent:* dry eyes, glaucoma, earache, tinnitus, blepharitis, decreased hearing, retinal hemorrhage, otitis externa, otitis media, bad taste, conjunctival hemorrhage, ear buzzing, motion sickness, spots before eyes. **Urogenital System:** *Frequent:* urinary incontinence, nocturia; *Infrequent:* dysuria, hematuria, urinary urgency, metrorrhagia, cystitis, enuresis, prostate hypertrophy, pyelonephritis, inability to empty bladder, breast fibroadenosis, fibrocystic breast, mastitis, pyuria, renal failure, vaginitis. **Postintroduction Reports** Voluntary reports of adverse events temporally associated with ARICEPT® that have been received since market introduction that are not listed above, and that there is inadequate data to determine the causal relationship with the drug include the following: abdominal pain, agitation, cholecystitis, confusion, convulsions, hallucinations, heart block (all types), hemolytic anemia, hepatitis, hyponatremia, pancreatitis, and rash. **OVERDOSAGE Because strategies for the management of overdose are continually evolving, it is advisable to contact a Poison Control Center to determine the latest recommendations for the management of an overdose of any drug.** As in any case of overdose, general supportive measures should be utilized. Overdosage with cholinesterase inhibitors can result in cholinergic crisis characterized by severe nausea, vomiting, salivation, sweating, bradycardia, hypotension, respiratory depression, collapse and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Tertiary anticholinergics such as atropine may be used as an antidote for ARICEPT® overdosage. Intravenous atropine sulfate titrated to effect is recommended: an initial dose of 1.0 to 2.0 mg IV with subsequent doses based upon clinical response. Atypical responses in blood pressure and heart rate have been reported with other cholinomimetics when co-administered with quaternary anticholinergics such as glycopyrrolate. It is not known whether ARICEPT® and/or its metabolites can be removed by dialysis (hemodialysis, peritoneal dialysis, or hemofiltration). Dose-related signs of toxicity in animals included reduced spontaneous movement, prone position, staggering gait, lacrimation, clonic convulsions, depressed respiration, salivation, miosis, tremors, fasciculation and lower body surface temperature. **DOSAGE AND ADMINISTRATION** The dosages of ARICEPT® shown to be effective in controlled clinical trials are 5 mg and 10 mg administered once per day. The higher dose of 10 mg did not provide a statistically significantly greater clinical benefit than 5 mg. There is a suggestion, however, based upon order of group mean scores and dose trend analyses of data from these clinical trials, that a daily dose of 10 mg of ARICEPT® might provide additional benefit for some patients. Accordingly, whether or not to employ a dose of 10 mg is a matter of prescriber and patient preference. Evidence from the controlled trials indicates that the 10 mg dose, with a one week titration, is likely to be associated with a higher incidence of cholinergic adverse events than the 5 mg dose. In open label trials using a 6 week titration, the frequency of these same adverse events was similar between the 5 mg and 10 mg dose groups. Therefore, because steady state is not achieved for 15 days and because the incidence of untoward effects may be influenced by the rate of dose escalation, treatment with a dose of 10 mg should not be contemplated until patients have been on a daily dose of 5 mg for 4 to 6 weeks. ARICEPT® should be taken in the evening, just prior to retiring, and may be taken with or without food.

Eisai Inc. Teaneck, NJ 07666 — Pfizer US Pharmaceuticals New York, NY 10017 — 206177 Revised December 2000

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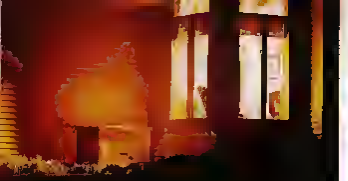

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Tom Silva's Techniques

BASIC USE

- Take a stable stance, and clear away scraps of wood that could upset your footing.
- Wear safety glasses.
- Hold the material tight to the fence and down against the table with one hand, and work the saw with the other.
- Push the saw blade steadily down into the wood.
- With a saw that slides, pull it all the way forward before you lower it into the wood and push to cut so the saw's force works with you to press the wood in and down. Never pull the blade through the wood.

CUTTING WIDE BOARDS

- When the piece you're cutting is too wide for the saw but still less than twice the width, you can cut it in two passes. Carefully cut the piece as far as the blade will reach, then flip it over and repeat the cut from the opposite edge.

PHOTOS: KINDRA CLNEFF

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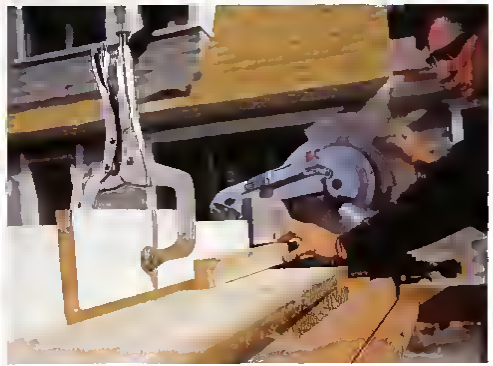

CUTTING SEVERAL PIECES THE SAME LENGTH

- For balusters, studs, and other lumber that has to be cut to equal lengths, fasten a stop block to the fence.
- Secure the block to the fence with screws or better yet, adjustable locking pliers, which tighten easily and hold securely.
- Position the stop block slightly above the table surface to make room for sawdust to escape. "Otherwise, if it packs up in there, your cuts won't be accurate," Tom says.
- Butt each piece of wood against the block to cut uniform lengths. Be sure to hold down the workpiece on the block side of the blade, not on the other side.

CUTTING MITERS AND BEVELS

- When cutting compound miters on crown molding, mark not only the point of the miter (where the wood meets the corner) but also the direction of the cut. "You don't have to lay it out with a ruler, just sketch a line showing which way it goes," Tom explains. Then, when you set up for the cut, even if you have to turn the wood upside down, you'll know what has to happen.

PHOTOS: KINDRA CLNEFF

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Good Bones

Tom Silva's best practices for framing

BY MAX ALEXANDER

From the Ground Up: 25 Years of Building Experience

In this special year long series celebrating the 25th anniversary of *This Old House*, we highlight each of the different systems in a house, from the foundation to the roof. You'll learn best building practices from an experienced *TOH* team member and discover some new materials and technologies we've got our eye on. By year's end, you'll know how to build the *This Old House* way.

A frame is the skeleton of a house. If the frame is strong, it provides the necessary support for everything that follows. But if it's weak, no amount of expensive finishes will hide the flaws. Those perfectly plastered walls will begin to crack every time a door slams, the granite countertops will gradually fall out of level, and the quartersawn oak floors will bounce and squeak like a rusty spring. "Shortcuts in framing are the biggest mistake you can make," says Tom Silva, *This Old House* general contractor, "although it may take four or five years before the sagging, the bouncing, and the movement start to show up."

While the basics of modern stud-wall framing haven't changed much in the past 25 years, the tools and materials certainly have. Pneumatic nail guns, which were novelties until the mid 1970s, have speeded up the assembly process; engineered lumber is steadily supplanting sawn boards, and metal connectors are now routinely used to enhance stiffness and sturdiness.

But Tom warns that tools and materials by themselves don't guarantee a strong house frame. They need to be in the hands of a skilled carpentry crew who know how to use them. "They'll build it right the first time," Tom says, "so you won't be sorry later on." To see how Tom frames a house, turn the page.

AIR POWER ON THE JOB

Back in 1969, when most houses were framed with hammers and sheer muscle power, my dad bought a nail gun for the family business. The other contractors just laughed. They said, "You're crazy spending money on one of those."

Crazy like a fox. It takes three solid swipes to hammer a framing nail home; one tug on the gun's trigger could sink the same nail in the blink of an eye. It wasn't long before those same builders had several nail guns bouncing around in the back of their trucks. Now, nail guns are fixtures on every framing job in the country. —*Tom Silva*

A good framing crew works fast. This complicated addition to the Manchester Mass. TV project went from bare foundation to sheathed structure in just 10 days.

PHOTOS: (TOP RIGHT) MILLER & MILLER; (BOTTOM) MELIN SMITH; ILLUSTRATION: IAN WHISPELL

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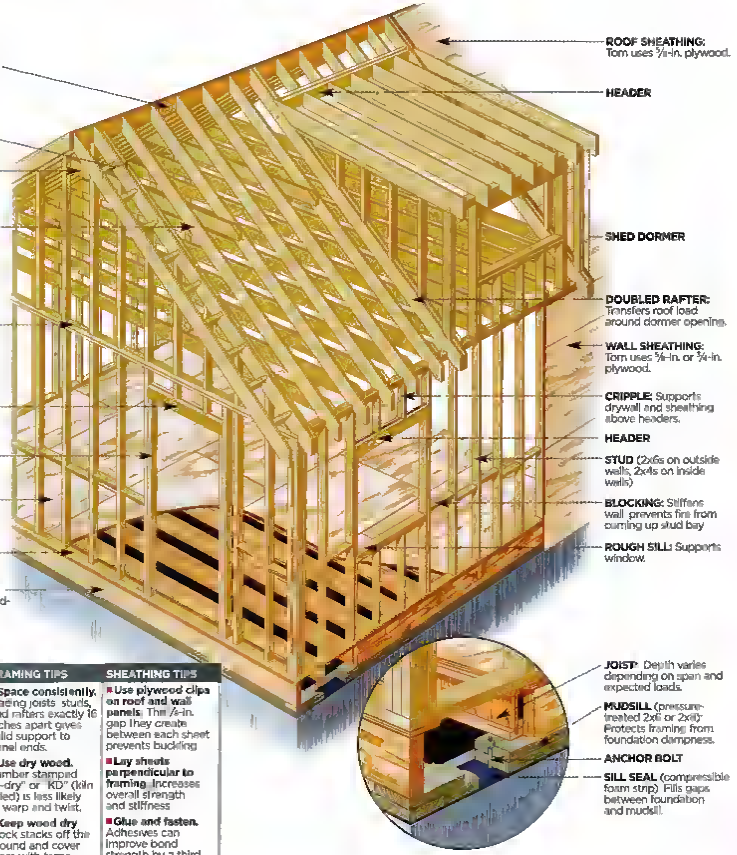
Building It Right

House frames can be made out of thick posts and beams (the oldest framing method) or extra-long studs (the balloon frames of the Victorian era). But Tom Silva typically frames in one-story "platforms" consisting of 8- or 9-foot-high stud walls resting on a plywood-sheathed subfloor. Each story is framed atop the previous one, until it's time to put on the roof.

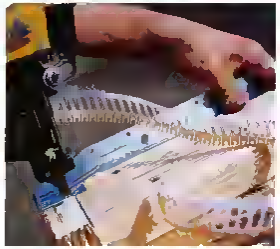


NAILING TIPS	FRAMING TIPS	SHEATHING TIPS
Use the right-size nails. Codes specify length, girth, and number of nails in critical joints. **Don't overdrive.** A nail head sunk too deep into the wood can't pull its full weight.	**Space consistently.** Placing joists, studs, and rafters exactly 16 inches apart gives solid support to panel ends. **Use dry wood.** Lumber stamped "S-dry" or "KD" (kiln dried) is less likely to warp and twist. **Keep wood dry.** Block stacks off the ground and cover them with tarps.	**Use plywood clips on roof and wall panels.** Thin ⅛-in. gap they create between each sheet prevents buckling. **Lay sheets perpendicular to framing.** Increases overall strength and stiffness. **Glue and fasten.** Adhesives can improve bond strength by a third.

ILLUSTRATIONS: AN WEBERBLE

As Seen on TV

Great framing ideas from *TOH* project houses



METAL HANGERS AND TIES

Concern about the weakness of nailed joints, particularly in earthquake- and hurricane-prone regions, has made metal straps and ties a fixture in codebooks and on today's job sites even where such natural disasters seldom occur There are hundreds of different types of galvanized-steel fittings, from joist hangers to hurricane straps, with new ones coming on the market almost every month. Each connector uses more nails than an "old-fashioned" joint because every hole in the connector needs to be filled But with the right nail gun there s almost no reduction in installation speed Note Use only nails specified by the manufacturer—no substitutions!

LIGHTWEIGHT JOISTS

An I-joist consists of a "web" of high-grade OSB (oriented strand board) glued between two horizontal "flanges" of conventional lumber or LVL (laminated veneer lumber) It's just as strong as a sawn 2x of the same width but only half the weight, and it's made in lengths of up to 60 feet Best of all holes for plumbing and ductwork can be cut through the web (at specified sizes and intervals) without compromising structural integrity *TOH* first used I-joists at the 1989 barn project in Concord Mass. and Tom has been using them ever since

ENGINEERED BEAMS

LVL beams are composed of wood veneers glued together under heat and pressure All the veneers are oriented precisely in the same lengthwise direction making LVLs nearly 20 percent stiffer than ordinary sawn lumber While LVLs are commonly used as ridge beams and headers above windows and doorways Tom has also used them as joists, rafters and stair stringers—anywhere he needs maximum performance in minimum space They're heavy but Tom likes them because they re as strong as steel yet he can cut them with an ordinary saw

ON THE HORIZON
New technologies for the future of framing

FOAM ADHESIVES

New foam-based adhesives use the superior sticking power of polyurethane and are easily dispensed with just a finger on the trigger Even better, one can of foam contains the equivalent of 15 tubes of old-style adhesive

TENACIOUS NAIL

The Sheather-Plus sheathing nail resists uplift forces twice as well as standard smooth-shanked nails, thanks to a ringed shank an oversize head, and a cement coating that acts like a lubricant to speed the nail home, then bonds to the wood

SUPER STUDS

Laminated strand lumber—flakes of wood that are pressure-glued to the size of a standard 2x4 or 2x6 (INSET)—is free of defects, won't warp or bow and can run as long as 22 feet, a dimension unthinkable in a sawn stud nowadays

PHOTOS (TOP LEFT) BRIAN WILDER (TOP RIGHT) JOHN HUEY (BOTTOM LEFT) KELLY SMITH

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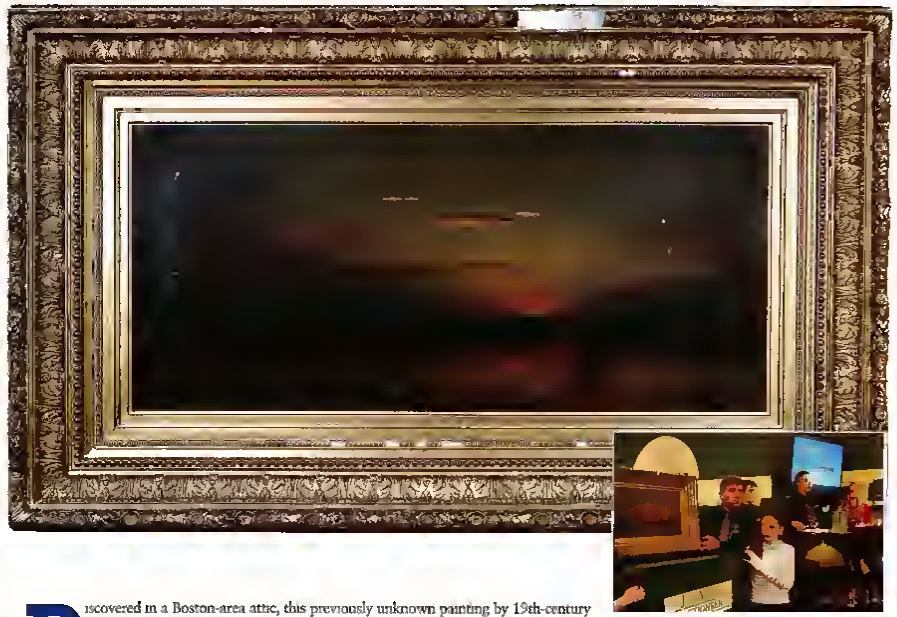
Oil painting featured on *Find!* episode brings over $1 million at auction



This landscape painting by 19th-century artist Martin Johnson Heade turned up in a Boston attic It sold at auction **(INSET)** *for more than $1 million.*

PHOTOS (FROM TOP) PETER ROSS; MATTHEW BRUCKER; LISA FIDLE

Discovered in a Boston-area attic, this previously unknown painting by 19th-century American painter Martin Johnson Heade sold for $1,006,250 at auction Leslie and I knew something like this would happen on *Find!*, but we didn't know it would happen so quickly It's the kind of thing we live for—it's what makes us tick And as Leslie says, the fact that the owner had no idea this landscape painting tucked away in the attic was actually a masterpiece makes it particularly gratifying.

After Amesbury, Massachusetts, auctioneer John McInnis found the painting leaning against an attic rafter, he tipped us off The house was filled with treasures, but nothing came close to the painting, a landscape scene depicting a yet-to-be-identified river or marsh at sunset and a small sailing vessel, in its original gilded frame, and in untouched condition. [*continued*]

Antiques experts Leslie Keno and Leigh Keno are hosts of *Find!* a new TV series on PBS celebrating the world of design, style, antiques and furnishings (for more, see *www.find-tv.com*). Leigh (at right in photo above) operates his own gallery of American antiques in Manhattan. Leslie is head of the American furniture department at auction house Sotheby's in New York City

Heade's renown today stems from the originality of his work and from the fact that he mastered both landscape and still-life subjects at a time when artists typically chose one genre or the other

"It's a major work by Heade, unlike any other composition I've seen," says Theodore E. Stebbins Jr., curator of American art at Harvard University's Fogg Art Museum and author of two landmark books about Heade. Stebbins believes the painting found in the attic dates from the 1870s.

HEADE WHO?

Today considered a leading American painter of the 19th century, Martin Johnson Heade (1819–1904) was not particularly famous during his lifetime, preferring to make a quiet living as a painter. Over the course of 60 years, Heade painted some 625 known works. His favorite landscape subject was the salt marsh, rendered in at least 120 paintings completed between 1859 and 1904.

"Heade turns up more than most of the good American artists because he wasn't well known," says Stebbins. "People bought his paintings and then put them away at some point."

In recent years, more than a dozen Heades have appeared, says Stebbins. "But only two have been significant: One, of magnolias, was found at a yard sale in California. The other is this one, which turned up in an attic in Boston."

With Heade works topping the million-dollar mark in the past, estimates for how much the newly discovered landscape scene would bring varied from $200,000 to seven figures. Leslie and I knew that our original estimate was conservative, but we didn't want to get the homeowner's hopes up. Stebbins guesses Heade would have received $150 for the painting originally (about $2,000 in today's dollars).

ART PRINTS AND POSTERS

An affordable way to hang a Heade on your walls is to buy a print or poster, typically costing $15 to $35 unframed. Allposters.com (*www.allposters.com*) offers over 50 Heade prints. Vintage Art Gallery & Frames (*www.vintageartgallery.com*) has more than 70 Heade prints, priced from $20 to $50 unframed.

If you would like to see an original Heade, more than 50 museums across the country display his works, including the Museum of Fine Arts in Boston (*www.mfa.org*), the Los Angeles County Museum of Art (*www.lacma.org*), and the Art Institute of Chicago (*www.artic.edu*).

YOUR OLD PAINTINGS

Do you suspect that your old painting has more than sentimental value? Painting conservator Jim Wright, of Somerville, Massachusetts, offers these suggestions:

CARE

- Don't dust paintings, even if they appear to be in good condition.
- If there's any sign of lifting or flaking paint, keep the work flat; don't hang it. If paint does fall off, save it.
- Don't remove the painting from its frame because it may be stuck to the frame. And the frame may contain notations relevant to the artwork. Also a vintage artwork's value is greater if it's in its original frame.
- Expect to pay $85 to $200 an hour (it typically takes at least 10 hours) to have your painting professionally cleaned or conserved. For help locating a conservator, consult the Web site of the American Institute for Conservation of Historic and Artistic Works at *http://aic.stanford.edu*.

DISPLAY AND STORAGE

- A temperature of 65 to 75 degrees Fahrenheit, with a humidity level of 50 to 55 percent, is ideal.
- Do not hang paintings in direct sun light, above a radiator or fireplace, or on poorly insulated outer walls.
- To store a painting, sandwich it in cardboard, making sure the cardboard does not touch the canvas. Place the painting on a support that keeps air circulating underneath it.

DETERMINING VALUE

- Gather any history or provenance of the painting.
- Photograph the painting and send or take the photographs (not the artwork itself) to an auction house with a reputation for handling paintings, or to a local museum, to find out if the painting warrants a professional appraisal, which may cost $300 or more. For help finding an appraiser in your area, try the Appraisers Association of America's Web site at *www.appraisersassoc.org*.

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Q&A

Curious about your collectibles? Our experts have the answers.

WICKER CHAIR

I found this wicker chair in my grandparents' 1890s summer cottage. A faded label under the seat reads "Wakefield Rattan." Can you tell me more about the chair and its value?

J. C. Cooper, Middletown, R.I.

LESLIE KENO REPLIES: Your Victorian wicker armchair appears to be in excellent condition. The original shellac finish brings out the nice color of the wicker and increases the chair's value, so I would caution you to not paint it. The Wakefield Rattan Company, founded in Boston in 1836, was a leading manufacturer of wicker furniture. We consulted antique wicker dealers Peter and Susan Tanzini, of Dovetail Antiques, in Columbus, New Jersey, and they believe your chair dates from 1892 to 1897 and has a value of approximately $1,000 because of its good condition and original finish.

New product, vintage look: *This classically styled wicker armchair is from Palecek, $1,024*

DRESSING TABLE WITH MIRROR

We recently purchased a piece of furniture at an estate auction, and we're not sure exactly what it is. We believe that it dates from the late 19th century. The piece measures 70 inches tall, 37 inches wide, and 19 inches deep, with 22-inch-long legs. What is the piece and how much might it be worth?

Haywood L. West, Lillington, N.C.

LEIGH KENO REPLIES: Although the turned legs on this dressing table with mirror are reminiscent of the late Federal style, elements such as the obelisk-form uprights and the use of thinly cut mahogany veneers are typical of the later Classical style and help date the piece later well into the 1840s. At first Leslie and I wondered if the uprights and mirror had been added later, but looking at an image of the back of the mirror, it appears to be the same wood as the base. Assuming the obelisk uprights and mirror are original, we estimate the value of the piece to be between $1,000 and $1,500.

CHIPPED VINTAGE WINEGLASSES

I inherited a large collection of vintage crystal wineglasses, but many of the rims are chipped. Is there anything that can be done to fix them?

Michelle Connors, Pittsburgh, Pa.

DAVID LACKEY REPLIES: Yes. The rims of vintage crystal wineglasses can be ground down even if the chip is large, which is considered ¼ inch. Reducing the height by ⅛ to ⅛ inch often will not affect the value of vintage crystal stemware from the 1930s or later. If you're not sure of the age of your stemware, ask an expert before you do any repairs to be sure it won't diminish its value. Keep in mind that the glass will be shorter after the grinding, but since glasses are clustered together only when they sit in the cabinet, it shouldn't matter. If the glass has an etched pattern that goes all the way to the rim, it may bother you to know that the pattern will be effected. However, if you have a set that is hard to find, replacements for you'd probably prefer a repaired glass to no glass at all. Sometimes glass repair services exhibit at local antiques fairs, or ask local antiques dealers. You can also check the Yellow Pages or the Web by looking for "Crystal Repair and Restoration." One Web site is *www.crystalrepair.com*. Expect to pay $10 to $20 per glass.

David Lackey is a partner in Edish (*www.edish.com*), an online china and crystal matching business; he is also a pottery and porcelain expert for *Antiques Roadshow*.

SEND US YOUR FINDS!

To submit a question on furniture, furnishings, style, or design, or for an opinion on a find from your home, go to *www.finddesign.net* or write to: **Find, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036.** Include a complete address and daytime telephone number. **If you're submitting a photo of an object, please shoot it on a plain white background.** (Digital images may be e-mailed as JPEG files.) Published questions will be edited for clarity and length and may be used in other media. Photos and any other materials submitted will not be returned. We regret that, due to the volume of mail received, we're not able to reply to unpublished questions.

PHOTOS: (BOTTOM LEFT) COURTESY PALECEK; (BOTTOM RIGHT) EATWISH

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Water, Water Everywhere

Solutions for wet-basement problems

BY JOSH GARSKOF

If you've got water in your basement, you're not alone. A whopping 60 percent of basements in the U.S. have moisture problems, according to an estimate by the American Society of Home Inspectors. Which isn't that surprising, when you look at a basement the way *This Old House* general contractor Tom Silva does. "A basement is just a big hole in the ground," he says. "And nature wants to fill holes with water."

Water can come from rain washing down the foundation walls from above, groundwater seeping in from below, a leaking pipe, even a misdirected sprinkler. Whatever the source, it will find its way through even the tiniest flaws in a foundation. Apart from damage to possessions and furnishings, a waterlogged basement fills a house with excess humidity, which corrodes pipes and electrical panels, encourages the growth of mold and rot, and attracts insects.

On the following pages, Tom shows how he dries up a basement. The first steps—plugging cracks, extending downspouts, covering window wells—are simple, quick, and inexpensive. If those don't solve the problem, he moves on to more elaborate (and costly) fixes, which generally require professional help. Tom recommends using a company that specializes in basement waterproofing (see "Find a Waterproofing Pro," right) and sticking to the proven strategies outlined here. "Solutions that sound too good to be true probably are," he says.

FIND A WATERPROOFING PRO

When you have an intractable water problem, it makes sense to hire a waterproofing contractor with the equipment and expertise to do the job quickly, safely, and effectively. Steer clear of outfits that offer a one-size-fits-all approach. You want options based on a careful assessment of your particular conditions. The National Association of Waterproofing and Structural Repair Contractors, a trade group, lists about 140 member companies on its Web site, *www.nawsrc.org*.

ILLUSTRATION: GARY HOVLAND

Mr. Goodwrench

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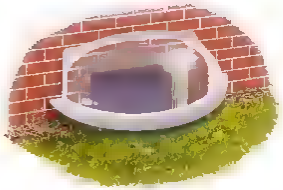
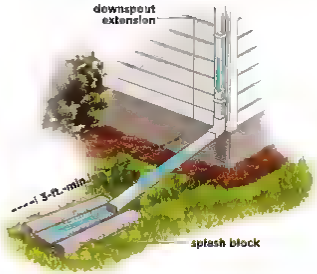
Quick Fixes

Look for the obvious places where water can enter. Plugging those leaks may be all you need to keep your basement dry





▲ FILL CRACKS AND GAPS

Problem: Whether because of settling, poor workmanship, or just old age, foundations can develop seams, cracks, and gaps that are an open invitation for water. Look for cracks in corners, under windows and doors, and where the basement floor meets the walls. Gaps often open up around windows, where an exterior stairwell meets the foundation, and anywhere pipes penetrate.

Solution: Tom patches cracks in concrete with hydraulic cement. It expands so it's almost like welding the concrete back together. And it sets fast, so you can plug holes even if water is actively coming through. For masonry foundations, he digs the old mortar out of the joints and fills them with new.

▲ COVER EXPOSED OPENINGS

Problem: Many basements depend on window wells to bring in natural light, and on an exterior stairwell that provides access to and from the outside. Both these features make great rain catchers if not properly covered. If you see dark water stains under the windows and on the steps and sides of the stairwell, there's a good chance they're leaking.

Solution: Add clear plastic window-well covers, which let in light while keeping out water and debris. Standard sizes are available in home centers for $10 to $40. Custom covers can cost as much as $125.

Refit a weathertight metal or fiberglass door over the stairwell. They're sold in lumberyards for between $200 and $300.

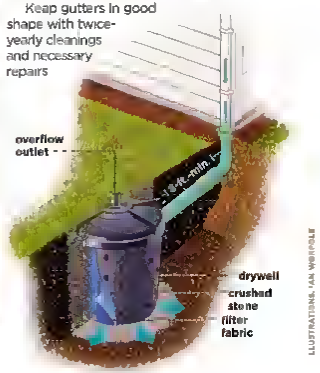
▲ IMPROVE GUTTER SYSTEM

Problem: An average-size roof sheds 1,000 gallons of water for every inch of rain that falls. If the gutters leak and overflow, or downspouts don't extend far enough from the house, all that rainwater could end up in your basement.

Solution: Attach downspout extensions and add splashblocks to carry the water at least 3 feet from the foundation (above).

If you don't like the look of extensions, or they're in inconvenient spots, bury a drainpipe to carry water to daylight or to a drywell—a perforated barrel buried at least 8 feet from the foundation (below). A filter at the top of the downspout keeps the drain clear; filter fabric wrapped around the drywell keeps its holes clear.

Keep gutters in good shape with twice-yearly cleanings and necessary repairs.



ILLUSTRATIONS: IAN WHITPOLE

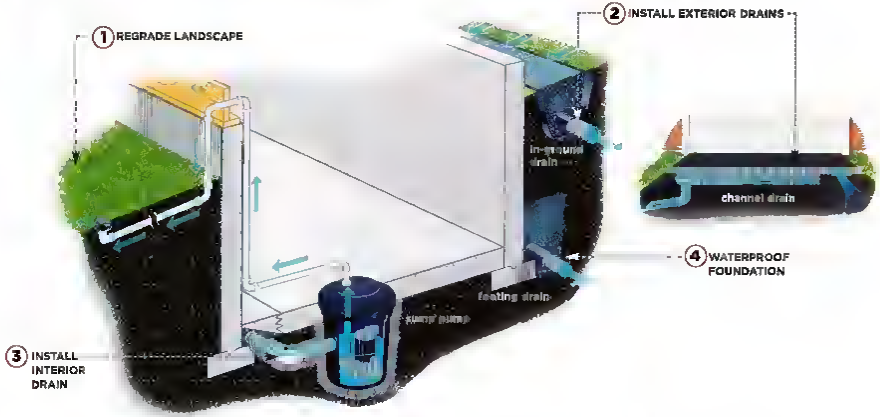
FLOOD STOPPERS

Even a bone-dry basement is still vulnerable to flooding from a source we all take for granted: household plumbing. A burst washing-machine hose, a cracked toilet, frozen pipes, or a rusted water heater can spew countless gallons for hours or even days, unless you have an electric shutoff valve. Mounted on the water-supply main just downstream from the main shutoff valve, this device stops water flow automatically in the event of a plumbing catastrophe.

The most basic automatic shutoffs sense an unusual or prolonged flow and close down the valve. The more advanced device at left employs wireless, battery-operated sensors with probes placed beneath water-using appliances. When a probe detects water, the sensor signals the electric shutoff to close. (The system can also notify your home-security company in the event of a shutdown.) In cold climates, a wireless freeze sensor is a useful add-on. By signaling the main valve to close when a supply pipe's temperature drops below 38 degrees, it protects against the flooding that can happen after frozen pipes burst. *—Scott Schilling*

Professional Solutions

When quick fixes aren't enough, then more elaborate—and expensive—measures may be in order. The illustration below shows four different ways to deal with a persistent wet basement, ranked in order of increasing complexity. Choose the solution that best fits your situation and budget and causes the least disruption to your home and property.



ILLUSTRATIONS: IAN WHITPOLE

1 REGRADE THE LANDSCAPE

Problem: Ideally, a house should sit up on top of a hill so that water always runs away from it. But often the backfill against the foundation has settled, or the surrounding property—a yard, patio, driveway, or walkway—is pitched toward the house.

Solution: The easiest fix is to regrade around the foundation. Ground should slope away from the house at least ½-inch per foot and be at least 8 inches away from any wood trim or siding.

Another option's to create swales and bumps in the yard to redirect water flow. This often requires bringing in heavy earth-moving equipment and uprooting trees and shrubs.

2 INSTALL EXTERIOR DRAINS

Problem: Surface water is running toward the foundation but regrading isn't practical (e.g., your entire neighborhood funnels water toward your basement).

Solution: Dig a defensive line in the yard or at the edge of a driveway or walkway to capture and redirect the surface water before it reaches the house. In yards, make an in-ground drain by burying a perforated drainpipe in a stone-filled trench. Slope the pipe so water heads to a drywell or an above-ground opening a safe distance from the house.

On improperly sloped walkways and driveways, a channel drain with a metal grate, set flush with the surrounding surface, serves the same purpose.

3 INSTALL INTERIOR DRAIN

Problem: A high water table is constantly pushing against the foundation from below, or grading and gutter work hasn't made a difference when it rains.

Solution: Put in a sump pump. The sump, a lined pit punched through the basement floor, collects the rising water; the pump kicks on automatically when the sump is filled, expelling water through a pipe to the outside. (A battery backup is recommended to keep the pump running if power goes out in a big rainstorm.) Water exiting the pipe should discharge at least three feet from the foundation.

If the sump alone doesn't do the job, it can be connected to a perforated drain pipe buried under the slab around the perimeter of the basement floor. This so-called French drain is highly effective and a good precaution if you have (or plan on having) a finished basement. Just be prepared. Installing a French drain involves cutting though the floor, burying the pipe in crushed stone, and patching the floor: a messy, noisy, and costly undertaking.

4 WATERPROOF THE FOUNDATION

Problem: Nothing else has worked, or you don't like the idea of being dependent on a sump pump.

Solution: Dig out around the foundation, waterproof the exterior with high-tech membranes and drainage fabrics, bury a perforated footing drain in crushed stone and lead it to daylight or a drywell. "I would only do that if the problem was very drastic, or if the landscape was being excavated anyway for another purpose," Tom says. "It's a very expensive proposition."

For help identifying the source of your basement problem, go to www.thisoldhouse.com or America Online Keyword: This Old House and type "wet basement" in the search box.

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Laying a Vinyl Floor

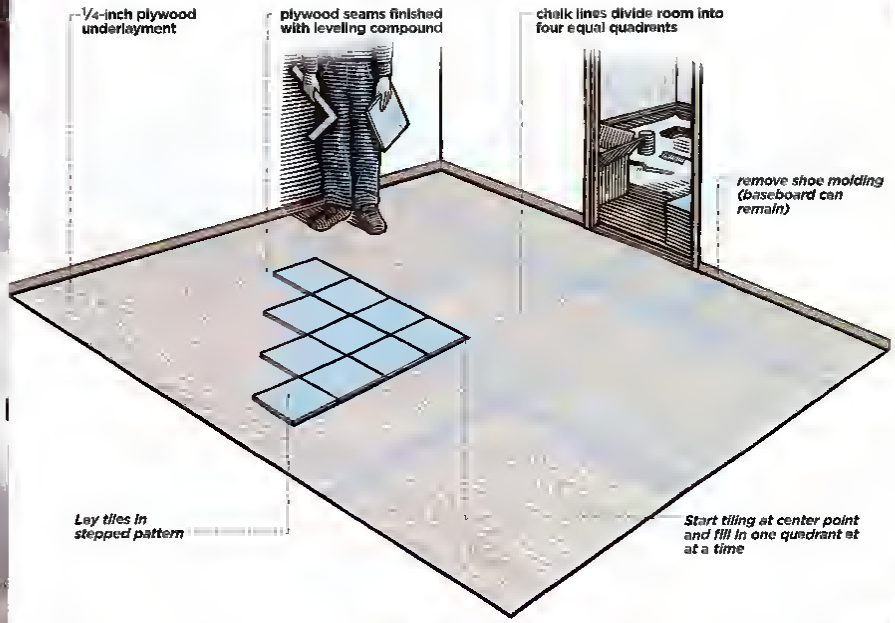
BY JOSEPH TRUINI PHOTOGRAPHS BY SHAFFER SMITH PHOTOGRAPHY
ILLUSTRATION BY GREGORY NEMEC

For mudroom or laundry room floors self-adhesive vinyl tiles (commonly called 'peel-and-stick") are an easy-to-install alternative to sheet vinyl or ceramic tile The 12-by-12-inch squares have a factory-applied glue that's protected by a removable backing sheet.

Good peel-and-stick tiles range in price from about 75 cents per square foot to over $3 Avoid thin bargain-bin tiles they'll quickly wear out. Choose ones that are thick and rigid and have at least a 10-year warranty And keep in mind that while today's vinyl products are being manufactured in an endless array of colors patterns and textures, the choices available in self-adhesive tiles is more limited

Although self-adhesive tiles are somewhat more vulnerable to lifting than sheet vinyl because of the number of seams an installation of top-grade vinyl tiles can last several decades if the old floor is prepared properly While it's possible to lay vinyl tile directly over some existing floors, including wood and sheet vinyl we strongly recommend that you first put down a new plywood underlayment That's the best way to ensure that the tiles will bond tightly and that the old floor won't telegraph through the new tiles

For this laundry room project, we covered the entire floor with ¼-inch underlayment plywood then filled the joints between the sheets with leveling compound that we sanded smooth to create a seamless substrate Affixing the tiles took just a couple of hours, and we butted them to the existing baseboard on the perimeter of the room Then we covered this intersection with quarter-round shoe molding for a neater finished look.



TOOLS

1. **Leveling compound** (for underlayment)
2. **Plastic bucket and 6-inch drywall knife** (for mixing and spreading leveling compound)
3. **Electric heat gun** (for softening tiles so they're easier to cut with a utility knife)
4. **Vinyl tile cutter** (available at rental shops for about $15 a day)
5. **Knee pads**
6. **Chalk reel**
7. **Utility knife**
8. **Tape measure**
9. **Undercut saw** (for trimming bottoms of door jamb and casing)
10. **Dust broom**
11. **Framing square**
12. **Sanding pad with 100-grit paper** (for sanding leveling compound)

NOT SHOWN

Hammer

Rolling pin or J-roller

For an archive of Homeowner's Handbook
From installing a picket fence to painting a room, go to www.thisoldhouse.com or America Online Keyword: This Old House and select "Homeowner's Handbook" in the Know-how section

STEP BY STEP: LAYIN

1 Put down underlayment

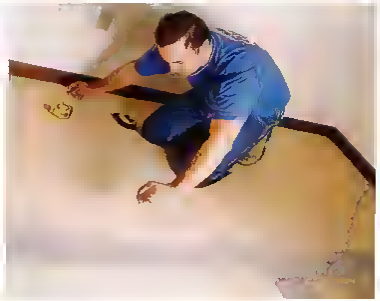
- Pry up any existing shoe molding from around the perimeter of the room
- Cover the entire floor with ¼-inch plywood underlayment secured with 1¼-inch (3d) underlayment nails Make sure to stagger the joints
- Spread a thin layer of leveling compound along the plywood seams with a 6 inch drywall knife **(ABOVE)** Allow to dry completely (about 30 minutes)
- Sand the seams smooth with a sanding pad with 100-grit paper.

5 Scribe tiles to fit along walls

- Place one full tile on top of the tile closest to the wall Align the top tile so that its four edges line up with the already installed tile below
- Set a second tile on top of the first and slide it up against the wall
- Draw a pencil line along the inner edge of the top tile marking the middle tile **(ABOVE)**
- Slide out the middle tile for cutting

2 Trim the door jamb and casing

- To trim down the door opening so the tiles will fit underneath, place a tile upside down in front of either door jamb to serve as a height guide
- Lay an undercut saw flat on top of the tile and carefully cut through the jamb **(ABOVE).**
- Slide the tile around to the front and then cut through the casing in the same manner. Repeat these steps on the other side



3 Lay out the room in quadrants

- Measure the width of the room in two places and in each case mark its exact center on the floor
- Snap a wall-to-wall chalk line lined up on the marks.
- Measure the chalk line and mark its center to indicate the room's center point
- Line up a framing square along the chalk line at the center point, than make a line along the square's tongue perpendicular to the chalk line. Do the same on the other side of the chalk line
- Snap a second wall-to-wall chalk line on the perpendicular lines to divide the room into quadrants **(ABOVE)**

4 Start tiling at the room's center

- Sweep each quadrant clean
- Tile the floor one quadrant at a time, beginning at the center point.
- Peel off the backing sheet from the first tile and set it into the corner formed by the intersecting chalk lines. Press the tile to the floor
- Set the rest of the tiles in the quadrant. Work out from the first tile in a step pattern: first out along the chalk lines, than filling in **(ABOVE)**
- Continue until you reach the last course before the walls; then start on the next quadrant.

6 Cut tiles to size

- To make very clean, straight cuts quickly, consider using a vinyl tile cutter. Similar to a paper cutter, this tool is available at rental shops.
- Lift the tool's handle to raise the hardened-steel blade. Slip the tile under the blade, then press down on the handle to slice the tile cleanly **(ABOVE)**
- To make interior cutouts, notches, or L-shaped corner cuts, you'll need to use a utility knife, first softening the tile with a heat gun

7 Trim tiles around heat registers

- If you come to a heat register (where a duct emerges from beneath the floor), remove its grille to expose the rectangular hole
- Mark a precise cutout for the hole on the vinyl tile by laying a full tile on top of the hole, pressing it tightly to the wall and penciling where it overlaps the duct.
- Use an electric heat gun to soften the tile, then cut it along the line with a utility knife **(ABOVE)**
- Test-fit the tile before peeling off the backing paper

8 Install shoe molding

- After laying all of the tile, roll the entire floor with a baker's rolling pin or J-roller. That will ensure that every tile is firmly bonded to the underlayment
- Next, conceal the gap between the tiles and the baseboard molding by replacing the old shoe molding or installing new molding **(ABOVE)**
- Secure the molding with 1½-inch (4d) finishing nails

TIP: *Don't wash the floor for at least five days; that gives the adhesive time to cure fully*

Caring for vinyl tile

Good-quality vinyl tiles are resilient, stain-resistant, and durable, but they're not impervious to abuse or neglect. To keep your floor looking new for years, follow these recommendations:

- **Sweep or vacuum the floor often** to remove dirt that can cause scratches and scuff marks.
- **When vacuuming, disengage the beater bar**; it can visibly damage the tile's surface
- **Wash the floor regularly** with a no-rinse floor cleaner; don't use soap-based detergents, abrasive cleansers, or mop-and-shine products
- **To restore the floor's shine,** polish the tiles with a liquid floor polish; avoid paste wax or solvent-based polishes
- **Use floor protectors** on chair and table legs to prevent indentations
- **Avoid chairs with casters,** which can leave visible track marks

- **Place natural-fiber mats** at exterior doorways to reduce tracked-in dirt and moisture. Don't use mats with rubber backing; they can discolor the floor
- **When moving appliances or heavy furniture, protect the floor** from gouges by laying down a plywood panel and "walking" the item across it
- **Remove black heel marks, crayon, or shoe polish** with a damp white cotton cloth dipped in baking soda. If the stain is persistent, blot it with a cloth dipped in rubbing alcohol (isopropyl alcohol) or mineral spirits