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Look for expanded Ratings, videos of road tests and lab tests, plus bonus features. Now included with your paid magazine subscription.

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ABOUT CONSUMER REPORTS We are the world's largest independent, nonprofit, consumer-product-testing organization, based in Yonkers, N.Y. We survey millions of consumers about their experiences with products and services. We buy all of the products we rate. We don't accept paid advertising. We don't accept free test samples from manufacturers. We do not allow our name or content to be used for any promotional purposes.

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SUBSCRIPTION INFORMATION Go to ConsumerReports.org/magazine or call 800-666-5261. See page 61 for more details. **RATINGS** We rate products using these symbols:

● Excellent ● Very Good ○ Good ● Fair ● Poor

READER LETTERS

Greener Ways to Sleep, to Shop— Even to Recycle

Going Organic—In Bed

You are to be applauded for addressing matters of critical importance, the pesticides and chemicals in our food and in and around our homes (May 2015). But you did not make reference to those issues in your report on mattresses. I recently purchased an OrganicPedic mattress from Organic Mattresses. Sleeping on a mattress that is not made from toxic materials is very comforting, not to mention great for the environment.

—Michele Cunko, Pittsburgh

EDITOR'S NOTE The product models we select for testing tend to be the ones that consumers are most likely to see in stores, online, and in ads. With that in mind, we hear you—and hope to test a mattress said to be made from nontoxic materials for a forthcoming report.

Trader Joe's: A Supermarket?

I must take issue with your placing Trader Joe's on the list ("America's Best, Freshest Supermarkets," May 2015), let alone near the top. The dictionary definition of supermarket is any business offering an unusually wide range of goods or services. Trader Joe's has, in almost every case, only house brands, offering no choice. Their produce is sold by the item, not by the pound. Their meat cuts are extremely limited and expensive. Trader Joe's is a very good specialty food store, but certainly not a supermarket.

—Steve Edwards, Lakewood Ranch, FL

EDITOR'S NOTE Our supermarket Ratings encompass everything from limited-assortment chains to giant supercenters. We go by the industry definition of "supermarket," which can mean a store carrying anywhere from as few as 15,000 products to as many as 60,000.

On 'Long-Life' Batteries

In your May 2015 issue ("Ask Our Experts"), you advised that readers change a smoke detector's batteries every six months, even if the batteries are labeled "long life." That expiration date applies only to batteries that are stored, as in an emergency kit. Once put into service, long-life batteries last no longer than regular batteries. An elderly relative put one of those batteries in her smoke detector years ago, thinking it wouldn't need replacing for 10 years. Luckily, she didn't have a fire before we discovered the unit wasn't working.

—Connie Ward, Seattle

How to Compare Sound Files

"The Right Gear for Your Ear" (May 2015) has a misleading comparison of various file formats. While FLAC high-res can take up more space than WAV, it is most often used as a standard resolution format. In such cases, you can get around twice as many files in FLAC as in the WAV format. As such, the standard resolution FLAC produces identical sound to the WAV file or the CD. Consumers might be misled into thinking that a FLAC file is automatically high-res; in most cases that is not true.

—John Clement, Bellaire, TX

EDITOR'S NOTE Our high-res chart caused confusion for a few readers, mainly because if you make a WAV file and a FLAC file from the same source, you expect the FLAC file to be smaller, due to it being compressed. But we showed what we tested: a CD ripped as a WAV file, and a high-res downloaded AIFF file. We also provided a FLAC version of the high-res file for comparison, because FLAC is far more common than AIFF. The chart would have been clearer if we had also provided the FLAC version of the CD for comparison. If so, you could have stored 52 FLAC songs—19MB each—rather than the 27 WAV songs, which were 37MB each.

The Benefits of Composting

Great article about recycling (Your Advocate, May 2015), but you overlooked an important and growing segment of recycling: composting. While it's generally considered for yard clippings and food scraps, several of the items listed that shouldn't be recycled—(dirty) paper towels, tissues, paper plates, and pizza boxes—can be composted.

—Chuck Coulson, Redwood City, CA

Old-School Wrinkle Releaser

It does not surprise me that Downy Wrinkle Releaser Plus works (The Update, May 2015). For many years I've removed wrinkles from my clothing using a spray bottle. I fill it with water, put the clothing on a hanger, spray, and—like magic—the wrinkles disappear. I assume Downy uses the same magic ingredient: clean water.

—Michael Squillante, via e-mail



SEND your letters for publication to
ConsumerReports.org/lettertoeditor.

FROM THE PRESIDENT



Beyond the Hype: The Meaning of Made in America

When Consumer Reports was founded in 1936, we not only fought to ensure that products were safe, fairly priced, and performed as advertised but we also chronicled how and by whom they were made.

This month we hearken back to those early roots as we examine one of the nation's most ubiquitous labels: Made in America. It's a phrase that wields real power in the marketplace. A recent CR survey found that 77 percent of Americans are willing to pay more for a product that has the claim.

But what you see is not always what you get. Apple, that quintessential American success story, assembles most of its iPhones in China; the Japanese brand Toyota, on the other hand, assembles the Tundra exclusively in Texas. The Federal Trade Commission does regulate "Made in U.S.A." claims, but as you'll see on page 28, those labels can take on many forms and meanings, so as a consumer, you have to look at the fine print.

For us, no matter where a product is manufactured, it should ultimately deliver on its promises to consumers while treating the workers who made it fairly and honestly. Globalization may add a layer of complexity to our products, but it should not preclude us from demanding full transparency from the companies that produce them.

—Marta L. Tellado,
President and CEO

FROM THE EDITOR



Pricier Isn't Always Better

I'm only human. I can be swayed, at least momentarily, by the new and flashy. I can drool over the Apple Watch with the 18K rose-gold case or the Tesla Model S.

But then reality sets in. Which is why I was struck by how many long-standing products—inexpensive ones at that—continue to rate highly in our testing.

Take sunscreen. This month we proved that you don't need a \$36 French lotion to stay burn-free; you can get great ray-blocking from Walmart's Equate Ultra-Protection SPF 50 sunscreen, only \$9, or from good old Banana Boat; the SunComfort Continuous Spray SPF 50+ is \$11. (For all of our sunscreen Ratings, see pages 42 and 43.)

Nor do you need to buy special sun-protection clothing. Turns out the traditional summer savior of red-headed kids everywhere—the Hanes Beefy-T, \$13—offers protection that's on par with pricier garments. (See page 41.)

Speaking of summer annoyances, we tackled one of the peskiest—mosquitos—by testing a vintage barrier method: an electric fan. By cracky, it worked, cutting mosquito landings by 45 to 65 percent. (Repellent advice and Ratings start on page 34.)

Even cars prove that flamboyance doesn't pay. Our tests of SUVs rated the reasonably priced Kia Sorento, starting at just under \$26,000, higher than the blingy Cadillac Escalade (reviews on pages 56 and 58, respectively).

Isn't it nice when tried and true also means tried and CR-tested?

—Ellen Kampinsky,
Editor in Chief

Coming in August

▼
WHAT YOU NEED
FOR THE
SUNNY MONTH



**Antibiotics:
Myths
and Dangers**



**Should You
Drop Cable?**



**Your Dream
Kitchen**



**How to Use
Less
Motor Oil**



**Yes, You Can
Afford to Live
to 100**

YOUR IDEAS COUNT

"I don't
like it."



"I love it!"

Give Us Your 2 Cents

What does "Made in America" mean to you? Have our tips on keeping cool and staying sunburn- and bug-free changed your summer habits? Tell us what you think about anything and everything in this issue of Consumer Reports.

→ **SHARE YOUR INSIGHTS** by sending us a letter for publication—or by joining our Reader Advisory Panel. Go to CRResearch.org/feedback.

CR EXPLAINED

Your Trusted Guide to the Complex World of Drugs

DRUG MANUFACTURERS in the U.S. spend billions of dollars each year to advertise their products to consumers and doctors. But do those drugs really work—and are they safe?

To answer those and so many urgent questions, Consumer Reports in 2004 launched Best Buy Drugs, a program that reviews the evidence on hundreds of drugs for dozens of common conditions. While investigating the effectiveness of certain drugs, we've reported that rosuvastatin (Crestor), used to treat high cholesterol, was no more effective than its competitor atorvastatin (Lipitor and generic) and was equally safe. We've also discovered that for most people with arthritis, highly advertised celecoxib (Celebrex) was no more effective than more common and less expensive ibuprofen (Advil

and generic), though it might protect a person's stomach from irritation a little more.

Best Buy Drugs also looks in-depth at the cost of medication in today's marketplace—and helps you determine the smartest way to buy it. Our team of secret shoppers, statisticians, and data analysts determines national average prices. We then tell you which pharmacies offer the best deal, potentially keeping hundreds and sometimes even thousands of dollars in your pocket each year.

CR Best Buy Drugs has received grants from the Engelberg Foundation and the National Library of Medicine and, beginning in 2008, from the state Attorney General Consumer and Prescriber Education Grant Program.

Learn more at CRBestBuyDrugs.org.



Your ADVOCATE

THE POWER OF TOUCH

The No. 1 reason people still shop in person, according to PricewaterhouseCoopers: to see, touch, and try the merchandise.

WHICH IS CHEAPER?

Surprise: 71 percent of products had the same price, online and offline, in a recent analysis by Anthem Marketing Solutions.

TOP ONLINE DEALS

Books cost about 30 percent less, on average, than those bought in stores, Anthem found. Men's personal-care products cost about 28 percent less.

BRICKS 'N CLICKS

A physical store figures in—at some point—71 percent of online sales, according to an A.T. Kearney survey of 2,500 consumers.

BEST & WORST ONLINE BUYS

You can get just about anything online these days. But some digital purchases are wiser than others. Turn to page 10 for the surprising things you'll want to buy on the Internet—and for the products that are still better found at stores.

PHOTOGRAPH BY TRAVIS RATHBONE

READER TIP

A Stain-Lifting Soak for Pots and Clothes

“When soaking a garment in OxiClean to remove a stain, I often use a large stainless-steel pot instead of the washing machine to save water. One day, after removing a garment and rinsing out the pot, I found that stains and mineral deposits that were in the pot were gone. It’s a safe, economical way to remove mineral deposits from any stainless-steel item.”

—Philip Oellrich,
Bolingbrook, IL

Our experts add: Any powder oxygen cleaner with sodium percarbonate will basically do the same thing. Warm water helps speed the process a bit.



Send Your Top Tip to:
ConsumerReports.org/cro/readertip.
If we run it, we'll pay \$100!

THE WIN

We Did it Together! The End of the Comcast-Time Warner Merger

COMCAST'S RECENT DECISION to drop its \$45 billion bid to buy Time Warner Cable is great news for consumers. If the sale had gone through, it likely would have meant higher prices, fewer choices, and even worse service for just about everyone.

It was a long road to quashing the merger, and Consumer Reports and its advocacy arm, Consumers Union, were there each step of the way. Our Hear Us Now campaign, launched in February 2014, when the deal was first announced, aimed to thwart a plan that would have given one huge corporation control of 60 percent of the cable TV market and more than half of the nation's high-speed broadband customers.

All indications were that the resulting behemoth would have been no great gift to consumers: Our most recent telecom survey shows that Comcast and Time Warner earn low marks for value

and customer support, a sign of the deep and long-standing problems with cable companies.

As part of our campaign, we conducted a national poll that revealed that a scant 11 percent of Americans supported the merger.

And as members of a coalition opposed to the merger, we helped gather more than 1 million signatures urging the Federal Communications Commission and the Department of Justice to reject the proposal. Our policy advocates met with regulators and our activists placed almost 15,000 calls to the office of the FCC's chairman, Tom Wheeler, to drive home the message.

“This is a major victory for consumers who stood up against a media Goliath and won,” says Marta L. Tellado, president and CEO of Consumer Reports. “And a major victory for everyone who wants a fair and competitive marketplace.”



GET INVOLVED

Actions You Can Take in July

→ PROTECT YOUR NEST EGG
Some financial advisers profit from steering soon-to-be retirees into questionable and expensive investments, a conflict of interest costing consumers about \$17 billion per year. The Department of Labor has proposed new rules requiring retirement advisers to put their clients' interests before their own profits. Learn more at dol.gov/protectyoursavings.

→ TELL CONGRESS WE WANT MEAT WITHOUT DRUGS
The use of antibiotics in U.S. meat production shot up 20 percent between 2009 and 2013, an increase that has been linked to a rise of antibiotic-resistant “superbugs” that can put your health at risk. A new bill would stop antibiotic use in healthy food animals. Ask your representative to support the Preservation of Antibiotics for Medical Treatment Act, at opencongress.org.

→ VOICE YOUR COMPLAINT
Ever been ripped off by a bank or a mortgage company? Now you can tell the Consumer Financial Protection Bureau—and the world. A new feature on its public database enables consumers to share stories of unfair lending practices, which helps the agency spot marketplace trends and helps you make more informed choices. (Companies can also post responses.) Check it out at consumerfinance.gov.



PROBLEM SOLVER

The Icemaker Cometh (Undone)

Owners of a balky Samsung fridge waited 8 months for a fix—till we helped

When it came time to replace their aging refrigerator, Robert and Diane Lynch of Davies, Fla., wanted a new unit that could hold party platters for their frequent family gatherings. And it had to have a through-the-door icemaker. They settled on the Samsung RFG297HDRS, \$2,200, with its spacious, French-door configuration.

Though they loved the look of the new fridge, the icemaker was temperamental from Day One. It constantly leaked water on the floor; the lever between the crushed and whole-ice settings jammed frequently; and cubes would eject without warning from the machine.

After several failed attempts to troubleshoot the problems, Robert contacted Samsung's service department. Five separate service calls ensued, each one more frustrating than the last, especially after he and Diane slipped on the wet kitchen floor. Robert says he was called "uncooperative" during one call and "an unhappy consumer who had buyer's remorse" during another. When he finally asked to speak with a supervisor, he was told that wouldn't be possible "per company policy."

In his last written appeal to Samsung, Robert copied the Problem Solver. By the time we reached him, a Samsung representative had already offered him a prorated refund on the refrigerator, but the actual amount hadn't yet

been disclosed. We contacted Samsung to inquire about it. Soon after, Robert let us know that Samsung was offering him a full refund. "I don't know what you said, but it did more in a day than I've been able to do in eight months," he said.

What does that mean for consumers?

We can't call a manufacturer every time a consumer has a bad experience. But there are a few takeaways here. First, know that icemakers can be a risky convenience. In our reliability surveys, models with that feature have much higher repair rates than those without it. You can extend the life of an icemaker by making sure that ice doesn't sit for too long in the bin; it could form into a large block that could jam the machine.

If your icemaker does fail, a single service call should fix it. If it doesn't, be persistent, and don't be afraid to take your complaints up the ladder. Robert did just that; after being denied access to a supervisor, he eventually reached the president's office. Who knows? That might have solved his problem as much as his decision to contact Consumer Reports.

→ FED UP WITH A COMPANY'S CUSTOMER SERVICE? Contact Consumer Reports' Problem Solver at problemsolver@cr.consumer.org.

ON YOUR SIDE

Listeria Lurks: Protect Yourself

Ice cream lovers were shocked this spring when Blue Bell halted sales due to a deadly outbreak of food poisoning. That news, plus recalls of foods ranging from hummus to frozen vegetables, brought attention to a stubborn problem: contamination of food by *Listeria monocytogenes*.

The bacterium doesn't sicken as many people as other bugs, such as salmonella, but it's the third most common cause of death from foodborne illness in the U.S. It can survive and multiply in refrigerated foods and live for years on equipment in food-processing plants.

Most people who become ill are pregnant women, newborns, those age 65 or older, or those with weakened immune systems. If you're in one of those groups, avoid high-risk foods: smoked seafood, deli meats, and hot dogs unless they're heated to an internal temperature of 165° F; unpasteurized milk; and soft cheeses such as brie and feta unless they're labeled as made with pasteurized milk. Queso fresco, another soft cheese, can be contaminated even when made with pasteurized milk.

Get the latest on recalls at www.fda.gov/safety/recalls. And follow these food-safety steps:

Rinse raw produce thoroughly under running tap water—using a clean vegetable brush for thicker skins—before eating, cutting, or cooking. That applies even to foods with inedible peels.

Keep your fridge below 40° F (our experts recommend 37° F) and your freezer at 0° F. Use an appliance thermometer to check.

Refrigerate leftovers in shallow, covered containers and use within three to four days. Eat luncheon meats within three to five days unless packaged and unopened. Hot dogs, once their packaging is opened, should be used within a week.





ON THE NET, NO ONE KNOWS YOU'RE A DOG
Fido's got the right idea; you can save 15 percent by ordering pet supplies online.

THE EMPOWERED CONSUMER

Deal or No Deal: When it Really Pays to Buy Online

How to know whether you're better off shopping digitally or in a store

YOU CAN BUY practically anything online, but that doesn't mean you'll always want to—or ought to.

The convenience is undeniable, of course, but the matter of cost is still very much a question. About 71 percent of products are essentially priced the same online and in-store, according to a recent study by Anthem Marketing Solutions. When there was a difference, the online product was cheaper 72 percent of the time. Those deals are the biggest reason people choose to shop the Internet, according to a recent survey of 19,000 consumers worldwide by PricewaterhouseCoopers.

But stores have advantages that the virtual world can't match: opportunities for shoppers to touch, see, and size up the goods and to walk away with a purchase. Those are the top reasons people still opt for a brick-and-mortar experience, according to the survey. That might explain the relatively slow rise of online categories like

groceries and eyeglasses.

More channels and more choices can mean more opportunity as well as more potential pitfalls. We asked our experts and industry analysts to share with us the things you *should* buy online—and when you're better off with a trip to the store.

5 THINGS TO BUY ONLINE

Electronics. In addition to the fact that you'll find a much wider selection online, more than two-thirds of electronics are cheaper when purchased on the Internet, according to Anthem. That's true for big-ticket items like computers as well as for smaller accessories like HDMI cables and cell-phone cases, which are often 30 to 40 percent less than in stores. (Stores get away with charging more because customers don't always compare prices on items that cost under \$20, says Andrea Woroch, an independent consumer savings expert.) Still prefer to buy a TV in person? Do your

research online. Many walk-in retailers will price-match a Web deal.

Small Appliances. You'll find the best selection of blenders, toasters, and the like online, although you're still better off trying out heavy or hard-to-maneuver items, like vacuums, in a store first.

Pet Supplies. By signing up for regularly scheduled pet-food delivery from Petco.com, you can save 15 percent on every qualifying order and guarantee that Fido never runs out of kibble. You can also net big discounts by buying pet meds online—if you're not in a rush—rather than going to the vet, where markups over wholesale prices can be 100 percent and up.

Theme Park Tickets. You'll pass by the ticket booth anyway, but buying online helps you “avoid lines at the park and find some of the best ticket-price deals that a park has to offer,” says Robb Alvey, founder of ThemeParkReview.com. If you're a member of AAA or have a credit card with rewards points, you may also be able to snag discounted tickets.

Baby Supplies. It's cheaper and more convenient to order diapers, baby food, and ancillary items (like diaper-pail refills) online, especially if you opt for a delivery program like Amazon's Subscribe and Save, which discounts your entire order by 15 percent if you select five or more items.

3 THINGS TO CONSIDER BUYING ONLINE

Bath Fixtures. Online, you have the benefit of a massive selection that no single showroom could contain, particularly if you're seeking special features or unusual hardware. If you're buying toilets or faucets, make sure you have the exact measurements. Get it wrong and you could wind up having to return it and pay a hefty restocking fee, or having to drill extra holes in your sink or countertop or—even worse—having to hide extra holes or unsightly metal plates.

Auto Parts. Buying car components online could save you as much as 50 percent, Woroch says. Before you order, talk with your mechanic to make sure you'll come out ahead in the end. You could pay a premium to have your local guy or gal install an item that you didn't buy from him or her directly. There can also be quality concerns about a discount or aftermarket part. It could fail sooner than the original; it might even void your car's warranty.

Tires. Start with our Ratings to find the best models that suit your needs. Then go online to check out price and availability, and to determine whether it's worth closing the deal there. Online prices can be competitive, but you'll need to take into account the cost of shipping and installation. You can also take the best online price you find to your local tire store and see whether it can be matched.

3 THINGS NOT TO BUY ONLINE

Paint. The colors on your computer screen are made by emitted light and will never look the same as actual paints, which are made of reflective pigments.

"Color should be chosen only after viewing painted test patches or large sample color chips on the walls of the space to be painted," says Amy Krane, an architectural color consultant. "The changing light during the day, the orientation of the room to the sun, the types of artificial light, and the other colors in the room—including floor, textiles, and furnishings—all affect your perception."

Office and School Supplies. You might notice fewer office-supply stores near you these days. As Staples and Office Depot contemplate a merger, your options could

soon be more limited. You certainly don't have to leave your desk to restock paperclips, but some research shows that doing so might get you the best deal.

The customer-service firm StellaService has reported that the average cost of purchasing a typical list of school supplies in a store was 41 percent *cheaper* than buying them online. (Of the 12 categories in Anthem's study, only office/school supplies showed an offline price edge.)

That said, busy parents who want the convenience of ordering can urge school districts or PTAs to sign up for a mail-order service such as Staples' SchoolKidz, which enables you to order items on the next year's list ahead of time and have a box of supplies delivered when school starts in the fall.

Drugs from Overseas. Up to 97 percent of online pharmacy storefronts are

considered "rogue," meaning that they don't require prescriptions or they sell drugs not approved by the Food and Drug Administration, according to a January 2015 review of almost 11,000 sites by the National Association of Boards of Pharmacy (NABP).

Shop at one of those sites and you could wind up with a drug that's old or was improperly stored, or it could be adulterated or even fake. (Up to 80 percent of drugs from some countries are counterfeit, according to the World Health Organization.) You also risk having your financial or personal information stolen. If you want to order medication online, chose a reputable site like CVS.com, Walgreens.com, and Walmart.com, or go to legitscript.com to see whether an outlet you want meets NABP standards. Learn more about the dangers of counterfeit drugs on page 32.

Brick and Mortar vs. One Click: How to Decide

With so many factors influencing your decision about where and how to shop—and more and more online categories to choose from—it helps to have a guide that will get you to the most seamless experience, the best deal, and most important, the right product. Jenn Markey, vice president of marketing for the online price-tracking firm 360pi, shared with us key questions to ask when deciding whether to buy online:

1. HOW MUCH IS SHIPPING?

If it's not free, you'll probably get a better deal in a store. The bigger or bulkier the item, the more valuable it is to you to have someone else pay its freight.

2. COULD I FIND THIS ITEM EASILY AT A STORE NEAR ME?

Brick-and-mortar retailers frequently use zone (or regional) pricing and assortments that reflect local market conditions and maximize margins, but many online outlets are still catching on to this idea. For now, the biggest retailers, including Amazon, largely default to a national price, which means that if you live in an area with limited competition, you'll probably find a better price online.

3. HOW MUCH WILL I NEED?

In general, online is optimized for large-pack sizes and packages. The larger the size, the lower the per-unit and per-volume price you'll pay.

4. CAN I ACTUALLY GET THE DEAL?

It's a common tactic of online retailers to drop prices on out-of-stock items to encourage their competitors to also lower their prices and/or price match. So know that the best price online might not be attainable.

5. WHEN WILL IT GO OUT OF STYLE?

You'll tend to find the widest selection of products online, but unless you're an early adopter, fast-aging products (such as electronics and apparel) are usually less expensive in-store once the initial rush has passed. On the other hand, products that evolve more slowly, like small appliances, will usually be more expensive in-store.

6. CAN I GET A LOCAL STORE TO MATCH THE PRICE?

If a physical store offers a price-match guarantee, then stepping away from the computer screen might be your best bet.



ASK OUR EXPERTS

Q: Can Antivirus Software 'Cure' My Sick Computer?

Q. If my computer already has a virus, are the anti-virus software programs that you recommend good, or is there another way to clean it up?

—Charles Jeannel, Los Angeles

A. Some computer viruses can limit your ability to properly install and run protection software. If you want to try to eliminate existing bugs, we recommend downloading and running the free Malwarebytes Anti-Malware scanner. (Find it at malwarebytes.org.) If necessary, you can download it on another computer, then transfer over the program using a USB flash drive. For more on preventing viruses, and our security software Ratings, turn to page 46.

→ **WE HAVE MORE THAN 140 EXPERTS ON CALL**
They research, test, and compare—so you don't have to! Share your toughest questions at ConsumerReports.org/askourexperts ... and watch this space for the answers.

Should My Teen Use a Credit or Debit Card?

Q. My 18-year-old daughter is new to banking and credit. She knows to pay off any credit-card balances each month. However, should she carry a debit card? And what are the protections associated with using a credit vs. a debit card?

—Phillip Ortiz, Queensbury, NY

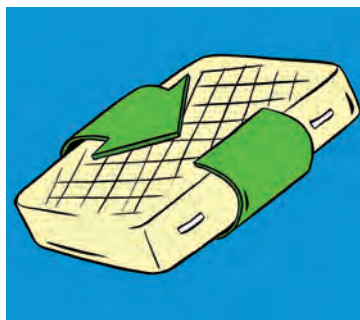
A. If your daughter has shown that she's able to spend responsibly, you might consider giving her a debit card. The advantage of choosing it over a credit card is that it can limit spending: Funds are immediately withdrawn from her account. (Be sure she doesn't opt for an overdraft program because that can lead to high fees.) But a debit card has some disadvantages. She won't be developing a credit history as she would with a credit card. If someone steals the card and makes purchases, she's out the money until the bank resolves the dispute. And she might incur fees from out-of-network ATMs or for foreign transactions. But debit cards do offer many protections; check with the card issuer.

Do I Need to Flip My Pillow-Top Mattress?

Q. I read with great interest "That Sinking Feeling" (May 2015). Some manufacturers put the pillow top only on one side and claim that the mattress doesn't need flipping. Others put it on both sides and talk about flipping it. Who's right?

—Dave Thomas, Cincinnati

A. If a manufacturer tells you not to flip a mattress, there's probably a good reason. For one thing, many mattresses today are one-sided; the flip side lacks that comfortable



ticking. And there's more going on below the surface because mattress makers might combine either inner-springs and foam or multiple types of foam in layers to provide the optimal sleep surface. They're designed to provide the correct contouring, support, and even temperature characteristics, so flipping the mattress could lead to premature wear, poor support, and discomfort.



Help! I Think My Dentist Overdoes It on X-Rays.

Q. "Overexposed" (March 2015) led me to review the schedule of my own dental X-rays. On a recent visit I declined them, and the office manager said that I couldn't have my teeth cleaned because it's against the law for them to treat me. (The Georgia Dental Association told me that it's not against the law, but that the dentist has the right to not treat me.) I want a dentist who will treat me without frequent X-rays. Any advice?

—P.B., via e-mail

A. If you're otherwise happy with your current dentist, talk with him or her first, says Jay W. Friedman, D.D.S., M.P.H., a consumer health care advocate and dental adviser to Consumer Reports. Share your concerns and underscore the fact that the American Dental Association (ADA) doesn't recommend X-rays at every visit. (You can also offer to sign a waiver on the X-rays.) If the dentist insists, you should look for another one who's sympathetic to your concerns. The ADA's list, at mouthhealthy.org/en/find-a-dentist, is a good place to start. Finding one shouldn't be hard: More dentists now take a flexible approach to scheduling X-rays. And ask your new dentist to contact your old one for copies of your prior X-rays.

GRIFE-O-METER

Patriot Pains

Most Americans prefer to buy U.S.-made goods and would even pay more for them, according to a new, nationally representative Consumer Reports survey. As our research shows, consumers are driven by love of country and a good deal; we hate when we can't find what we're looking for.

WHY WE BUY 'MADE IN THE USA'

- To keep manufacturing jobs at home: 88 percent
- To help the U.S. economy: 87 percent
- To keep America strong in the global economy: 84 percent
- To be patriotic: 62 percent



of Americans say they *don't* make an effort to buy products made in the U.S.



of people who buy American believe that the goods are produced under better working conditions.

What Bugs Us Most:

Our survey takers found the following experiences highly annoying:

American flags and other patriotic products that are made overseas:
49 percent

Big-box stores pushing mostly foreign-made products:
39 percent

Difficulty finding American products:
29 percent

Not being able to trust 'Made in America' labels:
23 percent

2 in 3

people we surveyed said they're more likely to shop in a store that advertises that it sells American products.

Price: A Major Barrier

56 percent of Americans think of U.S.-made products as costly.

AMERICANS' OTHER NEGATIVE PERCEPTIONS OF U.S. GOODS:

- 28% say the products are technologically challenged.
- 19% say they're unoriginal.
- 11% say they're unreliable.

3 out of 4 WHO BUY AMERICAN

say they do so because the products are of higher quality or they're better regulated than their foreign counterparts.

Where 'American Made' Matters

Our survey respondents said they make an extra effort to buy U.S. products in these categories:

FOOD:
76 percent

CARS, TRUCKS, OR MOTORCYCLES:
57 percent

LARGE APPLIANCES:
55 percent



How to Cut Your Water Use in Half

Even if you don't live in drought-plagued California, it's smart to save water with these products and plans

AS THE SAYING GOES, you can't squeeze water from a stone. But that's what California residents have been trying to do as the state's drought stretches into its fourth year. With hot weather approaching and water scarce in many parts of the country, there are lots of water-saving ideas floating around, but frankly, we admit that some of them seem downright silly.

Picking up an ice cube that's fallen on the floor and putting it on a plant won't provide much moisture. Throwing your dog's leftover water on the garden won't help much, either, unless you have a really big dog. And you could give all your kids a bath at the same time, but they might object.

California isn't the only place facing a dry spell. Water managers in 40 states say that even if water conditions remain normal, they expect shortages in some part of their state over the next decade. That's according to WaterSense, the water conservation partner of the Environmental Protection Agency. That means we all could benefit from California's efforts to get "more pop per drop," as a state water authority put it.

The two best ways to save water are by replacing water-wasting appliances and fixtures, and changing your lifestyle and habits. Neither is easy. The first requires an up-front expense and the second a long-term commitment. But do both and you

can cut your usage in half or better. That's good for the earth and your budget.

Outdoor watering accounts for almost 30 percent of water use, according to an analysis published by Environment Magazine. But toilets (19 percent), washing machines (15 percent), showers (12 percent), and faucets (11 percent) also use substantial amounts. Then there's the 10 percent of water lost to leaks that are not always easy to detect.

In addition to plugging leaks, five of the most effective ways to save water indoors, says Environment Magazine, are to install low-flow toilets, use a high-efficiency washer, reduce shower time to five minutes, wash only full loads of laundry, and reduce toilet flushes by 25 percent. Buying a more efficient dishwasher and installing low-flow showerheads also help.

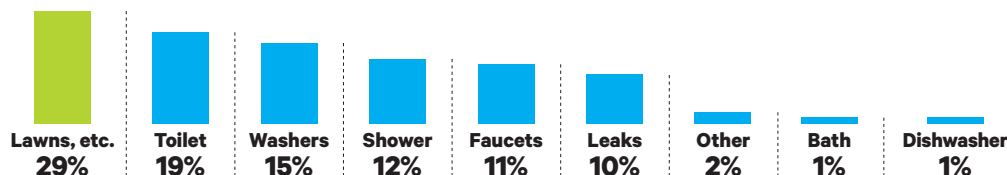
Despite good intentions, switching appliances and fixtures can sometimes have unintended consequences. Folks who install a low-flow shower may take longer showers, and those with low-flow toilets may flush more often thinking that they aren't getting the oomph they once did. That's where Consumer Reports can help. In our tests of those and other products, we measure not only efficiency but performance. For example, nine low-flow toilets made our list of top toilet picks because all were very good to excellent at removing solid waste.

Water-saving bathroom and kitchen fixtures that meet federal WaterSense standards carry that label, and appliances that meet federal water and energy standards earn the blue Energy Star. Both agencies encourage their partners to reward energy and water-saving behavior with rebates, as do many utilities.

Following are some meaningful ways to save water around the house and yard as well as top-performing water misers from our tests of washing machines, dishwashers, toilets, and showerheads.

Where Our Water Goes

The chart shows water usage in the average U.S. household, which taps about 255 gallons per day, according to an analysis by Benjamin D. Inskeep and Shahzeen Z. Attari in Environment Magazine.



Source: Environment Magazine, July-August 2014.



Bosch 500 Series SHP65T55UC ¹
Price \$900
H₂O per load 5 gallons



Kenmore 13473 ²
Price \$530
H₂O per load 4 gallons

Save H₂O in the Kitchen...

WHEN IT COMES to wasting water in the kitchen, the dishwasher isn't the culprit, it's probably you. Too many people rinse their dishes clean before putting them in a dishwasher designed to do that very job—and do it better than you can. Five ways to save:

- 1. Replace your old dishwasher.** Energy Star dishwashers are about 15 percent more water efficient than standard models. The most miserly use only 4 to 6 gallons during a normal cycle. Bonus: They're quieter, too.
- 2. Wash only full loads of dishes.** For maximum efficiency, load your dishwasher according to the instructions in your owner's manual, which will make the most of the sprays in your machine.

- 3. Keep your drinking water in the refrigerator instead of running the tap until it's cool.** Designate one glass or water bottle per person for the day so that you only have to wash it only once.

- 4. Give pots and pans a soak instead of scrubbing them under running water.** And don't wash your fruits and vegetables under the tap. Instead, rinse them in a large bowl filled with water.

- 5. Install a WaterSense aerator on the kitchen faucet to reduce flow to less than 1 gallon per minute.** It's a cheap fix for only pennies. Avoid running the garbage disposal, and the water that entails, by composting your food scraps.



Leak Tweaks

In the average household, 10,000 gallons of water go down the drain every year because of leaks. Here's how to stem the tide with tips from the EPA.

LEAK DETECTION

If a family of four is using more than 12,000 gallons a month in winter months, they've got serious leaks. Before looking for individual leaks, check your overall water usage by monitoring your water meter over a two-hour period when no water is being used. If the meter keeps inching up, you probably have a leak.

TOILETS

Typically, toilets begin leaking when the toilet flapper or valve seal becomes old or worn. To check, put some food coloring in the toilet tank and wait 15 minutes to see if color shows up in the toilet bowl. If it does, you've got a leak.

FAUCETS

Old and worn washers and gas-kets are frequently the cause of leaks. Turn the water off under the sink before trying to fix a leak. Close the drain and cover the bottom of the sink or bathtub with a cloth so you don't lose any small parts.

SHOWERHEADS

Make sure there is a tight connection between the showerhead and pipe stem. You can use pipe tape to secure it. You may also need to replace the washer. If you suspect a valve leak, it's time to call the plumber.

OUTDOORS

Check your garden hose at the connection to the spigot and, if needed, replace the washer. If you have leaky in-ground irrigation, call a professional.

...and the Laundry Room

THE WORST washing machines in our tests use well over 25 gallons of water. That's more than twice as much as miserly models, which use 10 to 12 gallons for an 8-pound load. Front-loaders are the most water efficient followed by HE top-loaders and agitator top-loaders. Five ways to save:

- 1. Replace your old washer.** Energy Star washing machines use about 40 percent less water than a regular washer. Bonus: Because high-efficiency models spin faster, the clothes need less drying time.
- 2. Pick the appropriate water level setting—often small, medium, large—for the load if that's how your machine works.** Front-loaders and most HE top-loaders have auto-load sensing, and a few agitator top-loaders

that recently came out have it, too. That feature automatically determines the load size and the amount of water needed.

- 3. Measure laundry detergent and use HE detergents for HE top-loaders and front-loaders.** Regular detergents are too sudsy, and using too much can cause high-efficiency washers to use more water by extending the rinse cycle.
- 4. Do only full loads but don't overstuff.** Using cold water whenever possible helps save on energy costs.
- 5. Pick the right soil setting for the load.** Choosing the heavy-duty setting can use more water and extend wash time. The normal setting works for most loads.



Maytag MHW5100DW ¹
Price \$950
H₂O per load 10 gallons



Samsung WA48H7400AP ¹
Price \$900
H₂O per load 12 gallons

¹ Consumer Reports recommends this product. ² CR rates this dishwasher excellent for washing and energy use.



**American Standard
FloWise Transitional
3-Function
Water-Saving Shower**
Price \$58
H₂O usage 2 gallons per minute

Save H₂O in the Bathroom

MORE WATER FLOWS through the bathroom than any other room in the house. In fact, bathrooms account for more than half of all indoor water use. But advances in plumbing technology mean that newer faucets, showers, and toilets use significantly less water than older models and still deliver the rinse, spray, and flush you expect. Five ways to save:

- 1. Replace your old toilets—all of them.** Older toilets use as many as 6 gallons per flush while new WaterSense toilets do the job with 1.28 gallons or less. With new toilets, the average family can reduce water use by 20 percent per toilet.
- 2. Instead of baths, take short showers, and cut your shower time to 5 minutes.** If you're

brave, turn off the water when lathering up or shampooing. And don't let the water run when brushing your teeth or shaving.

- 3. Replace your old showerhead.** Standard showerheads use 2.5 gallons of water per minute. WaterSense showerheads use no more than 2 gpm.

- 4. Replace your old faucets.** Replacing leaky or inefficient faucets and aerators with WaterSense models can save the average family 500 gallons of water per year.

- 5. Don't use your toilet as a garbage can.** It wastes water and can clog your pipes. Toilet paper is designed to disintegrate. Tissues, most wipes, and dental floss are not.



**American Standard
Champion 4 Max** ¹
Price \$240
H₂O usage 1.28 gallons



**St. Thomas Creations
Richmond ECO** ¹
Price \$350
H₂O usage 1.28 gallons

Outdoor/Yard Water-Saving Tips

NOT ONLY DO LAWNS soak up more water than any other plant in your yard, but homeowners tend to overwater their grass to keep it green. An established lawn needs only 1 inch of water per week in the growing season. Pouring on the water can actually harm your turf if not your budget. Five ways to save:

- 1. Let the grass grow longer by raising your lawn mower's cutting height.** Longer blades of grass help shade each other, reducing evaporation. Stop fertilizing; it only promotes new growth. When you mow, leave grass clippings on the lawn to retain moisture.

- 2. Don't wash off your driveway, steps, or deck with water.** Sweep them instead or use a leaf blower. If you use a sprinkler, direct the spray to the grass and garden and not the sidewalk and street. Wash your car with water from a bucket or go to a commercial car wash that recycles water.

- 3. When it rains,** collect the water in barrels or install gutters and downspouts that direct the runoff to your plants and trees.

- 4. Reduce the size of your lawn.** Consider replacing grass with mulch, ground cover, drought-tolerant plants, or ornamental grasses. Weeds compete with other plants for water so weed regularly. And ditch the water features unless they use recycled water. To find the best plants for your region, consult your county cooperative extension or a local nursery.

- 5. If watering is permitted, use soaker hoses or drip irrigation to apply water slowly and evenly.** Buy a hose nozzle with an automatic shut-off. Water early in the day when evaporation rates are low and more water is absorbed.



Soaker hose
Price \$25
Saves on sprays



**Toro Ultra Blower
Vac 51609 leaf blower**
Price \$75
Water used: 0

The UPDATE

PHONE IT IN

Air conditioners have gotten smarter. Some, like several Friedrich models, can be controlled by smartphone and connect with other units.

WAY TO BLOW

Here's a surefire way to lower energy bills: Replace dirty A/C filters and vacuum coils; that will improve cooling.

HOW LOW SHOULD YOU GO?

Temperaturewise, you'll be comfy if you cool your rooms to 78 degrees. But you'll save 3 to 5 percent on energy costs for every degree higher.

READY TO REPLACE?

American Standard is among the most reliable central-air brands, says our survey, on page 20.

GO WITH THE (AIR) FLOW

Most air conditioners tend to direct air to either the left or right. That can make a big difference in cooling a room. See the best room A/Cs, on page 18.

PHOTOGRAPH BY TRAVIS RATHBONE

Cool Down When It Heats Up

Your bills don't have to rise when temperatures do. Here's how to save without breaking a sweat.

TOUGHER FEDERAL energy standards mean that today's air conditioners are a lot more efficient than they used to be and cost less to operate. That's good news because up to 17 percent of a home's energy budget goes to cooling. Central air conditioning is common in most parts of the country, but even homes that have it may want a window or portable unit to supplement cooling in a stuffy room or in a work shed, garage, or other uncooled space.

If your cooling system is more than 10 years old, replacing it will bring immediate efficiency gains and drastically cut your costs. The window units on sale today meet strict standards that went into effect last summer. Manufacturers of central A/C systems will have to comply with even tighter energy standards by July 1, 2016. To test room A/Cs, we brought two dozen window air conditioners and a dozen portable units into our labs to put through our comfort evaluations. Here are the details:

Window A/Cs are worth a look. Small window units are the biggest seller, and we found four to recommend that cooled our testing chamber quickly—and quietly. That's important because noise is one of the biggest complaints about room air conditioners. GE told us that making units

quieter is a priority, and we saw some improvements in our tests.

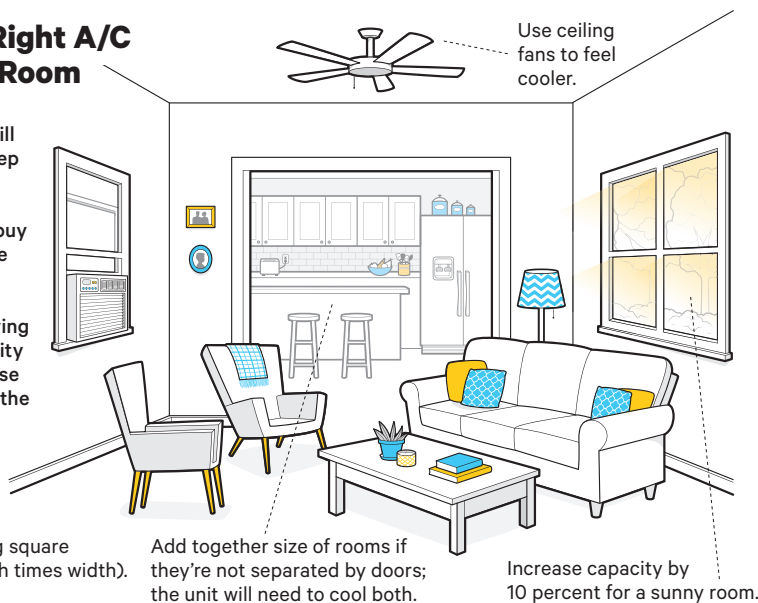
Like other household appliances, air conditioners are getting smarter and more connected. Friedrich has several models that you can control with your smartphone and claims you can connect multiple units to mimic the feel of central air. Like the Nest thermostat, the Quirky Aros is designed to learn your routine and adjust its

settings accordingly. But its cooling didn't live up to its cool factor.

'Portables' is a misnomer. Weighing between 51 and 82 pounds, portables aren't easy to move. In our tests we found that the dual-hose models were marginally better than the single-hose units. But neither provided the cooling oomph that you might expect for the price or the Btu/hr. listed on the box.

Get the Right A/C for Your Room

Buy too small and the unit will struggle to keep the room at a comfortable temperature; buy too big and the room will cool too quickly without removing enough humidity from the air. Use these tips get the right size.



5 Ground Rules for Central Air

Let's face it: Despite the comfort they provide inside, outdoor air conditioners can be an eyesore. But with some strategically placed landscaping, you can keep the compressor out of sight and help it to run more efficiently. Here's how:

1. Let it breathe. The compressor needs adequate airflow to work correctly, so make sure there's at least 2 to 3 feet of space between the unit and any plants or structures. There should also be 5 feet of clearance between the top of the unit and any trees above.

Keep in mind that the unit has to be accessible for servicing.

2. Put it in the shade. Placing the unit out of the hot sun will help it run more efficiently. Shade trees also keep your house from heating up as much.

3. Plan your plants. A hedge is a good way to conceal a unit as long as you trim it year round. To keep the unit free of falling leaves, select trees that retain their leaves during the winter. If you don't have room for a hedge, a trellis for climbing vines will provide shade and hide the compressor.

4. Keep the machine clean. A dirty condenser coil can increase compressor energy consumption by 30 percent. To prevent grass from your mower or mud from a rainstorm from spraying into the unit, surround the pad on which it sits with a stone border filled with crushed rock. That way rainwater drains away and foliage is kept at bay.

5. Keep lawn gear clear. Your A/C unit can get damaged by rocks kicked up by the mower or by being bumped by a string trimmer or mower.

Best Time to Buy

When it's cold outside, cooling contractors aren't busy, so they're more likely to return your calls and arrive on time for estimates. They're also eager to schedule work and may offer better deals than they would in the summer when temperatures and prices rise. Room units also cost less in the off-season.



LG LW1214ER

Choose the Best Air Conditioner for Your Needs

BEST FOR BEDROOM OR OFFICE (100 TO 300 SQUARE FEET)

- **A1 GE** \$210 CR Best Buy
- **A3 Friedrich** \$580
- **A4 Frigidaire** \$180

For a small bedroom, home office, or guest room you'll want an air conditioner with good scores for comfort and quiet. **A1** aced our comfort tests and was very quiet on both low and high fan speeds. **A3** costs more but was super-quiet and has a sleek look. Choose **A4** because it is quieter than **A2** and better for a bedroom.

BEST FOR LIVING ROOM OR FAMILY ROOM (350 TO 650 SQUARE FEET)

- **C1 LG** \$350
- **C2 Friedrich** \$400
- **C3 GE** \$250

For a living room or family room, you'll want a large air conditioner, especially if you have an open floor plan. **C1** made our list of top picks with its excellent scores for comfort. And despite its size, it operates at a quiet hum. **C2** was quieter still and offered plenty of comfort. A good large unit for the price, **C3** had excellent comfort scores but was a little noisier than the other picks.

Save 5% on Your Bills

The recommended indoor temperature for summer is 78° F. You'll save 3 to 5 percent on air-conditioning costs for each degree you raise the thermostat. Using a box or ceiling fan, which costs little to run, can make you feel 3° F to 4° F cooler.

Ratings: Air Conditioners

Scores in context: Of the 26 window air conditioners we tested, the highest scored 82; the lowest, 55. Of the 16 portable air conditioners, the highest scored 55; the lowest, 26. Listed below are the top-scoring models in order of performance. Recommended models offer the best performance.

☑ CR Best Buy ☑ Recommended

● Excellent ● Very Good ○ Good ● Fair ● Poor

WINDOW A/Cs

Recommended	Rank	BRAND & MODEL	PRICE	SCORE	SPECIFICATIONS			TEST RESULTS				
					Btu/hr.	EER	Max Window Width (in.)	Comfort	Brownout	Indoor Noise High	Indoor Noise Low	Ease of Use

A. 5,000 TO 6,500 BTU/HR. (COOLS 100 TO 300 SQUARE FEET)

☑	1	GE AEM05LS	\$210	82	5,450	11.4	38	●	●	●	○	L
☑	2	GE AEM06LT ^①	\$220	77	6,050	11.2	39	●	●	○	○	L
☑	3	Friedrich Kuhl SQ05N10B ^②	\$580	75	5,200	11.2	42	●	●	●	●	R/L
	4	Frigidaire FFRE0533Q1	\$180	74	5,000	11.2	37	●	●	●	○	L
	5	Friedrich Chill CP05G10	\$220	74	5,450	10.7	36	●	●	○	●	L
	6	LG LW6015ER ^①	\$180	74	6,000	11.5	34	●	●	○	○	L

B. 7,000 TO 8,500 BTU/HR. (COOLS 250 TO 400 SQUARE FEET)

☑	1	GE AEM08LT ^①	\$300	80	8,500	11.6	38	●	●	○	○	L
☑	2	LG LW8014ER	\$240	79	8,000	11.3	36	●	●	○	○	R
☑	3	Friedrich Kuhl SQ08N10 ^②	\$700	79	7,900	11.2	42	●	●	○	○	R
☑	4	Friedrich Chill CP08G10A ^②	\$380	76	7,800	11.2	43	●	●	○	○	L
	5	Haier ESA408N	\$240	73	8,000	11.3	37	●	●	●	○	R
	6	Frigidaire FFRE0833Q1	\$240	70	8,000	11.3	37	●	○	○	○	L

C. 9,800 TO 12,500 BTU/HR. (COOLS 350 TO 650 SQUARE FEET)

☑	1	LG LW1214ER ^②	\$350	80	12,000	11.3	39	●	●	●	○	R
☑	2	Friedrich Chill CP10G10A ^②	\$400	80	10,000	11.3	41	●	●	○	○	L
☑	3	GE AER10AT ^①	\$250	78	10,100	11.3	38	●	●	○	○	L
☑	4	Frigidaire FFRE1033Q1	\$300	72	10,000	11.3	38	●	●	○	○	R/L
	5	Sunpentown WA-1211S	\$330	69	12,000	10.8	37	●	●	○	○	L

PORTABLE AIR CONDITIONERS

		BRAND & MODEL	PRICE	SCORE	SPECIFICATIONS			TEST RESULTS				
	1	Friedrich ZoneAire P12B	\$600	55	11,600	NA	44	○	●	○	○	NA
	2	LG LP1414GXR	\$500	52	14,000	NA	50	○	●	○	○	NA
	3	Haier HPN12XCM	\$400	52	12,000	NA	47	○	●	○	○	NA
	4	Whynter ARC-14SH	\$500	52	14,000	NA	48	○	●	○	○	NA
	5	Kenmore 84126	\$500	49	12,000	NA	49	○	●	○	○	NA
	6	Honeywell MM14CCS	\$550	49	14,000	NA	47	○	●	○	○	NA

① Preretail sample tested; we'll check-test retail sample when it's available. ② Has slide-out chassis, which eases installation.

Keep Your A/C Humming

Dirt is the enemy of an efficient air conditioner. Keep it clean and you'll be rewarded with more cooling and lower utility bills. Ignore it and you can shorten the unit's life by making it work too hard. If your central air unit is aging but not yet kaput, you may want to wait until next summer to replace it. That's when new energy efficiency standards kick in; they'll save you money over the lifetime of the unit. Here's how to keep your A/C going:

ROOM A/C

Clean or replace dirty filters. Clean filters once a month during the cooling season. Vacuum off debris, then wash the filter in warm, soapy water; be sure filters are dry before you reinstall them. Replace a filter if it's damaged.

Vacuum coils and fins. Use an upholstery-brush attachment, taking care not to deform soft fins. If possible, remove the cover and use a soft brush or a can of compressed air on hidden dirt.

Avoid 'short cycling.' Wait 5 minutes after shutting off the unit to restart it. That allows

pressure in the refrigeration system to equalize, avoiding stress on the compressor.

CENTRAL A/C

Call a pro. Once per year, have a licensed professional change all filters; clean and flush the coils, drain pan, and drainage system; vacuum the blower compartments; and check the refrigerant and mechanical components.

Insulate ductwork. Make sure ducts are sealed and insulated. Up to 40 percent of cooling energy can be lost when uninsulated ducts pass through uncooled spaces such as attics. Make sure that connections at vents and registers are well-sealed where they meet floors, walls, and ceilings.

Do seasonal checks. Clear debris from around the outdoor unit regularly and keep vegetation at least 2 to 3 feet away. Clean indoor grills and filters every month. If the filter looks dirty, change it. A dirty filter will slow airflow and make the system work harder.

Central A/C Repair Rates

We asked readers whether their models broke. The table shows the percentage that failed, by brand, for each type.

CONVENTIONAL	
American Standard	10%
Bryant	11%
Trane	12%
Lennox	13%
Carrier	13%
Rheem	14%
Amana	17%
Goodman	17%
York	19%
HEAT-PUMP	
American Standard	17%
Trane	18%
Carrier	18%
Bryant	19%
Rheem	21%
Lennox	23%
Goodman	27%

➔ Source: Consumer Reports Annual Reliability Survey. Findings are based on responses from almost 34,000 readers who bought a conventional or heat-pump central A/C system from 2007 through mid-2013. Graphs show percentage of models for each brand that were repaired; differences of fewer than 5 points aren't meaningful, and data are adjusted to eliminate differences linked solely to age and use.

Before You Install Central: Contract Must-Haves

Surprises are the last thing you or your contractor wants once the installation of your central air conditioning starts. Short of X-ray vision to see through walls, a detailed contract is your best bet. Yours should include:

- The **exact make and model number** of the A/C condenser, its matching air handler, and new thermostat.
- How and **where the compressor** and air handler **will be installed**, including information on drainage of any condensation or leaks from the air handler.
- **Duct construction and insulation information**, including how seams will be sealed. (An acoustical liner inside the ductwork helps assure quietness when the system is running, and insulation on the outside of the ducts helps prevent condensation and improves efficiency.)
- **Ductwork location** (in attic, closets, etc.) and the number and locations of diffusers in each room. Places where the ductwork goes from unheated areas (such as the attic) to heated ones (bedrooms or closets) should be sealed with plaster, silicone, or expanding foam so that heated air doesn't get sucked up into unheated spaces in the winter.
- Any **electrical or plumbing work** that needs to be done and who will do it.
- **Warranty and service** information on the system and the installation.

Installing Window Units

Two out of three homeowners install their own window air conditioners, according to GE. To avoid any 'duh' moments, there are a few important things you should know.

WINDOWS Not all windows can accommodate an A/C. Double hung are the easiest. Make sure you measure the width and height of the opening before choosing a model. Avoid windows in direct sun. A unit placed in a shady spot can run up to 10 percent more efficiently, according to the Department of Energy.

WASH THE WINDOW After you install the A/C you won't be able to open it again for a while. Consider switching to shades so that the airflow isn't blocked.

POWER Make sure there is a three-prong outlet within cord length. (Extension cords aren't recommended.) Check the load on the circuit you plan to use, it's best to have a dedicated circuit.

INSTALLATION If you're installing it yourself, ask a buddy to help with the heavy lifting. A unit with a slide-out chassis is easier to install because you can secure the cabinet, then the chassis. Follow the manufacturer's installation instructions. Unless they say otherwise, the window air conditioner should be level from left to right and pitched slightly toward the outdoors so that water drains properly to the rear of the unit and doesn't leak into the home. And be sure to fill the gap between the window frame and the sash with foam to keep hot air out and cool air in.



GE AEM05LS



New Ways to Protect Your Credit Cards

Arm yourself against thieves by going high-tech

AFTER THE RASH of retailer data breaches this past year, you may be tempted to stash your credit cards under your mattress and just pay cash. But even if you managed to avoid being a victim of fraud or were covered by your bank or card company for your losses, credit-card data breaches can still cause you headaches. In an effort to reduce losses, your purchases may be rejected if they appear to be unusual. To cover their costs, banks could jack up fees and interest rates. “Ultimately, everyone ends up paying for fraud in one way or another,” says Randy Vanderhoof, director at EMV Migration Forum, a card-security consortium. But there are a few new tools you can use to help take a bite out of credit-card fraud and keep your own cards safer.

Get a card with a chip. Banks have an October target date to start issuing new credit cards with an embedded microchip called EMV (named for its backers, Europay, MasterCard and Visa), although many are running behind schedule. Every time you use a card with a chip, the information is stored as a one-time coded message, so any information stolen in a breach is later useless to the thief. For the same reason, the chip also makes it more difficult for fraudsters to steal your data at places such as gas stations to make a counterfeit card. One downside: The new chip won’t reduce the risk of fraud when you make purchases over the Internet because you still have to input your credit-card information.

Use a digital wallet. If you’re familiar with Apple Pay or Google Wallet, you know what a digital wallet is. The idea is that you can pay for retail goods with a wave of your smartphone and the costs are then charged to a credit card you choose. The mobile payment devices, currently accepted at less than 5 percent of retailers, add security through a process known as tokenization. When you

pay, the wallet substitutes your credit-card info with a set of random numbers (a token), making the data useless to fraudsters.

Consider a credit-card remote control. More banks are offering smartphone apps that operate the credit cards they issue. You can set a card to work at one store but not another or in some but not all geographic regions, or you can simply turn it off altogether. Customers of Lone Star National Bank in McAllen, Texas, for example, have been using the technology for more than a year. In that time, fraud losses have dropped about 60 percent, according to a bank representative. In April, Discover launched a service, Freeze It, that lets you turn off your card if you misplace it. The service is available through the Discover mobile app, at discover.com, and by phone.

Switch to a smart card. A new device from Stratos, a company based in Ann Arbor, Mich., looks like a regular credit card. In fact, it’s a single piece of plastic onto which you can load all of your accounts using a special card scanner that Stratos provides. When you make a purchase, you tell the Stratos card which card you want to use and it encrypts the data. A nice feature: You can use a mobile app to automatically lock the card if you happen to misplace it. The service costs \$95 per year (or \$145 for two years). Coin and Plastic are companies that offer similar smart cards.

Put your finger on it. MasterCard is working with Zwiipe, a company based in Oslo, Norway, on a card that uses biometric technology. Instead of dipping or swiping your card at the store, you place your finger over a built-in sensor on the card, then point the card at the payment terminal. The sensor matches your fingerprint with an image of it stored inside the card before allowing a charge to go through. MasterCard expects to launch the card in the U.K. this year before bringing it to the U.S.

RECALLS AND UPDATES

Mucinex’s Risky Label Glitch

If you have a bottle of Mucinex in your medicine cabinet, you may need to throw it away. In April, drug-maker RB recalled certain lots of over-the-counter Mucinex Fast-Max liquid products: Night Time Cold & Flu; Cold & Sinus; Severe Congestion & Cough; Cold, Flu & Sore Throat; Day Time Severe Cold and Night Time Cold & Flu; and Day Time Severe Congestion & Cough and Night Time Cold & Flu.

The manufacturer issued a recall after a retailer alerted it to a labeling problem. A company spokesperson said that although the products are correctly labeled on the front of the bottles and list all active ingredients, they may have an incorrect Drug Facts label on the back. The mislabeling could put consumers at risk for unexpected side effects.

The company representative told us that RB estimates that about 1.5 million mislabeled products could be in the hands of consumers.

In December, we raised concern about Mucinex Fast-Max pills, and other combo medicines, because multisymptom products can put consumers at a higher risk of doubling up on medicines. Our medical experts recommend using single-ingredient drugs whenever you can.

For more information on the recall and to see whether your bottle is among those affected, go to mucinex.com/recall. You can find the lot number and expiration date on the back of the item.



Getting Great Photos With a Smartphone

AMERICANS TAKE ALMOST 10 BILLION photos each month, according to one survey—and 6 billion of them are captured with a smartphone. They don't have to be just selfies and thoughtless snapshots. With today's technology, you can use a smartphone to create beautiful, high-impact images.

If you're shopping for a new phone and photography is important to you, check out the models on the facing page. They have some of the best cameras available in mobile devices. They can't perform as well as a dedicated camera for certain tasks—notably zooming in on distant scenes—but in many conditions they do just as well as point-and-shoots.

Where mobile devices surpass standalone cameras is in software. Powerful built-in apps let you apply filters and do basic editing. For instance, you can quickly turn a color photo into a nostalgic

sepia-toned picture. You can correct an image obscured in shadow, or use a cropping tool to turn a middling photo into a provocative image.

And unlike cameras, phones are frequently improved through operating-system updates. For instance, Apple's iOS 8, which launched last fall, enabled iPhone users to separately select either an autofocus point or an exposure setting.

Third-party apps are the final piece of the smartphone photography puzzle. Want to try a sophisticated image editor? Download it. Want an app for creating time-lapse videos or an on-the-fly illustration? You can find one of those, too. We've listed three highly capable photo apps on the facing page.

Ultimately, though, the most important way to improve your smartphone photography is to do it the old-fashioned way—go out and start shooting.

Cloud Storage

There are two good reasons to regularly move your photos off your phone and into the cloud: to organize them and to back them up. Here are three useful options:

Photo-specific cloud services.

Long-established services such as Picasa and Shutterfly are free or inexpensive. A newer option is Mylio. At \$50 per year, Mylio's basic plan is pricey but powerful: It backs up and organizes as many as 50,000 JPEGs and shares them across devices.

Generic cloud services. Apple and Android phones offer automatic cloud backup, and that's all many shooters need. But photos can eat through your free Apple or Google cloud storage quickly. To protect the privacy of your images, use two-factor authorization.

Social media. Many people simply post the photos they like on social media. Facebook reduces the size and quality of your images. Sites such as Flickr, by contrast, allow you to maintain the original quality of your image file.

Smart Settings



Turbocharged Apps

Three powerful tools for advanced shooting and editing



Manual, \$2 (iOS)

This app is both simple and powerful: It gives you manual control over your phone's camera, something that has been permitted by Apple only since iOS 8 was introduced last fall. With Manual, you can alter the ISO, shutter speed, white balance, and focus point, dramatically increasing your photo-taking choices. The app will also record what settings were used for each shot.



Snapseed, Free (Android and iOS)

This app brings you a wide range of novel filters and effects, including Vintage, Drama, and Retrolux, which can be applied alone or in layers. For example, Retrolux produces a weather-beaten texture. Adjust the strength of the effect by swiping your finger left or right. The app also includes a wide range of standard photo-editing functions.



Afterlight, \$1 (Android and iOS)

The developers of this app have created a nice combination of intuitive editing tools, along with dozens of filters and deeper, slightly more complex effects. The double-exposure tool is particularly fun: You choose two photos and scale one of them larger. Then Afterlight provides five options for combining the images, along with a slider to increase or decrease the collaged effect.

Your smartphone may be able to take better shots than you realize—the secret is in the settings.

1. Set focus and exposure independently. Phones aim to make picture-taking easy by locking the focus and exposure together. But you can set them independently, too. On iPhones with iOS 8, tap the screen to set a focal point. (A square and sun icon will appear.) Touch the screen again and slide your finger to move the sun icon and lighten or darken the exposure. On Android phones, onboard software varies from model to model, so explore the settings. Or download the free Camera FV-5 Lite app, which lets you independently adjust focus and exposure.

2. Tweak color. The built-in photo app on your phone provides a few ways to adjust the color in your composition. For instance, you can increase the saturation to produce a colorful Van Gogh-like palette. Decrease it to create a more monochrome shot. All modern phones also include preset, Instagram-like filters to quickly alter the look of an image.

3. Crop your shot. In many cases, this is the secret to fixing the composition after you've taken a photo. Built-in editing software also provides a virtual dial that allows you to rotate your image. That can be useful when correcting the horizon line in a landscape—or distorting it to add drama to a photograph.

Shooting Stars

Phones that take high-quality photos



Apple iPhone 6 \$650

HIGHS A large number of photo apps come to the iPhone before migrating to Android devices. The phone is also a great choice for video and still photography. **LOWS** The iPhone has no expandable memory, and it can't shoot Ultra HD video.



LG G3 \$600

HIGHS The camera's optical image stabilizer helps the G3 take very good photos in low light. The removable battery allows you to pack a spare, in case you run out of power. **LOWS** Though the HD video quality is good, other phones do even better.



Motorola Droid Turbo \$600

HIGHS It has an impressive display for showing off images. Like the Sony Xperia Z3v, its high-megapixel sensor allows for serious cropping. **LOWS** The Droid Turbo's HD video quality is good, but certain models perform better. It has no memory-card slot.



Nexus 6 \$650

HIGHS It's one of just a few phones with an optical image stabilizer for sharp images in low light. In most situations it shoots high-quality photos. **LOWS** Though photos look great on its display, the phone's large size may make it difficult to hold when composing. It has no memory-card slot.



Samsung Galaxy S5 \$650

HIGHS The 15.9-megapixel camera is one of several phones that shoot Ultra HD video. Active (or clumsy) photographers can dunk the S5 in up to 3 feet of water for up to 30 minutes. **LOWS** We like the S5's expandable microSD memory, but it's difficult to access.



Sony Xperia Z3v \$630

HIGHS This is one of the few phones that captured high-quality photos even in low light. You can swim with it for up to 30 minutes in about 3 feet of water. The high megapixel count lets you generously crop your photos. **LOWS** Although water-resistant, the phone is not shockproof.



"If you lose the ability to manufacture, then
over time you lose the ability to innovate as well."
—Willy Shih

MADE IN AMERICA

It doesn't mean what it used to. But here's the good news: Manufacturing is *not* going away, innovation remains strong, and if you want to buy American, you've got plenty of high-performing products to chose from.

"When you make it here, you have control over the whole process. If things get hung up, you're right there to problem-solve every step of the way."

—Catherine Connolly



ALMOST 8 IN 10 AMERICAN CONSUMERS SAY they would rather buy an American-made product than an imported one, according to a recent Consumer Reports survey. And more than 60 percent say they're even willing to pay 10 percent more for it. For some, the decision might stem from a belief in American quality and safety. Others might think it's the best way to support the American economy and workers. But in our increasingly complex global economy, how much meaning does a label stating "Made in America" still hold?

Some iconic American products, from the Apple iPhone to Cuisinart food processors, have little or no manufacturing presence on these shores, while many foreign makers have invested heavily in manufacturing plants in the U.S. The auto industry has long grappled with what it means to be made in America. (See "What Makes a Car 'American'?" on page 52.) But now, because of a wave of "reshoring," many appliance manufacturers and

other companies are moving significant operations back to the USA. Since 2010, about 300 companies have returned here, according to the Reshoring Initiative, an industry-supported not-for-profit that focuses on bringing manufacturing jobs back.

And yet the perception persists that American manufacturing is in decline. It's fueled by the fact that very few products sold in the U.S. in certain high-profile categories, such as consumer

electronics and clothing, are actually produced here. But the Department of Commerce reports that between 2009 and the end of 2014, U.S. manufacturing output grew by 45 percent, 646,000 jobs were added between February 2010 and May 2014, and another 243,000 positions are waiting to be filled. (Even so, such growth hasn't made up fully for losses during the 2008-2009 recession.)

Two reasons cited for a resurgence of American manufacturing in recent years are newly cheap energy and the narrowing gap in labor costs between the U.S. and other countries. But it's not just about costs. A third factor is increased investment in research and development.

Some analysts say that the frontier in innovation lies in "brainfacturing." It's a term that describes a new wave of manufacturing focused on research in digital technologies, automation, and new materials. In certain industries, such as software, American companies are so dominant that other countries are enacting legislation to encourage development of their own products in order to lessen their reliance on U.S. technology.

No matter how you define a "Made in America" label, though, it has selling power, and many marketing departments are rushing to capitalize on it. But consumers often don't know whether they can trust the claim. The Federal Trade Commission has issued standards for products that bear a "Made in the USA" label, but those guidelines aren't widely understood. And the claim gets even more confusing when compared with products that say "assembled" or "designed" in America. Adding to the cacophony, there is plenty of outright deception by companies that slap Americana on their products, in hopes they'll be able to cash in on public sentiment before getting found out as a fraud.

In an effort to capture the wide range of voices on this nuanced topic, we asked 13 leaders to weigh in. We also provide a guide to some of the highest-rated products—ones that live up to the "Made in America" promise.

10 Views on What We Build,

“

TO INNOVATE MORE, YOU HAVE TO MANUFACTURE MORE

One of the reasons for the decline in the 2000s was the idea that manufacturing is dumb and dirty—that we don't really need to do production, and we'll just focus on the innovation. But we found that doesn't work. Innovation and production are closely tied. If you're not actually in the factory, it's hard to know what new products to make.

”

—Susan Helper, Ph.D., chief economist
for the Commerce Department

WHY CHINA IS LOSING ITS ADVANTAGE



“The U.S. has faced a lot of challenges from China and still does, but costs in China are going up much faster than in the U.S. Our numbers show that the cost differential between the two countries has dropped dramatically—especially if you include transportation. We've identified at least 300 companies that have moved plants back to the U.S. or built plants in the U.S. specifically for that reason. Even the Europeans are moving factories here because it's cheaper.”

—Hal Sirkin, senior partner,
The Boston Consulting Group

THANK A ROBOT FOR THOSE NEW JOBS

“The playing field is leveling as manufacturing becomes more automated. If you go to the Tesla factory here in the Bay area, it's just a forest of robots. It's not like there used to be a forest of humans—there used to be an empty factory, an old GM factory. It was empty for like 15 years and then this new company came in, a company based on automation, and it created new jobs. Great jobs. Not factory-line workers, but robot programmers. There aren't many of them, but they're much higher skilled, much higher paid.”

—Chris Anderson, CEO of 3D Robotics and best-selling author
of *Makers: The New Industrial Revolution*

and Why

THE VALUE OF MANUAL LABOR

"A whole generation—of students, young people who want to work with their hands—want to do manufacturing, and we've done them a huge disservice by destroying the infrastructure for industrial arts—wood and metal shop. Even home economics doesn't exist anymore. So kids don't know how to sew buttons, much less become an engineer. Right now our primary use for education is as a holding pen for our kids."

—*Bre Pettis, a former school teacher who co-founded MakerBot and heads the Innovation Workshop at Stratasys*



THE POWER OF THE USA NAME

"I wanted to start a new underwear line, so on Kickstarter I put up a video asking 'Does anybody else care about "Made in America" the way I do?' At the time, the most successful fashion campaign on Kickstarter had done \$64,246 in sales. So I set my target at \$50,000. If we got to \$40,000, I'd consider that a win. It brought in \$291,493—and probably could have done more, but about halfway through, I realized I didn't know the unit economics well enough yet. I might well be losing money on every sale, so I put the brakes on. But the world really came running. And every big fashion project that came after that, they all talked about Made in America."

—*Jake Bronstein, founder and CEO of Flint and Tinder, on its 2012 "Made in America" underwear campaign*

PROXIMITY EQUALS PERFECTION

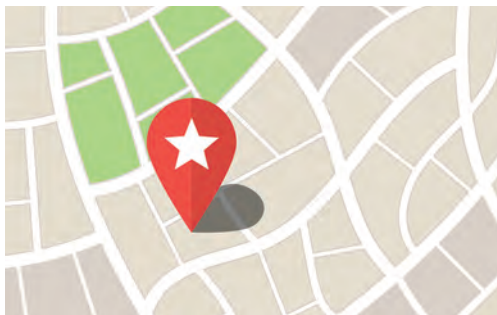
"In a highly commoditized world, the name of the game is creating something unique, something that stands out. When you make it here, you have control over the whole process. If things get hung up, you're right there to problem-solve every step of the way."

—*Catherine Connolly, CEO and owner of the textile manufacturer Merida*

A LOCAL PERSPECTIVE

"We have a myopic view of the country as one collective. I'd love to see things like 'Made in Oak Ridge,' 'Made in Phoenix,' 'Made in Washington, D.C.' Bring some notice to places that need to find local mojo. We've proved over and over that the ability to walk next door or drive across town and meet someone who's working on something drives innovation so much faster. To me, that's what's important."

—*John B. Rogers Jr., CEO and co-founder of Local Motors*



More Expert Views on Page 28.



A SENSE OF PLACE

"We've stigmatized the blue-collar existence. And that's a terrible disservice because it's a key part of what moves us forward. 'Made in America' requires a deeper understanding of what it really takes to make stuff. To me, it's also about community. I love it when something is made in a place I recognize—by a community I'm part of."

—*Adam Savage, co-host of TV's MythBusters*

WHAT WE GAVE UP

"The problem is that for 25 years, we sort of didn't think the manufacturing side mattered that much. We didn't particularly value having production-based jobs in the U.S., and we weren't too concerned about where work—whether in IT or energy or manufacturing—occurred. We thought that if we just invested a lot in R&D, the rest would take care of itself. It turns out you can lose even the ability to develop technology if the factories and production sites are all in Asia."

—*Mark Muro, senior fellow, the Brookings Institution*

IT'S OUR HISTORY

"Manufacturing technology and engineering is an integral part of the experience of so many American families: people who worked in the mines, mills, and factories. They built the railroads and infrastructure of the country. You don't have to drill too deeply into anyone's family history to find a connection to this story."

—*Brent Glass, director emeritus of the Smithsonian's National Museum of American History*

When the Flag Flies on the Label

Who gets to use the 'Made in America' tag?

RENEWED PRIDE in American manufacturing has made it more fashionable—and profitable—for companies to wax patriotic in their advertising, even when the claims are far from bona fide. “We see many goods which say ‘Made in the USA,’ but they’re actually made in China,” says Hal Sirkin, a senior partner at The Boston Consulting Group, global-management consultants.

The federal government’s “Made in USA” standards empower the Federal Trade Commission to take action against companies that make false or misleading claims.

All or almost all of a product bearing the label must be of U.S. origin, i.e., it should contain no foreign content (or a negligible amount) and its final assembly or processing must take place within the 50 states, the District of Columbia, or U.S. territories and possessions.

But the standards also allow manufacturers to make “qualified” claims for products that aren’t entirely of domestic origin. One example: a GE refrigerator with 87 percent U.S. content.

WHY FAKES SNEAK THROUGH

The role of the FTC is to provide guidance to companies that want to use the label; it doesn’t police every product on the market. “It’s often a question of context,” says Julia Solomon Ensor, a lawyer for the agency. “A product may convey that it’s made in the USA, with a huge American flag on the package, but then there will be a tiny qualifier saying it consists of 100 percent imported parts.”

The FTC would certainly challenge that kind of claim, but only after receiving a formal complaint from an outside party. “Most complaints come from competing companies, who can best determine if a product is truly made in the U.S.,” Ensor says. “It’s very difficult for the typical consumer to know if a claim is true or not.”

It doesn’t help that the FTC standards allow companies to design their own labels, unlike the federal Energy Star program, for example, with its distinctive blue label that’s a recognized mark of energy efficiency. ‘Made in the USA’ labels, by comparison, take many forms, as the examples at right show.

Paradoxically, plenty of products that really are manufactured domestically don’t carry a ‘Made in America’ label. For example, many Kenmore appliances are produced in the U.S., but you won’t see any patriotic labeling on them because Kenmore also has contracts with foreign manufacturers.

HOW TO RECOGNIZE IMPORTS

Given the vagaries of “Made in the USA” labeling, another strategy is to look for a “Country of Origin” mark, which Customs and Border Protection require on all imported products. It must be in a conspicuous place where it can be seen with casual handling, so you should be able to find it easily while shopping in a store. With refrigerators, for example, the country of origin is on the manufacturing sticker usually found on an interior wall. With gas grills, the sticker can be found on the back of the metal frame or cart. (Bear in mind that the marking isn’t required on American-made products.)

We’ve mined our current Ratings in a dozen product categories for recommended models that were made in the USA out of mostly U.S.-supplied parts, even if their manufacturers don’t advertise the fact. See page 30 for the list.

If you come across a claim that seems bogus, file a complaint at ftc.gov or call 877-FTC-HELP. An investigation will probably take a while, and the FTC won’t respond to you directly, so playing the vigilante role won’t help with your immediate purchase. But you’ll be doing your part to uphold the integrity of the “Made in the USA” claim.



3 More Views on American-Made

THE LOST GENERATION OF LEADERSHIP

If you lose the ability to manufacture, then over time you lose the ability to innovate as well. When I interviewed people at GE Appliance Park not long ago, one of the things they told me was how the career path for their product leadership had shifted when they started outsourcing. It became less about how to make things and more about how to buy materials overseas. When they brought that work back in-house, they had to retrain those people. They didn’t know how to do it anymore. They lost a whole generation of leadership. ”

—Willy Shih, Harvard Business School professor and co-author of “Producing Prosperity: Why America Needs a Manufacturing Renaissance”



6 Brands: Just How American Are They?

1. GE APPLIANCES

Headquarters
Louisville, Ky.

Key facts Since 2009, GE has invested \$1 billion to bring some of its manufacturing home to the U.S., with most of the investment going to Appliance Park, a 900-acre facility in Louisville. That's led to 3,000 new manufacturing jobs. GE's qualified "Made in America" label tells how much U.S. content is in each appliance. For example, the company says its bottom-freezer refrigerators comprise 87 percent domestic parts.

2. WHIRLPOOL

Headquarters
Benton Harbor, Mich.

Key facts It's the world's largest appliance manufacturer; its brands include Amana, Jenn-Air, KitchenAid, and Maytag. It's also the leading producer of U.S. appliance factory jobs with eight factories nationwide employing 15,000 workers. About 80 percent of Whirlpool appliances sold in the U.S. are made here. Some foreign components are used, but Whirlpool's label doesn't indicate how much.

3. FRIGIDAIRE

Headquarters
Stockholm, Sweden

Key facts Frigidaire, whose label says "Built with American pride," was founded in Fort Wayne, Ind., in 1916. It remained a U.S.-owned company until 1986, when it was purchased by the Swedish multinational Electrolux (which is also in the process of acquiring GE Appliances). Electrolux has been moving its manufacturing to Asia, Latin America, and other low-cost areas, but Frigidaire

still maintains five plants in the U.S., including one in Memphis, Tenn., that opened in late 2013.

4. APPLE

Headquarters
Cupertino, Calif.

Key facts Though a few Apple products are American-made, including the Mac Pro computer manufactured in Austin, Texas, the bulk of its manufacturing happens in China. Hence the "Designed by Apple in California" label shown at left. Apple claims that its innovation has produced more than 1 million U.S. jobs. But only 66,000 are actual Apple employees, including 30,000 retail workers.

5. ARIENS

Headquarters
Brillion, Wis.

Key facts Though many of its engines are imported, Ariens, which boasts of "American craftsmanship," employs more than 1,000 American workers in three factories to produce outdoor power equipment. Another 400 U.S. workers design, test, sell and support its products and customers.

6. TROY-BILT

Headquarters
Valley City, Ohio

Key facts Troy-Bilt's label, which says "Rooted in America," plays up its agrarian origins. In 1937, it revolutionized the rototiller, which is still a signature product, along with lawn mowers, leaf blowers, and other outdoor power equipment. It was bought by MTD, a Cleveland-based manufacturer, in 2001. Its five U.S. factories use a combination of domestic and foreign parts.

IF NOT HERE, WHERE?

"At first we thought this was going to be a small- to medium-size business, but now we're seeing some of the biggest brands in the world opt for American manufacturing. We're even seeing brands from China and Southeast Asia looking for American manufacturing facilities to produce products for import back to their own countries. We didn't anticipate that at all."

—Matthew Burnett, CEO and co-founder of Maker's Row, which connects businesses to America's manufacturers

THERE'S NO PLACE LIKE HOME

“The 'Made in America' movement is stronger than many people think. So many graduates of design and engineering programs are choosing to start something of their own, in the United States. It's larger companies, too. Look at Tesla, which set up manufacturing in California, one of the most expensive places in the world. Dozens and dozens of companies have decided that making things overseas is not really less expensive once you consider the quality differences and the delays.”

—Carl Bass, CEO and president of Autodesk, whose design software is used by engineers and designers

The Best American-Made Appliances

U.S. manufacturers are turning out top models in a slew of categories. Here are ones we've tested, and like.

THE THOUSANDS of products that pass through Consumer Reports test labs each year come from all corners of the globe. There are washing machines and water heaters from Mexico, TVs and refrigerators from South Korea, dishwashers and vacuums from Germany. We see lots of appliances that are made right here in the U.S., too, of course. Every country has winners and losers when it comes to quality and performance.

Here, we focus on the best American-made large and small appliances available now. Especially with so much recent reshoring, the U.S. is competitive in these categories, so you have plenty of choices. You might have to spend a bit more, however, because in many cases, appliance manufacturers have brought home production of premium lines while continuing to outsource lower-priced models. (For complete product Ratings, online subscribers can go to ConsumerReports.org.)



REFRIGERATORS

Among all bottom-freezers and built-ins we've tested, about 40 make our recommended list, including these 10 American-made models. (Most top-freezers and side-by-sides are made overseas.)

FRENCH-DOOR BOTTOM-FREEZER

GE Profile PWE23KMDES, \$2,600
Whirlpool Gold GX5FHTXV[Q], \$1,600

CONVENTIONAL BOTTOM-FREEZER

Whirlpool WRB322DMBM, \$1,400
Whirlpool Gold GB2FHDWX[Q], \$1,200
Amana ABB2224WE, \$1,350
Maytag MBF2258XE, \$1,100
Amana ABB2224BRM, \$1,250
Maytag MBF1958XE, \$1,150
BUILT-IN
Jenn-Air JS42PPDUB, \$7,200
Sub-Zero BI42S[S], \$8,000

DISHWASHERS

KitchenAid makes all of its dishwashers in Findlay, Ohio. Bosch and Kenmore mix domestic and foreign production, but the models below are made in the U.S.

KitchenAid KDTM354DSS, \$1,080
Kenmore Elite 12793, \$1,200
Kenmore Elite 12783, \$1,070
Bosch Ascenta SHX3AR7[5]UC, \$700
KitchenAid KDFE454CSS, \$1,350
Bosch 800 Plus Series SHX7PT55UC, \$1,300
Bosch 500 Series SHP65T55UC, \$900
Bosch 300 Series DLX SHX53TL5UC, \$850

WALL OVENS

Michigan-based Whirlpool (which also owns KitchenAid and Maytag) makes many of the best-performing wall ovens on the market. GE's innovative French-door oven is also recommended.

Whirlpool WOS92ECOAH, \$1,500
Maytag MEW9530AW, \$1,400
KitchenAid KEBS109BWW, \$2,000
GE PT9050SFSS, \$3,900
Maytag MEW7530AW, \$1,000
Maytag MEW7530AW, \$1,000

RANGES

Looking for a great American-made range? Many electric models score high in our tests, including the top induction model from Kenmore. The best pro-style ranges are made in KitchenAid's factory in Cleveland, Tenn.

SMOOTHTOP ELECTRIC

GE PS950SFSS, \$2,800
Maytag MET8885XS, \$1,700
GE PS920SFSS, \$2,800
Maytag MET8885XS, \$1,700

INDUCTION

Kenmore 95073, \$1,530
GE PHB920SFSS, \$2,200

GAS

KitchenAid KDRS505XSS, \$2,500

PRO-STYLE

KitchenAid KDRS407VSS, \$4,000
KitchenAid KDRU763VSS, \$6,000

WASHERS

About one-third of our washing machine picks are American-made. No dryers produced here make the cut in our current Ratings.

FRONT-LOADER

Maytag Maxima MHW8100DC, \$1,300
Maytag Maxima MHW5100DW, \$950

HE TOP-LOADER

Whirlpool Cabrio WTW8500DW, \$1,000

CONVENTIONAL TOP-LOADER

Whirlpool WTW4850BW, \$580
GE GTWN5650FWS, \$650

GAS GRILLS

The vast majority of gas grills are manufactured in China. But all Vermont Castings grills are made in central Vermont, and Weber's

Summit and Genesis lines are made in Palatine, Ill.

Vermont Castings Signature Series VCS325SSP, \$1,300
Weber Genesis S-330, \$970

FREEZERS

About half of our recommended freezers are made in the U.S., including upright and chest configurations.

SELF-DEFROST UPRIGHT

Frigidaire FFFH20F2QW, \$750
Maytag MZF34X16DW, \$550
Frigidaire FFFH17F4QT, \$800

MANUAL-DEFROST UPRIGHT

Frigidaire FFFU17M1QW

MANUAL-DEFROST CHEST FREEZER

Frigidaire FFCH16M5QW, \$590
Amana AZC31T15DW, \$550

SMALL APPLIANCES

American-made small appliances are difficult to come by. Indeed, no recommended toaster, coffee-maker, or food processor is made here. But the mixer and blender choices below are all top-rated.

STAND MIXERS

KitchenAid Professional 6500 Design Series, \$550
KitchenAid Classic (250 watt) K45SS[WH], \$200
KitchenAid Artisan KSM150PS[WW], \$300

BLENDEES

Vitamix Professional Series 750, \$650
Blendtec Designer 725, \$650
Waring Xtreme MX1000R, \$350

For the best American-made cars, see page 52.



SUB ZERO B142S
REFRIGERATOR



VITAMIX
PROFESSIONAL
SERIES BLENDER



KITCHENAID
CLASSIC
K45SS
STAND MIXER



WHIRLPOOL
CABRIO
WTW8500DW
WASHER



KENMORE
95073
RANGE



GE PT9050SFSS
WALL OVEN

FAKES, PHONIES, AND FRAUDS

We're awash in knockoffs of iconic American brands as well as respected international products. How to tell real from the rip-off.

AS THE WORLD has grown smaller, more and more foreign-made goods are hitting our shores. Among them, a flood of fakes, fueled in part by the Internet and the ease with which we can buy products directly. Last year, U.S. law enforcement agencies—including U.S. Immigration and Customs Enforcement's Homeland Security Investigations—shut down 29,684 websites that were illegally selling counterfeit merchandise online.

Buying counterfeit goods—whether online or in person—comes with a big risk. Not only do fakes cost U.S. businesses as much as \$250 billion in lost trade annually, but many are also downright dangerous. Here, some of the latest to watch for:

DRUGS AND MEDICAL PRODUCTS

Six percent of all fakes seized by U.S. Customs and Border Protection last year were pharmaceuticals and personal-care products. They're especially dangerous because they could be subpotent, superpotent, expired, or adulterated.

BOTOX The genuine wrinkle-smoother is made by U.S.-based Allergan, but in April the Food and Drug Administration (FDA) issued an alert for counterfeit Botox that was distributed by an unlicensed supplier and may have been sold to doctors' offices and clinics nationwide. The products are considered unsafe because the FDA can't confirm that they meet U.S. standards.

How to tell the difference: With the fake, the vial is missing the lot

This counterfeit Botox used the wrong name for the active ingredient.

FAKE



Look for a holographic image with the maker's name, in this case, Allergan.

REAL



Don't buy decorative contact lenses without a doctor's prescription.

RISKY



FAKE

Watch for phony UL labels on appliances and cords.



REAL

Updated labels have color-shifting ink.

number, and the carton doesn't have any entries next to "LOT: MFG: EXP." The outer carton and vial show the active ingredient as "botulinum toxin type A" instead of "onabotulinumtoxin A."

ALLI Lab tests conducted by GlaxoSmithKline, the U.K.-based

maker of the real over-the-counter weight-loss product, revealed that a fake, which was sold online, lacked orlistat, the active ingredient. Instead, it contained the controlled substance sibutramine, a drug that shouldn't be used without physician oversight and that

can cause adverse interactions with other medications.

NONPRESCRIPTION CONTACT LENSES Also referred to as "color" or "fashion" contacts, they're considered counterfeit if they're sold without a prescription. "The problem isn't with the decorative contacts themselves," says Bernard Lepri, an FDA optometrist. (Contacts are medical devices regulated by the agency.) "It's the way people use them improperly—without a valid prescription, without the involvement of a qualified eye-care professional." A poor fit can cause serious eye damage, including corneal scratches, infection, conjunctivitis (pinkeye), and even blindness.

Lenses sold illegally cost as little as \$20 from street vendors, at novelty stores, and elsewhere.

FAKE 'UL' LABELS

Many consumers know to look for the UL label, the safety seal that the independent Underwriters Laboratories puts on more than 22 billion products annually. Fraudsters create knockoff labels for appliances and electronics, particularly low-cost items such as power strips and extension cords as well as mobile-phone chargers and batteries, says UL's consumer safety director, John Drengenberg. Manufacturing shortcuts on products with counterfeit UL labels could lead to fire and shock hazards, among other dangers. Some extension cords with fake labels, for example, have been found with copper wiring that's inadequate to carry the appropriate current.

TOASTERS In April 2013, customs officers intercepted 15,000 fake toasters smuggled into a Los Angeles-area seaport from China. They had the fake UL labels pictured at left. (One hint: the misspelling in "ONE YEAN WARRANTY.") As a deterrent, UL has redesigned its mark in the form of a gold hologram with embedded codes and color-shifting ink, such as you'll find on high-denomination U.S. currency.

APPLIANCES

Counterfeit small appliances can be deadly. The Consumer Product Safety Commission (CPSC) has warned people for years about products that lack a ground-fault circuit interrupter (GFCI), which protects against electrical shock.

HAIR DRYERS Like most fake hair dryers, the one pictured at right was missing a GFCI, which can prevent electrocution if the dryer falls in water. The CPSC advises consumers to look for a large, rectangular-shaped plug at the end of the dryer cord indicating the presence of a GFCI, and certification from a recognized testing laboratory like UL on the dryer or its package.

Counterfeit hair dryers can pose an electrocution hazard.



Some of these counterfeit airbags didn't deploy; others ignited.

FAKE

As a general rule, consumers are best off buying auto parts from authorized dealers and retailers. If you shop elsewhere, make sure that you inspect the packaging carefully for the correct brand name, logo, and graphics. And be wary of subtle differences in artwork, colors, fonts, and spelling (for instance, "AZDelco" instead of "ACDelco"). Amazingly low prices should send up a red flag, too.

BATTERIES

Replacing expensive smartphone batteries from the manufacturer with no-name or off-brand substitutes can be a costly blunder. Most wireless devices use lithium ion (Li-Ion) batteries because they're lightweight, capable of holding their charge, and don't contain toxic metals. Note that even when genuine batteries are produced under manufacturers' specifications, they're especially sensitive to physical stress, according to CTIA The Wireless Association, a trade group. Too much pressure on a battery, for example, can cause an internal short-circuit, and overheating. Subject a counterfeit one to the same pressure and it could expand, explode, or catch fire, Samsung says.

SAMSUNG The fakes pictured here stand out because they lack the Samsung logo and a "+" and "-" icon, and the watt-hours value and battery capacity are wrong. Counterfeits might also have protruding or curved contacts instead of recessed flat ones. Learn more at samsung.com/ph/support/skp/faq/1058514.

AUTO PARTS

Illicit aftermarket auto parts are showing up at an alarming rate, says Bruce Foucart, director of the National Intellectual Property Rights Coordination Center, led by U.S. Immigration and Customs Enforcement. The parts are usually smuggled into the U.S. and bought by independent stores—sometimes knowingly, sometimes not. "At best, these parts will not perform as well as authentic ones," Foucart says. "At worst, they can fail catastrophically, with potentially fatal consequences." Most vehicle components can be faked.

AIRBAGS The National Highway Traffic Safety Administration (NHTSA) says that counterfeit airbags are sold as replacement parts for vehicles that have been in a crash. They look almost identical to original equipment,



including bearing the brands of major automakers—but NHTSA testing found that fakes consistently malfunctioned. Some didn't deploy, and others expelled metal shrapnel during deployment. In 2014, a Canadian man was sentenced to six months in prison for selling more than \$33,000 worth of fake BMW, Toyota, and Honda airbags (shown above). They were sourced from China and sold on eBay for about a year, according

to U.S. officials. Court records show that in follow-up testing, a bag failed to deploy as designed and shot flames from the top and bottom.

BRAKE PADS Avoid the temptation to save a few bucks. Counterfeit brakes have been discovered with poor-quality steel backing plates and weak or no shim bonding to the backplate, according to the Ford Motor Company. Fakes are often made from compressed wood chips and sawdust.

How to Make Sure You Get the Real Deal

Fake goods persist, says David Hirschmann, president of the U.S. Chamber of Commerce's Global Intellectual Property Center, because consumers are lured by unrealistically low prices. What you can do:

Consider the source. Fakes can be found at flea markets, on eBay, via marketplace merchants, at independent deep-discount and no-name stores, purse parties, swap meets, even mall kiosks. Be especially wary of "copycat" websites that resemble those of well-known merchants and Internet pharmacies.

Question prices that seem bewilderingly below market value. "We all like a deal," Hirschmann says, "but when it's too good to be true, it's probably no bargain in the end."

Know that your purchase does make a difference. While counterfeiting can't be stopped, Sandra Bell, deputy assistant commissioner for the Office of International Trade, says it can be slowed. "If shoppers don't buy fakes," she says, "then counterfeit goods and the sellers behind them won't prosper."



How to Win the Battle of the Bugs

You don't need harsh chemicals to keep the biters at bay. We reveal new, safer options.

WOULD YOU RATHER be eaten alive by mosquitoes and ticks that can carry debilitating—and even deadly—diseases or douse yourself in harmful repellents full of potentially dangerous chemicals? Almost three-quarters of Americans say they worry more about insect-carried diseases, such as Lyme and West Nile as well as newer threats like chikungunya and Powassan, according to a recent Consumer Reports survey of 2,011 U.S. adults.

Here's the real dilemma, though: Most people also say that safety is key when they choose a repellent, but only about a third think the products now on the market are safe for adults. Even fewer—23 percent—think the repellents are safe for kids.

If you're conflicted about what to do, we have good news: For the first time ever in Consumer Reports' tests of insect repellents, new, safer products—made with milder, plantlike chemicals—were the most effective. (See Ratings on page 36.) The top scorers outperformed products that contained DEET, a chemical that did best in our previous Ratings but can cause serious side effects (see the facing page). The active ingredients in the top repellents

are picaridin and oil of lemon eucalyptus, both chemically synthesized compounds that are similar to or come from natural ingredients. The secret sauce in best-scoring Sawyer Fisherman's Formula is picaridin; in Repel Lemon Eucalyptus, it's oil of lemon eucalyptus. They are not side-effect-free, but "those problems are much less severe than DEET," says Urvashi Rangan, Ph.D., executive director of Consumer Reports' Food Safety and Sustainability Center. "Still, all repellents should be used sparingly and only for the time you need them—especially on children and older people."

That's why an effective bug-avoidance strategy requires a full arsenal. Our new tests provide clarity on that, too, identifying non-chemical approaches that offer some relief (setting up a fan on your back patio, for example) and those that don't help much if at all (think citronella candles, wristbands, and "all-natural" products with geraniol, lemongrass, and rosemary oils).

The Swat Team Bares Arms

To find effective spray-on repellents, we went to an outside lab and tested 15 pump sprays and aerosols. The products contained

deet, oil of lemon eucalyptus, picaridin, a chemical called IR3535, and products made with natural plant oils.

Our brave testers had a different repellent applied to each of their forearms and, 30 minutes later, reached into an 8-cubic-foot cage containing 200 disease-free, female mosquitoes in need of a blood meal to lay their eggs. We used culex mosquitoes (the kind that transmit West Nile and are most active between dusk and dawn) and aedes (a variety that likes to feed on humans, is active all day long, and carries chikungunya). Our experts watched and recorded bites every hour.

A repellent failed if a tester was bitten two or more times in one 5-minute session, or once in two consecutive sessions. For ticks, we marked each tester's bare arms with three lines, then released, one at a time, five disease-free deer ticks to crawl on them. The repellent failed if two ticks crossed into the treated area.

What Bugs a Bug Most?

The top-performing products contained 20 percent picaridin (Sawyer Fisherman's Formula) and 30 percent oil of lemon eucalyptus (Repel Lemon Eucalyptus). They kept mosquitoes and ticks away for at least 7 hours. Two deet products also earned at least Very Good scores, and the repellent that was 15 percent deet (Repel Scented Family) outperformed the 25 percent deet product (Off! Deep Woods VIII), possibly because of its inactive ingredients. The IR3535 products, Coleman SkinSmart and BullFrog Mosquito Coast, didn't make our list of top sprays. Some of the plant-oil products couldn't ward off the aedes mosquitoes for even half an hour. To see the bugs in action on our testers' arms, go to ConsumerReports.org/cro/insects0715.

Repellents: The Bottom Line

GO PLANTLIKE Look first for products with 20 percent picaridin or 30 percent oil of lemon eucalyptus; we think they're safer than those with deet.

LIMIT DEET If you do opt for deet, avoid concentrations of more than 30 percent (which are potentially dangerous) or below 8 percent (which may not work as well).

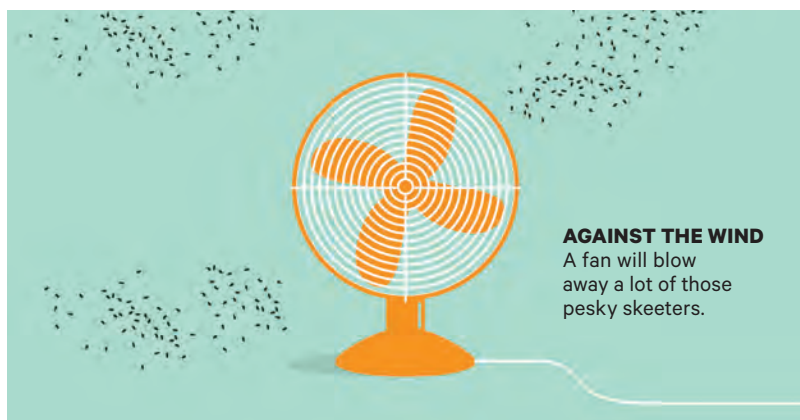
SKIP THESE Don't bother with "all-natural" plant-oil repellents. Skip wristbands, too. Neither worked well in our tests.

Get a Pest-Free Backyard

We tried a candle, a diffuser, and a fan. Here's what worked.

TO FIND OUT HOW WELL area repellents worked, we simulated a backyard barbecue in a 25x30-foot room and unleashed 250 aedes mosquitoes, known to be aggressive biters. We suited up four testers in protective suits and sat them at a "picnic" table, where we lit an Off! Citronella Bucket, \$8.50, containing a candle with 0.5 percent oil of citronella. Then we counted how often mosquitoes landed on them. We tested again with the Bug Band Portable Diffuser, \$20, which uses a battery-operated blower to propel the scent of 20 percent geraniol, another plant oil. Last, we cranked up an oscillating pedestal fan to its highest speed to see whether it could literally blow mosquitoes away.

What we found. Neither the citronella bucket nor the geraniol diffuser kept the mosquitoes at bay. But the fan showed some promise: It cut mosquito landings by 45 to 65 percent, at least among people sitting close to the fan. Our survey found similar results: 45 percent of people who used fans said they were especially helpful, compared with 31 percent of those who tried candles. What else can you do? Clean out gutters and empty old tires and bird-baths (where mosquitoes breed) and clear away ivy and decaying leaves (where they hide). For ticks, keep your lawn mowed, remove leaves, and let in as much sun as you can. Consider fencing, to keep out deer and other animals that carry ticks.



AGAINST THE WIND
A fan will blow away a lot of those pesky skeeters.

The Scoop on Deet and Its Alternatives

DEET (N, N-diethyl-meta-toluamide) has been the go-to insect repellent since it was introduced in the 1950s. But consumers are still confused by it: 64 percent of people we surveyed admit that they don't know how much deet a repellent should contain for it to be considered safe. And balancing safety and effectiveness is tricky. Products with 15 percent or more deet do work, though concentrations above 30 percent are no better, past tests have found. And deet, especially in high concentrations, can cause rashes, disorientation, and seizures. That's why we say you should avoid repellents with more than 30 percent deet and not use it at all on babies younger than 2 months. But go too low—such as 7 percent deet—and it won't stop bites for long.

PICARIDIN AND OIL OF LEMON EUCALYPTUS—two repellents introduced in the last decade—make good alternatives to deet. Here's why.

They work. The repellents we tested that contain 20 percent picaridin and 30 percent oil of lemon eucalyptus (p-Menthane-3,8-diol) warded off mosquitoes for at least 7 hours and kept deer ticks away for at least 6 hours. But the concentration is important: A spray that contained just 5 percent picaridin performed worse than the 7 percent deet product we tested.

They're safer. Picaridin is made to resemble the compound piperine, which occurs naturally in black pepper plants. Oil of lemon eucalyptus comes from the gum eucalyptus tree. Both have less serious side effects than deet has. Oil of lemon eucalyptus can cause temporary eye injury. The Food and Drug Administration says it should not be used on children under age 3. Of the two, picaridin is a better choice for kids, although it can cause some irritation of skin, eyes, and lungs.

NATURAL REPELLENTS DON'T DO THE JOB

Products with natural plant oils, such as citronella, lemon-grass, and rosemary, often have labels that talk a good game, with claims such as “proven effective” or “repels mosquitoes for hours.” But don’t believe it. Unlike repellents with chemically synthesized ingredients (including picaridin and oil of lemon eucalyptus), plant-oil products are exempt from scrutiny by the Environmental Protection Agency. That’s because the EPA considers them “minimum risk.” But none of those products we tested lasted more than 1 hour against aedes mosquitoes, and some failed almost immediately. In addition, the names of two products—Babyganics Natural and EcoSmart Organic—imply that they’re organic. But neither contains certified organic ingredients or bears the Department of Agriculture organic seal.

WRISTBANDS ARE A BUST

They’re marketed as being safer, because you don’t have to rub anything into your skin. But when our testers stuck their arms into a cageful of mosquitoes while wearing one of two wristbands—the Coleman Naturals Insect Repellent Snap Band (containing citronella oil) or the Super Band Wristband (containing geraniol oil)—the bugs started biting immediately. Given those results, we’ve rated them as poor performers and recommend that you skip them.

In February the Federal Trade Commission charged another maker of repellent wristbands, Viatek, with deceptive marketing of its Mosquito Shield Bands, which the FTC says contain mint oil. The FTC says the company’s claim that the bands protect against mosquitoes wasn’t backed up with scientific evidence. The case will be decided by a U.S. District Court; the FTC is seeking penalties and consumer refunds.

TRY THESE



A1 Sawyer **A2** Repel **A3** Repel **A4** Natrapel **A5** Off!

AVOID THESE



A14 Off! **A15** EcoSmart

Ratings: Insect Repellents

Scores in context: Of the 15 insect repellents we tested, the highest scored 96; the lowest, 7. All products are listed in order of performance.

☒ CR Best Buy ☒ Recommended

● Excellent ● Very Good ○ Good ● Fair ● Poor

INSECT REPELLENTS

Recommended	Rank	BRAND & PRODUCT	PRICE	Cost per Oz. (\$)	SCORE	Active Ingredients	Type	Effectiveness Aedes Mosquitoes (hr.)	Effectiveness Culex Mosquitoes (hr.)	Effectiveness Deer Ticks (hr.)	Resists Damage to Materials
<input checked="" type="checkbox"/>	1	Sawyer Fisherman's Formula Picaridin	\$8.25	2.06	96	Picaridin 20%	Pump	8.0	8.0	8.5	○
<input checked="" type="checkbox"/>	2	Repel Lemon Eucalyptus	\$7	1.75	87	Oil of lemon eucalyptus 30%	Pump	7.0	8.0	7.3	●
<input checked="" type="checkbox"/>	3	Repel Scented Family	\$7.50	1.15	82	Deet 15%	Aerosol	5.0	8.0	8.5	○
<input checked="" type="checkbox"/>	4	Natrapel 8 Hour	\$8	1.33	81	Picaridin 20%	Aerosol	7.8	8.0	6.0	○
<input checked="" type="checkbox"/>	5	Off! Deep Woods VIII	\$7	1.75	74	Deet 25%	Aerosol	8.0	8.0	4.9	○
	6	Coleman SkinSmart	\$8	1.33	69	IR3535 20%	Aerosol	3.1	6.0	8.2	○
	7	Cutter Skinsations	\$4.50	0.75	33	Deet 7%	Pump	1.3	2.9	6.0	○
	8	Cutter Natural	\$5.50	0.92	29	Plant oils	Pump	0.9	0.6	7.9	●
	9	Burt's Bees Herbal	\$8	2.00	28	Plant oils	Pump	1.0	1.3	6.2	●
	10	Babyganics Natural	\$9	1.50	25	Plant oils	Pump	0.5	1.0	6.8	●
	11	BullFrog Mosquito Coast	\$8	1.33	25	IR3535 20%	Aerosol	0.8	3.5	4.7	○
	12	All Terrain Kids Herbal Armor	\$9	2.25	23	Plant oils	Pump	0.6	1.1	6.6	○
	13	California Baby Natural Bug Blend	\$15.50	2.38	22	Plant oils	Pump	0.5	0.5	6.7	●
	14	Off! FamilyCare II Clean Feel	\$6	1.00	18	Picaridin 5%	Pump	0.5	0.9	5.2	●
	15	EcoSmart Organic*	\$7	1.17	7	Plant oils	Pump	0.5	0.5	1.3	●

*Does not contain certified organic ingredients.

Find the Best Insect Repellent for You

BEST ALL-AROUND

- **1 Sawyer Fisherman's Formula Picaridin** \$8.25

This pump spray stood out in several ways. It protected for 8 hours against mosquitoes, including the aggressive ones that spread chikungunya. And it protected for more than 8 hours against ticks. It also has less serious side effects, especially for kids. The only negatives: It's a little pricey, and it discolored leather and vinyl and removed nail polish.

LESS LIKELY TO STAIN

- **2 Repel Lemon Eucalyptus** \$7

Of the top repellents, the Repel Lemon

Eucalyptus pump was least likely to damage or discolor materials. But it did take off nail polish.

PLEASANT SCENT AND FEEL

- **2 Repel Lemon Eucalyptus** \$7
- **4 Natrapel 8 Hour** \$8
- **5 Off! Deep Woods VIII** \$7

When it comes to scent and feel, these stood out. The Repel had a mostly eucalyptus scent with a hint of lemon, and it was slightly oily. The Natrapel had a floral perfumey aroma, and it was oily. The Off had a mild aroma that was mostly floral and a little fruity. It left a thin, dry coating.

Don't Spray It on Your Face, and Other Tips

Proper use is essential, even with safer repellents. That means:

- Apply repellents only to exposed skin or clothing (as directed on the product label). Never put it on under clothing. Use just enough to cover and only for as long as needed; heavy doses don't work better.

- Don't apply repellents over cuts, wounds, or irritated skin.
- When applying to your face, spray first on your hands, then rub in, avoiding your eyes and mouth, and using sparingly around ears.
- Don't let young children apply. Instead, put it on your own hands, then rub it on. Limit

use on children's hands, because they often put their hands in their eyes and mouths.

- Don't use near food, and wash hands after application and before eating or drinking.
- At the end of the day, wash treated skin with soap and water, and wash treated clothing in a separate wash before wearing again.

The Danger in the Bite

MOSQUITO-BORNE DISEASES

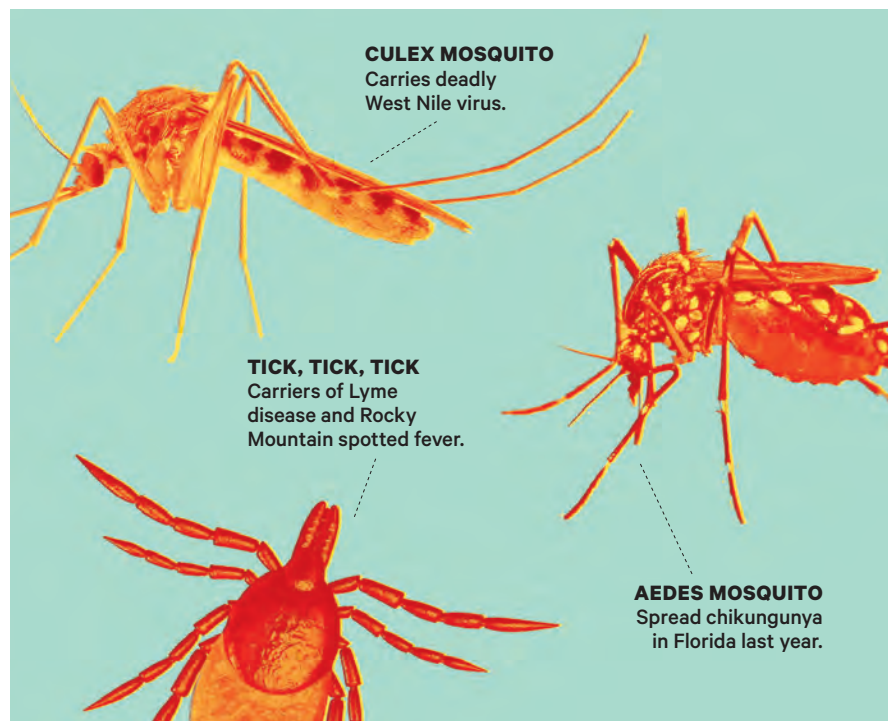
West Nile was reported in 47 states last year and killed 85 people in the U.S. **Chikungunya** isn't as widespread—yet—or as deadly. Of the almost 2,500 cases reported in the continental U.S. since January 2014, there were no deaths, and only 11 cases were from bites received in the continental U.S. (all in Florida). The rest were brought back from the Caribbean, Asia, or Africa. But experts worry that chikungunya may be prone to large outbreaks in urban settings. The mosquitoes that carry it bite all day long. Plus, roughly 70 to 90 percent of infected people develop symptoms, compared with 20 percent of those infected with West Nile.

WHAT TO DO See a doctor if you develop signs of either disease: fever, headache, and body aches for West Nile; and fever and joint pain for chikungunya. Both are viral, so antibiotics won't help. But over-the-counter pain relievers can ease symptoms.

TICK-BORNE DISEASES

Lyme disease affects about 300,000 people each year, mostly in the Northeast and Upper Midwest. But that geographic reach is expanding, and doctors in new areas may be less familiar with the disease. **Other tick-related diseases** include Rocky Mountain spotted fever, most often in North Carolina, Oklahoma, Arkansas, Tennessee, and Missouri; babesiosis, in the Northeast and Upper Midwest; ehrlichiosis, in the Midwest and South; and an emerging virus, Powassan, mainly in the Northeast and Great Lakes region.

WHAT TO DO See a doctor if you develop a bull's-eye rash accompanied by flu-like symptoms, which indicates Lyme. Prompt treatment can stop the infection and prevent more serious complications, such as joint pain and facial paralysis (Lyme disease); heart, joint, or kidney failure (Rocky Mountain spotted fever); blood clots and bleeding (babesiosis); difficulty breathing or bleeding disorders (ehrlichiosis); and neurological problems (Powassan).



SKIP COMBO PRODUCTS Repellents with sunscreen aren't a good idea.

The Deal With Skin So Soft

How did a bath oil develop a reputation as an insect repellent? Avon's Skin So Soft makes no repellent claims, and its ingredients—mineral oil and emollients—are purely cosmetic. But because it had so many fans, we tested the pump spray—in 1993—and found that it did not fend off mosquitoes at all. Other Skin So Soft products are now marketed as repellents. One, Skin So Soft Bug Guard Plus IR3535 Expedition, combines a repellent with sunscreen. But we think such products are a bad idea: Sunscreens should be applied liberally and often, so the combo could lead to unnecessarily high doses of the repellent. We haven't yet tested Avon's stand-alone repellent, Skin So Soft Bug Guard Plus Picaridin, but we plan to include it in our next round of testing. That product contains just 10 percent picaridin. In our tests of similar products, the two with 20 percent picaridin performed very well, and the one with 5 percent didn't.



5 Things You Must Know About Sunscreen

There are more than 1,000 products on the shelves. Here, 15 terrific nonyucky, nonsticky, no-burn options.

IN A PERFECT WORLD sunscreen would glide smoothly onto your skin, imperceptibly and safely providing all of the protection you need until you wash it off. The reality, as we all know, is far different: Sunscreen often drips into eyes, feels greasy, irritates skin, and stains clothing. Worse, as our tests this year and in the past have shown, sunscreens don't always shield your skin as well as their labels claim. People like to think they can trust particular brands or ingredients, but that's not always the case.

We measured SPF (sun protection factor) in 34 sunscreens by applying different products to panelists' backs and having them soak in a large tub of water for the amount of time the sunscreens were claimed to be water-resistant (either 40 or 80 minutes). When the panelists got out of the water, we exposed their sunscreen-coated skin to ultraviolet (UV) light. The result: Almost a third of the products tested fell short of the SPF claim on their labels. We also found reasons to be concerned about claims of broad-spectrum protection and of "natural" sunscreens.

But not all of the news is bad. This year, we found nonsticky, nonstinky products that also do a great job of protecting your

skin, many of them at affordable prices. So when you're struggling to choose from a huge selection (more than 1,000 lotions, sprays, foams, and gels are on the market), look for our 15 recommended products and keep these five facts in mind:

1. You Can't Always Trust the Claimed SPF

Considering that SPF is usually the feature people look for when they shop for sunscreen, our findings about SPF protection were troubling. Eleven products did *not* deliver their promised protection and missed the mark by anywhere from 16 to 70 percent. (See Ratings, on page 42.)

Even so, you'd still be pretty well covered, at least in some cases. Most dermatologists and other experts recommend using a sunscreen that delivers an SPF of 30 or higher, which blocks 97 percent or more of the sun's UVB rays, the ones that cause you to burn and contribute to the damage that can lead to skin cancer. Three of the sunscreens that fell short of their claims still had an SPF higher than 30: Coppertone UltraGuard SPF 70+ tested as an SPF 59, Coppertone ClearlySheer for Beach & Pool SPF 50+ tested as an SPF 37, and Banana Boat Sport

Performance with Powerstay Technology SPF 100 tested as an SPF 36.

If a sunscreen still gives you adequate protection, why does it matter if the SPF is lower than what's promised? First, the Food and Drug Administration requires that sunscreen manufacturers test their products and label them correctly. Most important, we found some cases where a sunscreen dipped below an SPF of 30 despite claiming that number—or higher—on the label. That was the case for eight of the 34 sunscreens in our tests; one, Yes To Cucumbers Natural SPF 30, had an average SPF of just 14.

Those findings are troubling, especially when you consider that people don't always apply the right amount of sunscreen, fail to reapply it often enough, or don't minimize their sun exposure (see "Slather It On!" on page 41). For instance, ultrahigh-SPF products tend to lull users into staying in the sun longer, possibly overexposing them to UVA and UVB rays.

2. Your Sunscreen May Be Doing Only Half of Its Job

The FDA mandates that sunscreens labeled "broad spectrum" protect against UVB and UVA rays. Unlike UVB rays, which are more prevalent in the summer and between 10 a.m. and 4 p.m., UVA rays are constantly present during the day—no matter the season or weather—and they can pass through clouds and even glass. UVA rays act stealthily—they're less intense, and their attack doesn't leave us looking red or feeling hot like UVB rays do, but they're a potentially more insidious threat to your health. UVA rays have a longer wavelength than UVB, so they penetrate deeply into the skin. They can accelerate aging-related skin damage, raise the risk of melanoma, and suppress the immune system.

The FDA requires that manufacturers test their sunscreens in order to call them broad spectrum, but it's a pass/fail test. Different sunscreens have a wide range of UVA protection, yet they're all labeled "broad spectrum," leaving the impression that one broad-spectrum sunscreen is as good as another. That's why evaluating the degree of UVA protection is an important part of our testing.

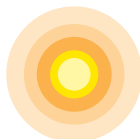
To isolate the degree of UVA protection, we use a test that's modeled on the one performed in the European Union and is different from the test the

SUN NUMBERS



90%

of the skin damage we think of as 'aging' may actually be due to sun exposure.

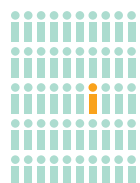


3.6 million

cases of melanoma, basal cell, squamous cell, and other skin cancers will be diagnosed this year.

63%

of skin-damaging UVA rays penetrate clear glass. UVB is mostly blocked, so you can't get a sunburn through a window.



1 in 50

people will develop melanoma, the deadliest type of skin cancer, at some point during their lifetime.

FDA requires of U.S. manufacturers. In the EU, a broad-spectrum sunscreen must provide UVA protection equal to one-third or more of the SPF value. (We use our tested SPF findings for that calculation, not the SPF on the label.) We chose that test because it allows us to differentiate the degree of UVA protection among sunscreens. All but two of the sunscreens (EltaMD UV Aero SPF 45 and Aloe Gator SPF 40+) should meet the U.S. standard for broad spectrum, but our tests indicate that eight of them might not have passed the more specific EU test. Another concern is that Aloe Gator SPF 40+, which got a Poor UVA rating, provided excellent SPF protection that would suppress burning, potentially causing people to bask longer in the sun.

3. 'Natural' Sunscreens Don't Work All That Well

Though "natural" has no real definition on a sunscreen label, the term is often used to refer to products that contain only the minerals zinc oxide and/or titanium dioxide as active ingredients. Mineral sunscreens are less likely than those that contain chemicals (such as avobenzone) to irritate skin or cause allergic reactions. (That's why dermatologists routinely recommend them.) But we've seen in our tests over the years that these so-called naturals are also less likely to offer skin the complete protection it needs. Two years ago, we gave just one product a Very Good rating for UVA and a different one a Very Good rating for UVB. Good was the highest rating for a mineral sunscreen for both UVA and UVB last year.

The growing popularity of mineral sunscreens led us to test several this year. Our results weren't much better than in the past: Of the five mineral body sunscreens we looked at, three rated Excellent for UVA—but the same three received Fair ratings for UVB. When it came to SPF, only two met their claims—with the others seriously missing the mark. In addition to Yes To Cucumbers Natural SPF 30 averaging an SPF of 14, CVS Baby Pure & Gentle SPF 60 delivered an SPF of 18, and Vanicream SPF 50+ supplied an SPF of 17. None of the mineral-only sunscreens is on our list of recommendations, but we gave California Baby Super Sensitive SPF 30+ a Good rating for UVA and UVB. If you want a sunscreen with no chemicals, consider that one.

One likely reason mineral sunscreens routinely score so poorly: To provide good protection, sunscreens need to form a uniform film on the skin, explains David C. Steinberg, president of Steinberg & Associates, a personal-care-products consulting company in Plainsboro, N.J. And even though most mineral products contain micronized titanium dioxide, zinc oxide, or both, they're still particles—so they don't create a smooth, uniform surface.

Sunscreens: The Bottom Line

PICK BROAD-SPECTRUM Always look for both UVA and UVB protection.

DON'T SKIP PROTECTION The rewards of using any sunscreen outweigh the potential risks.

CHOOSE WISELY SPF claims can't be trusted. Use our Ratings chart to be sure. Look for the .

Aren't mineral sunscreens safer? Some people think so because they sit on the surface of the skin and aren't absorbed the way chemical sunscreens are. But mineral sunscreens that go on clear—as many do these days—may contain nanoparticles, which may be absorbed. The truth is, there are safety concerns with many active sunscreen ingredients—chemical and mineral. The science to rank them in order of safety isn't there, but it is clear that the risks don't outweigh the benefits of using sunscreen.

4. You Can Get Super Protection at a Low Price

It's true that our top-rated sunscreens are also the most expensive: La Roche-Posay Anthelios 60 Melt-in Sunscreen Milk (SPF 60) costs \$36, or \$7.20 per ounce, and Vichy Capital Soleil 50 Lightweight Foaming Lotion (SPF 50) costs \$28.50, or almost \$6 per ounce. But there are many sunscreens that were far less costly and worked essentially just as well. In fact, all of the other 13 CR recommended sunscreens were a fraction of the price—\$1.65 per ounce on average. How low can you go and still get excellent protection? At \$9 per bottle (56 cents per ounce), Walmart's Equate Ultra Protection SPF 50 was the fourth-highest-rated sunscreen and is a CR Best Buy.

5. Sunscreen Doesn't Have to Be Sticky and Stinky

Even the most protective and cheapest sunscreen isn't going to do you much good if you don't use it. And for many people, the “yuck factor,” as one CR reader called it, is as important as the SPF. There are two reasons sunscreens can feel greasy: Most of their active ingredients are oily, and especially in higher-SPF sunscreens, those ingredients can make up as much as 35 percent of the product. Yet our panel of sensory testers, who analyzed the feel and scent of all of the products in our Ratings, found that

Our recommended sunscreens average out to \$2.30 per ounce.

aesthetically pleasing sunscreens do exist. In fact, though most sunscreens had an oily feeling when you first put them on, they also rubbed in within about 30 seconds and didn't leave white streaks on the skin.

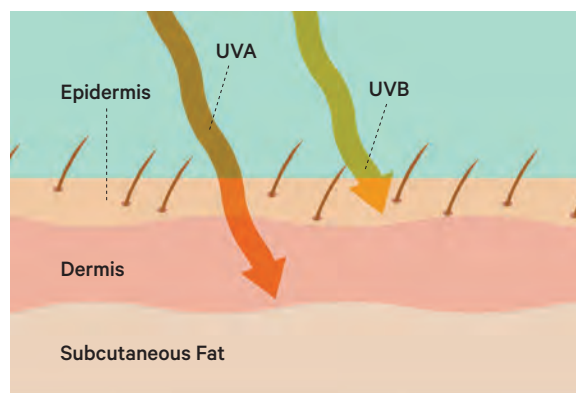
Luckily, many of the sensory standouts fared well in UVA and SPF testing, too. Depending on which scent you prefer, there are a host of very protective options that left little or no residue. One is L'Oréal Quick Dry Sheer Finish 50+, which left skin soft, wasn't sticky, and imparted a subtle floral aroma with hints of citrus and evergreen. If you want a uniquely light scent (think herbal and outdoorsy), consider Caribbean Breeze Continuous Tropical Mist SPF 70. If a classic beachy fragrance is more to your liking, try one of these three sunscreens: Coppertone Sport High Performance AccuSpray SPF 30, Equate Ultra Protection SPF 50, and Equate Sport Continuous Spray SPF 30. If you're more a fan of a tropical fruit and coconut scent, Banana Boat SunComfort Continuous Spray SPF 50+ will keep you smelling like a piña colada. Ocean Potion Protect & Nourish 30 calls its fragrance “scent of sunshine”; we're not sure what sunshine smells like, but it did have a bouquet reminiscent of orange Creamsicle that became more floral over time. Prefer no fragrance? Coppertone UltraGuard SPF 70+ had a barely noticeable scent.

UVAs vs. UVBs

These two rays affect skin differently

UVA rays do damage and penetrate the deepest. UVA rays are long enough to reach skin's dermal layer, damaging collagen and elastic tissue. That layer is also where the cells that stimulate skin darkening are found; that's why UVA rays are considered the dominant tanning rays. (UVA rays are also used in tanning beds.) Though many people still think a tan looks healthy, it's actually a sign of DNA damage—the skin darkens in an imperfect attempt to prevent the further injury, which can lead to the cell mutations that trigger skin cancer.

UVB rays burn and are shorter. The chief cause of reddening and sunburn, UVB rays tend to damage the epidermis, skin's outer layers, where the most common (and least dangerous) forms of skin cancer occur. Those cancers are linked to sun accumulation over the years. Another type of skin cancer, melanoma, is thought to be caused by brief, intense exposures, such as a blistering sunburn. But the skin reddening often doesn't occur for hours after sun exposure, which is why you should reapply sunscreen every 2 hours even if your skin looks fine.



As pleasant as a sunscreen might smell or feel, it probably will sting if it gets into your eyes—and that's why all of the products we tested have instructions telling users to avoid contact with the eyes. But what about the four that specifically are claimed not to irritate? Per our testing, CVS Baby Pure & Gentle SPF 60, Babyganics Mineral-Based SPF 50+, California Baby Super Sensitive SPF 30+, and Well at Walgreens Baby SPF 50 are indeed peeper-friendly.

Most of the sunscreens we tested also cautioned users about the possibility of staining fabrics. When we tested eight that do not include that warning, we found that they *did* leave marks on the four fabrics tried—100 percent cotton, 100 percent polyester, 95 percent rayon and 5 percent spandex, and 90 percent polyester and 10 percent spandex. The best way to minimize the chances of staining is to allow sunscreen to dry on skin before you get dressed.



FIND OUT MORE about sunscreen and how to stay safe in the sun at [ConsumerReports.org/cro/sunsafety](https://www.ConsumerReports.org/cro/sunsafety).



Cover Up!

That old standby—the white T-shirt—still works great

In addition to using sunscreen, it's important to wear clothing that protects you from the sun. Many hats, shirts, and other garments sport a UPF (ultraviolet protection factor) number. What we found: The UPF shirt we tested more than delivered on its claims. Even better: You may not need to shell out for pricey UPF clothing to get good coverage.

We measured the UPF in three white shirts. The Coolibar Girl's Rash Guard UPF 50+, \$32, delivered a UPF of 174. Because UPF indicates what fraction of ultraviolet radiation can penetrate fabric, that means that the garment—which is a blend of 84 percent polyester and 16 percent spandex embedded with titanium dioxide that is claimed to last the lifetime of the shirt—allows

just 1/174th of UVA and UVB rays to reach the skin.

As impressive as those results are, they don't seem so remarkable when you consider that the two other garments we tested, which aren't claimed to provide any UV protection, did very well, too. A cotton Hanes Beefy-T long-sleeve T-shirt, \$13, and an Eastbay Evapor long-sleeve compression crew made of the same polyester/spandex blend as the Coolibar top, \$18 delivered UPFs of 115 and 392 respectively. Even when wet, the Hanes Beefy-T, which is thicker than a regular T-shirt, offered a UPF of 39, which we judge to be a respectable level of protection. Coolibar's UPF actually increased when it got wet, to 211, and Eastbay's dipped to 304.

Does Europe Really Have Superior Sunscreens?

Considering that more than 17 percent of the sunscreens we tested got an overall score of 90 or higher, it's fair to say that Americans have access to some very good options. That's impressive because the U.S. has just 17 approved active ingredients, compared with 29 in Australia, 27 in Europe, and 20 in Canada.

And only a handful are widely used, notes David Steinberg, president of Steinberg & Associates, a personal-care-products consulting company in Plainsboro, N.J. The others either don't work well or have properties that make them largely unusable. For instance, dioxybenzone makes the skin give off a blue glow as it absorbs UV rays. Menthyl anthranilate smells like bubble gum or grape juice, so it's usually found only in kids' products.

If manufacturers have fewer UV filters to work with, what accounts for the high performance of U.S. sunscreens? "Everyone talks about active ingredients, but inactive ingredients are perhaps as important—if the vehicle doesn't create a uniform film over the skin, you won't get adequate protection," says Steven Q. Wang, M.D., director of dermatologic surgery and dermatology at Memorial Sloan Kettering Cancer Center in Basking Ridge, N.J., and an industry consultant. "Over the years, manufacturers have figured out ways to improve the formulations, so they're more elegant. That means people are more likely to use them—and use them correctly."

Slather It On

That's essentially the answer most experts give when asked how much sunscreen to use. More specifically, you hear that you should use a shot glass full for your entire body, but what if you aren't in a bathing suit?

One rule of thumb is a teaspoon per body part or area: 1 teaspoon for your face, head, and neck; 1 for each arm; 1 for each leg; 1 for your chest and abdomen, and 1 for your back and the back of your neck. Regardless of which SPF you use, apply it 15 to 30 minutes before going outside to allow it to adhere to skin, then reapply at least every 2 hours—more often if you're swimming or sweating excessively.

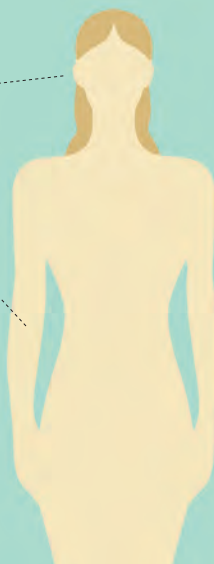
While we're on the topic of reapplication, note that doing so after you've exceeded a sunscreen's approximate maximum protection time doesn't allow you to stay in the sun longer—that can lead to burning. So if you normally burn in 20 minutes without protection and have already been using an SPF 15 sunscreen for 5 hours, your best choice is not to reapply it but to head for the shade.

Don't forget your ears!
They're a common
site for basal cell skin
cancers.

Apply sunscreen to the
inside as well as the
outside of your arms.

Many people forget to
put sunscreen on the
tops of their feet.

**Rule of thumb:
1 teaspoon
per body part.**



Find the Best Sunscreen for You

BEST KIDS' BLEND

- **A2 Coppertone** \$10.50

There's no reason a kid can't use an adult sunscreen or vice versa, but this one has a babylike scent (baby powder and roses), and it provides excellent UVA and UVB protection.

BEST ULTRAHIGH SPF

- **C1 La Roche-Posay** \$36
- **C3 Neutrogena** \$10.50
- **C4 Caribbean Breeze** \$16.50

All of these met their SPF claims in our tests. Neutrogena and Caribbean Breeze are spray sunscreens.

UNIQUE SCENT

- **C4 Caribbean Breeze** \$16.50
- **B2 L'Oréal** \$11
- **C5 Banana Boat** \$10.50

If you aren't a fan of classic beachy or tropical fragrances, you might like these woody-scented products. Banana Boat is labeled SPF 100 but averaged 36.

BEST BARGAIN

- **A3 Equate** \$9 CR Best Buy
- **B4 Equate** \$8 CR Best Buy

Walmart's store brand delivers top-notch protection and has a classic beachy scent.

WON'T STING EYES

- **A10 California Baby** \$20
- **A11 Babyganics** \$12
- **A12 Well at Walgreens** \$8.50
- **C6 CVS** \$10

THE ABCs OF SPF

SPF (sun protection factor) is a relative measure of how long a product will protect you from UVB rays, the ones that cause sunburn. Assuming you use it correctly, if you'd burn after 20 minutes in the sun, an SPF 30 protects for about 10 hours. But intensity and wavelength distribution of UVB rays vary throughout the day and by location. And that calculation does not apply to UVA rays.

No sunscreen blocks 100 percent of UV rays, and ultrahigh SPFs are not much more protective than SPFs of 30 or 50. SPF 15 blocks 93 percent of UVB rays. SPF 30 blocks 97 percent. The increase in protection is even more gradual after that, 98 percent for SPF 50 and 99 percent for SPF 100.



A1 Vichy



A2 Coppertone



A3 Equate



A4 No-Ad



B1 Banana Boat

Ratings: Sunscreens

The sunscreens are listed in overall performance order within the types: lotions, sprays, and ultrahigh SPFs. All are water-resistant for 80 minutes, except where noted.

☑ CR Best Buy ☑ Recommended

A. LOTIONS

REC.	RANK	PRODUCT	PRICE PER OUNCE	BOTTLE SIZE	PRICE	CLAIMED SPF	TESTED SPF	SCORE	UVA	UVB
☑	1	Vichy Capital Soleil 50 Lightweight Foaming Lotion (Foam)	\$5.94	4.8 oz.	\$28.50	50	Meets claim	99	●	●
☑	2	Coppertone Water Babies SPF 50	\$1.31	8.0 oz.	\$10.50	50	Meets claim	98	●	●
☑	3	Equate (Walmart) Ultra Protection SPF 50	\$0.56	16.0 oz.	\$9.00	50	Meets claim	94	●	●
☑	4	No-Ad Sport SPF 50 ①	\$0.63	16.0 oz.	\$10.00	50	Meets claim	88	●	●
☑	5	Ocean Potion Protect & Nourish 30	\$1.00	8.0 oz.	\$8.00	30	Meets claim	87	●	●
☑	6	Aveeno Protect+ Hydrate SPF 30	\$3.33	3.0 oz.	\$10.00	30	Meets claim	84	●	●
☑	7	Up & Up (Target) Ultra Sheer SPF 30	\$1.63	3.0 oz.	\$4.90	30	Meets claim	83	●	●
	8	Hawaiian Tropic Sheer Touch Ultra Radiance SPF 50	\$1.13	8.0 oz.	\$9.00	50	28	70	●	○
	9	Alba Botanica Very Emollient Sport SPF 45	\$2.88	4.0 oz.	\$11.50	45	Meets claim	67	○	●
	10	California Baby Super Sensitive SPF 30+ ②	\$6.90	2.9 oz.	\$20.00	30+	Meets claim	44	○	○
	11	Babyganics Mineral-Based SPF 50+	\$2.00	6.0 oz.	\$12.00	50+	25	44	○	○
	12	Well at Walgreens Baby SPF 50 ②	\$0.85	10.0 oz.	\$8.50	50	25	43	○	○
	13	Vanicream SPF 50+ ②	\$4.50	4.0 oz.	\$18.00	50+	17	41	●	●
	14	Yes To Cucumbers Natural SPF 30 ②	\$4.00	3.0 oz.	\$12.00	30	14	35	●	●
	15	Aloe Gator SPF 40+ (Gel)	\$3.25	4.0 oz.	\$13.00	40+	Meets claim	21	●	●

B. SPRAYS

☑	1	Banana Boat SunComfort Continuous Spray SPF 50+	\$1.83	6.0 oz.	\$11.00	50+	Meets claim	97	●	●
☑	2	L'Oréal Quick Dry Sheer Finish 50+	\$2.44	4.5 oz.	\$11.00	50+	Meets claim	94	●	●
☑	3	Coppertone Sport High Performance AccuSpray SPF 30 ①	\$1.58	6.0 oz.	\$9.50	30	Meets claim	84	●	●

Guide to the Ratings. Score is based on the results of our UVB and UVA tests after water immersion.



B2 L'Oréal



B3 Coppertone



C1 La Roche-Posay



C2 Coppertone



C3 Neutrogena

● Excellent ● Very Good ○ Good ● Fair ● Poor

B. SPRAYS continued

REC.	RANK	PRODUCT	PRICE PER OUNCE	BOTTLE SIZE	PRICE	CLAIMED SPF	TESTED SPF	SCORE	UVA	UVB
✓	4	Equate (Walmart) Sport Continuous Spray SPF 30 ¹	\$1.33	6.0 oz.	\$8.00	30	Meets claim	84	●	●
	5	Coppertone ClearlySheer for Beach & Pool SPF 50+	\$2.20	5.0 oz.	\$11.00	50+	37	79	●	●
	6	CVS Sport Clear Spray SPF 30 ¹	\$1.50	6.0 oz.	\$9.00	30	Meets claim	79	●	○
	7	Hawaiian Tropic Island Sport Ultra Light SPF 30	\$1.75	6.0 oz.	\$10.50	30	Meets claim	74	●	○
	8	Australian Gold Continuous Clear 30	\$1.75	6.0 oz.	\$10.50	30	Meets claim	69	●	○
	9	Neutrogena Wet Skin SPF 30 ¹	\$1.90	5.0 oz.	\$9.50	30	Meets claim	68	●	○
	10	Banana Boat Sport Performance CoolZone SPF 30	\$1.67	6.0 oz.	\$10.00	30	Meets claim	67	●	○
	11	Banana Boat Sport Performance Clear UltraMist with Powerstay Technology SPF 50+	\$1.83	6.0 oz.	\$11.00	50+	24	59	●	○
	12	Goddess Garden Organics Sunny Body Natural 30 ² ³	\$3.67	6.0 oz.	\$22.00	30	Meets claim	40	●	○
	13	EltaMD UV Aero SPF 45	\$4.67	6.0 oz.	\$28.00	45	22	26	●	○

C. ULTRAHIGH SPFs

✓	1	La Roche-Posay Anthelios 60 Melt-in Sunscreen Milk (Lotion)	\$7.20	5.0 oz.	\$36.00	60	Meets claim	100	●	●
✓	2	Coppertone UltraGuard SPF 70+ (Lotion) ¹	\$1.38	8.0 oz.	\$11.00	70+	59	90	●	●
✓	3	Neutrogena Beach Defense Water+Sun Protection SPF 70 (Spray)	\$1.62	6.5 oz.	\$10.50	70	Meets claim	88	●	●
✓	4	Caribbean Breeze Continuous Tropical Mist SPF 70 (Spray)	\$2.75	6.0 oz.	\$16.50	70	Meets claim	84	●	●
	5	Banana Boat Sport Performance with Powerstay Technology SPF 100 (Spray)	\$1.75	6.0 oz.	\$10.50	100	36	78	●	●
	6	CVS Baby Pure & Gentle SPF 60 (Lotion) ¹ ² ³	\$3.33	3.0 oz.	\$10.00	60	18	44	●	●

¹ Contains retinol or retinyl palmitate, which pregnant women may want to avoid. ² Contains only the mineral active ingredients titanium dioxide, zinc oxide, or both. ³ Water resistant for 40 minutes.

BEST 'NATURAL' SUNSCREEN

• A10 California Baby \$20

It didn't get high enough UVA or UVB scores in our tests to make it onto our recommended list, but it was the only mineral sunscreen that got a Good rating for UVA and UVB protection. Titanium dioxide is the active ingredient.

BEST SPRAY

• B1 Banana Boat \$11

• B3 Coppertone \$9.50

Banana Boat has a narrow spray pattern that makes it easier to target specific places such as arms and legs without getting it on clothing or dispersing it into the air. Coppertone, with its wider spray pattern, is better for large areas, such as the back.

TRULY FRAGRANCE-FREE

• C2 Coppertone \$11 CR Best Buy

The only sunscreen in our tests that had a barely noticeable aroma, it provided excellent UVA and UVB protection despite averaging an SPF of 59, not the claimed 70+.

IF PRICE IS NO OBJECT

• C1 La Roche-Posay \$36

• A1 Vichy \$28.50

Scoring 100 and 99, respectively, these pricey products *do* deliver. The Vichy is a lightly scented sunscreen with an unusual texture similar to hair mousse.

HOW WE TEST SUNSCREENS

To check for UVB protection, a standard amount of each sunscreen is applied to small areas of our panelists' backs. Then they soak in a tub of water. Afterward, each of those areas is exposed to six intensities of UVB light from a sun simulator for a set time. About a day later, the six spots are examined for redness. The resulting UVB ratings reflect each product's actual effectiveness after water immersion. (The tested sunscreens carry a claim of water resistance for 40 or 80 minutes.) Tested SPF (based on the average results for each sunscreen), not how close a sunscreen comes to meeting its SPF claim, is used to calculate our UVB scores. To test for UVA, we smear sunscreen on a plastic plate and pass UV light through and measure the amount of UVA and UVB rays that are absorbed. That information is then used to calculate our UVA score.

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** Between 4/1/14 and 6/30/14, the average estimated savings off MSRP presented by TrueCar Certified Dealers to users of the Consumer Reports Build & Buy Car Buying Service based on users who configured virtual vehicles and subsequently purchased a new vehicle of the same make and model listed on the certificate from Certified Dealers, was \$2,990 including applicable vehicle specific manufacturer incentives. Your actual savings may vary based on multiple factors including the vehicle you select, region, dealer, and applicable vehicle specific manufacturer incentives which are subject to change. The Manufacturer's Suggested Retail Price ("MSRP") is determined by the manufacturer, and may not reflect the price at which vehicles are generally sold in the dealer's trade area as not all vehicles are sold at MSRP. Each dealer sets its own pricing. Your actual purchase price is negotiated between you and the dealer. Neither TrueCar nor Consumer Reports brokers, sells or leases motor vehicles. Service not available in Canada.

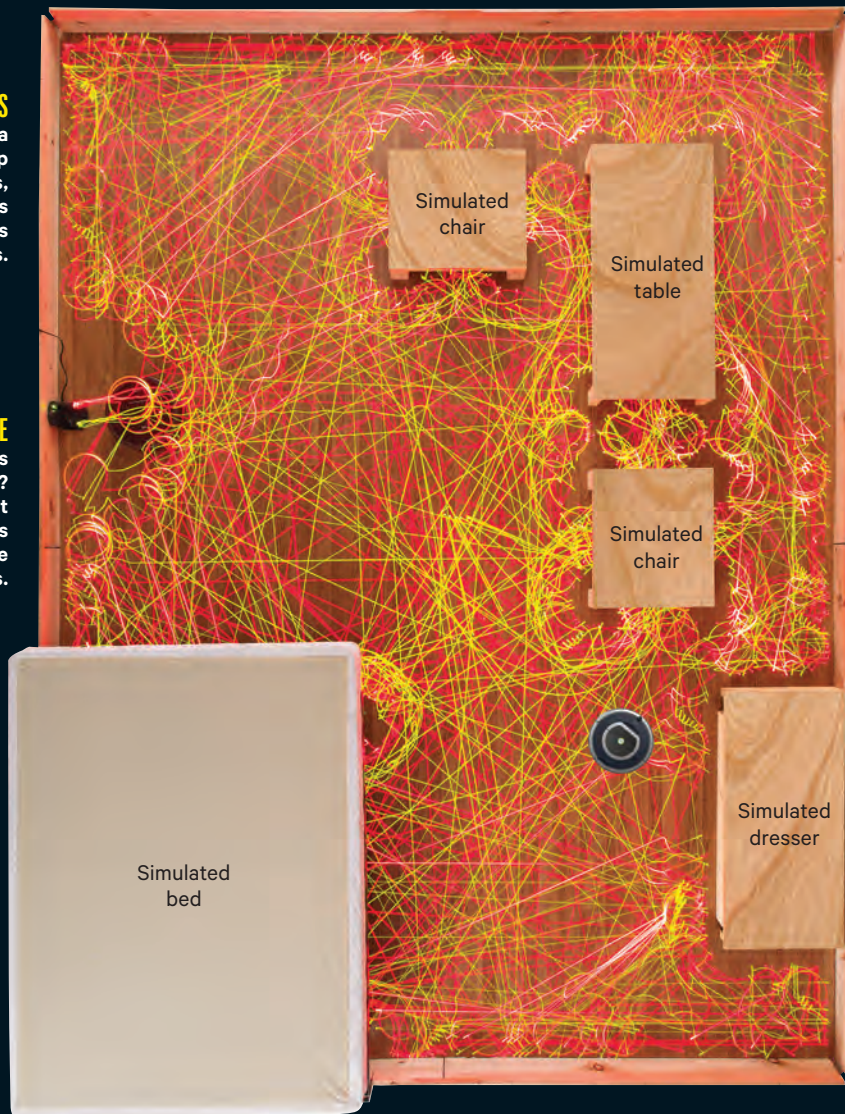
Lab TESTS

HEAD OF THE CLASS

The iRobot Roomba 880, \$700, took top scores in our tests, with excellent marks for cleaning carpets and bare floors.

SAVE A LITTLE

Need a less expensive robot? The iClebo Arte cost only \$450 and was just behind the iRobot in our Ratings.



ROBOCARE

A robovac will clean your floor, but you'll want to clean the robovac. All six models we tested needed pet hair removed from the brush roll and dust cleaned off sensors.

THE TRACKS OF MY VAC

While you're away, here's how the Roomba robovac plays. A time-lapsed picture of LEDs on the iRobot shows how it zigs and zags to clean a floor. See robovac Ratings, page 48.

Keep Your PC Safe—for Free

You can get good antivirus protection at no cost, or add extra defenses with paid programs

YOU CAN'T ARGUE with free. But when it comes to protecting your computer, is free good enough? Our tests show that it is. We tried 18 security software packages, both free versions and fuller suites that you pay for, and found that the best of the freebies provide ample coverage for most threats. You can add a few free extras if you want more protection than a basic package provides.

Two tips, for starters: Download from the official website, and be sure to choose the free version. It's easy to grab a fee-based product by mistake. Then decide whether you want one of these add-ons. (Note: We're focusing on Windows PCs because they face far more security threats than Apple computers.)

Phishing protection. Free packages don't have anti-phishing features that warn you if you go to a risky site used in phishing scams or one that might host malware. No sweat; it's easy to set up phishing protection. Most major browsers have some protection built in, but toolbars from Netcraft (netcraft.com) and McAfee Site Advisor (siteadvisor.com) offer more warning about dangerous sites.

Anti-spam tool. If your e-mail service doesn't block as much junk mail as you'd like, add another level of protection. We recommend Spamfighter (spamfighter.com).

Other extras. Though free packages lack a firewall to prevent malware from downloading onto a computer, don't be too concerned about that. The firewalls built into Windows and Mac OS should suffice for most users. Both are turned on by default.

Fee-based security suites offer a few extras that might be worth paying for. Most have a stronger, two-way firewall that's more effective than the one built into your operating system, so they can keep malicious websites from grabbing data from your computer. Many commercial suites also include parental controls. Some, such as Eset Smart Security 8, offer anti-theft software to help you locate a stolen laptop.

There's less malware targeting Apple computers, but Macs aren't immune, and they can spread infected files to Windows PCs. Avast and Sophos are among the free security programs for Macs.

Ratings: Security Software

Scores in context: Of the 18 packages we tested, the highest scored 69; the lowest, 38. The recommended free package from Avira should protect all but the most at-risk Internet users. The full, fee-based suites offer features such as more parental controls.

☒ Recommended

● Excellent ● Very Good ○ Good ● Fair ● Poor

A. FREE ANTI-MALWARE PROGRAMS

		BRAND	PRICE*	OVERALL SCORE	TEST RESULTS							FEATURES	
Recommended	Rank				Threat Blocking	Ease of Use	Malware Scan	Firewall	Use of Resources	Anti-Phishing	Updating Response to Threats	Spam Filter	Parental Filter
<input checked="" type="checkbox"/>	1	Avira Free Antivirus 2015	Free	58	●	●	●	●	○	●	●		
	2	AVG AntiVirus Free 2015	Free	54	●	○	●	●	○	●	●		
	3	Avast Free Antivirus 2015	Free	54	●	○	○	●	●	●	●		
	4	Microsoft Windows 8.1 with Defender	Free	38	○	○	○	●	●	●	●		

B. SECURITY SUITES

<input checked="" type="checkbox"/>	1	Eset Smart Security 8	\$80	69	●	●	●	○	●	○	●	●	●
<input checked="" type="checkbox"/>	2	Symantec Norton Security	\$80	69	●	○	●	●	○	●	●	●	●
<input checked="" type="checkbox"/>	3	BullGuard Internet Security	\$60	68	●	○	●	●	○	●	●	●	●
<input checked="" type="checkbox"/>	4	G Data Internet Security	\$50	67	●	○	●	○	●	●	●	●	●
	5	Kaspersky Internet Security 2015	\$60	65	●	○	●	●	●	●	●	●	●
	6	Bitdefender Internet Security 2015	\$80	65	●	○	●	○	○	●	●	●	●
	7	ZoneAlarm Internet Security Suite	\$60	63	●	●	●	○	○	●	●	●	
	8	McAfee Internet Security	\$80	62	●	○	●	○	○	●	●	●	●
	9	Avira Internet Security Suite	\$100	62	●	●	●	●	●	●	●		
	10	AVG Internet Security 2015	\$70	59	●	●	●	○	○	●	●	●	
	11	F-Secure Internet Security	\$70	58	●	○	●	●	○	●	●	●	●
	12	Avast Internet Security	\$60	53	●	○	○	○	○	●	○	●	
	13	Trend Micro Internet Security	\$40	51	●	○	○	○	○	○	○	●	●
	14	Panda Internet Security 2015	\$70	43	○	○	○	○	○	○	○		●

*One-year subscription for three PCs.

Find the Best Software for Your Needs

BEST FREE SOFTWARE

• A1 Avira Free

This product does a great job of responding quickly to new threats, blocking malware, and providing clear warnings about problems. The downside: It's one of a handful of packages that contact third-party websites during installation for marketing purposes, which is surprising because you'd expect security software to protect your privacy.

PAID SOFTWARE WITH MOST FEATURES

• B1 ESET \$80

• B2 Symantec \$80

Both suites provide a robust package of features, including anti-spam and parental controls. ESET excels at blocking malware and responding quickly to new threats; Symantec has the best firewall among the packages.



When You Need a Little Help with Your Computer

Two ways to go: The manufacturer and a retail store

IF YOU WANT an army of geeks you can count on to tame an unruly computer, you'd better buy a Macintosh: Apple tech support is by far the most effective of any computer brand's. With most Windows PCs, there's only a 50-50 chance that a manufacturer's tech support will do the trick.

That's what more than 3,200 computer owners told us when Consumer Reports National Research Center surveyed them earlier this year. Mac users gave Apple's phone and online support glowing reviews, and four out of five said tech support was able to resolve their problem.

It's no surprise that Apple had the highest score for overall user satisfaction. In fact, the company has been top-rated every year since we first asked consumers about tech support back in 2007—even though Apple provides just 90 days of free phone and online tech support, compared with one year for most Windows PC companies.

The help desks at Windows PC companies often didn't live up to that name. For four of the six PC brands in the survey, tech support solved only half of the problems consumers brought to them. Even the best of them—Lenovo and Dell—came through just 61 percent of the time.

Tip: Though online tech support (via website, chat, or e-mail) was the option most used by our survey takers, consumers who picked up the phone to call were more

satisfied with the results. So next time you need help, consider phoning tech support rather than going to the website.

The Store Can Be Your Savior

Retailers might be a better resource for PC owners seeking assistance. Users who went to a walk-in retail store for help were generally pretty happy, whether they had a PC or a Mac. The Genius Bars in Apple stores were among the best-rated options, and independent shops were rated pretty much even with Apple. Best Buy's Geek Squad and Staples' EasyTech were a step behind Apple and the independents but did a decent job.

There's one huge difference among them: The Genius Bars in Apple retail stores offer free lifetime support. With the other services, you generally have to pay for help. Prices vary greatly depending on the service you need and by retailer, so get an estimate before you commit.

Staples, for example, will diagnose and repair a problem via online support for \$80 or in store for \$160. Best Buy's Geek Squad offers unlimited troubleshooting for three devices for \$200 per year. You can also pay per service. Microsoft's Answer Desk (which didn't receive enough reviews to be included in the survey) offers free in-store consultations and repairs for software-related problems, plus support by chat and phone. There is a charge for certain services.

Ratings: Manufacturer Tech Support

BRAND	READER SCORE ¹	PHONE SUPPORT	ONLINE SUPPORT	% OF PROBLEMS SOLVED ²
Apple	83	●	●	82%
Lenovo	64	○	●	61%
Dell	61	●	●	61%
HP/Compaq	55	●	●	52%
Acer/Gateway	53	—	●	45%
Toshiba	52	●	●	49%
Asus	51	—	—	50%

¹ Differences of fewer than 5 points are not meaningful.

² Differences of fewer than 8 points are not meaningful.

Ratings: Retailer Tech Support

RETAILER	READER SCORE ¹	% OF PROBLEMS SOLVED ²
Apple's Genius Bar	83	88%
Local independent shops	80	85%
Best Buy's Geek Squad	75	82%
Staples' EasyTech	71	75%

¹ Differences of fewer than 5 points are not meaningful.

² Differences of fewer than 8 points are not meaningful.

Easy DIY Fixes

When trouble strikes, it's easy to forget the basics. Before you seek help, see whether you can resolve the problem yourself.

Close apps you're not using, so they're not straining system resources.

Restart to clear out digital detritus (such as temporary files) and free up system memory and other resources.

Enter your problem into a search engine.

You may find a quick fix at a user forum or an expert site. In some cases you can post a problem to get feedback from other users.

If a virus scan is running, pause it until you're finished working. Scans hog system resources, slowing everything down. Set auto scans for times you're not using the computer.

Don't skip antivirus software entirely, because malware can really mess with your system. Also set Windows for automatic updates so that you get the latest security patches.

Still no luck? Restore your system using the built-in utilities on your Windows PC or Mac. Unlike a full factory restore, that won't erase all of your files and require you to reinstall apps.



Hands-Free Cleaning

Robovacs don't need anyone pushing them around. But they do require occasional TLC.

WHO WOULDN'T APPRECIATE some extra help with the vacuuming before the guests arrive? Robotic vacuums such as the six we've tested won't clean carpets as well as your average upright or canister, but those vacs can't push themselves around. And the \$700 iRobot Roomba 880 topped our chart with great pickup and smart navigation.

Multitasking doesn't have to cost so much. The iClebo Arte YCR-M05, a CR Best Buy at \$450, took almost 2 hours to clean our 12x16-foot test room and did almost as well on carpets as the Roomba. But it had its quirks, as did most of the other models.

Robotic vacs return to their bases to recharge once they're finished or the battery runs down. But the iClebo muscled its charging base around while cleaning. The iClebo and the \$900 Miele Scout RX1 also wobbled back and forth for several seconds after transitioning from bare floor to carpet. What's more, the Ecovacs Deebot D77, \$700, and the Miele had some trouble getting past carpet fringes and power cords—a problem dating back to the earliest robotics.

Only two we tested, the iClebo and the Miele, were easy to program, but some were more flexible than others in varying daily cleaning. And if you detest bending, avoid the Neato models, which lacked a remote control.

Ratings: Robotic Vacuums

Scores in context: Of the six robotic vacuums tested, the highest scored 87; the lowest, 56. Our overall score primarily evaluates each vacuum's carpet-surface and bare-floor cleaning, along with ease of use and the unit's ability to navigate around the obstacles in our test room.

☒ CR Best Buy
 ☒ Recommended

☒ Excellent
 ☒ Very Good
 ☐ Good
 ☐ Fair
 ☐ Poor

Recommended	Rank	BRAND & MODEL	PRICE	SCORE	TEST RESULTS					FEATURES	
					Carpet Surface	Bare Floors	Ease of Use	Navigation	Cleaning Time (min.)	Remote Control	Pattern
<input checked="" type="checkbox"/>	1	iRobot Roomba 880	\$700	87	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	57	<input checked="" type="radio"/>	Random
<input checked="" type="checkbox"/>	2	iClebo Arte YCR-M05	\$450	86	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	119	<input checked="" type="radio"/>	Grid/Random
	3	Ecovacs Deebot D77	\$700	73	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	95	<input checked="" type="radio"/>	Random
	4	Miele Scout RX1	\$900	70	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	19	<input checked="" type="radio"/>	Grid
	5	Neato Botvac 80	\$550	68	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	15		Grid
	6	Neato XV-21	\$400	56	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	17		Grid

Care and Feeding of Your Trusty Robot

Your robovac may take some getting used to. Although they're designed to work on their own, they do need occasional attention to keep them running well.

Give it a trial run. On your first day with your new vac, forget about unattended operation. Learn how it handles its territory—including chairs, cords, and floor coverings.

Expect to clean it. All of the robotics needed manual clearing of hair and debris.

The Ecovacs Deebot D77 is supposed to empty what it picks up into a detachable canister on the base, yet it transferred only part of its contents. Several vacs had full-bin indicators, but only one worked.

Store it with care. If you'll be away for a week or two, shut the vac off after a charge. But the otherwise top-notch Roomba won't completely power down—you'll have to unscrew a hatch and remove the battery.

How the New Galaxy Stacks Up

WITH ITS GALAXY S LINE of Android-based smartphones, Samsung has established a reputation for being the anti-iPhone. When Apple was producing the relatively small-screened iPhone 4, 4S, 5, and 5s, with 3.5- and 4-inch displays, Samsung expanded its Galaxy S line from 4-inch screens in its first generation all the way up to a 5.1-inch screen on last year's Galaxy S 5. As Apple experimented with high-end structural materials such as glass and aluminum, Samsung's phones were unapologetically plastic, with removable batteries and expandable storage.





Just when it appeared that Apple was coming around to Samsung's philosophy with the launch of the larger-screened iPhone 6 and 6 Plus last fall, it seems Samsung has now decided to make its new S6 and S6 Edge significantly more Apple-like. Both new Samsung smartphones emphasize design with elegant glass-and-aluminum construction. (The S6 Edge's screen also bends at both edges.) But their sealed cases also represent a significant departure from their user-upgradable predecessor; they have no removable battery, nor a memory-expansion-card slot, making it more difficult for users to upgrade. Also

gone is the water resistance of the S 5. The S6 and S6 Edge do have some noteworthy new features, including wireless charging that works with both major standards, plus a rapid-charge feature.

Samsung's change in strategy has cost it in our Ratings. Former Galaxy S phones have

tended to perform better than Apple devices in our testing because of their consumer-friendly features and great battery life. But the new S6 and S6 Edge rank similarly to the iPhone 6. Seems like Samsung's move to make these models into iPhone clones has worked in more ways than one.

SAMSUNG VS. APPLE Tale of the Tape

				
	Samsung Galaxy S 5	Samsung Galaxy S6	Samsung Galaxy S6 Edge	Apple iPhone 6
Price (full starting price for lowest available storage capacity)	\$500 (16GB)	\$600 (32GB)	\$700 (32GB)	\$650 (16GB)
Display Size	5.1-inch	5.1-inch	5.1-inch	4.7-inch
Display Resolution	1080x1920	1440x2560	1440x2560	750x1334
Memory-Card Slot	Yes	No	No	No
Built-In Wireless Charging	No	Yes	Yes	No
Water-Resistant	Yes	No	No	No
Ease-of-Use Score	●	●	●	●
Battery-Life Score	●	●	●	●

● Excellent ● Very Good ○ Good ● Fair ● Poor

Brinkmann Grill Fails Safety Test

Cooking with fire has its rewards—grilled ribeyes, anyone?—and its risks. That's why we put all grills through safety checks. Our latest tests found that the Brinkmann Patio 810-6230-S small gas grill failed one of our safety tests, and we do not recommend buying it. We paid \$129 at Home Depot; it's also sold at Albertsons and Hy-Vee.

If a burner's flame goes out and gas still flows, the gas can build up and result in a potentially dangerous situation. To check how likely it is that a grill's burners could go out, we let the grill's lid drop from a height of 6 inches to closed. When the lid drops, a burst of air is forced over the burners, which could happen if you quickly open or close the lid. We do the test on high and low heat settings. Two of these Brinkmann grills failed

our drop-lid test after flames on one of the grill's two burners occasionally went out when on the low-heat setting. This test failure poses a safety risk, so we do not recommend buying the grill at this time. The risk from this situation is low, but no gas grill should have this flaw. All of the other 100-plus grills tested passed the drop-lid test on both low- and high-heat settings. At press time we were not aware of any reported injuries.

"We have done numerous tests here in Dallas and at our factory and this grill passed the ANSI standard" (an industry test), said Bradley Gleaton, director of quality control for Brinkmann. He does not believe this issue poses a risk, but the company decided to improve the grill's crossover channel as a result of our test findings. Brinkmann shipped

most of its grills for the 2015 season, so Gleaton couldn't say when grills with the new crossover channel would be in stores.

If you own this grill, call Brinkmann's customer service at 800-527-0717 and request a crossover channel, as we did, or try returning the grill. The replacement crossover channel fixed the safety problem. Until you replace the crossover channel, if you use the grill use it only on the high-heat setting.

According to Brinkmann, 99 percent of these grills are sold at Home Depot. As we went to press, Brinkmann told us, "Due to the 'Do Not Buy' rating on model 810-6230-S we decided to quarantine the item," adding that the company is replacing the crossover channels for all units and the boxes with the revamped grills will bear a green sticker.



Until those grills are available, Home Depot has put a "stop sale" on this grill, meaning its checkout system won't allow it to go through the registers, says Stephen Holmes, a spokesman for the retailer. Brinkmann said that the corrected grills would be in stores by late May. Consumer Reports' policy is to keep the Do Not Buy status until we can buy and test the grill and it passes our safety test. We intend to buy it as soon as it becomes available. For updates check ConsumerReports.org.

ConsumerReports® Save thousands on your new kitchen!



**On Sale
NOW!**

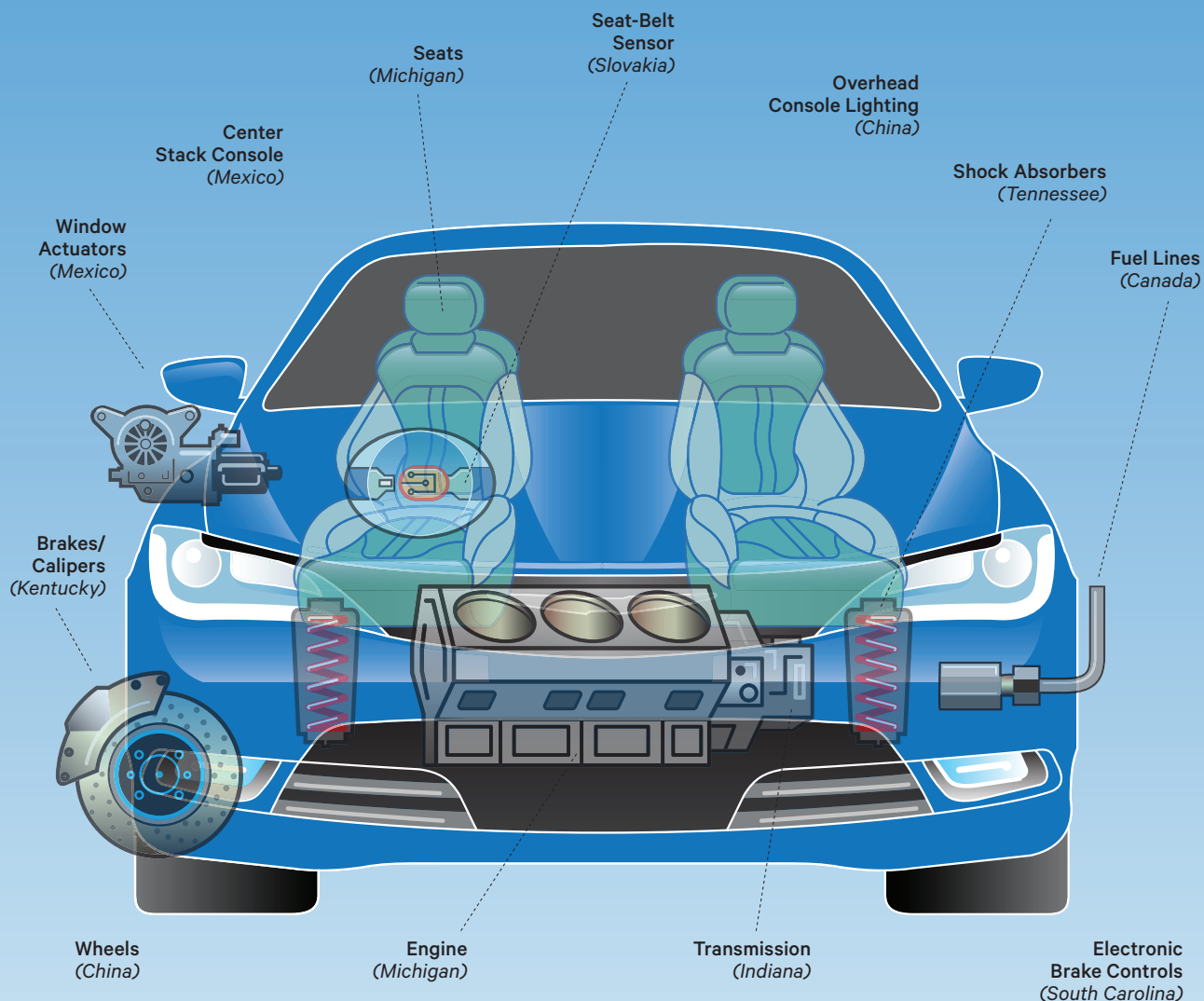
Essential Guide Tells You:

- Best and worst kitchen trends
- 7 best design decisions
- Which small appliances to buy
- 5 surprising kitchen fixes
- Top appliance stores

PLUS: Exclusive Ratings to help you find the most reliable appliances

**Available at bookstores or at
ConsumerReports.org/books**

Road REPORT



IMPORTED FROM DETROIT

The marketing of the Chrysler 200 sedan carries the slogan 'America's Import.' But how much of the 200 actually is made in America? About 67 percent, with final assembly in Michigan. But some key parts come from overseas, as this image illustrates. Which are the most 'American' cars? The answers, starting on page 52, might surprise you.

ILLUSTRATION BY HANK OSUNA



WHAT MAKES A CAR 'AMERICAN'?

As more foreign automakers build plants on our shores, the definition of 'Made in the U.S.A.' gets fuzzier

IT HAS BEEN ALMOST 40 YEARS since the first U.S.-built Volkswagen Rabbit rolled off an assembly line in Westmoreland, Pa., forever changing the definition of "American car."

During those four decades, the automotive industry has increasingly become a global enterprise, with automakers and their suppliers grabbing parts from all over the world, then building and selling those polyglot vehicles in as many countries as possible.

One example of the murkiness of defining nationality is the 2014 Chevrolet Silverado 1500 pickup. Many were assembled in Silao, Mexico, with assembly lines also in Indiana and Michigan. But the 2015 Toyota Tundra is assembled exclusively in Texas. Which truck is more American, the Mexican-made Chevy or Texas Toyota?

"You're never going to get a car made 100 percent in one country anymore," says Eric Fedewa, a supply-chain expert with industry consultancy IHS. "What you'll typically see instead is larger components

made near the point of sale, to save shipping costs, while small components like electric motors and actuators will be brought in from anywhere."

The traditional Detroit automakers accounted for almost 6 million of the more than 11 million vehicles made in the U.S. last year—although Toyota and Honda are close to Fiat Chrysler Automobiles as the No. 3 U.S. producer. And Korean and European brands have joined numerous Japanese automakers in building assembly plants amid America's amber waves of grain.

To help consumers understand how "American" a new vehicle is, every car has to display a parts-content window sticker. That country-of-origin statement has been required since 1994 by the American Automobile Labeling Act (AALA). It lists the final assembly point, source of the engine and transmission, and which countries supplied 15 percent or more of the vehicle's equipment. You can find the full list at nhtsa.gov.

That label is flawed, though. Thanks to some creative lobbying, the AALA lumps in Canadian content with parts sourced in the U.S. Everywhere else counts as "foreign"—even Mexico, despite both Canada and Mexico being part of the North American Free Trade Agreement (NAFTA).

How did that geographical anomaly come to pass? Detroit's Big Three automakers happened to own a string of auto and component plants just northeast of Detroit in Ontario. Subtract the Canadian content, and many Detroit cars just became a lot less "American." As comedienne Kathleen Madigan would have it, perhaps Canada really is America's attic.

At best, the AALA sticker is a rough approximation anyway: Carmakers continuously juggle their suppliers and production-line assignments as the need arises. Also, the AALA doesn't account for where the profits on the sale of a vehicle end up. And the origination label traces a vehicle part back only so far. So the profits from a Honda Civic assembled

in Indiana ultimately return to Japan, and profits from a Chevrolet Trax crossover built in South Korea return to Detroit. To add to the confusion, profits from that most American of all vehicles—Jeeps—are now funneled overseas because the brand is part of the Fiat auto empire.

“Made in America” also means more than just assembly jobs. Most automakers have created large local supplier factories and engineering and safety labs, as well as design studios and research centers.

Carmakers have long believed that the most sensible course of action is to use global component sets that are fine-tuned locally for regional market tastes. But the local studios of many foreign brands are now leading the way for global vehicle development. Perhaps no greater symbol of that was when Honda had its Ohio research and development lab develop the automaker’s flagship Acura NSX supercar, which will launch this year.

A BMW Built in South Carolina?

The U.S. saw an increase in automotive employment in the 1990s and early 2000s. German, Japanese, and South Korean automakers covered the American South with hulking final-assembly and supplier plants and tens of thousands of nonunion jobs that paid just well enough to fend off the United Auto Workers. The idea: Build ‘em where you sell ‘em.

Many Americans were wary back in the 1980s when Honda, Toyota, and Nissan began constructing factories in the U.S., but those “transplants” have turned out to be stalwart large-scale employers.

In an ironic turnabout from the years when naysayers decried made-in-Asia cars as little more than tin boxes built with cheap labor, the U.S. has become the low-cost labor source of choice for foreign brands. Korean automakers Hyundai and Kia jumped into the fray; even German luxury brands had little problem expanding outside home.

In 2014, BMW exported 70 percent of what it builds in its South Carolina plant. Paul Ferraiolo, BMW’s product planning and strategy manager, says, “it’s not an issue” that the automaker builds cars in South Carolina.

“Our Spartanburg cars are as German in character, design, tuning, and quality as any other,” Ferraiolo says. “No one asks for a German-built car.”

In 2012, Japanese-brand car-production facilities and their suppliers generated almost 700,000 manufacturing and other jobs in America, according to a report by Rutgers University economics professor Thomas J. Prusa, Ph.D. Including dealer networks,

U.S.-Made Cars We Like

If you want a car assembled by the folks you see down at Moe’s diner and made with American-sourced parts, the following list is a good place to start. A ☒ indicates that the vehicle also is recommended because it performed well in Consumer Reports tests, has average or better predicted reliability, and performed adequately in crash tests.

☒ Recommended

REC.	VEHICLE	FINAL ASSEMBLY LOCATION	% DOMESTIC CONTENT	COMMENTS
SEDANS				
<input checked="" type="checkbox"/>	Buick LaCrosse	Kansas City, Kan.	62%	Some engines imported.
<input checked="" type="checkbox"/>	Buick Verano	Orion Township, Mich.	60%	Some imported transmissions.
<input checked="" type="checkbox"/>	Chevrolet Impala	Detroit; Ontario	62%	V6 version assembled in Canada.
<input checked="" type="checkbox"/>	Chevrolet Malibu	Detroit; Kansas City, Kan.	62%	
<input checked="" type="checkbox"/>	Honda Accord	Marysville, Ohio; Japan	70%	Some powertrains made in Japan.
<input checked="" type="checkbox"/>	Toyota Camry	Georgetown, Ky.; Lafayette, Ind.	75%	Some powertrains made in Japan.
SUVs				
<input checked="" type="checkbox"/>	Acura MDX	Lincoln, Ala.	65%	
<input checked="" type="checkbox"/>	Acura RDX	East Liberty, Ohio	70%	
<input checked="" type="checkbox"/>	Buick Enclave	Lansing, Mich.	75%	
	Chevrolet Suburban	Arlington, Texas	60%	New model; reliability unknown.
<input checked="" type="checkbox"/>	Chevrolet Traverse	Lansing, Mich.	75%	
<input checked="" type="checkbox"/>	Dodge Durango	Detroit	67%	Some engines (V8s) from Mexico.
<input checked="" type="checkbox"/>	GMC Acadia	Lansing, Mich.	75%	
<input checked="" type="checkbox"/>	Toyota Highlander	Princeton, Ind.	60%	Some powertrains imported.
PICKUP TRUCK				
	Ford F-150	Dearborn, Mich.; Kansas City, Mo.	65%	New model; reliability unknown.
UPSCALE SEDANS				
	Acura TLX	Marysville, Ohio	65%	New model; reliability unknown.
<input checked="" type="checkbox"/>	Toyota Avalon	Georgetown, Ky.	70%	Some transmissions made in Japan.
SPORTS CAR				
<input checked="" type="checkbox"/>	Chevrolet Corvette	Bowling Green, Ky.	75%	Some transmissions made in Mexico.
MINIVANS				
<input checked="" type="checkbox"/>	Honda Odyssey	Lincoln, Ala.	75%	
<input checked="" type="checkbox"/>	Toyota Sienna	Princeton, Ind.	75%	Some transmissions made in Japan.
ELECTRIC VEHICLE				
<input checked="" type="checkbox"/>	Tesla Model S	Fremont, Calif.	50%	

Source: 2015 AALA listing (nhtsa.gov) and Consumer Reports. Some cars on this list are not recommended because the vehicle is too new in its model cycle and there is insufficient reliability data.

ROAD REPORT

Japanese-brand companies accounted for an estimated 1.3 million American jobs.

Next New-Car Hub: Mexico

But the American South's automotive boom could be tapering. Mexico, with its willing and lower-wage work force, and the benefit of NAFTA, is emerging as a major exporter.

Almost all of the big carmakers and many parts suppliers have built Mexican plants in the past five years—mostly specializing in entry-level cars with their inherent narrow profit margins.

It has been reported that Mexico is likely to send about 2 million cars north of the border this year, outpacing what we import from Canada, Japan, or all of Europe.

Given the rise of the Latino population in America, having vehicles coming from Mexico could have a marketing benefit.

Those customers have the opportunity to purchase vehicles that might have been built in their home country, says Jim O'Sullivan, CEO of Mazda North American Operations, which now builds some Mazda2 and Mazda3 models in Mexico. "Some of our dealers have told us anecdotally," he says, that Latino customers "know the vehicle was built in Mexico, and they gravitate to that."

What's Really American?

So if you want to buy American, which is the best vehicle to choose?

In 2014, about 11 million vehicles from a dozen brands were built in the U.S. But they vary considerably in the percentage of U.S.-manufactured components they use. The 2013 BMW X3 was assembled in South Carolina, but 65 percent of its content came from Germany, according to its AALA label. The Honda Odyssey, at 75 percent American or Canadian parts, is assembled in Alabama, with its engine and transmission also coming from the U.S. Honda says it exported more vehicles from U.S. factories than it imported from Japan in 2013 and 2014.

To those who argue that Japanese-branded cars can't be considered American because profits revert to Japan, it could be pointed out that the billions of dollars spent on American plant construction, equipment procurement and assembly-line workers bolsters the U.S. economy rather than Japan's.

Whatever your reasons, if you're in the market for a good-performing homegrown vehicle, you can find some great choices. To help you choose, we have assembled several lists of good-performing vehicles that have strong reliability, are assembled in the U.S., and have high percentages of the content attributable to domestic manufacturing.



Chevrolet Traverse

Highest-Volume U.S. Carmakers

Ranking of automakers by the number of passenger vehicles assembled in U.S. factories in 2014. Numbers include vehicles exported for sale outside the U.S.

AUTOMAKER	VEHICLES BUILT IN U.S., 2014
Ford	2,178,120
General Motors	1,926,007
Fiat Chrysler	1,733,002
Toyota	1,334,691
Honda	1,268,904
Nissan	931,974
Hyundai/Kia	768,230
BMW	349,949
Mercedes-Benz	220,181
Subaru	193,022
Volkswagen	123,415
Mitsubishi	69,178
Tesla	36,036
TOTAL	11,132,709

10 Cars With the Most American Parts

These 2015 models assembled within the U.S. have the largest portion of domestic-manufactured components, as defined by the American Automobile Labeling Act.

VEHICLES	PERCENT
Buick Enclave	75%
Cadillac CTS coupe	75%
Chevrolet Corvette	75%
Chevrolet Traverse	75%
GMC Acadia	75%
Honda Odyssey	75%
Toyota Camry	75%
Toyota Sienna	75%
Dodge Viper	71%
Jeep Cherokee	71%

Tied at 70 percent: Acura RDX, Honda Accord, Honda Crosstour, Honda Pilot, Jeep Wrangler, Toyota Avalon, Toyota Tundra.



Honda Odyssey



Ford F-150

RED, WHITE, AND BLUE OVAL
Ford Motor Co. built the most vehicles in the U.S. in 2014, thanks to the F-150, made in Michigan and Missouri.



Crossover Clash

Four SUVs: Two from Detroit, one from Japan, one from Korea. All made in America.

FOR OUR JULY ISSUE, we wanted to put four examples of a traditionally American vehicle through our tests. And what is more American than a big, people-hauling, gear-piling sport-utility vehicle? Especially if it's made in the U.S.A.

So why are a South Korean Kia and a Japanese Nissan part of the competition? Because they are assembled in West Point, Ga.; and Canton, Miss.; respectively. As American as barbecue, they are.

But it's more than their American assembly that makes them worthy

of notice. The research and development for the two vehicles was done with American consumers in mind, and the results show it.

We also took a dive deep into the redesigned Cadillac Escalade, an SUV that stands proud as the icon of brash American attitude and status. Read our review to see whether the Caddy's bling is only skin deep. And because the Escalade doesn't stand alone in its field, we also checked out the mid-cycle refresh of the Lincoln Navigator.

So who comes out on top? The results may surprise you.

UPCOMING ROAD TESTS

August 2015

- Ford Mustang
- Dodge Challenger
- Ford F-150
- Chevrolet Colorado



Ford Mustang



Dodge Challenger

How We Test

The Consumer Reports Auto Test Center is situated on 327 acres in rural Connecticut. Our team of 30 automotive engineers, auto writers and editors, technicians, statisticians, analysts, and support staff buy about 70 cars and trucks that we test each year. We drive those vehicles for thousands of miles before putting them

through a battery of more than 50 individual tests and months of real-world pounding. Some tests—such as fuel economy, acceleration, avoidance maneuvers, and braking—are objective, instrumented tests. Others—such as seat comfort, ease of use of controls, and ride quality—are subjective, graded by a jury of experts in

their respective disciplines. Our 580 years of combined experience in testing, engineering, and data analysis make Consumer Reports' Ratings the single most authoritative automotive resource available.

84

Look for the road-test score for each car we test.



MID-SIZED SUVs

Kia Sorento

Not too big. Not too small. Has Kia found the sweet spot for family crossover vehicles?

84

THE KIA SORENTO IS A 'TWEENER.'

It plays in the space between small crossovers such as the Honda CR-V and family-sized vehicles like the Toyota Highlander. Splitting segments like that allows the Sorento to be livable and city-friendly while offering the functionality of larger vehicles. For some shoppers, it lands in the sweet spot.

As design goes, the Sorento's appearance is stately and mature—a far cry from the futuristic “angry android” styling of the Nissan Murano on the facing page.

The new looks are backed up by substance, manifested in a comfortable ride, a quiet cabin, and reassuring handling—not to mention the peace of mind that comes with driving a car deemed a Top Safety Pick by the Insurance Institute for Highway Safety.

The base Sorento starts at \$25,795, including destination charges, but it comes with just a 185-hp four-cylinder engine. If you want more power from either a turbo-four or a V6, or if you want that third-row seat, it will cost you a few grand more.

Our tested EX V6 trim adds leather seating surfaces, heated power front seats, and automatic climate control. It's classy inside.

With the V6, you'll always get the kids to soccer practice on time. The engine's 290 hp is sent through a six-speed automatic transmission to the front wheels, or via optional all-wheel drive. Our AWD V6 version is capable of towing an impressive 5,000 pounds.

On the road, the Sorento has a comfortable ride, absorbs pavement flaws effectively, and

transmits low levels of road and wind noise into the cabin. Handling, traditionally not one of Kia's fortes, is now responsive and secure. The third row is roomy for younger kids, but they can access it more easily from the passenger side.

Kia has made living with the Sorento as easy as possible. Pairing your phone via Bluetooth is straightforward, and the voice control system understands myriad commands. But the EX has a disappointingly small touch screen for the radio, and only three audio presets appear on the screen at one time.

A caveat: Shortly after we purchased our \$37,915 tested model, an EX Touring package became available. It adds \$2,900 to the price and includes a much larger, easier-to-use touch screen with navigation, as well as a massive dual-pane moon roof. Had that model been available at launch, we would have purchased it instead.

That said, 40 grand is a lot to pay for a crossover that literally doesn't measure up to the competition if you need the extra space. Its features may be the equal of the larger SUVs on the market, but when you're hauling kids and their stuff, those precious extra inches of length and cargo capacity make a huge difference. Another concern: The past generation Sorento had an average to worse-than-average reliability record. We'll want to see whether the redesigned model is less trouble-prone.

The Sorento's pleasant driving experience and family-friendly functionality have placed it among our highest-scoring mid-sized SUVs. It may be a tweener, but it is right-sized for us.



2016 KIA SORENTO EX V6

HIGHS	Ride, quietness, transmission, smooth V6, three-row seating, easy to maneuver yet roomy, Good IIHS crash-test results
LOWS	Rear visibility, tight third row, small infotainment screen on EX trim
ENGINE	290-hp, 3.3-liter V6; 6-speed automatic; AWD
FUEL	21 mpg
PRICE	\$25,795-\$43,995



KIA'S KID ZONE

The SUV's optional third row is a tight fit for anyone bigger than child-sized.



MIDSIZE SUVs

Nissan Murano

Under its wild exterior design lurks an elegant, easy-to-live-with SUV

77

WHENEVER NISSAN LAUNCHES

a redesigned vehicle, it's a toss-up whether it will be a technological leap forward or a retreat characterized by cost cutting. Thankfully, the 2015 Murano landed butter-side up—it's one of the better midsize SUVs out there.

Since its inception for 2003, the Murano has boasted an upscale interior, a lively V6, and a continuously variable transmission. It has also been a fashion victim, with a too-small back window restricting the view to the rear.

Despite a dramatic restyling of the sheet metal, all of those attributes, both positive and negative, carry over to the 2015 version, which also brings a load of high-tech entertainment and safety gear.

If the old Murano resembled a jelly bean, the new one is a Twizzler—all creases and folds. Nissan also has embraced the "floating roof" design, a trompe l'oeil effect achieved with black trim covering the rear roof pillars. Like the design or hate it, you won't lose this vehicle in a shopping mall parking lot.

Speaking of shopping, the Murano has easy access for passengers and gear. The rear seat is roomy, and the seats fold down easily to swallow your mall haul.

Our SL had a comfortable, decidedly untrucklike ride, though Platinum versions with the 20-inch wheels ride stiffly. Handling is mundane, with vague, reluctant, and overly light steering that takes away a driver's confidence in the vehicle. The Murano may look like an athlete, but

it lacks the agility to back up its braggadocio.

It's too bad that the handling is so lackluster, because the energetic 260-hp, 3.5-liter V6 provides effortless acceleration and averaged a decent 21 mpg, using regular fuel. The CVT transmission hides its inherent stretchy, rubber-band feel when you're cruising. But when you need to accelerate hard, the CVT makes the engine spool up noisily and insistently. Towing capacity is paltry for the class, too, maxing out at 1,500 pounds.

Inside, the cabin stays blissfully quiet, on par with a Toyota Highlander or Jeep Grand Cherokee. Cabin finish is plush and upscale, with numerous soft-touch surfaces and attractive stitching. However, the swoopy exterior styling triggers some major blind spots to the driver's aft and the rear corners. Some of us wanted to pull the tilt-and-telescoping steering wheel closer, and short drivers may have to crane to see over the hood.

Overall, our \$42,065 Murano proved easy to live with. The controls are straightforward, with dedicated dash buttons for the climate system and radio volume and tuning. Clear, responsive controls on the big, vivid touch screen help. Too bad the steering-wheel controls lack contrast and are hard to decipher. The voice command system works well, though.

Optional safety equipment includes surround-view camera system, blind-spot monitoring, rear-cross-traffic alert, and forward-collision warning with automatic braking.

Travelers know Murano as an island gem near Venice famous for elegant glassware. This Nissan wears the name well.



TESTED VEHICLE

HIGHS	Interior plushness, access, infotainment system, readily available active safety features
LOWS	Visibility, overly light steering, agility, towing capacity
ENGINE	260-hp, 3.5-liter V6; continuously variable transmission; all-wheel drive
FUEL	21 mpg
PRICE	\$30,445-\$41,485



HEAR ME ROAR
Murano's CVT transmission works well but still makes the engine drone loudly during hard accelerations.



LUXURY/LARGE SUVs

Cadillac Escalade

Imposing on the red carpet, but clumsily trucklike on its way to the show

61

FEW VEHICLES CAN MATCH THE

Brodingnagian bling that marks the arrival of a Cadillac Escalade. From its eye-searing headlights to its giant chrome wheels and roof-to-bumper LED taillights, the Escalade is designed to put more ordinary vehicles in their rightful place.

Although it's easy to understand the Escalade's snob appeal, this SUV's luxury is disappointingly skin deep.

On the way to the red carpet, the Escalade's ride feels far from luxurious. This SUV simply floundered in our driving tests. With apologies to U-Haul, the Caddy's harsh ride atop those shiny 22-inch rims is comparable to that of a rented box-truck. The driving position has you wedged between an overstuffed center console and a thickly padded door panel.

In emergency maneuvers, the Escalade is unusually slow and ungainly. And stopping distances outstretched other full-sized SUVs. That may seem self-evident for such a behemoth, but the Escalade makes the Lincoln Navigator—and even the Escalade's down-market sibling, the Chevrolet Suburban—feel almost graceful by comparison. Parking at the mall is like docking the supertanker it takes to fuel this leviathan.

The Escalade's standard 6.2-liter V8 has the thrust necessary to motivate this girthful hulk. With its new eight-speed automatic, its 16 mpg is thirsty but not bad for this class.

So how does the Escalade treat your posse? The second-row seats will leave your VIP passengers feeling like they're flying coach, and

the third row is simply cramped and awkward.

Can you make an elegant arrival when you exit this beast? Most of our staffers appreciated the optional power running boards, which give shorter occupants a gentlemanly boost up or escort down. Taller folks, though, found that the boards just got in the way.

If you need more space and a comfortable third row, choose the extended Escalade ESV, which is based on the longer Suburban. But that will set you back an additional \$3,000—and at \$87,360, our standard-length Escalade is already well into Range Rover territory.

To be fair, the Escalade is extremely quiet and plush, with a natty interior finished in hand-stitched leather and a choice of walnut, elm, or Santos wood trim. Power folding second- and third-row seats make loading your loot a snap.

But for a brand that likes to brag about technology, the Caddy's Cue infotainment system is infuriating—even for something as basic as finding your smartphone's music selections. And the clunky column shifter feels sadly old-fashioned.

If you're looking for a big black-and-chrome bus to haul your entourage, the Chevy Suburban does a better job. Compared with the 'Slade, the Suburban has a more comfortable third-row seat, plenty of cargo space, and a better driving position and ride. And for \$17,000 less, you won't miss any critical amenities beyond the Escalade's sparkly bits. You may lose some style points as you disembark, but you'll arrive far more comfortable and composed.



TESTED VEHICLE

HIGHS	Sheer bravado, stunning interior, quietness, towing capacity, headlights
LOWS	Harsh ride, unintuitive Cue infotainment system, tiny third-row seat
ENGINE	420-hp, 6.2-liter V8; 8-speed automatic transmission; four-wheel drive
FUEL	16 mpg
PRICE	\$73,965-\$95,870



DAZZLING
The Escalade has the best-performing headlights we've ever tested.

ROAD REPORT

Ratings: Midsize and Luxury/Large SUVs

Scores in context: The highest-rated midsize SUV scored 85; the lowest, 20. Recommended models performed well in CR's road tests and have average or better predicted reliability. They also performed adequately, if included, in crash tests.

☒ Recommended

Better ← ● → Worse

A. MIDSIZED SUVs

Rec.	Rank	MAKE & MODEL	PRICE As Tested	RELIABILITY Predicted	SCORE Road Test	TEST RESULTS									
						Overall MPG	Acceleration 0-60 MPH, Sec.	Dry Braking 60-0 MPH, Ft.	AM Speed, MPH	Routine Handling	Ride/Noise	Seat Comfort Front/Rear	Cargo Volume, Cu. Ft.	Controls	Fit and Finish
	1	Kia Sorento EX (V6)	\$37,915	New	84	21	7.4	131	49.5	●	●/●	●/●	37.5	●	●
<input checked="" type="checkbox"/>	2	Toyota Highlander XLE (V6)	\$38,941	●	84	20	7.5	134	50.5	○	●/●	●/●	40.5	●	●
<input checked="" type="checkbox"/>	3	Hyundai Santa Fe GLS (V6)	\$36,290	○	81	20	7.6	133	51.0	○	●/●	●/●	40.5	●	●
	4	Jeep Grand Cherokee Limited (V6)	\$41,375	●	78	18	8.0	134	50.0	○	●/●	●/●	36.5	●	●
	5	Nissan Murano SL	\$42,065	New	77	21	7.7	131	50.5	○	●/●	●/●	33.5	●	●
<input checked="" type="checkbox"/>	6	Hyundai Santa Fe Sport (4-cyl.)	\$28,370	○	73	23	9.7	132	50.5	○	●/○	●/●	35.5	●	●

B. LUXURY/LARGE SUVs

	1	Mercedes-Benz GL350 BlueTec	\$73,020	●	82	20	8.2	136	44.5	○	●/●	●/●	47.0	○	●
	2	Land Rover Range Rover HSE (3.0L)	\$88,545	NA	80	17	6.7	137	48.5	○	●/●	●/●	34.5	○	●
	3	Chevrolet Suburban LTZ	\$69,790	New	74	16	7.9	139	47.0	●	●/●	●/●	62.5	●	●
	4	Lincoln Navigator (base)	\$68,895	New	70	15	7.0	136	48.5	●	●/○	●/●	61.5	○	●
	5	Ford Expedition EL Limited	\$63,080	New	61	14	7.2	136	45.0	●	●/○	●/●	71.0	○	○
	6	Cadillac Escalade Premium	\$87,360	New	61	16	6.1	142	45.0	●	●/●	●/●	48.0	●	●

Why certain models are not recommended. The Kia Sorento, Nissan Murano, Chevrolet Suburban, and Lincoln Navigator are too new for us to have reliability data. We have insufficient data for the Range Rover. The Jeep Grand Cherokee and Mercedes-Benz GL have much worse than average reliability. The Ford Expedition and Cadillac Escalade scored too low to recommend.



LUXURY/LARGE SUVs

Lincoln Navigator

70 **BIG, BRASH, AND WITH AN EXTRA** dash of flash, Lincoln has updated the aging Navigator SUV for 2015. The biggest news is under the hood, where a 380-hp, 3.5-liter twin-turbocharged EcoBoost V6 replaces the old, thirsty, and lethargic V8.

Despite losing two cylinders, the new powerplant offers effortless power for quick

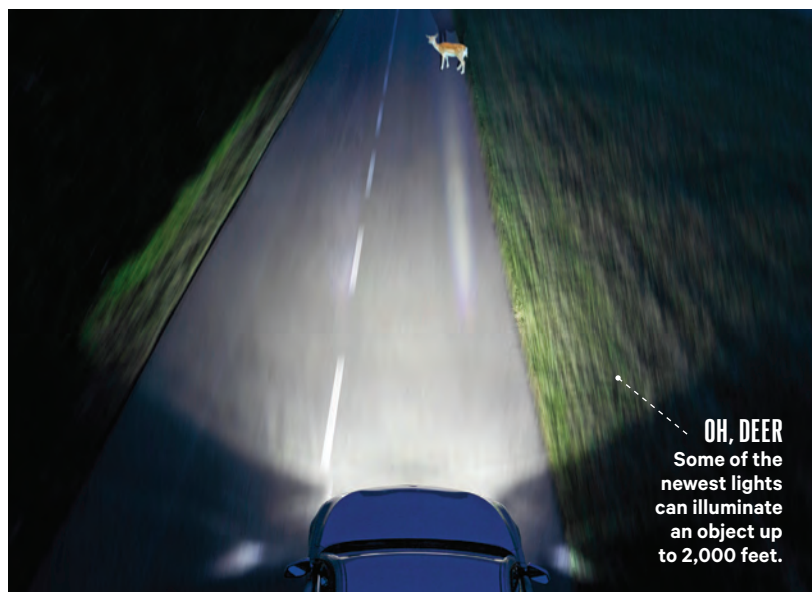
acceleration and impressive towing ability. And though our measured 15 mpg overall is not exactly "Eco," that does represent a 2-mpg improvement over the last Navigator V8 we tested. Our \$68,895 Navigator had a comfortable ride, but it showed its age and truck-based roots with clumsy handling. Other changes include updated front-end styling with a new grille and HID lighting. One benefit of its old-school styling is large windows that help with visibility and lend an airy feel.

Though upgraded, the interior still can't match the luxurious ambiance of the Cadillac Escalade, due to excessive wind noise and vast expanses of cheap-looking plastic. The Navigator's cabin is spacious, with room for eight and a third row that's usable even for adults. A long-wheelbase version adds more room.

One major gripe: The update doesn't include electronic crash-avoidance systems such as forward-collision warning. In this class of large, heavy vehicle, it should at least be offered.



TESTED VEHICLE	
HIGHS	Ride, effortless power, spacious interior and third row, towing capacity
LOWS	Wind noise, interior fit and finish, agility
ENGINE	380-hp, twin-turbo V6; 6-speed automatic transmission; four-wheel drive
FUEL	15 mpg
PRICE	\$62,915-\$68,855



CAR STRATEGIST

In the Light

Headlight technology is getting more complex. But do these new lamps actually help you see better? Or are they just a pricey fashion accessory?

THE DAYS OF BASIC LOW AND HIGH BEAMS are over as car headlights become ever more sophisticated.

The new technologies bring promises of brighter light, greater reach down the road, and even the ability to spot pedestrians and animals long before they would be illuminated by conventional bulbs.

The new lights also free up car designers, who can now create distinct looks and identities not possible with the round and rectangular frames of old, and convey a brand image anywhere from friendly to a menacing “get out of my way.”

But our tests have found that in the real world, high-tech headlights don't necessarily let you see any further. They're often brighter than current halogen lights, but they don't necessarily throw light farther down the road. And they can be scarily expensive to replace. Here's a look at some of the latest trends in headlight design to watch for the next time you're in the market for a new car.

Adaptive headlights. The lights illuminate around corners by aiming the beam in the direction you've turned the steering wheel. Mechanical systems that do the same thing have been around for the better part of a century, but these days, electronics do

the job. We've seen mixed results and have differing opinions from our testing. Make sure to try them on a nighttime test drive, and be aware of the added cost.

HID. High intensity discharge headlights do away with the heated filament of ordinary bulbs and instead use gas. The result is lower operating temperature and longer life. But HID headlights cost hundreds of dollars to replace, and they require a transformer that can run more than \$500 if it goes bad. In our tests, HID headlights generally haven't performed any better than basic halogen lights overall. Note: Even budget models such as the Mazda3 include them with certain option packages.

LED. Light-emitting diode headlights have several advantages over conventional bulbs, including compact size, reduced energy consumption, and longer life. Their flexible, string-like arrangements help designers create a distinct look. The downside is the replacement cost can run to hundreds or even thousands of dollars. All for a technology that shows little benefit in our tests.

Laser. The latest trend in automotive lighting, laser headlights provide a focused long-range beam that can double the reach of normal high beams, focusing a beam up to 2,000 feet, according to manufacturer claims. Already offered in Europe on select models from Audi and BMW, laser headlights aren't yet legal in the U.S.

LED adaptive. The next big thing in headlights combines some of the technologies listed above. Adaptive LED systems use a matrix of individual LEDs that automatically turn on and off based on where the car is headed and other vehicles that the system detects on the road. That provides high-beamlike optimum illumination while not blinding oncoming drivers. We tried one such system on a Euro-market Audi, and found that it worked well. It too, is an expensive option, costing \$2,500. But don't run down to a dealer looking for them; they're not yet legal in the U.S.

Night vision. We've sampled vehicles from Audi and BMW that use infrared cameras and sensors to detect pedestrians and animals far in the distance. Images appear on the center screen in the car. The systems even put a little extra light on an image as you draw closer. We see a lot of potential for those systems, but the trick will be incorporating the benefit without increasing the distraction.

➔ **HAVE A PROBLEM WITH YOUR MECHANIC OR DEALERSHIP? SOMETHING PUZZLING YOU ABOUT YOUR CAR? Contact CR's Car Strategist at carstrategist@cr.consumer.org.**



The Dark Side of Pricey Lights

The newest car lights come with cool features—as well as some problems. Most major automakers, including BMW, Ford, General Motors, Nissan, Tesla, and Toyota, have issued Technical Service Bulletins (TSBs) warning about fogged or defective lenses, outright headlight failure, and other problems. Before you spend big bucks, ask your dealer whether your car is covered, or do the research online. Go to ConsumerReports.org/carrecalls and check our lists of TSBs.

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SELLING IT

Cracked Promise

Lloyd and Nedra Doyle of Eugene, Ore., loved the Stars and Stripes on this pepper grinder's package, but a closer look revealed it was only filled in America.



MADE IN CHINA



Caught Here, Processed There

"These salmon did a lot of traveling to end up on my table!" writes Judy Schlafer, from Dow, Ill., of this Chinese product caught in U.S. waters.



WILD CAUGHT IN USA
PROCESSED IN CHINA
PRODUCT OF CHINA

A Hill of Beans

The bag says Brach's is "America's Candy Maker," but Susan Sherman of Cincinnati notes that this confection was actually produced south of the border.



AMERICA'S CANDY MAKER®

Product of Mexico

A Lesson in Labellese

Lori Dehn of Spring Lake, Minn., tipped us off to this clothing line, which touts an "authentic" tradition that may not be what purchasers have in mind.



AUTHENTIC AMERICAN TRADITION

Made in Bangladesh
RN#73277

SIZE
LARGE

Country of Origin Unclear

The "American-made" distinction is powerful, but as you'll see from these reader submissions, the fine print sends a mixed message.

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CR Best Buy Products with this icon offer the best combination of performance and price. All are recommended.



Recommended Models with this designation perform well and stand out for reasons we note.

How to Use the Canada Extra Section

Every month, Canada Extra provides Canadian pricing and availability information about products tested for that issue. The Ratings in this section are based on this month's reports, but they narrow your choices to the products that are sold in Canada.

You can use this section in either of two ways: Start with the main report, read about the products that interest you, and turn to this section to find whether they're sold—and for what price—in Canada. Or start here, find products sold in Canada whose price and overall score appear promising, and read more about them in the main report and full Ratings chart; page numbers appear with each Canadian report. (For some products, the Canadian model designation differs slightly from the one used in the U.S.)

In most cases, the prices we list here are

the approximate retail in Canadian dollars; manufacturers' list prices are indicated by an asterisk (*). Check marks identify CR Best Buys or recommended products in the U.S. Ratings. "NA" in a chart means that information wasn't available from the manufacturer. We include, in the Contact Info list on page 32D, the manufacturer's phone number and Web address in Canada so that you can call or go online to get information on a model you can't find in the stores. (Many products that aren't available in Canadian stores can be bought online.)

We appreciate your support, but we don't take it for granted. Please write to CanadaExtra@cu.consumer.org and tell us what you think. We can't reply to every e-mail message or implement every suggestion, but with your help we'll try to keep growing to serve your needs.

Robotic Vacuums

Four of the six tested robo-vacs are available, including both of the recommended models. Report and Ratings, page 48

		BRAND & MODEL	PRICE	SCORE
Rec.	Rank			
✓	1	iRobot Roomba 880	\$750	87
✓	2	iCleo Arte	\$450	86
	5	Neato BotVac 80	\$480	68
	6	Neato XV-21	\$390	56

Security Software

All of the tested security software is available. **Report and Ratings, page 46**

A. FREE SECURITY SOFTWARE

Rec.	Rank	BRAND & PRODUCT	PRICE	SCORE
<input checked="" type="checkbox"/>	1	Avira Free Antivirus 2015	Free	58
	2	AVG AntiVirus Free 2015	Free	54
	3	Avast Free AntiVirus 2015	Free	54
	4	Microsoft Windows 8.1 with Defender	Free	38

B. SECURITY SUITES

<input checked="" type="checkbox"/>	1	ESET Smart Security 8	\$80	69
<input checked="" type="checkbox"/>	2	Symantec Norton Security	\$80	69
<input checked="" type="checkbox"/>	3	BullGuard Internet Security	\$60	68

B. SECURITY SUITES continued

Rec.	Rank	BRAND & PRODUCT	PRICE	SCORE
<input checked="" type="checkbox"/>	4	G Data Internet Security	\$60	67
	5	Kaspersky Internet Security 2015	\$60	65
	6	Bitdefender Internet Security	\$80	65
	7	ZoneAlarm Internet Security Suite	\$70	63
	8	McAfee Internet Security	\$80	62
	9	Avira Internet Security Suite	\$130	62
	10	AVG Internet Security 2015	\$75	59
	11	F-Secure Internet Security	\$70	58
	12	Avast Internet Security	\$70	53
	13	Trend Micro Internet Security	\$40	51

Air Conditioners

Eight of the tested window and portable air conditioners are available, including four of the recommended models. **Report and Ratings, pages 18-20**

ROOM A/Cs

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
------	------	---------------	-------	-------

A. WINDOW AIR CONDITIONERS 5,000 TO 6,500 BTU/HR. (COOLS 100 TO 300 SQUARE FEET)

<input checked="" type="checkbox"/>	3	Friedrich Kuhl SQ05N10B ⁽²⁾	\$640	75
	4	Frigidaire FFRE05C3Q1	\$230	74
	5	Friedrich Chill CP05G10A	\$310	74

B. 7,000 TO 8,500 BTU/HR. (COOLS 250 TO 400 SQUARE FEET)

<input checked="" type="checkbox"/>	2	LG LW8014ER	NA	79
<input checked="" type="checkbox"/>	4	Friedrich Chill CP08G10A ⁽²⁾	\$600	76
	6	Frigidaire FFRE08C3Q1	\$290	70

C. 9,800 TO 12,500 BTU/HR. (COOLS 350 TO 650 SQUARE FEET)

Rec.	Rank	BRAND & MODEL	PRICE	SCORE
<input checked="" type="checkbox"/>	1	LG LW1214ER ⁽²⁾	NA	80

PORTABLE AIR CONDITIONER

		BRAND & MODEL	PRICE	SCORE
--	--	---------------	-------	-------

D. 9,000 TO 15,500 BTU/HR.

	6	Honeywell MM14CCS	\$680	49
--	---	--------------------------	-------	-----------

⁽²⁾Slide-out chassis; eases installation.

Recalls

2014 Honda Civic

During the mounting process, some tires may have been damaged. That may affect the bead of the tire, causing a tear. As a result, the tire may rapidly lose air, which may lead to a crash or an injury.

Models 2,314 vehicles.

What to do Have the dealer inspect the tires and replace, if necessary.

2013-2014 Nissan models

The passenger-seat occupant classification system may inaccurately indicate that the passenger seat is empty, when in fact it is occupied. Thus, the passenger airbag would be disabled without the illumination of the airbag warning light. If there is a crash and the airbag is not deployed, that may result in serious injury to the occupant of the seat.

Models 60,022 2013-2014 Nissan Altima, 2013 Infiniti JX35, 2013-2014 Nissan Leaf, 2013 Nissan NV200, 2013-2014 Nissan Pathfinder, 2014 Infiniti Q50, 2014 Infiniti QX60, and 2013-2014 Nissan Sentra vehicles.

What to do Have the dealer reprogram the occupant classification system.

2013 Toyota Highlander

Based on the requirements of Canada Motor Vehicles Safety Standard 207—Anchorage of Seats, the seat track on the left side of the second-row seat may fail to fully lock in the forward and second adjustments positions. In the event of a crash, the seat anchorage may not meet the proper strength requirement. That may increase the risk of injury in a crash.

Models 2,065 vehicles.

What to do Have the dealer make repairs.

2013-2014 Chevrolet Cruze

The passenger-side halfshaft may fracture and separate. If the vehicle is moving, that may result in a loss of motive power. If that occurs while the vehicle is parked on an incline without the brake being applied, it may result in unintentional vehicle movement. Both conditions may increase the risk of a crash or an injury.

Models 26,757 vehicles.

What to do Have the dealer replace the affected halfshafts. Note: This recall supersedes Recall 2013323. Some vehicles that were inspected and/or repaired under the previous recall will need to be inspected again and repaired, if necessary.

2014-2015 General Motors models

During assembly, transmission cooler lines may not have been firmly seated in their fittings on vehicles equipped with six-speed automatic transmissions. That may result in transmission fluid leaking near hot surfaces, which may increase the risk of fire.

Models 51,115 2014 GMC Sierra, 2014 Chevrolet Silverado, 2015 Chevrolet Suburban, 2015 Chevrolet Tahoe, 2015 GMC Yukon, and 2015 GMC Yukon XL vehicles.

What to do The dealer will inspect the connections and repair, if necessary.

2012-2013 Ford Edge

The fuel line pulse damper may have been manufactured incorrectly on vehicles equipped with a 2.0L engine. That may cause cracks. Fuel leakage in the presence of an ignition source may result in fire or injury.

Models 3,409 vehicles.

What to do Have the dealer replace the fuel line assembly. Note: This recall supersedes Recall 2012-299 (12S40). Vehicles that were repaired under the previous campaign will also need to be repaired under this campaign.

2001-2004 Mazda Tribute

On vehicles operated in areas where road salt is used for extended periods of time in the winter months, the forward attachment point for the lower control arm may separate from the vehicle's subframe. That may affect the ease of handling the vehicle and may result in a crash.

Models 13,182 vehicles.

What to do Have the dealer install a newly designed reinforcement cross-face.

2005-2007 GM models

With the added weight of a key ring or if the vehicle goes off-road or experiences another type of jarring event, a defect in the ignition switch may cause the switch to move out of the "run" position. Based on timing and relative to the activation of the sensing algorithm, that may result in the airbags not being deployed, which may increase the risk of injury.

Models 153,310 2005-2007 Chevrolet Cobalt, 2007 Pontiac G5, and 2005-2006 Pontiac Pursuit vehicles.

What to do Have the dealer replace the ignition switch. Note: Until the correction is performed, all items should be removed from the key ring.

2014 Mazda6

A defect in the fuel tank venting system may allow the fuel tank to be overfilled. That may cause fuel to enter the charcoal canister and may result in a fuel leak. If there is a fuel leak in the presence of an ignition source, it may result in a fire.

Models 3,567 vehicles.

What to do Have the dealer make repairs.

Autos Report and Ratings, pages 55-59

All of the tested vehicles are available in Canada. Listed by group, in order of overall score within group.

MAKE & MODEL	PRICE RANGE	ACCELERATION (SEC.)				FUEL ECONOMY (LITERS PER 100 KM)		
		0-50 KM/H	0-100 KM/H	80-100 KM/H	500 METERS	CITY DRIVING	HIGHWAY DRIVING	OVERALL
MIDSIZE SUVs								
Kia Sorento	\$27,495-\$46,695	3.1	7.8	3.3	18.2	17.0	7.9	11.3
Nissan Murano	\$29,998-\$43,498	3.6	8.1	3.6	18.3	15.9	8.2	11.1
LUXURY/LARGE SUVs								
Lincoln Navigator	\$75,810-\$86,060	2.7	7.4	3.9	18.0	22.6	11.6	15.7
Cadillac Escalade	\$84,095-\$101,635	2.3	6.4	3.2	16.7	23.5	10.2	15.1

Contact info How to reach manufacturers in Canada.

Avast

866-951-7679
avast.com

AVG

avg.ca

Avira

avira.com

Bitdefender

647-955-1197
bitdefender.com

BullGuard

bullguard.com

ESET

866-343-3738
eset.com

Friedrich

210-546-0500
friedrich.com

Frigidaire

800-668-4606
frigidaire.ca

F-Secure

fsecure.com

G Data

gdatasoftware.com

Honeywell

480-353-3020
honeywell.com

iClebo

855-926-1601
iclebo.com/english

iRobot

877-855-8593
irobot.com

Kaspersky

877-665-4717
kaspersky.ca

LG

888-542-2623
lg.ca

McAfee

866-622-3911
mcafee.com

Neato

877-296-3286
neatorobotics.com

Symantec

800-745-6061
symantec.com

Trend Micro

613-599-4505
trendmicro.ca

Zone Alarm

650-628-2212
zonealarm.com