



ALL-YEAR-LONG

Home Care

GUIDE™

**IMPROVE
REPAIR
ORGANIZE
MAINTAIN**

INDOORS AND OUT

Do-It-Yourself Tips for

- Windows
 - Gutters
 - Floors
 - Kitchen Appliances
 - A/C & Furnace
- ...And much more

**1200+ HOME
PRODUCTS
RATED**

\$12.99US \$13.99CAN



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SPRING



8 **SPRING CLEAN**

Refreshing your rooms after the long winter can be easy. Use our pros' tips to get your windows, carpets, fridge, and more squeaky-clean.



16 **SPRING MAINTAIN**

Warmer weather means it's time to get decks and outdoor furniture ready and to prep your yard to look its best all season long.



22 **SPRING SHOP**

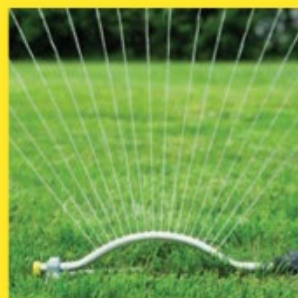
Yardwork essentials go on sale in the spring, and so do small appliances and mattresses. Here's what to shop for now.

SUMMER



50 **SUMMER CLEAN**

When you're not outside enjoying the sun, take a moment to use our advice to clean up your garage and change your furnace's filters.



54 **SUMMER MAINTAIN**

You want a gorgeous, green lawn ... but all that upkeep! Here's the best way to mow and water your grass. Plus: Gas grill care and repair.



58 **SUMMER SHOP**

Need a new drill, string trimmer, or dehumidifier? Find deals on these products, laundry appliances, and more now.

**4 HOW TO USE
THIS GUIDE**

136 GET IN GEAR

See the details on the top-rated tools on our cover.

ON THE COVER

Photographer: John Walsh/Consumer Reports

FALL



**76 FALL
CLEAN**

Take advantage of the lull between Labor Day and the holidays to clean fans and humidifiers, and prep linens and bedding for guests.



**82 FALL
MAINTAIN**

The mowing season is just about over, but there are still outdoor tasks to take care of, from clearing gutters to winterizing lawn gear.



**88 FALL
SHOP**

Deep discounts on leaf blowers, snow blowers, cooking appliances, and small appliances make the fall a prime time to shop.

WINTER



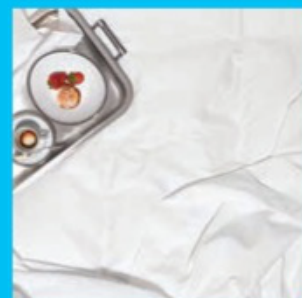
**116 WINTER
CLEAN**

Stay inside and show your floors and furniture some love with our expert guides to removing tough stains, such as ink, wax, and gum.



**120 WINTER
MAINTAIN**

Winter weather may keep you busy, but our tips for clearing snow and protecting pipes can help prevent pricey damage.



**128 WINTER
SHOP**

If you want to upgrade your bedding or get fit, you're in luck: Sheets, treadmills, and ellipticals are among the products on sale now.



HOUSEHOLD HELP FROM CR'S EXPERTS

Whether it's your first home or your fifth, you want to keep it sparkling clean and running well, inside and out. But most of us aren't born knowing the secrets to streak-free windows, or how to change a furnace filter, or when leaf blowers go on sale.

Don't worry: Consumer Reports is ready to pitch in. Our home pros—engineers, researchers, market analysts, and editors—know the best and fastest ways to care for your home, from organizing the garage to clearing the gutters, and much more.

This issue is filled with our experts' DIY tips for seasonal cleaning and maintenance—plus advice on when it's safest to hire a pro. Our exclusive tests of

thousands of products reveal the best home gear, and our sales analysis tells you when to shop to get the best prices.

Caring for your house the right way is a big job, we know. But with our help, you'll spend less time scrubbing and weeding, and more time enjoying your beautiful home.

—The Editors of Consumer Reports

RATINGS Overall Scores are based on a scale of 0 to 100. We rate products using these symbols:

❌ POOR
 ⚠️ FAIR
 👍 GOOD
👍👍 VERY GOOD
 👍👍👍 EXCELLENT

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ALL-YEAR-LONG Home Care GUIDE™

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MEMBERSHIP BENEFIT

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POWERFUL STORIES CAN INSPIRE CHANGE



Share Your Story™ is a way that members can share personal stories or read one that they can relate to.

If you had an experience where you think a product was defective, a service under-delivered, or a business practice was misleading, we want to hear from you.

Check out **Share Your Story™** at [cr.org/membership](https://www.consumerreports.org/membership)

CR ConsumerReports®

Your Year-Round Project Planner

Consider this guide your spring-summer-fall-winter “to do” list. For every season, you’ll find expert advice on how to improve, repair, organize, and maintain your home.

CLEAN

Did you know you should dust your refrigerator coils in the spring, blot up grease from the garage floor in the summer, and clean ceiling fan blades in the fall? Now you do—and our pros share the best (and fastest) ways to get those jobs done.

MAINTAIN

Find guidance for bigger chores and outdoor upkeep here, from making grill repairs in the summer to winterizing your lawn mower in the fall to preventing pipes from freezing (or thawing them if they’re already icy) in the winter.

SHOP

Our market analysts track sales trends for hundreds of products throughout the year to help you find the lowest prices. Use our expert buying advice and exclusive ratings of the products on sale each month to pick the best-performing gear.

HOW TO USE CR'S RATINGS

Overall Score combines the results of performance tests in our labs with the data we collect through surveys of CR members to give you a holistic picture of product quality. To arrive at this number, Consumer Reports evaluates a variety of factors—performance, predicted reliability, and owner satisfaction. We then incorporate data from all these assessments into one Overall Score.

Predicted Reliability is our forecast of the likelihood that newly purchased models from a given brand, not under service contract, will have a problem within a given time frame, based on CR members’ reports in our surveys. Owner Satisfaction—also from our surveys—is based on the proportion of CR members who are extremely likely to recommend the product they bought.

Recommended Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features					
				Predicted reliability	Owner satisfaction	Thermostat control	Temperature authority	Energy efficiency	Noise	Evenness	Storage capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Interior storage capacity (cu. ft.)	Energy cost/yr. (¢)
BOTTOM-FREEZER REFRIGERATORS																
1	Kenmore Elite 79043	89	\$1,300	5	5	5	5	5	5	5	23.8	70	33	33	17.1	45
2	Kenmore Elite 79023	89	\$1,300	5	5	5	5	5	5	5	21.8	69	30	34	15.8	40
3	LG LDCS24223S	88	\$1,150	5	5	5	5	5	5	5	23.8	69	33	33	17.1	41
4	Kenmore 69313	85	\$700	5	5	5	5	5	5	5	18.5	66	30	31	13.4	58
5	Amana ABB2224BRM	81	\$1,350	5	5	5	5	5	5	5	21.9	69	33	31	15.3	59
6	KitchenAid KRBR109ESS	79	\$1,530	5	5	5	5	5	5	5	18.7	67	30	31	12.1	41
7	Amana ABB1924BRM	78	\$1,170	5	5	5	5	5	5	5	18.5	66	30	31	12.5	58
8	GE GDE2SEKSS	78	\$1,575	5	5	5	5	5	5	5	24.8	69	33	35	17.1	79
9	KitchenAid KRBR102ESS	77	\$1,530	5	5	5	5	5	5	5	22.1	69	33	31	14.9	75
10	GE GDE21ESKSS	75	\$1,485	5	5	5	5	5	5	5	23.0	70	30	35	14.6	74
11	Whirlpool WRB329DMBM	71	\$1,260	5	5	5	5	5	5	5	18.7	67	30	31	12.1	41
12	Fisher & Paykel ActiveSmart RFIDWDRUXS	70	\$2,300	5	5	5	5	5	5	5	17.3	68	32	28	13.0	49
13	Whirlpool WRB322DMBM	71	\$1,260	5	5	5	5	5	5	5	22.1	69	33	31	14.9	75
14	Bosch B11CB5055S	71	\$2,160	5	5	5	5	5	5	5	11.3	79	24	26	8.4	46
15	Haier HRB15N38GS	71	\$900	5	5	5	5	5	5	5	15.0	68	28	24	11.9	55
16	Blomberg BRFB82255N	67	\$1,700	5	5	5	5	5	5	5	16.2	60	30	31	13.7	48
17	Bertazzoni REF318EMXR	65	\$1,500	5	5	5	5	5	5	5	17.0	69	32	27	13.7	58
THREE-DOOR FRENCH-DOOR																
1	LG LFXS32766S	89	\$3,510	5	5	5	5	5	5	5	31.5	69	36	34	20.9	99
2	Kenmore Elite 74113	85	\$2,700	5	5	5	5	5	5	5	31.7	69	36	36	21.5	99
3	LG LFC247705T	83	\$1,705	5	5	5	5	5	5	5	23.8	69	33	33	17.4	78
4	Samsung RF28HDEDPWW	83	\$2,200	5	5	5	5	5	5	5	27.8	69	36	34	20.0	89
5	Kenmore Elite 73153	81	\$2,400	5	5	5	5	5	5	5	28.7	69	36	34	19.5	95
6	GE GNE29GSKSS	81	\$2,000	5	5	5	5	5	5	5	28.7	70	36	34	20.9	84
7	LG LFXS30766S	81	\$3,400	5	5	5	5	5	5	5	29.6	69	36	34	19.1	101
8	LG LFC227705T	81	\$1,630	5	5	5	5	5	5	5	21.8	66	30	33	15.4	76

Recommended products are top-scoring models that do not have brand reliability problems.

CR Best Buys are recommended products that combine impressive performance with an attractive price.

Test Results indicate how well the product performed in our exhaustive in-house tests.

Features show the details about a given product, including dimensions and more.

NOTE

In most cases, the ratings in this issue reflect only models that scored Excellent or Very Good in our tough tests. All-Access and Digital members can find the latest, complete ratings for all the products included in this guide at CR.org.

INDEX

Air Conditioners		Garages	
Maintenance.....	19	Cleaning and Organization.....	51
Air Purifiers Ratings.....	23	Stain Removal From Floors.....	52
Blenders Ratings.....	37	Gas Grills	
Carbon Monoxide Detectors		Cleaning and Care.....	56
Placement.....	97	Ratings.....	28
Ratings.....	96	Repair.....	57
Carpets		Generators Ratings.....	121
Cleaners.....	11	Gutters Cleaning.....	83
Cleaning.....	12	Heating Systems	
Spot Removal.....	13	Maintenance.....	53
Ceiling Fans Cleaning.....	77	Humidifiers	
Chimneys Cleaning.....	83	Cleaning.....	77
Coffee Makers Ratings.....	102	Ratings.....	132
Cordless Drills Ratings.....	59	Ice Dams	127
Curtains		Insulation and Ductwork	
Cleaning.....	10	Inspection.....	83
Cords.....	10	Interior Paints Ratings.....	95
Decks Maintenance.....	17	Laundry Detergents	
Dehumidifiers Ratings.....	62	Ratings.....	80
Dishwashers Ratings.....	63	Lawns	
Drapery Rods Cleaning.....	10	Summer Care.....	55
Electric Clothes Dryers		Fall Care.....	86
Ratings.....	69	Lawn Mowers & Tractors	
Ellipticals Ratings.....	130	Ratings.....	32
Exterior Paint Ratings.....	39	Winterizing.....	85
Fire Extinguishers		Leaves	
Correct Use.....	122	Leaf Blowers Ratings.....	89
Floors		Cleanup.....	84
Cleaning.....	117	Mattresses	
Stain Removal for Nonwood Floors.....	119	Cleaning.....	9
Food Processors Ratings.....	131	Ratings.....	43
Freezers Ratings.....	40	Over-the-Range Microwaves	
Furnace Filters		Ratings.....	72
Changing.....	53	Pipes	
Ratings.....	53	Protecting.....	126
Furniture		Thawing.....	126
Cleaning, Indoor.....	118	Refrigerators	
Cleaning, Outdoor.....	18	Cleaning.....	15
Stain Removal for Wood Furniture.....	118	Ratings.....	106
		Ranges Ratings.....	91
		Roof Maintenance.....	83



Sheets Ratings.....	129	Trees Care.....	84
Siding Cleaning.....	19	Upholstery	
Smoke Detectors		Cleaners.....	11
Placement.....	97	Cleaning.....	11
Ratings.....	96	Vacuum Cleaners Ratings.....	26
Space Heaters Ratings.....	24	Wall Ovens Ratings.....	100
Snow Blowers		Washing Machines	
Fall Preparation.....	87	Ratings.....	66
How to Use.....	123	Water Saving Outside.....	55
Ratings.....	98	Windows	
Snow Removal		Cleaning.....	14
Driveways and Walkways.....	122	Ratings.....	36
Safety.....	124	Wood Stains Ratings.....	39
Shovels.....	125	Yard	
Storm Supplies	121	Fall Care.....	84
String Trimmers Ratings.....	60	Mosquito and Tick Prevention.....	21
Table and Bed Linens		Spring Care.....	20
Cleaning.....	79		
Removing Stains.....	80		
Treadmills Ratings.....	134		

SPRING

From washing windows to readying your A/C for warmer days, we have the expert advice you'll need to get these spring jobs done right (and tips on when it's best to hire a pro). Plus: The home gear to find on sale now.



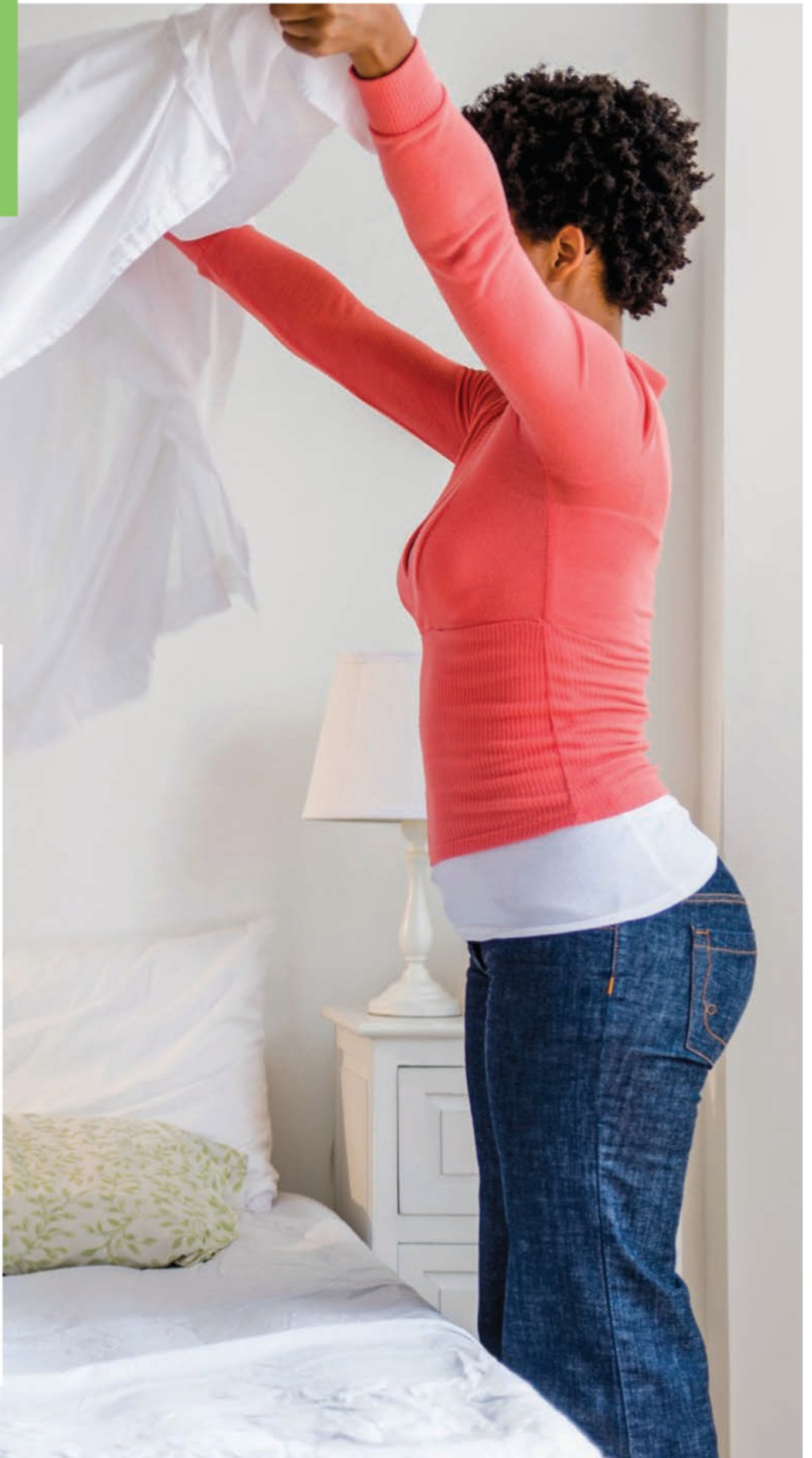


SPRING

CLEAN

YOUR SPRING CLEANING CHECKLIST

- Rotate mattresses and wash mattress pads and blankets. **P. 9**
- Wash curtains and draperies or have them dry-cleaned. **P. 10**
- Clean upholstery. **P. 11**
- Shampoo rugs. **P. 12**
- Wash windows. **P. 14**
- Clean out the refrigerator and dust coils. **P. 15**
- Go through closets to discard unwanted clothes; clean winter coats.
- Hang blankets on a clothesline to air out before putting them away.



PHOTO, PREVIOUS SPREAD: MICHAEL BRAUN/GETTY IMAGES. PHOTOS, THIS SPREAD FROM LEFT: GETTY IMAGES; RUSSELL SADUR/GETTY IMAGES

● Mattresses

If you find yourself sniffing as you snuggle in for the night, it might be a sign that it's time to clean your mattress.

Dust mites—microscopic bugs that feed off the dead skin cells of humans and their pets—can take up residence in bedding. When we inhale their feces, it can trigger an allergic response, leading to a runny nose, itchy eyes, coughing, and other symptoms.

Giving the mattress a thorough cleaning can provide relief by reducing these and other offending allergens, such

as pet dander. "Those with sensitivities to indoor allergens, such as to pet hair, dander, and house dust mites, will generally see a reduction in symptoms with cleaning," says Clifford W. Bassett, M.D., medical director of Allergy & Asthma Care of New York, a medical practice.

Even if allergies aren't a concern, cleaning your mattress twice a year can help extend its life. Follow the steps at right. Note: You'll have to leave your mattress undisturbed for 24 hours, so find another place to sleep for a night.

TIP

If you're worried about dust mite allergies, use a dustproof or allergen-impermeable mattress cover.

4 STEPS TO CLEANING A MATTRESS

STEP 1

Strip the mattress bare and toss all bedding in the wash. (Launder according to the care instructions.) If dust mites are a concern, make sure to wash bedding materials at 130°F or hotter: The water must be at least that temperature to effectively reduce their populations. (You may need to increase the temperature setting on your water heater. Most are set around 120°F.)

STEP 2

Thoroughly vacuum the entire surface of the mattress with your vacuum's upholstery or crevice attachment. The surface probably won't look dirty, but you can bet that dust, dead skin cells, and mites are there—they're just not visible.

STEP 3

Spot-treat any stains with an enzyme-based upholstery cleaner or pet-stain and odor remover. You can also try a simple solution of 1 teaspoon of mild dishwashing liquid and 1 cup of warm water.

STEP 4

To deodorize the mattress, cover the surface with a layer of baking soda. For the best results, leave it undisturbed for 24 hours, then vacuum it away.



● Curtains

Dust curtains and drapes with your vacuum cleaner's soft-brush attachment or with a soft, long-handled broom with synthetic fibers (they're much better than natural fibers at collecting dust).

If you use a vacuum cleaner, set it for reduced suction so that you don't draw the fabric into the nozzle. You might want to place a stiff piece of plastic screen between the nozzle and the fabric to prevent that from happening, or secure an old nylon stocking over the nozzle with a rubber band.

If you can take down curtains and drapes and rehang them with relative ease, air them outdoors on a clothesline or put them in a clothes dryer set to the no-heat or delicate cycle.

Before cleaning your curtains and draperies, read care instructions carefully to determine whether you can wash them or whether you should have them dry-cleaned. Even if they are made of washable fabric, the linings and the threads used in sewing may shrink in water. Play it safe and opt for dry cleaning if you're in doubt. Definitely dry-clean curtains and drapes with stitched-in pleats, swags, or other elaborate ornamentation that may not withstand a washing. You can freshen up velvet draperies without washing them or dry-cleaning them; just brush them from time to time with a chamois cloth dipped in hot water and wrung out thoroughly.

Constant exposure to sunlight can render even sturdy fabrics fragile. So when machine-washing curtains and draperies, use the gentle cycle, cool or lukewarm water, and mild detergent. If possible, hang them on a clothesline to dry, or put them in a dryer on a no-heat or

delicate setting. If instructions call for hand-washing, as is often the case with silk fabrics, do so in lukewarm or cool water and use mild dishwashing detergent. Swish gently and never twist or wring the fabric.

Wash sheers on a regular basis even if they don't look dirty, because by the time dirt appears they can be permanently discolored. Clean these fragile fabrics gently. Make sure they fill no more than half the machine, and let them soak for 5 minutes in cold water. Use a mild detergent and, if you wish, a whitening agent. Turn the dial to rinse to drain the water, then run the machine on a gentle wash setting for just 2 to 3 minutes. (To restore stiffness to sheer curtains, you can also soak them in a solution of 1 teaspoon of starch to 1 quart of water.) Put the sheers and a couple of terry-cloth towels in

TIP

When machine-washing curtains and draperies, use the gentle cycle, cool or lukewarm water, and mild detergent.

a dryer on the no-heat setting for another 2 to 3 minutes. Rehang while still damp, and pull into shape. If necessary, move an ironing board next to the window and iron the hems while the curtains or draperies are hanging, or use a hand-held steamer or the vertical steam of a regular steam iron to smooth them.

**DRAPERY
RODS AND
CURTAIN
CORDS**



● Upholstery

Vacuum upholstered furniture regularly to prevent dirt from building up. To clean up a spill, blot the wet areas immediately with a white towel or paper towel. (Dyes in a colored towel or paper towel can bleed and leave a stain on the upholstery.) To clean upholstered furniture, you can buy a cleaning product and apply it by hand; buy or rent a machine that cleans both upholstery and carpeting (at right); or call in a professional cleaning service.

HAND CLEANING
 Cleaning by hand usually means spraying upholstery cleaner on the fabric, gently rubbing with a damp sponge, cloth, or brush, and then vacuuming the residue. Any hand-cleaning product is likely to work better if the job is done before the upholstery becomes badly soiled.

MACHINE CLEANING
 You can use an upholstery extractor machine or a carpet

extractor with an upholstery wand. Use a cleaning product designed for upholstery, following package directions. Set up fans to speed drying.

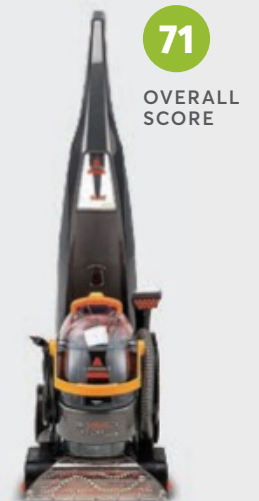
PROFESSIONAL CLEANING
 Professional cleaning may seem expensive, but it's far less costly than replacing dingy furniture. A cleaning service should be able to provide a preliminary estimate over the phone. Request that a technician come to your home to evaluate the job and spot test the cleaner the company uses by applying it to an inconspicuous area. A reputable company should explain the process and the results you can expect, outline guarantees and other policies, provide references, and give you a firm quote.

CHECK REFERENCES
 Some professionals may prefer to steam-clean with water and detergent because the results are generally better than they are with dry cleaning. But cleaning with water—even by a pro—can be risky, so make sure the cleaning professional does a spot test first and is prepared to switch to dry cleaning or a foam-based cleaner if necessary.



TOP-RATED CARPET CLEANERS

These models have upholstery cleaning attachments.



71
OVERALL SCORE

✓ **BISSELL PROHEAT 2X LIFT-OFF PET 15651**
\$260



67
OVERALL SCORE

✓ **RUG DOCTOR MIGHTY PRO X3**
\$460

When laundering curtains and draperies, take the opportunity to clean cords and rods, too. You should usually be able to clean these while they're still in place.

RODS
 Place a plastic sheet on the floor beneath

plastic rods, then use a sponge or clean cloth to wash them with liquid detergent and warm water, and rinse with cold water. (If the rods are quite dirty, you may want to take them down and soak them in soapy water before washing them.)

Remove gliders and soak them in soap and water, then rinse. Once the curtain rods are clean and dry, spray the channel of the tracks with a lubricant like WD-40 and allow it to dry before rehanging the curtains.

CORDS
 Don't dampen cords, because they can shrink. Just run a dust cloth over them instead. Dust surfaces around and behind the rods with the crevice-tool attachment of a vacuum cleaner or with a soft brush. Brass rods are almost

always treated with a protective coating of lacquer, so you only need to dust them with a clean cloth. Do the same for wooden rods, then apply a light coat of furniture polish, making sure you rub it in well so fabric that comes in contact with it isn't stained.

● Carpets

Regular vacuuming and spot cleaning (see the chart on the facing page) are the key to keeping rugs and carpets clean. But depending on the manufacturer's advice and the amount of foot traffic, it may be necessary to shampoo or deep-clean once every year or two.

For lightly soiled carpets, use just water and an absorbent cloth; a detergent may leave too much residue and make resoiling more likely.

Heavily soiled carpets require a thorough cleaning. This means renting or buying a deep-cleaning machine or shampooer and purchasing a special carpet-cleaning solution, available from the rental outlet or most grocery stores. (Be sure to purchase solution that's compatible with your

machine.) Follow instructions for the machine and the cleaning solution; in particular, don't make the cleaning solution any stronger than recommended.

Start by vacuuming, going over each area several times. Then do the shampooing in sections. Then brush the pile in the correct direction with a clean carpet brush, and allow it to dry thoroughly.

If your carpet has a significant amount of ground-in dirt or staining, you may want to hire a professional service. Ideally, personnel should come your home to carefully evaluate the carpet's condition before providing an estimate, but often this doesn't happen.

Some cleaning services provide a preliminary price pending closer inspection in

the home. This is fine if the cleaners do a careful inspection and, if necessary, provide a new price quote.

The cleaning service should discuss its procedures in detail. Depending on a carpet's condition, it may not be possible to clean it completely. The company should tell you if its cleaners won't be able to remove a stain without damage so that there will be no surprises. Ask the service what it will do if the carpet is damaged and how it will protect your furniture.

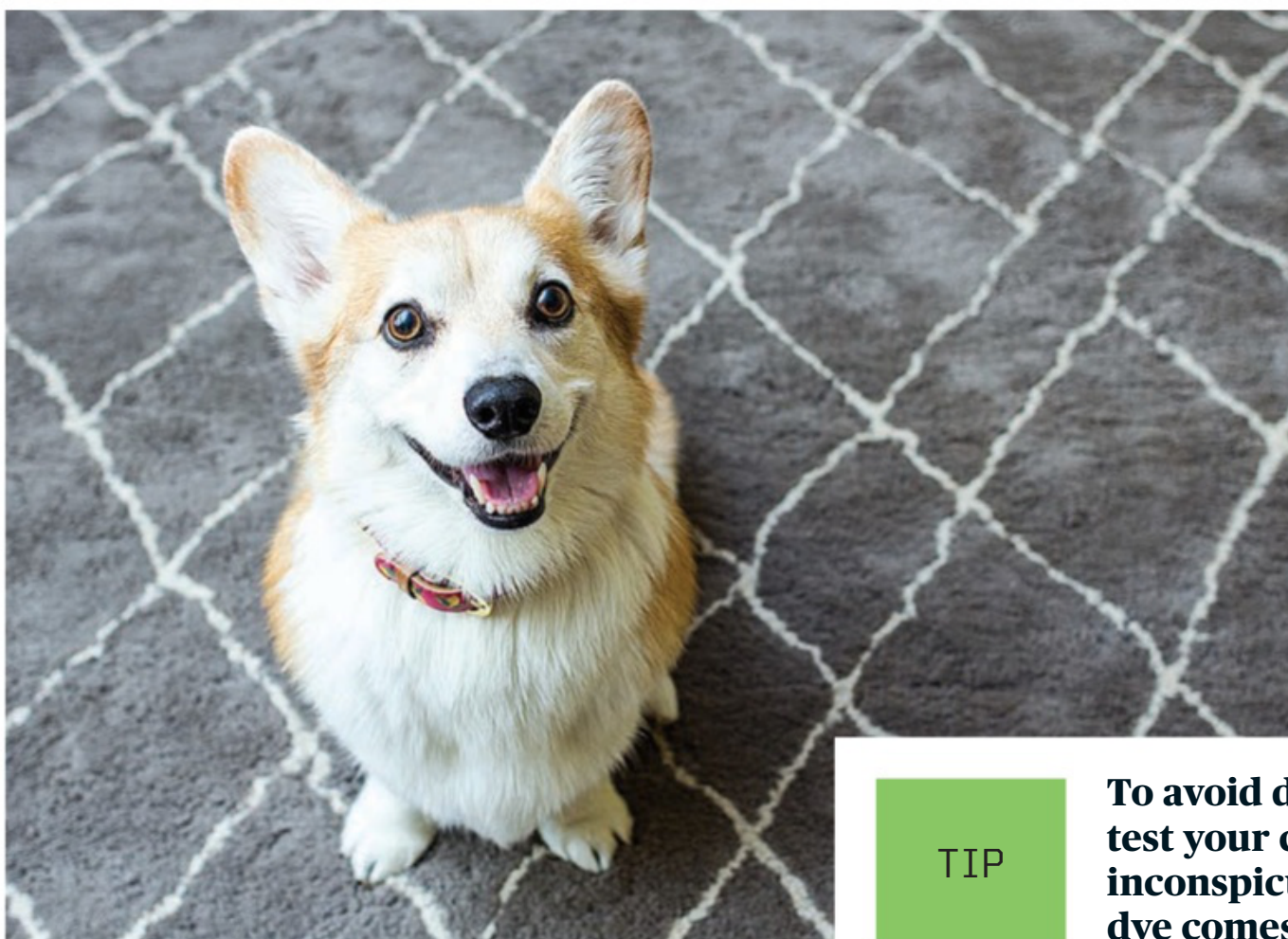
Be sure to ask for and check references. Consumer Reports suggests that delicate area rugs be removed and cleaned at a plant site, not in your home. You can usually take the rug in yourself or pay to have it picked up and dropped off.



CARPET CLEANING CAUTIONS

Shampoos and even water can temporarily or permanently shrink or discolor carpeting. Take these steps to avoid problems:

- With any kind of cleaner, test the fastness of the dye by dampening an inconspicuous area and seeing whether dye comes off on a white tissue. If so, rely on an expert to do the cleaning.
- Clean wall-to-wall carpeting in place to avoid shrinkage.
- When you use any water-based treatment, avoid overwetting. Never allow water to penetrate to the back of a rug. The backing may be damaged and the color may bleed through to the floor.
- Remove as much furniture from the room as you can. You or the pros you hire should put a piece of aluminum foil under any furniture legs that are in contact with the cleaned carpet to prevent staining. Leave the foil in place for one or two days, or until the carpet is thoroughly dry.



TIP

To avoid discoloring your rug, test your cleaning product in an inconspicuous area to see whether dye comes off on a white tissue.

OUT, DAMNED SPOTS!

Hit with a spill? Nancy Bock of the American Cleaning Institute shares tips on how to remove some of the most common—and stubborn—carpet stains by hand.



Wine/Juice/Soda

Act quickly, gently blotting the liquid with a white cotton cloth. Mix 4 cups of water, a tablespoon of dish soap, and a quarter-cup of white vinegar, and apply using a clean sponge. Soak the area with the mixture, allowing 5 to 10 minutes for it to work on the stain. Blot again—don't rub—with a clean cloth. Repeat these steps until the stain is gone.



Paint

For water-based or latex paint stains, if the spot is still wet, blot with a white cotton cloth dampened with warm water. (A white cotton cloth is best for removing stains to ensure no transfer of dye.) Repeat until the paint is gone. If the paint is dry, consider using a carpet cleaner to remove it.



Blood

Apply a small amount of cold water to the stain as quickly as possible, and blot with a white cotton cloth. Never use hot water because it will set a blood stain. Repeat until the stain is gone.



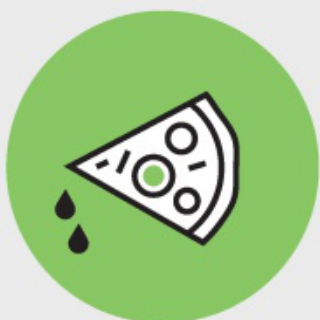
Pet Poop

Remove the waste, then use an old spatula, a butter knife, or a spackle tool to carefully lift any residue from the carpet. Soak the area with a laundry stain remover or other product designed for pet stains according to the manufacturer's instructions. Then use a clean wet sponge dampened with a combination of cold water and laundry detergent to blot the area.



Mud

Let the mud dry completely or it may become much more difficult to remove. Once it has dried, slowly vacuum over the area in all directions to pick up loose dirt. Soak a white cotton cloth in 1 cup of lukewarm water and a teaspoon of dish soap, and apply. Then use a clean white cloth to blot the area. Repeat these steps until the stain is gone, changing cloths as needed to avoid restaining the carpet.



Grass

Dip a clean white towel in 1 cup of cold water mixed with a quarter-teaspoon of laundry detergent. Blot the stain gently. Check to see whether the grass stain has transferred from the carpet to the towel. Blot and check until the stain is no longer visible, changing towels as needed to avoid restaining the carpet.



Oil/Grease

Some greasy stains can be removed with a dab of mild dish detergent. Apply a small amount with a white cotton cloth, and then blot dry. If that doesn't remove the stain, apply a small amount of dry-cleaning solvent (you can purchase it online) using a cloth. Blot, then rinse. If residue remains, sprinkle baking soda on the spot and vacuum once it appears that the baking soda has absorbed the stain.



Pet Urine

Blot the urine with a white cotton cloth. Spray the area with one part white vinegar and one part water to neutralize the uric acid. Then mix a teaspoon of clear, mild, nonbleach laundry detergent into 4 cups of water and apply to the stain. Rinse with water, then press with a clean cloth over the area to absorb the water. Repeat these steps until the spot is gone.

● Windows

Wash windows on a cloudy day or when the windows are in shade, because direct sun will cause streaking. For supplies, you'll need two buckets; a sponge; a good-quality rubber squeegee; a clean, lint-free cloth; a chamois cloth; and a commercial cleaning solution or your own.

START WITH THE FRAMES

Clean very dirty frames before you start your window cleaning. Vacuum the runners of aluminum window frames and doors, then polish the frames with silicone car polish, which can also be used in channels to help windows slide smoothly. Or lightly oil the channels. Wash painted or vinyl frames with a sponge dipped in warm water and detergent. Rinse with

warm, clean water, and towel-dry, if necessary.

THEN CLEAN THE PANES

How often the outside of windows need cleaning depends on where you live, but the inside usually needs cleaning twice a year. Most new double-hung windows have tilting sashes, a handy feature that lets you pivot them inward for easier cleaning. With most, you simply flip a lever to tilt the sash in. But with some, you have to pull the sash out of the track.

CLEAN WINDOWS FROM THE TOP DOWN

Use a slightly damp sponge to apply the window cleaning solution. Wipe across the window with a dampened squeegee blade, then wipe

the blade. Follow with a rinse of clean water applied with chamois. Polish off remaining moisture with the dry cloth.

Below are some instructions for cleaning special windows.

STAINED GLASS

Clean small windows or stained-glass windows with a damp sponge first, then wipe with a clean, damp chamois. Polish with a clean cloth. Treat delicate stained glass with care. Painted glass should be gently cleaned with a damp chamois.

SKYLIGHTS

Some high windows and skylights can be cleaned with special extension tools, but it may be more practical to hire a professional, if only for the out-of-reach windows.

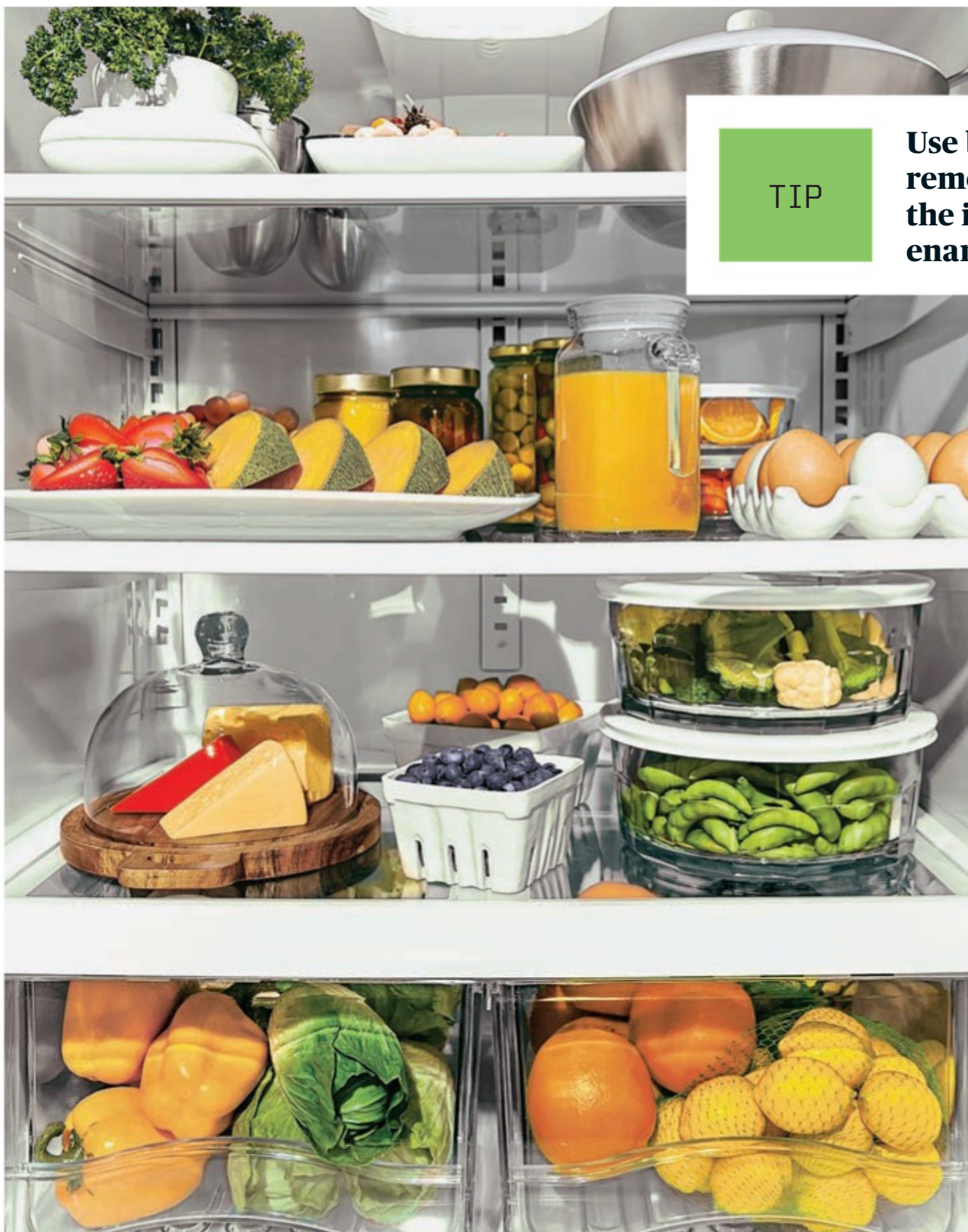
WINDOW WASHING WARNING

In Consumer Reports' past window tests, we made a surprising discovery: It's easy to stain some brands of windows if you use the wrong cleaner. Ammonia-based formulas, including some Windex products, can cause streaks or film on windows.

So before you grab your squeegee, check the manufacturer's website for instructions. And whichever cleaner you use, pick a cloudy day for window cleaning—sunlight can make a cleaning solution evaporate before you finish—and clean your windows from the top down to prevent unsightly drips.



ILLUSTRATION: CHRIS PHILPOT



TIP

Use baking soda and water to remove stubborn stains on the interior, shelves, and baked-enamel exteriors.

repeat the washing once or twice a day until the odor is gone. If this doesn't do the trick, the odor may have permeated the evaporator coil, which produces cold air for the fridge and freezer. The coil is usually located on the back wall of the freezer. Check your user's manual for specific cleaning instructions.

- **For a baked-enamel finish,** clean with a sponge dipped in a solution of dish soap and hot water. Remove stains with a little baking soda applied to a damp cloth. Don't use abrasive cleansers because they can scratch the surface.

- **For stainless-steel fridges,** use a specially formulated stainless steel cleanser, available at most grocery stores.

- **The condenser coil,** which helps disperse heat, is outside the cabinet. Because it tends to collect dust, which lowers the refrigerator's efficiency, it should be cleaned once or twice a year. This is key before the onset of summer, when high temperatures impose heavy demands on a refrigerator.

The condenser is usually behind or beneath the fridge, although on built-in models it's on top of the unit. To clean the condensers on all but built-in models, turn off and unplug the refrigerator, then pull it out so you can reach the back. (You may have to remove the "service access" panel.)

Use a condenser-coil cleaning brush (available in hardware and appliance stores) to dust the condenser, then vacuum it with the crevice tool. To clean the condenser of a built-in unit, consult a professional.

● Refrigerators

Spill-proof, pull-out shelves and other handy features that make cleanups easier are almost standard equipment in new refrigerators. Even so, ongoing maintenance and a little elbow grease is required to keep refrigerators sanitary, odor-free, running efficiently, and looking good, inside and out.

- **To avoid scratching,** remove debris from soft plastic surfaces

inside the refrigerator with a damp sponge dipped in a mild solution of ¼ cup of baking soda mixed with one quart of water.

- **It's especially important to keep the door seal clean,** because dirt impairs its ability to hold in cold air.

- **Remove glass or wire shelves** and other fittings—including the removable drip pan at the bottom of some older-model

refrigerators—and wash them in the sink with hot water and liquid detergent. Use baking soda on stubborn stains.

- **Leave an open container of baking soda** on a refrigerator shelf to keep odors down. If strong odors persist, switch off the refrigerator, remove all the food, and wash the interior with a solution of baking soda and water. Leave the door open and

SPRING

MAINTAIN



YOUR SPRING MAINTENANCE CHECKLIST

- Clean and refinish decks. **P. 17**
- Clean outdoor furniture. **P. 18**
- Check air conditioner filters. **P. 19**
- Inspect siding. **P. 19**
- Get the yard ready for the growing season. **P. 20**
- Take steps to prevent ticks and mosquitos. **P. 21**

PHOTOS, FROM LEFT: TREVOR TONDRO/OTTO; THOMAS LOOF/TRUNK ARCHIVE

● Decks

Lumber, like skin, doesn't fare well unprotected. The sun's ultraviolet rays are always on the attack, breaking down lignin, the glue in wood that keeps the wood fibers together. Rain and sun alternately swell and dry wood, eventually causing it to crack and split. Moisture promotes the growth of mold and mildew. Dirt lodges between wood fibers and sticks to stains and sealers.

Apply the sealer or stain to a new deck as soon as possible. Any time the wood is allowed to go untreated, it begins to break down due to weather. Older decks should be cleaned of mildew and dirt first. Clean and treat decks every year if you are using a clear product or every two to four years if you are using a top-performing semi-transparent or solid stain. To determine whether small black spots are mildew, drop full-strength household bleach on one; if it disappears after a minute or two, it's mildew. To eliminate mildew on a larger area, mix ½ cup of household liquid bleach in 1 gallon of water. Wearing gloves, use a stiff brush to scrub the area, and rinse it after 15 minutes.

For routine cleaning to remove dirt and mildew (or on new decks, to remove mill residue), wash with oxygen-based bleach from the paint store, applied with a pump sprayer. For redwood and cedar, use oxalic acid deck cleaner rather than bleach to remove graying and stains. Follow the instructions and cautions on the label. After cleaning, allow the deck to dry overnight, then treat it. Deck-treatment products may be solvent- or water-based.

There are several main categories of deck-treatment products.

- **Clear finishes** are generally water-repellent, but they usually don't protect from ultraviolet and visible light. Because they soak into the wood, they let the wood's natural grain show through and allow the wood to turn gray. Few clear finishes resist mildew effectively. Expect to clean the wood and reapply the finish annually.

- **Transparent finishes** contain some color pigments that help block ultraviolet light. They enhance the wood's color but may allow the wood to turn gray. Semi-transparent finishes contain even more pigment to help block ultraviolet and visible light. The wood grain is visible, but it takes on the color of the finish. Expect to clean the wood and reapply the finish every two to three years.

- **Solid finishes** are the longest-lasting products. They form a paint-like film that blocks ultraviolet and visible light. Solid finishes mask everything entirely, except the texture of the wood grain. Expect to clean the wood and reapply the finish every three to four years.

Our tests have found that solid stains perform better than semi-transparent and clear finishes. The best solid stains we tested remained close to their original color after three years, picked up only a little dirt and mildew, and effectively protected the wood from cracking. To choose a finish, consider the appearance you want and how often you intend to renew the treatment. And pick one of our top choices, on page 39.

TIP

Clean and treat decks every year if you are using a clear product or every two to four years if using a semi-transparent or solid stain.





● Outdoor Furniture

■ **Cast iron:** Remove rust spots with a wire brush or by sanding, then paint with a metal primer, followed by a coat of rust-inhibiting, exterior paint. Oil any hinges to prevent rust.

■ **Molded plastic:** Use a mild detergent solution and scrub dirt off with a soft-bristled brush. Rinse with a garden hose. Wipe dry with a soft cloth. If there is mildew on the furniture, apply a solution of ½ cup of bleach in a gallon of water with a sponge. Wear gloves. Allow the solution a few minutes to work, then scrub the area again and rinse.

■ **Redwood:** To clean, scrub with detergent and water, rinse with a damp sponge, and dry. Redwood should be sealed occasionally—after cleaning and possibly sanding—to keep out moisture and prevent cracking. If it has grayed, a wood-rejuvenation sealer can restore color. Follow the manufacturer's instructions to remove dirt or grease. Cover and store for the winter.

■ **Teak:** This oil-finished product should be dusted regularly and cleaned with mild detergent. Oil annually with teak oil. Rub on the oil

with a clean, soft cloth and leave overnight, then buff with another clean cloth.

■ **Cushions:** Use a mild detergent solution and a soft-bristled brush to scrub off any dirt, then rinse with a hose. Prop up the cushions in the sun to dry. If they have mold or mildew, try the bleach solution (½ cup in a gallon of water), but test first in an inconspicuous place to make sure it doesn't affect the color. Wear gloves and apply the solution with a sponge. Allow it a few minutes to work, then scrub, rinse, and dry in the sun.

TIP

Always wear gloves when using a bleach solution to remove mold or mildew from outdoor surfaces.



● Air Conditioners

All room air conditioners have a filter behind the front grille that can get clogged with dirt and dust, which reduces air-flow through the unit, diminishing its efficiency and ability to clean the air. A few times a season, pop off the grille and take out the filter. Remove debris with a vacuum, then wash the filter in warm, soapy water. Let the filter dry before reinstalling it. If the filter is badly worn, it's time for a new one. If you have a central unit, once a year have a licensed professional perform a full inspection and maintenance program on your air-conditioning unit.

● Siding

VINYL

This is the most popular choice for siding material, and little wonder: It's low-maintenance, holds color well, and is fairly resilient. Clean with an all-purpose cleaner. Use a long-handled brush, working from top to bottom, or a pressure washer. Be sure to point the pressure washer straight ahead, not upward, to ensure that water doesn't seep beneath the siding. You may also use a home-washing kit that attaches to a garden hose, but the job will take longer than it will with a pressure washer. To remove mildew, spray an all-purpose cleaner or a solution of ½ cup bleach to 1 gallon of water onto the mildewed area. Do not use cleaners that can harm the siding's surface, such as those containing organic solvents and undiluted chlorine bleach.

ALUMINUM

Though aluminum siding is easy to maintain when it's new, over time it may dent and

lose its color. In regions near salt water and where salt is used on roads in the winter, aluminum can corrode. Clean with a commercial cleaning solution that contains agents that kill mildew. Apply it by hand or with a pressure washer (but be careful not to dent the aluminum) and rinse thoroughly. Before painting, clean well and apply a suitable primer to any bare spots or use a self-priming paint to skip that step.

CEDAR CLAPBOARD

This long-popular choice can last from 10 to 100 years. But it requires time-consuming and costly upkeep, including regular painting or staining. On a regular basis, use a stiff brush to clear away leaves and other debris from shingles and the gaps between them because they may trap water and cause a leak. To treat moss or mildew, spray a solution of ½ cup bleach in 1 gallon of water. Take care not to let these cleaners get on plants.



● Yard

1. CHECK YOUR MOWER AND STRING TRIMMER

Start your gas mower and string trimmer to make sure they're running well. If you properly winterized the equipment (see page 85), the machines should be ready to get to work.

If you didn't winterize the gear, don't start the mower or trimmer—circulating stale fuel could create problems, then you'd have to drain the lines. Instead, remove the gasoline from each tank using a turkey baster dedicated to this task. Then fill tanks with fresh fuel and stabilizer. Now you can test your tools. If any problems occur, take the equipment to the service center now; you'll get your gear back sooner and before you really need to use it.

2. TEST YOUR SOIL

More than 100 land-grant schools in the U.S. have an extension service that will perform soil testing for a small fee. You can find the closest office to your house on the

U.S. Department of Agriculture Extension Service website.

The results you receive will tell you about the nutrients in your soil and the soil's pH balance. Handling this early will help you make informed decisions about fertilizing and treating pH.

If your soil has low pH, meaning it's acidic, you can spread lime now. If you have high alkaline soil, add elemental sulfur. Either way, you'll benefit from spring rains, which will help the soil absorb what you've laid down. But you'll want to tackle this task now—sending in samples and waiting for results can take several weeks.

3. CLEAR LEAVES AND DEBRIS

It's generally fine to leave the leaves where they are in the fall, but large, dense swaths of yard debris can block the sun from reaching your lawn, making it difficult for grass to sprout at all. If you didn't use a leaf blower last fall, do some cleanup now. Use the collected leaves for

TIP

A soil test will tell you whether you have acidic or high alkaline soil, and whether any nutrients are lacking—so that you can fertilize correctly.

compost. Better still, mulch the fallen leaves with the mulching kit or attachment for your mower or tractor. The churned-up clippings will feed your lawn and reduce the amount of fertilizer that's needed.

4. APPLY FERTILIZER

Bags of fertilizer display three numbers separated by hyphens. The numbers refer to the ratio among nitrogen (N), phosphorus (P), and potassium (K), in that order. Again, your soil test will let you know what nutrients your soil is lacking. For grasses planted and intended for cooler, northern climates, put down at least one application of fertilizer in spring (if you need fertilizer). Bagged fertilizer is best distributed with a spreader, either a push model or a snap-on version that attaches to your riding mower.

5. REPAIR WALKWAYS AND EDGING

Winter can be brutal on pavers, walkways, and driveways. Aside from damage done by your snow blower or a plow, frost heave—the natural freeze-and-thaw cycle—can split concrete and knock stones out of whack. To keep out water and help keep a problem from worsening, seal any new gaps in concrete with concrete-crack filler.

Secure loose pavers or patio stones temporarily. If the damage is extensive, consider having a landscape contractor dig up and reset the stones, making sure to start 6 inches below the soil line to minimize shifts from future frost heave. Tackling this project now, while pros are less busy, may cost a bit less than booking a repair at the height of the season.



7 ANTI-PEST TIPS TO FOLLOW THIS SPRING

Controlling ticks and mosquitoes in your yard can protect your health

More people are becoming ill with diseases carried by ticks and mosquitoes, biting pests that arrive with warmer weather. The annual number of these infections, such as Lyme disease and West Nile virus, reported to the Centers for Disease Control and Prevention more than tripled between 2004 and 2016 in the U.S. But before you spray your yard with pesticides, opt for effective yet less drastic methods. Here, some of the best ways to thwart the bugs.

1 ELIMINATE STANDING WATER

Mosquito larvae must live in water to grow into the buzzing bugs. Once a week, eliminate or empty areas with standing water, such as birdbaths, buckets, tires, planters, wheelbarrows, clogged rain gutters, and even holes in tree trunks or stumps.

2 PROTECT YOUR PETS

Ticks can spread disease to cats and dogs. Talk to your vet about getting an effective anti-tick product for your pet, whether that's a collar or a topical or oral medication. To keep your pets safe, be sure to follow the directions on the label about which age and species the product is for. Certain items for dogs can be toxic to cats, for instance.



3 KEEP YOUR YARD NEAT

Ticks—and many of the rodents they attach to—like to hide in shady areas created by tall grasses, brush, and debris. Eliminate bushy areas and ground-cover vegetation, especially where there's a lot of traffic, such as walkways or areas where kids play. Don't leave grass clippings or fallen leaves

on your lawn—collect and compost them instead.

4 CONSIDER USING BAIT BOXES

These devices contain bait attractive to rodents and cause them to come into contact with pesticide after being enticed inside. The

pesticide doesn't harm the mouse but kills the ticks that might be attached to the animal. A 2017 study published in the *Journal of Medical Entomology* found that the use of bait boxes significantly reduced tick populations in the areas around where the devices were installed.

5 USE REPELLENT

Apply insect repellent whenever you might be exposed to ticks or mosquitoes. Our tests have found that products with 15 to 30 percent deet, 20 percent picaridin, or 30 percent oil of lemon eucalyptus may be most effective against mosquitoes and ticks. Frequent reapplication isn't necessary. If you're in wooded or grassy areas, wear closed-toed shoes and long-sleeved tops, and tuck your pants into your socks. At the end of the day, check your body for ticks that may have attached themselves to your body.

6 CREATE A MULCH MOAT

Use dry wood chips or gravel to create a 3-foot-wide barrier between your yard and wooded areas. The dry, exposed moat discourages ticks from crawling onto your lawn—and can warn people who cross the mulch that they may be entering a tick-heavy zone.

7 FENCE YOUR YARD

Deer are carriers of ticks, and keeping them off your property may help reduce the number of certain species of ticks in the area, studies have shown. Consider fencing your yard to keep out deer.

SPRING

SHOP



SHOP THE SALES THIS SPRING

MARCH

- Air Purifiers **P. 23**
- Space Heaters **P. 24**
- Vacuum Cleaners **P. 26**

APRIL

- Gas Grills **P. 28**
- Lawn Mowers & Tractors **P. 32**
- Pressure Washers **P. 35**
- Double-Hung Windows **P. 36**

MAY

- Blenders **P. 37**
- Exterior Paint & Wood Stains **P. 39**
- Freezers **P. 40**
- Mattresses **P. 43**

Air Purifiers

The start of spring allergy season is a good time to pick up an air purifier. There are several types, including ionizing, ultraviolet, and filter-based. At CR we test portable filter-based models, which are the most common. The very best models in our tests are effective at removing smoke and dust at both high and low speeds.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results				
					Dust/pollen/smoke removal (high)	Dust/pollen/smoke removal (low)	Noise (high speed)	Noise (low speed)	Annual cost
LARGE ROOM (350-650 SQ. FT.)									
	1	Blueair Classic 605	88	\$750					\$224
	2	Blueair Blue Pure 211	85	\$300					\$192
	3	Honeywell HPA300	76	\$250					\$203
	4	Alen Breathsmart	72	\$650					\$190
	5	Honeywell 50250	69	\$180					\$213
	6	Idylis AC-2118	68	\$306					\$121
	7	SPT AC-2102	65	\$325					\$395
	8	Winix FresHome WACP450	64	\$220					\$112
	9	Kenmore 83396	63	\$200					\$187

HOW WE TEST: Dust/pollen/smoke removal indicates how well models cleared air of fine clay dust and cigarette smoke; performance of

portables is at their highest and lower speeds. Ones that scored well for dust removal should perform comparably

for pollen. **Noise** is based on instrument measurements with a portable model running at its highest and lower speeds. **Overall Score** is based on the

performance of the product in all of our tests.

FROM OUR EXPERTS

AIR PURIFIER SHOPPING TIPS

KNOW THE CADR

This stands for “clean air delivery rate” and indicates the volume of filtered air that a unit delivers. Most air purifier packaging will display three CADR numbers, one each for dust,

smoke, and pollen. Look for a CADR above 250. Anything below 100 isn't very effective.

MATCH ROOM SIZE

For the best performance, choose one of the models that

we recommend for large rooms (350 to 650 square feet), even if you're going to use it in a smaller space. Running a large model at a lower speed will keep noise down when the air purifier is in use, and it will allow you to use a higher speed to clean out a large room quickly, should the need arise.

BE AN ENERGY STAR

Models that carry this familiar blue logo are 40 percent more

efficient than non-Energy Star models.

CONSIDER FILTERS

Many air purifiers have a HEPA filter, which can capture very fine particles. Some also use a prefilter to capture larger airborne particles, which can extend the life of the HEPA filter. Filter-based air purifiers cannot capture gases, so they won't protect you from some of the most dangerous impurities, including

carbon monoxide, nitrogen oxides, radon, and volatile organic compounds (VOCs). And unless they have a carbon filter, they won't rid your home of odors—so even if smoke has been filtered from the air, the smell will remain. Carbon filters can remove VOCs but require frequent changing. Models with washable filters can add convenience and save you money on replacement filters.

● Space Heaters

As temperatures go up outside, the price of space heaters goes down, making March prime deal time. Look for a model that oscillates and includes a fan, which will help distribute heat more quickly. And choose one that has fire safety features, such as a sensor that will turn it off if it overheats or falls over.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features								
					Room heating	Spot heating	Hot surface	Fire safety	Ease of use	Noise	Output (watts)	Weight (lb.)	Tip-over safety switch	Fan	Remote control	Oscillating	Multiple fan speeds	Timer	
SMALLER HEATERS																			
✓	1	Vornado VMH600	86	\$150	↑	↑↑	↑	↑↑	↑↑	↑	1500	10	●	●	●		●	●	
✓	2	Dyson AM09	85	\$450	↑↑	↑↑	↑↑	↑	↑	↓	1500	6	●	●	●	●	●	●	
💰	3	Comfort Zone CZ499R	83	\$70	↑↑	↑↑	↓	↑↑	↑↑	↑	1500	6	●	●	●	●	●	●	
✓	4	Lasko CC23160 Motion Heat Plus (Costco)	80	\$65	↑↑	↑	↑	↑↑	↑↑	↓	1500	8.4	●	●	●	●	●	●	
💰	5	Lasko Designer Series 6435	78	\$48	↑↑	↑	↓	↑	↑↑	↓	1500	7		●	●	●		●	
✓	6	Lasko AW315 Bladeless Tower (Home Depot)	77	\$100	↑↑	↑↑	↑	↑	↑	↑	1500	9.4		●	●	●	●	●	
✓	7	Heat Storm Mojave	75	\$130	↑	↑↑	↑	↓	↑	↑	1500	10		●	●		●		
✓	8	Heat Storm Sahara	73	\$130	↑	↑↑	↓	↓	↑	↑	1500	9		●	●		●		
✓	9	Honeywell HCE311V	71	\$40	↑↑	↓	↓	↑↑	↑↑	↓	1500	3	●	●		●	●	●	
✓	10	Lasko 751320	71	\$45	↑	↑	↓	↑↑	↑	↑	1500	6		●	●	●		●	
	11	Lasko 755320	70	\$55	↑↑	↑	↓	↑	↑↑	↑	1500	7		●	●	●		●	
	12	Vornado VH10	68	\$80	↑↑	↑	↓	↑↑	↓	↑↑	1500	5	●	●					
	13	Lasko 5307	67	\$40	↑	↑	↓	↑	↑	↑↑	1500	4		●		●			
	14	Stadler Form Max M-006	65	\$120	↑	↓	↓	↑↑	↑	↑	1500	5	●	●			●		
	15	Honeywell HeatGenius HCE840B	65	\$70	↑↑	↓	↓	↑↑	↑↑	↑	1500	5	●	●			●	●	
	16	Rowenta SO9276	65	\$100	↑↑	↓	↓	↑↑	↑	↓	1500	4.4	●	●			●	●	
	17	Dyson Pure Hot+Cool Link wifi	65	\$600	↑	↓	↓	↓	↑↑	↓	1500	9	●	●	●	●	●	●	
	18	Vornado Vheat	65	\$130	↑	↓	↓	↑↑	↓	↓	1500	9	●	●			●		
	19	Vornado VH200	64	\$60	↑	↑↑	↓	↑↑	↓	↑↑	1500	4	●	●					
	20	DeLonghi HVF3555TB	63	\$60	↑	↑	↓	↑↑	↓	↑	1500	4	●	●		●		●	
PERSONAL HEATER																			
	1	Vornado SRTH	62	\$45	↓	↓	↑	↑↑	↓	↑	900	3	●	●				●	

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features							
					Room heating	Spot heating	Hot surface	Fire safety	Ease of use	Noise	Output (watts)	Weight (lb.)	Tip-over safety switch	Fan	Remote control	Oscillating	Multiple fan speeds	Timer
LARGER HEATERS																		
	1	Lifesmart ZCHT1001US	81	\$95							1500	14						
	2	Honeywell HZ-980	77	\$170							1500	17						
	3	Heat Storm Logan	72	\$150							1500	21						

HOW WE TEST: **Output** is based on the manufacturer's stated wattage rating, which was verified during testing. **Room heating** is the effectiveness of a model to heat a standard-sized room, such as a family room, in 15 minutes. **Spot heating** is the effectiveness of a model to directly heat an individual

sitting in a room in 15 minutes. **Hot surface** is the risk of burn from touching the heat-exhaust outlet. The score is a combination of maximum temperature at the hottest portion of the outlet, the size of the hot area, and the hot area's accessibility. Models with a Very Good or Excellent rating are cool enough to

safely touch. Heaters rated Fair or Poor can be hot enough to cause a burn when operating at their hottest setting. **Fire safety** is the potential for ignition of flammable material, such as drapes or clothing. Heaters rated Poor can cause ignition to cotton material when operated at their hottest setting.

Ease of use indicates how easy the heater's controls are to operate and how easy the heater is to move and carry. **Noise** is the relative loudness of the heater operating on its highest setting. **Overall Score** is based on the performance of the product in all of our tests.

SPACE HEATER SHOPPING TIPS

About 25,000 house fires and 300 deaths are attributed to space heaters each year, according to the Consumer Product Safety Commission. In addition, 6,000 people end up in emergency rooms with burns from touching a heater's hot surface. So it's essential

to focus on safety when shopping for a new model. Here, four safety features to look for.

CERTIFICATION
Make sure the heater you buy carries a safety certification label from an independent testing organization, such as the UL mark

from Underwriters Laboratories, the ETL label from Intertek, or certification from CSA International.

SHUT-OFF FEATURES
A smart sensor that automatically shuts off a heater when it overheats is a must. You'll also want a

tip-over switch that does the same if the heater is knocked over.

GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PLUG
Most space heaters don't come equipped with a GFCI plug, which prevents electric shock. Heaters without

one should not be used around water, manufacturers advise.

STURDY CORD
Most space heaters come with a cord that's 6 feet long. To prevent overheating, never use an extension cord or a power strip with an electric heater.

Vacuum Cleaners

Upright models with a bag work best for homes with wall-to-wall carpet or a lot of rugs, and canisters perform better on hard flooring. If possible, test the vacuum before purchasing to be sure you're comfortable with its weight and maneuverability. And remember to consider available storage space.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							Features						
					Predicted reliability	Owner satisfaction	Carpet	Bare floors	Hose suction	Clean emissions	Handling	Pet hair	Noise	Weight (lb.)	Cord length (ft.)	Brush on/off	Easy on/off	Manual-pile adjust	Accepts tools	Suction control
BAGLESS UPRIGHT VACUUMS																				
✓	1	Shark Navigator Powered Lift-Away NV586 (Target)	77	\$300	↑	↑	↑	↑	↑	↑	↑	↑	↓	16	26	•		•	•	
✓	2	Shark DuoClean Powered Lift-Away NV831	76	\$350	↑	↑	↑	↑	↑	↑	↑	↓	18	30		•	•	•		
✓	3	Shark DuoClean Powered Lift-Away Speed NV800	75	\$300	↑	↑	↓	↑	↑	↑	↑	↓	15	30			•	•		
✓	4	Shark Rotator Professional Lift-Away NV501	75	\$260	↑	↑	↑	↑	↓	↑	↑	↓	17	30	•		•	•		
✓	5	Shark Rotator Powered Lift-Away Speed NV680	74	\$260	↑	↑	↑	↑	↓	↑	↑	↑	14	30	•		•	•		
✓	6	Kenmore Pet Friendly CrossOver 31220	74	\$250	↓	↓	↑	↑	↑	↑	↓	↓	18	29	•		•	•		
✓	7	Dyson Ball Animal 2	73	\$500	↓	↓	↑	↑	↑	↑	↑	↓	17	30	•		•	•		
✓	8	Dyson Ball Multi Floor 2	73	\$400	↓	↓	↑	↑	↑	↑	↑	↓	16	31	•		•	•		
✓	9	Shark Apex DuoClean Powered Lift-Away Speed AX912	73	\$350	↑	↑	↑	↑	↓	↑	↑	↓	16	30			•	•		
Ⓢ	10	Shark Navigator Lift-Away NV352	72	\$200	↑	↑	↑	↑	↓	↑	↑	↓	14	25	•		•	•		
✓	11	Shark Apex DuoClean Zero-M Powered Lift-Away AZ1002	72	\$400	↑	↑	↓	↑	↑	↑	↑	↓	17	30		•	•	•		
Ⓢ	12	Shark Navigator Professional Lift-Away NV356E	72	\$200	↑	↑	↑	↑	↓	↑	↑	↓	16	30	•		•	•		
✓	13	Kenmore Elite Pet Friendly CrossOver Ultra 31230	72	\$350	↓	↓	↑	↑	↑	↑	↓	↓	18	35	•		•	•		
✓	14	Shark Apex DuoClean Powered Lift-Away AX951	70	\$400	↑	↑	↓	↑	↑	↑	↑	↓	18	30		•	•	•		
	15	Kenmore Progressive 10135	68	\$150	↓	↓	↑	↑	↓	↑	↓	↓	18	25	•	•	•	•		
	16	Shark DuoClean Slim NV201	68	\$240	↑	↑	↓	↑	↓	↑	↑	↓	14	25			•	•		
	17	Dyson Cinetic Big Ball Animal	67	\$600	↓	↓	↑	↑	↓	↑	↓	↓	19	35	•		•	•		
	18	Dyson Cinetic Big Ball Animal + Allergy	67	\$700	↓	↓	↑	↑	↓	↑	↓	↓	19	35	•		•	•		
	19	Shark Navigator Zero-M Lift-Away Speed ZU560	63	\$220	↑	↑	↓	↑	↓	↑	↑	↓	13	25			•	•		
BAGGED UPRIGHT VACUUMS																				
Ⓢ	1	Kenmore Elite Pet Friendly 31150	77	\$350	↓	↓	↑	↑	↑	↑	↓	↓	21	35	•	•	•	•		
✓	2	Miele Dynamic U1 Cat & Dog	76	\$550	↓	↑	↑	↑	↑	↑	↓	↑	22	40	•	•	•	•		
Ⓢ	3	Kenmore Pet Friendly 31140	74	\$200	↓	↓	↑	↑	↑	↑	↓	↓	20	29	•	•	•	•		
✓	4	Kirby Avalir 2	71	\$1,600	↓	↓	↑	↑	↑	↑	↓	↓	23	29	•	•	•	•		

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							Features						
					Predicted reliability	Owner satisfaction	Carpet	Bare floors	Hose suction	Clean emissions	Handling	Pet hair	Noise	Weight (lb.)	Cord length (ft.)	Brush on/off	Easy on/off	Manual-pile adjust	Accepts tools	Suction control
BAGLESS CANISTER VACUUMS																				
✓	1	Miele Blizzard CX1 Cat & Dog	77	\$900	⬆	⬆	⬇	⬆	⬆	⬆	⬇	⬆	⬆	15	21	•	•	•	•	•
\$	2	Kenmore 22614	71	\$350	⬇	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	23	24	•	•	•	•	•
BAGGED CANISTER VACUUMS																				
✓	1	Miele Complete C3 Marin	84	\$1,100	⬆	⬆	⬆	⬆	⬆	⬆	⬇	⬆	⬆	23	24	•	•	•	•	•
✓	2	Miele Complete C3 Alize	77	\$650	⬆	⬆	⬇	⬆	⬆	⬆	⬇	⬆	⬆	17	24	NA	•	•	•	•
✓	3	Kenmore Elite Pet Friendly UltraPlush 81714	76	\$400	⬇	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	25	26	•	•	•	•	•
✓	4	Kenmore Elite Pet Friendly CrossOver 21814	75	\$500	⬇	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	26	27	•	•	•	•	•
\$	5	Kenmore 81614	74	\$300	⬇	⬇	⬆	⬆	⬆	⬆	⬇	⬆	⬆	23	28	•	•	•	•	•

HOW WE TEST: **Carpet** indicates how much embedded talc and sand a vacuum lifted from a medium-pile carpet. **Bare floors** shows how well a vacuum picked up sand without dispersing it on bare floors. **Hose suction** indicates the strength of airflow through the hose. **Clean emissions** is our measurement of

the quantity of wood floor particles a vacuum released under two conditions: first, when only the motor was turned on, and second, while vacuuming. **Handling** reflects how easy it is to push, pull, and carry the vacuum. **Pet hair** reflects how well a vacuum picks up pet hair from medium-pile carpet. **Noise** is

based on measurements in decibels. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop problems or break within the first five years. **Owner satisfaction** reflects

the proportion of CR members who are extremely likely to recommend the vacuum they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (-), we assume the model has average reliability and satisfaction.

PHOTO: CAROL YEPES/GETTY IMAGES



Gas Grills

A basic gas grill is fine for cooking burgers and hot dogs, but if you also enjoy grilling fish and sizzling steaks with sear marks, look at the temperature-range score in our ratings. The higher the score, the better the grill is at cooking a variety of foods. For ribs or roasts, look for high scores in our indirect cooking tests.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Evenness performance	Preheat performance	Temperature range	Indirect cooking	Convenience	Sturdiness	Stainless steel grates	Coated-cast-iron grates	Igniter type	Fuel gauge	Side burner
MIDSIZED GAS GRILLS (ROOM FOR 18 TO 28 BURGERS)																	
✓	1	Weber Genesis II E-310	77	\$700	↑↑	↑↑	↑	↓	↑	↑↑	↑	↑↑		•	Electronic	•	•
✓	2	Weber Genesis II S-335 61006001	76	\$1,050	↑↑	↑↑	↑	↓	↑	↑	↑↑	↑↑	•		Electronic	•	•
✓	3	Weber Genesis II E-330 61012001	75	\$900	↑↑	↑↑	↑	↓	↑	↑	↑↑	↑↑		•	Electronic	•	•
✓	4	Weber Genesis II SE-335 61016201	75	\$1,000	↑↑	↑↑	↑	↓	↑	↑↑	↑↑	↑↑	•		Electronic	•	•
✓	5	Weber Summit S-470	75	\$2,150	↑↑	↑↑	↑	↑	↑	↑	↑	↑↑	•		Rotary	•	•
✓	6	Weber Spirit II S-310 45000001	74	\$500	↑↑	↑↑	↑	↓	↑	↑	↑	↑↑		•	Electronic	•	•
Ⓢ	7	Even Embers GAS8560AS	74	\$375	—	—	↑↑	↑↑	↑	↑	↑	↑	•		Rotary	•	•
✓	8	Nexgrill Deluxe 720-0896B (Home Depot)	73	\$400	↑	↓	↑	↑↑	↑	↑	↑↑	↓		•	Electronic	•	•
✓	9	Nexgrill 720-0896C (Home Depot)	73	\$700	↑	↓	↓	↑	↑↑	↑	↑↑	↑↑		•	Electronic	•	•
✓	10	3 Embers GAS7480AS (Tractor Supply Co)	72	\$500	—	—	↑↑	↑	↑	↓	↓	↑↑	•		Rotary	•	•
✓	11	Napoleon Prestige P500RSIB	72	\$1,400	↑↑	↑↑	↑	↓	↑	↑	↑	↑↑	•		Rotary	•	•
✓	12	Char-Broil Signature 463372017	71	\$430	↓	↓	↑↑	↓	↑	↑↑	↓	↓	•		Electronic	•	•
✓	13	Napoleon LEX485RSIB	71	\$1,200	↑↑	↑↑	↑	↑↑	↑	↑	↑	↓	•		Electronic	•	•
Ⓢ	14	Nexgrill 720-0830H (Home Depot)	71	\$290	↑	↓	↑↑	↑↑	↑	↑	↓	↓	•		Electronic	•	•
	15	Megamaster 720-0983	70	\$240	↑	↓	↑	↑	↑	↑	↓	↓		•	Electronic		
	16	Even Embers GAS7540AS	70	\$280	—	—	↑↑	↑↑	↑	↑	↓	↓		•	Rotary	•	•
	17	Napoleon Rogue R425SBPK	70	\$750	↑↑	↑↑	↑	↓	↑	↑	↓	↓		•	Rotary	•	•
	18	RevoAce GBC1748WS (Walmart)	69	\$160	—	—	↑	↑↑	↑	↑	↓	↑↑		•	Rotary	•	•
	19	KitchenAid 720-0990C (Costco)	69	\$2,000	↓	↓	↑	↑	↑	↑	↑	↑↑	•		Electronic	•	•
	20	Kenmore 6256595 [PG-4030800LS] (Kmart)	69	\$450	↓	↓	↑↑	↑↑	↑	↑	↓	↓	•		Electronic	•	•
	21	Megamaster 720-0982	68	\$220	↑	↓	↑	↑↑	↑	↑	↓	↓		•	Electronic		
	22	Nexgrill 720-0888N (Home Depot)	67	\$200	↑	↓	↓	↑↑	↑	↑	↓	↓		•	Electronic	•	•
	23	Char-Broil Performance 463342119 [Item #895417] (Lowe's)	67	\$290	↓	↓	↑↑	↑	↑	↑	↓	↓	•		Electronic	•	•
	24	Napoleon Rogue R425SIBPSS	67	\$1,000	↑↑	↑↑	↑	↓	↓	↑	↑	↑↑	•		Electronic	•	•
	25	Dyna-Glo Premium DGA550SSP-D	67	\$450	↑	↓	↓	↑↑	↑	↑	↓	↓	•		Electronic	•	•
	26	Monument Grills 24367	66	\$350	—	—	↑	↑	↑	↓	↑	↓		•	Electronic	•	•
	27	Nexgrill Evolution 720-0882A (Home Depot)	66	\$450	↑	↓	↓	↑↑	↑	↑	↑	↓	•		Electronic	•	•

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features					
					Predicted reliability	Owner satisfaction	Evenness performance	Preheat performance	Temperature range	Indirect cooking	Convenience	Sturdiness	Stainless steel grates	Coated-cast-iron grates	Igniter type	Fuel gauge	Side burner	Long-warranty burners
MIDSIZED GAS GRILLS <i>Continued</i>																		
	28	Char-Broil Signature Tru-Infrared 463367016	66	\$400												Electronic		
	29	Megamaster 720-0804	66	\$200												Electronic		
	30	Expert Grill 720-0968 (Walmart)	66	\$225											Rotary			
	31	Char-Broil Commercial Tru-Infrared 463242515 [Item #606680] (Lowe's)	66	\$400											Electronic			
	32	Member's Mark PG-4030400LG (Sam's Club)	66	\$250											Electronic			
	33	Broil King Baron 440 922164	65	\$600											Electronic			
	34	Kenmore Elite 600 Series 48593	64	\$1,000											Electronic			
	35	Cuisinart GAS9556ASO	64	\$350											Push button			
	36	Nexgrill 720-0898	64	\$330											Electronic			
	37	Cuisinart GAS9456ASO	64	\$295										Push button				
	38	Char-Broil Signature 463277017	63	\$600										Electronic				
	39	Char-Broil Commercial Tru-Infrared 463242715 [Item #606682] (Lowe's)	63	\$500											Electronic			
	40	Char-Broil Performance 463347518 [Item #698086] (Lowe's)	63	\$200											Electronic			
	41	Char-Broil Performance 463347519 [Item #698086] (Lowe's)	63	\$200											Electronic			
	42	Kenmore Elite 550 Series 48587	62	\$700										Electronic				
	43	Monument Grills 35633	62	\$370											Electronic			
	44	Char-Broil Signature Tru-Infrared 463276016	62	\$500											Electronic			
	45	Delsol DSBQ25G-DSGB25	62	\$1,750										Rotary				
	46	Char-Broil Gas2Coal Hybrid 463340516	62	\$300											Electronic			
	47	Char-Broil Performance 463244819 (Lowe's)	62	\$400											Electronic			
	48	Char-Broil Performance 463335517 (Walmart)	62	\$200											Electronic			
	49	Kokomo Grills KO-BAK4BG-C	62	\$2,240										Rotary				
	50	Royal Gourmet MG5001-R	61	\$600											Electronic			
	51	Expert Grill 720-0969 (Walmart)	61	\$175										Push button				

Gas Grills *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Evenness performance	Preheat performance	Temperature range	Indirect cooking	Convenience	Sturdiness	Stainless steel grates	Coated-cast-iron grates	Igniter type	Fuel gauge	Side burner
LARGE GAS GRILLS (ROOM FOR 28 OR MORE BURGERS)																	
✓	1	Monument Grills 77352	79	\$500	—	—	↑	↑	↑	↑	↑	↓	•		Electronic	•	
✓	2	Weber Summit E-670	79	\$2,500	↑	↑	↑	↑	↑	↑	↑	↑	•		Electronic	•	•
✓	3	Weber Genesis II E-410	76	\$1,000	↑	↑	↑	↓	↑	↑	↑	↑	•	•	Electronic	•	
✓	4	Weber Genesis II S-435 62006001	76	\$1,250	↑	↑	↑	↑	↓	↓	↑	↑	•		Electronic	•	•
✓	5	Napoleon LEX730RSBIPSS	76	\$2,050	↑	↑	↑	↑	↑	↑	↓	↑	•		Rotary	•	•
✓	6	Napoleon Prestige Pro 665RSIB	74	\$3,300	↑	↑	↑	↓	↑	↑	↓	↑	•		Rotary	•	•
✓	7	Signateur 5 Burner Item #1500111 (Costco)	74	\$800	—	—	↑	↑	↑	↑	↑	↑	•		Electronic	•	
✓	8	Broil King Regal S590 Pro 958344	72	\$1,100	↑	↓	↓	↑	↑	↑	↑	↑	•		Electronic	•	•
	9	Kenmore Elite 700 Series 48591	70	\$1,500	↓	↓	↑	↑	↑	↑	↑	↑	•		Electronic	•	•
	10	Member's Mark 6 Burners GAS9670ASO (Item #980150651) (Sam's Club)	69	\$600	↓	↓	↑	↑	↑	↑	↑	↑	•		Electronic	•	
	11	Broil King Baron 590 923184	69	\$800	↑	↓	↓	↓	↑	↑	↑	↑	•	•	Electronic	•	•
	12	Kenmore 16156	67	\$480	↓	↓	↑	↑	↑	↑	↓	↓	•		Electronic	•	•
	13	Char-Broil Performance 463276517	66	\$380	↓	↓	↑	↑	↑	↑	↓	↑	•	•	Electronic	•	
	14	Broil King Imperial 590 958884	66	\$1,990	↑	↓	↓	↓	↑	↑	↑	↑	•		Electronic	•	•
	15	Grill Zone BG2615B [Item #204381] (True Value)	65	\$400	—	—	↑	↑	↑	↑	↓	↑	•		Rotary	•	
	16	KitchenAid 720-0893	65	\$800	↓	↓	↑	↑	↑	↑	↓	↓	•		Rotary	•	•
	17	Huntington Patriot 5900 Pro 683544	64	\$700	↓	↓	↓	↓	↑	↑	↑	↓	•		Electronic	•	
	18	Broil King Sovereign XLS 90 988844	63	\$1,000	↑	↓	↓	↓	↑	↑	↓	↓	•		Electronic	•	•
	19	Kenmore PG-40611SOL	63	\$300	↓	↓	↓	↑	↑	↑	↓	↑	•		Electronic	•	
	20	Saber R67SC0012	61	\$1,900	↓	↓	↑	↓	↑	↑	↑	↑	•		Electronic	•	•
SMALL GAS GRILLS (ROOM FOR 18 OR FEWER BURGERS)																	
✓	1	Weber Spirit II E-210 44020001	70	\$400	↑	↑	↑	↓	↑	↑	↑	↑	•	•	Electronic	•	•
	2	Royal Gourmet MG3000	68	\$450	—	—	↑	↑	↑	↑	↓	↓	•	•	Electronic		
	3	Nexgrill Evolution 720-0864M (Home Depot)	68	\$230	↑	↓	↑	↑	↑	↑	↑	↓	•		Electronic	•	
	4	Blue Rhino GBC1932L [Item #1139071] (Lowe's)	66	\$150	—	—	↑	↑	↑	↑	↓	↓	•		Rotary		
	5	Dyna-Glo DGF350CSP-D	66	\$140	↑	↓	↑	↑	↓	↓	↓	↑	•		Rotary	•	

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							Features				
					Predicted reliability	Owner satisfaction	Evenness performance	Preheat performance	Temperature range	Indirect cooking	Convenience	Sturdiness	Stainless steel grates	Coated-cast-iron grates	Igniter type	Fuel gauge	Side burner	Long-warranty burners
SMALL GAS GRILLS <i>Continued</i>																		
	6	Huntington 641154	65	\$300												Electronic		
	7	Dyna-Glo DGC310CNP	65	\$100												Rotary		
	8	Char-Broil Signature 463675517	65	\$300												Electronic		
	9	Expert Grill GBC1816WRS	64	\$95	—	—										Push button		
	10	Nexgrill Evolution Infrared 720-0864M (Home Depot)	63	\$230												Electronic		
	11	Huntington 665154 (Home Depot)	63	\$200												Electronic		
	12	Huntington Cast 3400 30040 (Home Depot)	63	\$235												Push button		
	13	Char-Broil Commercial Tru-Infrared 463642316 [Item #748075] (Lowe's)	62	\$300												Electronic		
	14	RevoAce GBC1729W (Walmart)	62	\$130	—	—										Rotary		
	15	Broil King Baron S320 921554	61	\$450													Electronic	
	16	Dyna-Glo DGB300CNP-D	61	\$180												Push button		
	17	Grill Zone BG1762B [Item #204378] (True Value)	61	\$250	—	—										Rotary		

HOW WE TEST: First, we wire each grill's surface with dozens of heat-resistant thermocouples and perform four crucial temperature tests: **Evenness performance** indicates how even the temperature range is across the cooking surface during preheat and using the main burners' lowest and

highest settings. **Preheat performance** measures how hot the cooking surface is after 10 minutes. It also indicates how fast the grill reaches its maximum temperature. **Temperature range** reflects the span between the lowest and highest settings using all main

burners. **Indirect cooking** indicates how well a grill can control low heat. **Convenience** is our evaluation of basic features. **Sturdiness** reflects how solidly built each model is. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability**

estimates the likelihood that newly purchased models from a given brand will develop problems or break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend the gas grill they bought.

Lawn Mowers & Tractors

Prices for lawn mowers range from a few hundred bucks to several thousand. Though it's not necessary to spring for the priciest model on the market, spending a bit more than the lower end of the price spectrum will get you a higher-quality machine.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						
					Predicted reliability	Owner satisfaction	Side-discharging	Mulching	Bagging	Evenness	Handling	Noise at ear	Noise at 25 feet
GAS PUSH MOWERS													
✓	1	Honda HRR216PKA	75	\$430	↑	↑	↓	↑	↑	↑	↑	↓	↓
✓	2	Cub Cadet SC100 H	70	\$300	↑	↑	↑	↑	↓	↑	↑	↓	↓
✓	3	Troy-Bilt TB160 XP	69	\$280	↑	↓	↑	↑	↓	↑	↑	↓	↓
Ⓢ	4	Troy-Bilt TB110	67	\$220	↑	↓	↑	↑	↓	↑	↑	↓	↑
✓	5	Toro Recycler SmartStow 21329	66	\$300	↓	↓	↑	↑	↑	↑	↑	↓	↓
GAS SELF-PROPELLED MOWERS													
✓	1	Honda HRX217K6HZA	86	\$850	↑	↑	↓	↑	↑	↑	↑	↓	↓
✓	2	Honda HRX217K6VKA	83	\$600	↑	↑	↓	↑	↑	↑	↑	↓	↓
✓	3	Honda HRR216VYA	82	\$500	↑	↑	↓	↑	↑	↑	↑	↓	↑
✓	4	Honda HRR216VLA	80	\$500	↑	↑	↓	↑	↑	↑	↑	↓	↑
Ⓢ	5	Honda HRR216VKA	79	\$400	↑	↑	↓	↑	↑	↑	↑	↓	↓
✓	6	Toro Super Recycler 21381	73	\$550	↓	↑	↑	↑	↑	↑	↑	↓	↓
✓	7	Cub Cadet SC 700h	71	\$550	↓	↑	↑	↑	↑	↑	↑	↓	↑
✓	8	Cub Cadet SC 900	70	\$450	↓	↑	NA	↑	↑	↑	↑	↓	↓
✓	9	Honda HRS216K6 VKA	70	\$400	↑	↑	↑	↑	NA	↑	↑	↓	↑
✓	10	Toro Recycler SmartStow 20340	68	\$400	↓	↑	↑	↑	↑	↑	↑	↓	↓
✓	11	Toro Recycler 20333	67	\$400	↓	↑	↑	↑	↑	↑	↑	↓	↓
✓	12	Toro PowerReverse Recycler SmartStow 20355	67	\$450	↓	↑	↑	↑	↑	↑	↑	↓	↓
GAS WIDE-DECK SELF-PROPELLED MOWERS													
Ⓢ	1	Troy-Bilt TB WC28	73	\$850	↓	↓	↑	↑	↑	↑	↑	↓	↓
✓	2	Toro TimeMaster 21199	73	\$1,000	↓	↑	↑	↑	↑	↑	↑	↓	↓
LAWN TRACTORS													
✓	1	John Deere X350-42	90	\$3,200	↑	↑	↑	↑	↑	↑	↑	↓	↓
✓	2	John Deere S240-48	89	\$2,600	↑	↑	↑	↑	↑	↑	↑	↓	↓
✓	3	John Deere E160	89	\$2,300	↑	↑	↑	↑	↑	↑	↑	↓	↓
Ⓢ	4	John Deere E130	86	\$2,000	↑	↑	↑	↑	↓	↑	↑	↓	↓
Ⓢ	5	John Deere E140	85	\$2,000	↑	↑	↑	↑	↓	↑	↑	↓	↓
✓	6	Husqvarna TS 354X	80	\$3,500	↑	↓	↑	↑	↑	↑	↑	↓	↓

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						
					Predicted reliability	Owner satisfaction	Side-discharging	Mulching	Bagging	Evenness	Handling	Noise at ear	Noise at 25 feet
LAWN TRACTORS, ZERO-TURN													
	1	John Deere Z345R-42	85	\$2,800									
	2	Toro MyRide TimeCutter MX5075 74768	84	\$4,000					*				
	3	Toro TimeCutter SS4225 74726	83	\$2,500									
	4	John Deere Z335E-42	83	\$2,500									
	5	John Deere Z375R-54	83	\$3,500					NA				
	6	John Deere Z355E	83	\$2,900					NA				
	7	Toro MX5000 74773	82	\$3,000					*				
	8	Craftsman Z530	79	\$2,700									
	9	Cub Cadet RZT SX 42	76	\$3,000									
	10	Cub Cadet Ultima ZT2-50	76	\$3,700					NA				

*Consumer Reports rates the optional TimeCutter MX & SWX Twin Bagger (79395) for this mower a Don't Buy: Safety Risk because its installation requires unbolting its discharge chute/deflector, which exposes the cutting blade. Toro advises against operating the product without the discharge deflector or bagging tube, but CR believes if the bagging tube repeatedly clogs in thick or tall grass a consumer could foreseeably use the mower without the tube installed, posing a laceration and thrown-objects risk (when a blade contacts things like rocks and sticks, they can become dangerous projectiles). If you already own the bagging kit, we suggest you stop using it, reinstall the discharge deflector assembly, and mow in the side-discharge or mulching mode.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							
					Predicted reliability	Owner satisfaction	Side-discharging	Mulching	Bagging	Evenness	Handling	Run time	Charge time	Noise at ear
BATTERY PUSH MOWERS														
	1	Ego LM2101	71	\$400										
	2	Ego LM2002	68	\$400										
	3	Stihl RMA 510	67	\$550	-	-								
	4	Ryobi RY40180	61	\$300			NA							
	5	Echo CLM-58V4AH	61	\$520	-	-	NA							
	6	GreenWorks MO60L410 [Item #725987] (Lowe's)	61	\$430										

Lawn Mowers & Tractors *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results								
					Predicted reliability	Owner satisfaction	Side-discharging	Mulching	Bagging	Evenness	Handling	Run time	Charge time	Noise at ear	Noise at 25 feet
BATTERY SELF-PROPELLED MOWERS															
✓	1	Ego LM2142SP	79	\$750	-	-	↑	↑	↓	↑	↑	↑	↓	↑	↑
💰	2	Ego LM2102SP	79	\$550	-	-	↑	↑	↓	↑	↑	↑	↑	↑	↑
✓	3	Kobalt KMP 6080-06 (Lowe's)	71	\$570	-	-	↓	↓	↓	↑	↑	↑	↓	↑	↑

HOW WE TEST: We evaluate how well the mower performs in three cutting modes: Side-discharging, Mulching, and Bagging. ("NA" means the feature is not available.) **Evenness** is how evenly the mower cuts. **Handling** denotes ease of operating the controls,

maneuvering, and more. **Noise at ear** is measured in decibels. Measurements over 85 decibels (which earn the mower a Fair or Poor rating) require hearing protection. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction.

Predicted reliability estimates the likelihood that newly purchased models from a given brand will develop problems or break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend

the lawn mower they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (-), we assume the model has average reliability and satisfaction.



PHOTO: JOHN WALSH/CONSUMER REPORTS

● Pressure Washers

Whether it's a mildew-covered deck or an oil-stained driveway, a good pressure washer can clear the gunk in a fraction of the time it would take you with soap, water, and elbow grease. Keep in mind that pressure washers are powerful tools that can cause serious injury if not used properly.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results				Features									
					Cleaning	Power	Noise	Ease of use	Weight (lb.)	Pressure range (psi)	Flow rate (gpm)	Engine size	Cord length (ft.)	Hose (ft.)	Temperature range (F)	Turbo	Number of nozzles	Trigger safety lockout
GAS-POWERED																		
	1	DeWalt DXPW3425	78	\$600	↑	↑	↓	↑	74	3400	2.5	200	NA	25	100		5	Manual
	2	Ryobi RY803111	77	\$470	↑	↑	↓	↑	57	3200	2.5	196	NA	25	104		4	Manual
	3	Generac 10000006882	76	\$350	↑	↑	↓	↑	60	3000	2.4	196	NA	30	100	●	6	Manual
	4	Simpson MS60763-S	74	\$320	↑	↑	↓	↑	57	3000	2.4	196	NA	25	100		5	Manual
	5	Predator 62214	74	\$370	↑	↑	↓	↑	70	3100	2.8	212	NA	25	NS		5	Manual
	6	Briggs & Stratton 020661	71	\$450	↑	↓	↓	↑	53	3100	2.5	190	NA	30	NS		5	Auto
	7	Troy-Bilt Flex 23AADAAA711	70	\$280	↑	↑	↓	↑	178	3000	2.5	208	NA	28	100		5	Manual
ELECTRIC-POWERED 120V																		
Ⓢ	1	Craftsman 99016	63	\$140	↑	↓	↑	↑	24	1800	1.2	13 amps @120V	35	25	100	●	4	Manual
Ⓢ	2	GreenWorks GPW1951	62	\$190	↑	↓	↑	↑	36	1950	1.2	13 amps @120V	36	24	104	●	4	Manual
ELECTRIC-POWERED 240V																		
✓	1	NorthStar 1573021	73	\$850	↑	↑	↓	↑	112	3000	2.5	20 amps @230V	35	25	140		2	Manual

HOW WE TEST: **Cleaning** reflects the pressure washer's versatility and efficiency in cleaning a range of surfaces. The better performers have multiple spray patterns that can cover various cleaning chores, from light, superficial cleaning to deep cleaning of concrete, decking, and other hard-to-clean surfaces.

Power is a combination of pressure, measured in pounds per square inch (psi), and flow, measured in gallons per minute (gpm). Higher pressure results in better cleaning of a given surface; coupled with a higher flow as well, you'll get the job done the fastest. **Noise** is a combination of measurements, based on dBA,

reflecting the proximity of the operator to the pressure washer. While our noise score averages measurements taken close by the machine and at the end of the hose's typical reach, we strongly recommend hearing protection for working close to a gas-powered model in particular. **Ease of use** indicates how easy it is to operate,

including transport, power (adding fuel or plugging in), storage (hose and cord wrapping), and protection (from thermal and low-oil conditions). This score also includes helpful features and water inlet and outlet, nozzle, and wand connections. **Overall Score** is based on the performance of the product in all of our tests.

● Double-Hung Windows

New windows not only enhance your home from the outside but also can make it quieter and less drafty inside. Today's double-hung windows are easier to clean and maintain than most older windows, as well as more energy efficient. They're a big investment, so follow our shopping tips, below.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results		
					Wind resistance 0 degrees (F)	Wind resistance 70 degrees (F)	Rain resistance
VINYL WINDOWS							
✓	1	Pella 350 Series	91	\$415	⬆️	⬆️	⬆️
✓	2	Simonton Reflections 5500	73	\$290	⬆️	⬆️	⬇️
✓	3	Jeld-Wen V-2500 Series	69	\$300	⬆️	⬆️	⬇️
	4	Window World 6000 Series	67	\$260	⬆️	⬆️	⬇️
✓	5	Simonton Prism Platinum	66	\$285	⬆️	⬆️	⬇️
✓	6	Pella ThermaStar	64	\$260	⬆️	⬆️	⬇️
✓	7	Atrium 8700 Series	64	\$375	⬆️	⬆️	⬇️
COMPOSITE WINDOWS							
✓	1	Pella Impervia	81	\$510	⬆️	⬆️	⬆️
✓	2	Andersen A-Series	81	\$500	⬆️	⬆️	⬆️
WOOD WINDOWS							
✓	1	Pella Lifestyle Series (Formerly 450 Series)	72	\$580	⬆️	⬆️	⬇️
✓	2	Andersen 400 Series Woodwright	64	\$530	⬇️	⬆️	⬇️

HOW WE TEST: We purchased custom-made double-hung, double-pane replacement windows with a low-e coating and a gas fill directly from manufacturers. Each window was ordered to fit a 3x5-foot opening and installed per manufacturers' instructions in a frame designed to

replicate the structural opening in the wall of a house. To measure **Wind resistance, 0° F**, we subject a window to simulated wind speeds of 25 mph and 50 mph, while holding the temperature at 0° F, and measure the amount of air leaking through the window with a flowmeter.

This same test is repeated, but at room temperature, for our rating for **Wind resistance, 70° F**. For **Rain resistance**, we pelt a window with 5 gallons of water per square foot per hour while slowly increasing wind velocity until water is detected anywhere on the inside of the

window. We start at 30 mph, and the velocity can reach a simulated maximum gale force wind speed of 74 mph. We calculate the **Overall Score** by evaluating a window's wind resistance at 0° F and 70° F, and rain resistance at 70° F.

FROM OUR EXPERTS

WINDOW SHOPPING TIPS

OPT FOR "POCKET REPLACEMENTS" If your existing frames and sills are sound and square, you'll save on materials and labor by using "pocket replacement" units, which fit into

your existing frames. If your frames have deteriorated, you'll need full replacement windows. These include the frame, sill, jambs, and usually what's known as a nailing flange, which

attaches the window to the outside wall. **GET MULTIPLE BIDS** Most manufacturers train and certify contractors to install their own brand of window, so have

the contractor you purchase windows from do the install as well. Look for someone who is certified by the American Window and Door Institute or Installation Masters.

Blenders

Blenders are ideal for making icy drinks, whipping up smoothies, crushing ice, and puréeing vegetables and fruit. As you shop, be sure to check the reliability scores in our ratings, below, to help you find a model you can rely on. Also, note the height of the blender to be sure it will fit under your cabinets.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features						
					Predicted reliability	Owner satisfaction	Icy drinks (smoothies)	Convenience	Ice crush	Noise	Durability	Purée	Glass jar	Plastic jar	Pulse	Removable blade	Personal blender attachment	Wattage	Weight (lb.)
FULL-SIZED BLENDERS																			
	1	Vitamix Professional Series 750	88	\$650													1656	13	Variable
	2	Vitamix 5200	83	\$450													1380	11	Variable
	3	Vitamix Ascent Series A3500	82	\$650													1440	15	15
	4	Ninja Smart Screen Duo with FreshVac CT661V	81	\$170													1100	9	8
	5	Ninja Professional NJ600	81	\$100													1000	7	3
	6	Ninja with Duo Auto-iQ BL642	80	\$200													1500	17	5
	7	Cuisinart Hurricane Pro 3.5 Peak HP CBT-2000	78	\$300													1500	11	13
	8	Breville Super Q BBL920BSS1BUS1	78	\$500													1800	14	10
	9	Dash Chef Series Digital	77	\$200	—	—											1400	11	16
	10	Ninja BL770	75	\$200													1500	9	4
	11	Vitamix Explorian Series E310	75	\$350													1380	12	10
	12	Tribest Dynapro Commercial Vacuum DPS1050	74	\$495	—	—											1865	13	Variable
	13	Kuvings Vacuum SV500S	73	\$650	—	—											1700	12	Variable
	14	Instant Pot Ace Multi Use	73	\$100	—	—											600	11	11
	15	Braun PureMix Power JB7350	73	\$100													1000	10	6
	16	Wolf Gourmet High Performance WGBL100S	73	\$600	—	—											1656	13	15
	17	Ninja Chef High-Speed CT805	72	\$180													1500	10	20
	18	Midea CyclonBlade High Speed MBL17HS	72	\$140	—	—											1400	11	6
	19	Dash Chef Series Power Blender	71	\$180	—	—											1400	11	13
	20	Hamilton Beach Professional 58850	71	\$250													1440	11	13
	21	KitchenAid High Performance Series KSB6060	70	\$360													2237	19	10
	22	Ninja Master Prep Professional QB1004	69	\$60													450	4	1
	23	Breville the Fresh & Furious BBL620SIL	69	\$200													1100	9	8
	24	Braun PureMix JB7172BK	69	\$160													670	10	7
	25	Oster 800 Series BLSTKH-GMO-000	69	\$50													504	7	5

● **Blenders** *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features						
					Predicted reliability	Owner satisfaction	Icy drinks (smoothies)	Convenience	Ice crush	Noise	Durability	Purée	Glass jar	Plastic jar	Pulse	Removable blade	Personal blender attachment	Wattage	Weight (lb.)
FULL-SIZED BLENDERS <i>Continued</i>																			
	26	Vitamix TurboBlend 3-Speed 060304	69	\$370	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	27	Oster Classic Series with Food Processor BPMT02-SSF-000	68	\$90	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	28	Cuisinart Hurricane 2.25Peak HP CBT-1500	68	\$200	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	29	KitchenAid Pro Line Series KSB7068	67	\$400	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	30	Omega 3HP OM6160S	67	\$280	—	—	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	31	Hamilton Beach Commercial Tempest HBH650	67	\$630	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	32	Cuisinart Velocity CBT-600GRY	66	\$70	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	33	Dash Cold Fusion Vacuum DVB300RMRD	66	\$150	—	—	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	Variable
	34	Oster Pro 1200	66	\$70	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	35	Cuisinart Velocity Ultra Trio BFP-650	66	\$150	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	36	Oster 10 Speed 6832	64	\$45	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	37	Black+Decker Performance FusionBlade Blending System BL6010	64	\$100	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	38	Cuisinart CBB-1200 1.75 Inverter	63	\$200	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	39	Cuisinart SmartPower CPB-300	63	\$70	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	40	Hamilton Beach Professional Quiet Power 58870	62	\$150	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	41	Crux CRX14546 7-Speed	61	\$90	—	—	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️
	42	Bella Pro Series 7-Speed 90068	61	\$50	—	—	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️

HOW WE TEST: **Icy drinks** reflects the smoothness and thickness of non-alcoholic piña colodas determined by using assorted sieve sizes. Blenders that do well for icy drinks do as well or better for smoothies. **Convenience** is based on testers' judgments on ease of cleaning and replacing the blade, clarity of controls and jar markings, pouring ease, and jar weight, etc.

Ice crush indicates how well the blender is able to crush seven ice cubes without water in a specified period of time. **Noise** is based on readings from a noise meter and specifies how noisy the blender is during operation at maximum speed. **Durability** indicates whether or not the blender still functioned after undergoing the

durability test. It consists of crushing ice 15 times consecutively for three cycles for a total of 45 tests. **Purée** is how well the blender purées raw ingredients into a soup. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop

problems or break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend the blender they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

● Exterior Paint & Wood Stains

The best exterior paints and wood stains can protect your house, deck, railings, and more from the elements. Our tests simulate years of outdoor exposure so that you can choose a finish that will offer the best protection for the longest time.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results			Features				
					Appearance after 3 years	Appearance after 6 years	Appearance after 9 years	Resists cracking	Resists color change	Resists dirt	Resists mildew	VOCs (grams/liter)
EXTERIOR PAINTS (COMPLETED THE EQUIVALENT OF 9 YEARS' EXPOSURE)												
⬇️	1	Behr Premium Plus Ultra Exterior (Home Depot)	75	\$39	⬆️	⬆️	⬆️	●	●	●	●	50
⬇️	2	Clark + Kensington Exterior (Ace)	75	\$35	⬆️	⬆️	⬆️	●	●	●	●	50
	3	Sherwin-Williams Emerald Exterior	73	\$72	⬆️	⬆️	⬆️	●	●		●	0
	4	Behr Premium Plus Exterior (Home Depot)	72	\$30	⬆️	⬆️	⬆️	●	●		●	50
	5	Valspar DuraMax Exterior (Lowe's)	72	\$39	⬆️	⬆️	⬆️	●	●		●	50
	6	Sherwin-Williams Duration Exterior	70	\$68	⬆️	⬆️	⬆️	●	●			92
	7	Glidden Premium Exterior (Home Depot)	68	\$24	⬆️	⬆️	⬆️	●	●			100

HOW WE TEST: **Appearance after 3 years** summarizes performance after one year of our accelerated weathering (i.e., equivalent to three years on a vertical wall). **Appearance after 6 years** summarizes performance after two years of our accelerated weathering (i.e., equivalent to six years on a vertical wall). **Appearance after 9 years** summarizes performance after three years of our accelerated weathering (i.e., equivalent to nine years on a vertical wall). **Overall Score** is based on the performance of the product in all of our tests.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results			Features				
					Appearance after 1 year	Appearance after 2 years	Appearance after 3 years	Resists cracking	Resists color change	Resists dirt	Resists mildew	VOCs (grams/liter)
SEMI-TRANSPARENT WOOD STAIN												
⬇️	1	Behr Premium Semi-Transparent Waterproofing Stain & Sealer (Home Depot)	65	\$37	⬆️	⬆️	NA	●	●	●	●	100
SOLID WOOD STAINS												
⬇️	1	Olympic Elite Advanced Stain + Sealant in One Solid	80	\$44	⬆️	⬆️	⬆️	●	●		●	100
💰	2	Behr Deckplus Solid Color Waterproofing Wood Stain (Home Depot)	74	\$29	⬆️	⬆️	⬆️	●	●	●	●	100
	3	Benjamin Moore Arborcoat Solid Deck & Siding	69	\$46	⬆️	⬆️	⬇️	●	●	●	●	100
	4	Olympic Maximum Solid	68	\$37	⬆️	⬆️	⬆️	●	●		●	169
	5	Cabot Solid Color Acrylic Siding Stain	68	\$36	⬆️	⬆️	⬇️	●	●	●		100
	6	PPG ProLuxe Rubbol Solid Wood Finish	68	\$39	⬆️	⬆️	⬆️	●	●		●	250

HOW WE TEST: **Appearance after 1 year** summarizes performance after one year of our accelerated weathering. **Appearance after 2 years** summarizes performance after two years of our accelerated weathering. **Appearance after 3 years** summarizes performance after three years of our accelerated weathering. **Overall Score** is based on the performance of the product in all of our tests.

Freezers

The two most popular styles are stand-up and chest freezers. Stand-up freezers open like a cabinet and take up less floor space than the chest variety, but they can be less efficient and won't maintain frozen food as long in a power outage. Chest freezers have a lid to lift and can be more difficult to organize.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features											
					Thermostat control	Temperature uniformity	Energy efficiency	Power outage	Noise	Ease of use	Energy cost/yr. (\$)	Claimed capacity (cu. ft.)	Usable capacity (cu. ft.)	HxWxD (in.)	Controls on front of unit	Power-on light	Temperature alarm	Door lock	Interior light	LED interior light(s)	Tiered bins	Compartment dividers
MANUAL-DEFROST CHEST FREEZERS																						
✓	1	GE FCM22DLWW	91	\$765	↑	↑	↑	↑	↑	↑	45	21.7	21.5	33x74x33	•	•	•	•	•			
✓	2	GE FCM11PHWW	89	\$495	↑	↑	↑	↑	↑	↓	32	10.6	10.6	34x51x27	•	•	•	•				
✓	3	GE FCM16DLWW	85	\$675	↑	↑	↑	↑	↑	↑	36	15.7	15.6	34x66x28	•	•	•	•	•	•		
✓	4	Frigidaire FFFC13M4TW	84	\$500	↑	↑	↑	↓	↓	↓	35	12.8	12.6	33x50x30		•		•	•			
✓	5	Frigidaire FFFC07M1TW	82	\$230	↑	↑	↑	↓	↑	↓	32	7.0	6.9	34x38x21	•	•						
Ⓢ	6	Insignia NS-CZ70WH6	82	\$170	↑	↑	↑	↓	↑	↓	32	7.0	6.9	34x38x21	•	•						
✓	7	GE FCM5SKWW	81	\$210	↑	↑	↑	↓	↑	↓	0	5.0	5.8	34x29x22	•	•						
	8	Insignia NS-CZ10WH6	80	\$270	↑	↑	↑	↓	↓	↓	31	10.2	10.0	34x44x27	•	•						
	9	Frigidaire FFFC25M4TW	78	\$700	↑	↑	↑	↓	↓	↓	55	24.8	24.6	32x84x32		•	•	•	•			
	10	Insignia NS-CZ50WH6	77	\$150	↑	↑	↑	↓	↑	↓	28	5.0	4.8	34x29x21	•	•						
	11	Amana AQC0701GRW	77	\$300	↑	↑	↑	↓	↑	↓	32	7.0	6.9	33x39x22	•	•						
	12	Frigidaire FFFC15M4TW	76	\$480	↑	↑	↑	↓	↓	↓	38	14.8	15.6	34x56x30		•	•		•			
	13	Hotpoint HCM9DMWW	76	\$360	↑	↑	↑	↓	↑	↑	0	9.4	9.4	34x42x27	•	•		•	•			
	14	Frigidaire FFFC20M4TW	75	\$600	↑	↑	↑	↓	↓	↑	47	19.8	19.7	32x74x30		•	•	•	•	•		
	15	Amana AQC0902GRW	74	\$350	↑	↑	↑	↓	↑	↓	28	9.0	8.9	34x44x24	•	•						
	16	Amana AZC31T15DW	73	\$600	↑	↑	↑	↑	↓	↓	44	14.8	10.9	35x46x29								
SELF-DEFROST UPRIGHT FREEZERS																						
✓	1	Kenmore Elite 27002	87	\$930	↑	↑	↑	↓	↓	↑	65	20.5	16.3	73x34x31	•	•	•	•		•	NA	NA
✓	2	Frigidaire FFFH21F6QW	87	\$900	↑	↑	↑	↓	↓	↑	65	20.5	16.3	73x34x31	•	•	•	•		•	NA	NA
✓	3	GE FUF17DLRWW	84	\$690	↑	↑	↑	↓	↓	↑	57	17.3	13.2	65x33x30	•	•	•	•		•	NA	NA
✓	4	Frigidaire Gallery FGVU21F8QF	84	\$1,170	↑	↑	↑	↑	↑	↑	62	20.5	12.3	73x34x31	•	•	•	•		•	NA	NA

RECOMMENDED

 CR BEST BUY

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features									
					Thermostat control	Temperature uniformity	Energy efficiency	Power outage	Noise	Ease of use	Energy cost/yr. (\$)	Claimed capacity (cu. ft.)	Usable capacity (cu. ft.)	HxWxD (in.)	Controls on front of unit	Power-on light	Temperature alarm	Door lock	Interior light	LED interior light(s)

SELF-DEFROST UPRIGHT FREEZERS *Continued*

\$	5	GE FUF14DLRWW	84	\$675							51	14.1	11.0	62x28x30	•	•	•	•	•	•	NA	NA				
	6	Kenmore 22442	82	\$450							56	13.8	11.5	62x30x31							•	•	•	NA	NA	
	7	Frigidaire FFFU14F2QW	82	\$540							56	13.8	11.5	62x30x31							•	•	•	NA	NA	
	8	GE FUF17SMRWW	82	\$700							0	17.3	14.1	65x33x32	•	•	•	•	•	•	•	•	•	NA	NA	
	9	Frigidaire FFFH20F2QW	82	\$800							63	20.2	17.8	73x34x31		•					•	•	•	NA	NA	
	10	Kenmore 22042	82	\$598							63	20.2	17.8	73x34x31		•					•	•	•	NA	NA	
	11	Insignia NS-UZ21XWH7	80	\$715							63	21.0	17.7	77x33x30	•	•	•				•	•	•	NA	NA	
	12	Kenmore 22742	77	\$620							60	16.6	13.7	68x34x29							•	•		NA	NA	
	13	Insignia NS-UZ14XWH7	74	\$530							50	13.8	12.0	62x28x30	•	•	•						•	NA	NA	
	14	Whynter UDF-138DW	74	\$720							50	13.8	12.0	62x28x30	•	•	•						•	NA	NA	
	15	Premium PFV1375MW	74	\$545							50	13.8	12.0	62x28x30	•	•	•						•	NA	NA	
	16	Insignia NS-UZ17XWH7	73	\$600							57	17.0	14.7	65x33x30	•	•	•						•	NA	NA	
	17	GE FUF21SMRWW	72	\$850							0	21.3	17.3	77x33x32	•	•	•	•	•	•	•	•	•	•	NA	NA
	18	Maytag MZF34X16DW	68	\$560							44	15.7	13.0	60x30x29							•	•		NA	NA	
	19	Maytag MZF34X20DW	68	\$770							103	19.6	15.7	67x33x29							•	•		No	No	
	20	Maytag MZF34X18FW	68	\$750							64	17.7	12.9	61x30x28									•	•	NA	NA
	21	GE FUF21DLRWW	68	\$810							64	21.3	16.4	77x33x30	•	•	•	•	•	•	•	•	•	•	NA	NA
	22	Whirlpool WZF79R20DW	67	\$700							107	19.6	15.7	67x33x29							•	•	•	•	NA	NA
	23	GE FUF14SMRWW	66	\$600							0	14.1	10.6	62x28x32	•	•	•	•	•	•	•	•	•	•	NA	NA
	24	Whirlpool WZF57R16FW	65	\$750							54	15.7	13.3	61x30x28							•	•		•	NA	NA
	25	Whirlpool WZF34X16DW	63	\$610							59	15.7	13.0	61x30x30									•		NA	NA

Freezers *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features										
					Thermostat control	Temperature uniformity	Energy efficiency	Power outage	Noise	Ease of use	Energy cost/yr. (\$)	Claimed capacity (cu. ft.)	Usable capacity (cu. ft.)	HxWxD (in.)	Controls on front of unit	Power-on light	Temperature alarm	Door lock	Interior light	LED interior light(s)
MANUAL-DEFROST UPRIGHT FREEZERS																				
✓	1	Frigidaire FFFU06M1TW	69	\$380	↑	↑	↑	↑	↑	↓	36	5.8	5.0	56x22x22	•				NA	NA
✓	2	Frigidaire FFFU17M1QW	68	\$610	↑	↑	↑	↑	↓	↓	50	17.3	14.4	68x34x29			•	•	NA	NA
	3	Danby DUFM085A2WDD1	63	\$435	↑	↓	↑	↓	↓	↓	32	8.5	7.4	59x24x26					NA	NA

HOW WE TEST: **Thermostat control** indicates that a model has a built-in temperature sensor that will automatically turn on a fan if the temperature below the hood gets too high. **Temperature uniformity** measures how uniform the freezer

keeps the temperature. **Energy efficiency** reflects energy use for the usable volume (our measurement) based on average energy costs. **Power outage** is the freezer's ability to stay cold after the electricity goes out. **Noise** level is measured when

the compressor starts up and during steady running. Subjective judgments by a panel of listeners supplemented our noise-meter readings. **Ease of use** assesses features and design, including layout, controls, and lighting. **Energy cost/yr.** is the estimated cost in dollars,

based on the current year's average national electricity rate. Your cost will vary depending on the rate for electricity in your area. **Overall Score** is based on the performance of the product in all of our tests.



FREEZER SHOPPING TIPS

NOISE
If you plan to keep the freezer near a living area, consider how noisy it is. You don't want it to drown out conversation or your favorite television show.

LOCATION
Most manufacturers say their freezers can operate in a room where the temperature can reach up to 110° F, but check the product specifications if you plan to put it in an

area that's not air-conditioned or heated, such as a garage.
ENERGY EFFICIENCY
Don't expect your new freezer to be quite as energy efficient as its yellow EnergyGuide

label implies. On average, our latest tested models used 17 percent more energy than the label indicated they would. Uprights are typically less efficient than chest models.

● Mattresses

Sleeplessness is a serious problem in the U.S., with an estimated 164 million people struggling with it at least once a week, according to a Consumer Reports survey of 4,023 individuals. A new mattress could help. Use our shopping tips on page 47 to choose the right one for your sleep style and budget.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Firmness rating	Dimensions (LxWxH, in.)	Features					
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization			Latex foam	Gel-infused foam	Resists bounce	Eases movement	Grips	Retains warmth
FOAM																				
\$	1	Casper The Casper ¹	85	\$995	↑	↑	↑	↑	↑	↑	↑	↑	4	79x59x10						
✓	2	Essentia Stratami ^{2,3,4}	81	\$2,870	↑	↑	↑	↑	↑	↑	↑	6	79x60x8	•						
✓	3	Reverie Dream Supreme II Hybrid Sleep System Firm ⁴	81	\$3,700	↑	↑	↑	↑	↑	↑	↑	4	79x59x12	•				8		
✓	4	Sleep on Latex Pure Green Firm ^{2,3,4}	81	\$795	↑	↑	↑	↑	↑	↑	↑	7	81x61x9	•				0		
✓	5	BedInABox Tranquillium ^{1,5}	79	\$1,300	↑	↑	↓	↑	↑	↑	↑	6	81x61x11		•			0		
✓	6	Tuft & Needle Mint ⁵	78	\$995	↑	↑	↑	↑	↑	↑	↑	4	81x61x12		•			0		
\$	7	Novaform Serafina Pearl (Costco) ^{1,5}	78	\$800	↑	↑	↓	↑	↑	↑	↓	5	81x60x14		•			0		
\$	8	Lull The Lull ^{1,5}	78	\$800	↑	↑	↓	↑	↑	↑	↑	6	80x60x10		•			0		
✓	9	GhostBed GhostBed ^{1,2,5}	77	\$895	↑	↑	↑	↑	↑	↑	↑	7	80x60x11	•	•			0		
✓	10	Dream Bed Lux LX510 ¹	77	\$2,700	↑	↑	↓	↑	↑	↑	↑	2	80x60x12			•		4		
✓	11	Sleep Innovations Marley ^{1,5}	77	\$430	↑	↑	↓	↑	↑	↑	↑	7	80x60x10		•			0		
✓	12	GhostBed Luxe ¹	77	\$1,475	↑	↑	↓	↑	↑	↓	↑	4	80x59x13			•		0		
✓	13	Nest Bedding Love & Sleep	76	\$750	↑	↓	↓	↑	↑	↑	↑	4	80x60x11			•		0		
✓	14	Purple The Purple Mattress ³	76	\$1,000	↑	↑	↓	↑	↑	↓	↑	3	78x60x9			•		0		
✓	15	Sheex Performance Cooling ¹	75	\$1,400	↑	↑	↓	↑	↑	↑	↑	3	81x60x9			•		0		
✓	16	Saatva Zenhaven Latex	74	\$1,900	↑	↓	↓	↑	↑	↑	↓	3	80x60x10	•		•		4		
✓	17	My Pillow 10" Mattress ^{1,5}	74	\$900	↑	↓	↓	↑	↑	↑	↑	6	80x60x10		•	•		0		
✓	18	Ashley Sleep The Perfect 10 ^{1,5}	74	\$700	↑	↑	↓	↑	↑	↑	↑	4	79x59x11		•			4		
\$	19	Tuft & Needle T&N Mattress ^{3,5}	74	\$595	↑	↑	↑	↑	↓	↓	↑	5	80x60x10		•	•		0		
✓	20	Nectar The Nectar ¹	73	\$795	↑	↑	↓	↑	↑	↓	↓	6	80x60x11			•		0		
✓	21	Tulo Medium ¹	73	\$650	↑	↑	↓	↑	↓	↓	↑	3	79x58x10			•		0		
✓	22	Reverie Dream Supreme II Hybrid Sleep System Medium ⁴	73	\$3,700	↑	↑	↑	↑	↓	↓	↑	3	79x59x12	•		•		8		
	23	Brentwood Home Sequoia Euro Top ^{1,5}	72	\$1,150	↑	↓	↓	↑	↑	↓	↑	5	81x61x13		•	•		6		
	24	Bear Queen ⁵	71	\$850	↑	↑	↓	↑	↑	↓	↑	6	79x60x10		•	•		0		

¹ Includes a layer of memory foam. ² Includes a latex-foam layer. ³ Made of foam but not memory foam. ⁴ Certified Organic. ⁵ Includes a layer of gel-infused foam. ⁶ Firm models are memory foam; medium-firm models have latex foam. ⁷ Firmness displayed is an average value.

Mattresses *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Firmness rating	Dimensions (LxWxH, in.)	Features					
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization			Latex foam	Gel-infused foam	Resists bounciness	Eases movement	Grips	Retains warmth
FOAM <i>Continued</i>																				
	25	OrganicPedic by OMI Flora Nouveau ⁽²⁾⁽³⁾⁽⁴⁾	71	\$4,445	↓	↓	↓	↑	↓	↓	↑	↑	4	80x60x9	•	•	•	8		
	26	Beautyrest 14" SurfaceCool Gel ⁽¹⁾⁽⁵⁾	71	\$600	↑	↑	↑	↓	↓	↓	↑	↑	4	80x59x14		•	•	0	•	
	27	Leesa The Leesa Mattress	70	\$995	↑	↑	↓	↑	↑	↓	↑	↑	4	80x60x10			•	0	•	
	28	Novosbed Memory Foam ⁽¹⁾	69	\$1,100	↑	↓	↓	↑	↑	↓	↑	↓	4	80x60x12			•	0		
	29	Eight The Smart Mattress	69	\$1,050	↑	↑	↓	↑	↓	↓	↑	↑	5	79x60x10			•	0	•	
	30	Luxi The Luxi Soft ⁽¹⁾⁽²⁾	69	\$1,300	↑	↑	↑	↓	↓	↑	↑	↑	4	81x62x11	•		•	0		
	31	Yogabed Luxury Foam Y10 ⁽³⁾	69	\$850	↑	↓	↓	↑	↑	↓	↑	↑	6	80x60x10			•	0		
	32	Reverie Dream Supreme II Hybrid Sleep System Soft ⁽⁴⁾	69	\$3,700	↑	↑	↑	↓	↓	↓	↑	↑	3	79x59x12	•		•	8		
	33	Dromma Triple Layer ⁽¹⁾⁽²⁾⁽⁵⁾	69	\$850	↑	↑	↓	↑	↓	↓	↑	↑	4	80x60x12	•	•	•	0		
	34	Zinus Green Tea Pressure Relief	69	\$340	↓	↓	↓	↑	↑	↓	↑	↑	6	81x60x10			•	0	•	
	35	Sleep Innovations Taylor 12 inch Gel Swirl ⁽¹⁾⁽⁵⁾	68	\$470	↑	↑	↑	↑	↑	↓	↑	↓	6	80x60x12		•	•	0	•	
	36	Novaform Comfort Grande (Costco) ⁽¹⁾⁽⁵⁾	68	\$600	↑	↑	↑	↑	↓	↓	↑	↑	6	81x61x13		•	•	0		
	37	Wright 1.27 Luxury Memory Foam ⁽¹⁾⁽⁵⁾	68	\$1,795	↑	↑	↓	↑	↓	↓	↑	↑	4	80x60x12		•	•	0		
	38	AmazonBasics Memory Foam 10-Inch	68	\$245	↑	↑	↓	↑	↓	↓	↑	↓	2	81x61x10			•	0	•	
	39	Ikea Myrbacka ⁽¹⁾⁽²⁾⁽⁶⁾	68	\$500	↑	↓	↓	↑	↑	↓	↑	↑	7	79x35x10	•		•	4		
	40	Puffy The Puffy ⁽¹⁾⁽⁵⁾	67	\$1,150	↑	↓	↓	↑	↑	↓	↑	↓	7	80x60x10		•	•	0	•	
	41	Saatva Loom & Leaf	67	\$1,300	↓	↓	↓	↑	↑	↑	↑	↓	4	80x60x12			•	4		
	42	The Original Mattress Factory Serenity Latex ⁽²⁾⁽³⁾	67	\$1,779	↑	↑	↑	↓	↓	↓	↑	↓	4	80x61x11	•		•	4		
	43	Classic Brands Sleep Trends Sofia ⁽¹⁾⁽⁵⁾	65	\$760	↑	↑	↑	↓	↓	↓	↑	↓	2	80x60x14		•	•	0		
	44	Amerisleep AS3 ⁽³⁾	65	\$1,200	↑	↑	↓	↑	↓	↓	↑	↑	3	81x60x12			•	0	•	
	45	Serta iComfort Blue Max Touch 1000	64	\$1,800	↑	↓	↓	↓	↓	↓	↑	↓	3	80x59x13		•	•	0	•	
	46	Luxi The Luxi Medium Firm ⁽¹⁾⁽²⁾	64	\$1,300	↑	↑	↑	↓	↓	↓	↑	↑	3	81x62x11	•		•	0		
	47	Spa Sensations Memory Foam SPA-1000Q ⁽¹⁾	64	\$360	↑	↓	↓	↑	↑	↓	↓	↓	6	80x60x10				0	•	
	48	Ikea Matrand ⁽²⁾⁽⁶⁾	63	\$400	↑	↓	↓	↑	↓	↓	↑	↑	6	79x55x7	•		•	4		
	49	Sealy Premium Collection Gratifying ⁽⁵⁾	62	\$1,850	↑	↑	↑	↓	↓	↓	↑	↑	2	80x60x13		•	•	0	•	
	50	Cocoon by Sealy Cocoon Firm ⁽¹⁾	61	\$850	↑	↓	↓	↑	↑	↓	↑	↓	6	80x60x10			•	0		

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Features										
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization	Firmness rating	Dimensions (LxWxH, in.)	Latex foam	Gel-infused foam	Resists bounceiness	Eases movement	Grips	Retains warmth			
INNERSPRING																							
	1	Avocado Green ^{[2][4]}	85	\$1,400									7	79x59x12				4					
	2	Charles P. Rogers Powercore Estate 5000 ^[2]	80	\$1,500									6	81x61x14				8					
	3	Avocado Green Mattress Pillowtop ^{[2][4]}	79	\$1,800									5	80x59x14				4					
	4	Sealy Posturepedic Performance Copper II ^[1]	78	\$1,580									4	80x60x13				0					
	5	Stearns & Foster Lux Estate Middletown ^[5]	78	\$2,300									4	80x61x14				8					
	6	Sealy Posturepedic Premium Silver Chill ^[1]	77	\$2,000									3	80x60x14				0					
	7	Voila Hybrid ^{[1][2]}	77	\$1,200									6	80x60x11				0					
	8	WinkBeds The WinkBed Luxury Firm	77	\$1,600									5	80x60x16				0					
	9	Serta iSeries Hybrid 500 14" Cushion Firm ^{[1][5]}	76	\$1,900									5	79x60x14				4					
	10	Denver Mattress Doctor's Choice Plush	76	\$580									3	80x60x11				4					
	11	Allswell Luxe Hybrid	75	\$585									7	80x60x13				0					
	12	Charles P. Rogers St. Regis Pillowtop	75	\$1,160									6	81x61x13				4					
	13	Sealy Posturepedic Performance Lawson Euro Pillowtop ^[5]	75	\$1,670									6	79x60x14				0					
	14	Sealy Posturepedic Essentials Trust II ^[1]	74	\$1,100									4	80x59x12				0					
	15	Classic Brands Sleep Trends Davy	74	\$780									4	81x60x10				0					
	16	Kingsdown Crown Imperial Empire ^{[1][5]}	74	\$1,800									3	80x59x13				4					
	17	Saatva Flagship Luxury Firm Eurotop	74	\$1,100									3	80x60x16				4					
	18	Ethan Allen EA Signature Firm ^[5]	74	\$2,000									7	80x60x12				0					
	19	Purple 3	73	\$2,200									3	81x60x13				3					
	20	Duxiana DUX 1001	73	\$4,950									4	81x60x14				0					
	21	Beautyrest Black Mariela	72	\$2,500									2	79x60x15				4					
	22	Tomorrow SleepSystem ^[1]	72	\$990									3	78x58x10				0					
	23	Sealy Posturepedic Performance Kelburn II	72	\$1,300									5	80x59x13				0					
	24	Leesa Hybrid Mattress	72	\$1,595									3	80x60x11				0					

^[1] Includes a layer of memory foam. ^[2] Includes a latex-foam layer. ^[3] Made of foam but not memory foam. ^[4] Certified Organic. ^[5] Includes a layer of gel-infused foam. ^[6] Firm models are memory foam; medium-firm models have latex foam. ^[7] Firmness displayed is an average value.

Mattresses *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Features						
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization	Firmness rating	Dimensions (LxWxH, in.)	Latex foam	Gel-infused foam	Resists bounciness	Eases movement	Grips
INNERSPRING <i>Continued</i>																			
	25	Beautyrest Silver Hybrid Grand Isle Firm ⁵	72	\$1,460	↑	↑	↓	↑	↑	↓	↑	↓	4	79x58x14		•	•		4
	26	Serta Hotel Beds Concierge Suite II ⁵	71	\$1,100	↑	↑	↑	↑	↓	↓	↑	↓	3	80x60x12		•	•	•	0
	27	OrganicPedic by OMI Stella ²	71	\$2,000	↓	↓	↓	↑	↑	↑	↑	↓	4	80x60x12	•		•	•	8
	28	Amore Beds Hybrid ^{1 5}	71	\$875	↑	↓	↓	↑	↑	↓	↑	↓	6	79x59x12		•	•		0
	29	Sealy Posturepedic Premier Hybrid Copper Cushion Firm ⁵	70	\$1,275	↑	↑	↑	↑	↑	↓	↑	↑	4	79x60x14		•	•	•	0
	30	Night Therapy Fusion Gel Hybrid ^{1 2 5}	70	\$790	↑	↑	↓	↑	↑	↓	↑	↓	3	80x60x15	•	•	•	•	4
	31	The Original Mattress Factory Orthopedic Luxury Firm	70	\$630	↑	↑	↑	↑	↑	↓	↓	↓	4	79x60x14			•	•	4
	32	Beautyrest Platinum Preferred Chestnut Hill ¹	70	\$2,490	↓	↑	↑	↑	↓	↓	↑	↑	3	80x60x15			•	•	4
	33	Kingsdown Passions Imagination ⁵	70	\$1,140	↑	↑	↑	↑	↓	↓	↑	↑	3	80x60x14		•	•	•	4
	34	Beautyrest Legend McFarland ^{2 5}	69	\$1,950	↑	↑	↑	↑	↓	↓	↑	↑	4	80x60x15	•	•	•	•	4
	35	Night Therapy Euro Box Top Spring	69	\$248	↑	↑	↑	↓	↓	↓	↑	↑	3	81x59x12			•	•	0
	36	Serta iSeries 100 Firm ^{1 5}	69	\$1,200	↑	↑	↓	↓	↓	↓	↑	↑	5	80x60x14		•	•	•	4
	37	Charles P. Rogers Powercore Nano ²	68	\$2,400	↑	↑	↓	↑	↑	↓	↑	↑	5	80x60x15	•		•	•	8
	38	Beautyrest Platinum Hybrid Brayford Creek ^{1 5}	67	\$1,200	↓	↓	↓	↑	↑	↓	↑	↓	3	80x60x14		•	•		4
	39	Beautyrest Black Hybrid Gladney ⁵	67	\$2,750	↑	↑	↑	↑	↓	↓	↑	↓	3	80x60x14		•	•	•	4
	40	Serta Perfect Sleeper Trelleburg Super Pillowtop ^{1 5}	67	\$850	↑	↓	↓	↑	↓	↓	↑	↑	4	79x59x15		•	•	•	6
	41	Intellibed Posture Perfect	67	\$3,800	↑	↑	↑	↑	↓	↓	↑	↓	3	80x59x13			•	•	0
	42	Spring Air Isabella	66	\$1,599	↑	↑	↑	↑	↑	↓	↑	↓	4	80x60x14			•	•	0
	43	Tempur-Pedic Tempur-Adapt	66	\$2,000	↓	↓	↓	↑	↓	↓	↑	↓	3	81x60x11			•		4
	44	Therapedic Agility ^{1 2 5}	66	\$1,100	↑	↑	↑	↓	↓	↓	↑	↑	3	81x61x11	•	•	•	•	0
	45	Beautyrest Platinum Cedar Ridge ¹	66	\$1,700	↑	↑	↑	↑	↓	↓	↑	↑	3	79x60x15			•	•	4
	46	Sealy Hidden Lake Pillowtop ⁵	65	\$900	↓	↓	↓	↑	↓	↓	↑	↑	3	80x60x14		•	•	•	0
	47	Beautyrest Platinum Spring Grove ^{1 5}	64	\$1,200	↑	↑	↓	↑	↓	↓	↑	↑	2	80x60x14		•	•	•	4
	48	Eclipse Conformatic Collection Diamond Plush ⁵	64	\$800	↓	↓	↓	↓	↓	↓	↑	↑	3	80x61x15		•	•	•	4
	49	Ashley Sleep Anniversary Edition ⁵	63	\$600	↓	↓	↓	↑	↑	↓	↑	↑	5	80x60x12		•	•	•	0

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results								Features						
					Petite side sleeper	Average side sleeper	Large/tall side sleeper	Petite back sleeper	Average back sleeper	Large/tall back sleeper	Durability	Stabilization	Firmness rating	Dimensions (LxWxH, in.)	Latex foam	Gel-infused foam	Resists bounce	Eases movement	Grips
INNERSPRING <i>Continued</i>																			
	50	Hampton & Rhodes HR420S Plush	63	\$600	↓	↑	↑	↓	↓	↓	↓	↑	↓	2	79x59x12		•	•	0
	51	Beautyrest Haven Pines ¹¹⁵	62	\$1,600	↓	↓	↓	↓	↓	↓	↓	↑	↑	2	79x60x17		•	•	4
	52	Spring Air Triumph Plush ⁵	61	\$1,000	↑	↓	↓	↓	↓	↓	↓	↑	↑	2	80x60x15		•	•	0
	53	Restonic ComfortCare Select Hampton ²¹⁵	61	\$1,500	↓	↑	↑	↓	↓	↓	↓	↓	↑	3	80x60x17	•	•	•	4
	54	Serta iComfort Applause II ⁵	61	\$1,155	↑	↑	↑	↓	↓	↓	↓	↑	↑	3	79x59x13		•	•	4
	55	Restonic Scott Living by Restonic Cascade Eurotop	61	\$1,800	↑	↑	↓	↓	↓	↓	↓	↑	↓	2	80x60x16		•	•	4

ADJUSTABLE AIR

	1	Sleep Number 360 p6 Smart Bed ¹¹⁷	81	\$2,700	↑	↑	↑	↑	↑	↑	↑	↑	↑	4	81x60x11		•	•	0
	2	Sleep Number 360 c2 Smart Bed	80	\$1,000	↑	↑	↑	↑	↑	↑	↑	↑	↑	7	80x59x8		•	•	0
	3	Personal Comfort A8 Bed	70	\$2,200	↑	↑	↓	↑	↑	↓	↓	↑	↓	4	81x61x13		•	•	0
	4	Sleep Number 360 i8 Smart Bed	67	\$3,200	↓	↓	↓	↓	↓	↓	↓	↑	↑	4	80x60x12		•	•	0

¹¹ Includes a layer of memory foam. ¹² Includes a latex-foam layer. ¹³ Made of foam but not memory foam. ¹⁴ Certified Organic. ¹⁵ Includes a layer of gel-infused foam. ¹⁶ Firm models are memory foam; medium-firm models have latex foam. ¹⁷ Firmness displayed is an average value.

HOW WE TEST: Support for **side sleepers** is the ability to keep a side sleeper's spine relatively horizontal. Support for **back sleepers** is the ability to maintain the natural curve of the back sleeper's spine. In our support tests, we use a woman 4 feet, 11½ inches to 5 feet, 1½ inches tall

and 110 to 127.5 pounds for the **Petite sleeper** scores, and a man 6 feet, 2 inches to 6 feet, 4 inches tall and 220 to 242 pounds for the **Large/tall sleeper** scores. The **Average sleeper** is an average of these two sizes. **Durability** gauges a mattress's ability to keep its original shape,

height, firmness, and support after a simulated eight to 10 years of use, including our passing a nearly 310-pound roller over each mattress 30,000 times. A high score for **Stabilization** indicates little or no bouncing or vibration transferred for innersprings, and ease of

movement and changing positions for foam. We rate **Firmness** on a scale of 1 to 10, with 10 being the firmest. **Price** is approximate retail for a queen-size mattress without a box spring. **Overall Score** is based on the performance of the product in all of our tests.

FROM OUR EXPERTS

MATTRESS SHOPPING TIPS

COMPARE PRICES

These range from too-low-to-believe to astronomical. But there's good news: Our years of testing have shown that whichever type you choose—foam, innerspring, or adjustable air—you need to spend only

around \$1,000 for a comfortable, supportive mattress. You don't necessarily need to buy a new box spring as well, though the sales staff may try to talk you into it. Once you've settled on a model, try to haggle. Many businesses, such as

warehouse clubs, have fixed prices and won't budge. But for retailers that do negotiate—particularly specialty chains—huge markups allow them to lower prices by 50 percent or more during their frequent sales, so don't be afraid to bargain.

FEEL BEFORE BUYING

If possible, lie on any mattress that you're considering. Make sure the store offers a full refund or credit if you don't like it later. Return periods, often called "comfort guarantees," range from a couple of weeks to 120 days.

SUMMER

Now's the time to get your garage organized, keep your lawn growing green, and show your gas grill a little love. You can save on drills and string trimmers around Father's Day, get a dishwasher deal in July, and more.



SUMMER

CLEAN

YOUR SUMMER CLEANING CHECKLIST

- Organize the garage. **P. 51**
- Remove garage floor stains. **P. 52**
- Have furnace cleaned and tuned. Clean or change furnace filters. **P. 53**
- Dust coils behind or underneath the refrigerator. **P. 15**



PHOTO, PREVIOUS SPREAD: MEHMED ZELKOVIC/GETTY IMAGES. PHOTOS, THIS SPREAD FROM LEFT: RAYMOND FORBES/STOCKSY, GETTY IMAGES

● Garages

Filled with tools, lawn mowers, sports equipment, and more, a garage can easily turn into a disorganized mess. Some of us can't even fit our car in our cluttered garage—no matter how large the space.

Sound familiar? Even if you can still squeeze into your garage, getting from the car to the house shouldn't be an obstacle course. Here's how to clean and declutter this essential utility space.

First, cull (be ruthless). Then plan. Divide items in your garage into four groups: sell, donate, trash, and keep. That will give you a better idea of how much storage you need, and what kind. And if you call in a pro to install a storage system, you won't wind up with one that's more extensive and expensive than necessary.

Overall, your objective in this step is to get as much as you can off the garage floor and onto the walls or shelves. Then you can start planning. Ask yourself whether you prefer to store items behind closed doors, on open shelves, or a mix of both. Also, are there items cluttering up indoor living spaces that you'd like to store in the garage? And last, think about future needs. If you own a Mini Cooper but will be trading it in for an SUV, or vice versa, consider the size difference.

Remember to allow for the swing of car doors, plus room to exit and enter, when measuring your space. Typically, the wall facing the hood will have room for deep shelves or cabinets, while the side walls will allow only shallow storage. Consider

3 THINGS YOU SHOULDN'T KEEP IN THE GARAGE

■ **Paint or solvent:** Wide temperature swings can damage paint. Cold is especially bad because it can freeze the water in paint.

■ **A refrigerator or freezer:** When your garage is cold, the machine's compressor won't run long enough to properly cool the freezer. When the garage is hot, the fridge will work overtime to stay cool, driving up your electric bill.

■ **Gasoline:** Pilot lights, like those on a water heater, and flammable vapors are the problem here. The vapors could cause a fire or an explosion. Even in a detached garage, you want to be sure that gas is stored in an approved container. Keep only as much gas as you'll use in a few weeks.

the ideas below and on the next page for some of the most common storage needs:

1. DIY SUPPLIES

Many people store tools or a workbench in their garage, and some use the space as a workshop. A slat wall, wire grid, or pegboard will keep your tools in plain sight. Opt for cabinets with doors and drawers if you prefer things to be stowed away or you want to keep them from young children. Unless you have an oversized garage, cabinets that are 24 inches deep and a workbench will probably fit only at the rear of the garage.

If space is at a premium or you maintain your own car, consider tool cabinets on wheels, which you can move into the center of the garage or onto the drive-way. A workbench that lets you adjust the height is handy for different jobs and for users of different heights.

Consider a workbench with a sealed wood, laminate, or plastic surface. These types resist stains best, according to our tests. A wood or metal table is also a good option.

2. GARDEN GEAR

You'll probably want wall storage and shelves for hand tools, potting soil, peat moss, and fertilizer. Lawn mowers and heavy pots will need space on the floor. (To save room, look for a lawn mower that folds up for vertical storage.) Use a wall system for your rakes, hoes, and other tall items. Mount trowels, bulb planters, and other hand tools on a pegboard, either on individual hooks or perhaps in wire or clear plastic bins for visibility.

3. SPORTS EQUIPMENT

A slat wall, track, or grid system can be fitted with hooks for specialized holders for balls, mitts,



● Garages *Continued*

backpacks, rackets, skateboards, skis, bikes, and more. (These hook systems are great for kids who rarely want to put items neatly in closets and shut the door.) You can also mount hooks and other holders directly on the wall. Ditto for pegboards, which also come in galvanized steel.

More tips: A slat wall or grid system allows you to easily raise hooks and accessories as the kids get taller. Wall-mounted wire baskets, mesh bags, and clear, open bins stow items in clear view.

A floor bike rack allows youngsters to ride right into the garage and park. When they're older and stronger, swap it for a wall-mounted rack. No kids? Consider suspending bikes from the ceiling with a bike lift, either motorized or manual. A hoist allows you to get your canoe or kayak up and down without damaging it or harming yourself in the process. Be sure to check the weight that the units can hold as well as the head room your garage door needs.

4. BULKY AND SEASONAL ITEMS

The ceiling has become the new frontier in garage storage, with systems designed to hold

items as varied as hurricane shutters, large coolers, and surfboards. Overhead storage is an economical alternative to a cabinet for large, long, and relatively flat objects.

A ceiling-mounted shelf is the ideal place for such lightweight items as holiday decorations and out-of-season clothing. Most are designed to allow plastic bins to sit securely in slots. Mesh sides add another measure of stability.

Store bulk purchases like extra cleaning supplies and nonperishable foods on shelves near the inner door to the house. Most home centers stock inexpensive plastic shelving units that you can assemble yourself.

Paper records should go into waterproof bins. Some rail-storage systems have wall braces and accommodate bins above. But heavy items should never be stored on a shelf, because they could exceed the capacity, causing a collapse.

It's best to store heavy items in waterproof bins on the floor or in cabinets. Use clear plastic bins to hold more than one type of item. Opaque bins are fine for out-of-season clothes, old business records, etc., if they're clearly labeled.



REMOVE STAINS FROM GARAGE FLOORS

If there's an oil or grease spill, sprinkle a commercial oil-absorbing compound or cat litter to soak up as much of the spill as possible. Leave for a couple of days, then sweep. To remove a stain that has set, use a commercial degreaser and stain remover

product. (These are powerful and toxic, so look for a product that bears the Environmental Protection Agency's Safer Choice label.) Because concrete is porous, the oil or grease may have penetrated and the stain may reappear over time. If

this happens, repeat the process.

For a rust stain, use a solution of one part oxalic acid crystals (available at hardware stores), six parts water, and enough fuller's earth to make a paste. Apply, let dry, and scrape off. The rust

stain should be gone. Or use a commercial rust remover. Always be careful with such solvents and cleaners.

You may want to paint the concrete with garage-floor paint and seal it, but you'll first need to clean the surface with a concrete-etching



solution, available at hardware stores. This job requires gloves and goggles, in addition to extremely good ventilation. Be aware that painting may make the floor slippery. Another option is to cover the concrete floor with garage tiles.

● Heating Systems

If you have a forced-air system, change or wash the air filters regularly. A dirty filter can restrict airflow and make the system less efficient. And make sure the filter fits. It should occupy the entire filter cavity and prevent air from bypassing it. Vacuum the outside of the furnace or heat pump once every month or so. If there are radiators, clean them regularly.

A furnace must be properly maintained. Consider a service contract that includes an annual inspection of your

furnace. The technician should check electrical connections and wiring, as well as gas piping, for damage and leaks.

Despite the improved efficiency and comfort of most new furnaces, it's generally more cost-effective to repair a furnace than to replace it. But if a key component—such as the heat exchanger or control module—fails, you're probably better off replacing the furnace, especially if the unit is more than 15 years old. The average furnace typically lasts about 18 years.

HOW TO CHANGE A FURNACE FILTER

Your furnace's filter needs to be replaced every few months to keep the system running at peak efficiency—and to help prevent pollutants from entering your living space.

STEP 1

What kind of filter do you have? Turn off the furnace. Remove the filter, which will be inside the furnace or the return air vent. Look for an arrow on the filter indicating airflow direction. Using a permanent marker, draw the airflow direction on the outside of the

furnace, so you'll always know the right way to install the filter. Then note the size, which will be printed on the cardboard frame.

STEP 2

Get the right replacement. Furnace filters are sold at home centers, hardware stores, and online. Disposable ones are typically 1 or 2 inches thick. We also test thicker furnace filters, some up to 5 inches, and they often provide superior air cleaning. But if your furnace isn't already equipped to handle a thicker

filter, it will need to be modified by a heating, ventilation, and air-conditioning pro. A filter that has a plastic frame is reusable. Clean it periodically with a vacuum and water, ideally outdoors. Let it dry completely before reinserting.

STEP 3

Install the new filter. Look for markings that tell you which side should face the furnace. Slide the filter into place and replace any cover that goes over it. Note the date, so you'll know when it's time to change the filter again.

TOP-RATED FURNACE FILTERS

These three cleared dust, pollen, and smoke.



70

OVERALL SCORE

✓ **LENNOX HEALTHY CLIMATE CARBON CLEAN 16** (5 IN.) \$100



68

OVERALL SCORE

✓ **FILTRETE 1900 MAXIMUM ALLERGEN REDUCTION** (1 IN.) \$20



68

OVERALL SCORE

✓ **CARRIER EZ FLEX FILTER CABINET** (5 IN.) \$64

SUMMER

MAINTAIN



YOUR SUMMER MAINTENANCE CHECKLIST

- Care for your lawn the right way. **P. 55**
- Take steps to save water outside. **P. 55**
- Clean your gas grill. **P. 56**
- Replace gas grill parts, if necessary. **P. 57**

● Lawns

Americans have long had a love-hate relationship with their yards. Curb appeal and a backyard oasis are considered must-haves for 79 percent of Americans when buying or renting a home, but it costs time and money to maintain a lawn. In fact, it's the second most important consideration, right behind a newly updated kitchen.

Here's what you need to know to care for that emerald carpet.

WATER WISELY

To keep your lawn hydrated, "water deeply but infrequently," says turfgrass specialist Frank Rossi, Ph.D., at the Cornell University Turfgrass Program in New York. Programming your sprinkler system to run every day can lead to disease and weed problems.

For more watering precision, Rossi recommends purchasing a soil moisture sensor. These come in two varieties: simple meters you stick in the ground and wireless sensors that

beam data and insights to a smartphone app. Either will indicate whether your lawn needs more water to adequately support plant life.

"Think of the sprinkler as a tool to bridge you until the next rain event," says Jason Henderson, Ph.D., an associate professor of turfgrass and soil sciences at the University of Connecticut in Storrs. Focus watering on wilted areas, running sprinklers for 15 to 20 minutes in each area. Repeat the process in 30 minutes if the soil is not wet 4 to 6 inches down. For more tips on saving water outside, see below.

MOW THE RIGHT WAY

To get the best results from your mower, "sharpen your mower blade at least once a year," says Frank Spinelli, CR's lawn mower test engineer. Mowing grass with a dull blade will tear the grass and injure it.

Take the blade to a hardware store or repair shop and have a professional sharpen it. The

service typically costs between \$5 and \$15. (Or purchase do-it-yourself sharpening tools for about \$10.)

When it comes time to cut, follow the 30 percent rule. "Never cut off more than 30 percent of the leaf tissue when you mow," Rossi says. Keep the grass about 3 inches in length, because this will allow the roots to grow deep into the soil. What does that look like in terms of frequency? You might end up mowing once every two weeks when growth slows in the hot summer months.

"Let the mower discharge the clippings back onto the lawn, so it can absorb their nutrients," Henderson says. Those clippings contain a lot of nitrogen—one of three important elements in fertilizer. At the end of each cutting session, wash out the underside of the mower's cutting deck, which houses the blade. Certain mowers come with a washout port that allows you to connect a garden hose for easy cleaning.

TIP

To save water, consider replacing some areas of grass with mulch, drought-tolerant plants, or ground cover.

6 WAYS TO SAVE WATER OUTSIDE

Lawns soak up more water than any other plant in your yard, and homeowners tend to overwater. An established lawn needs only 1 inch of water per week in the growing season—more can actually harm your turf.

Here are the water-saving steps to take:

- **Let the grass grow longer by raising your lawn mower's cutting height.** Longer blades of grass help shade each other, reducing

evaporation, so keep your grass between 3 and 4½ inches tall. Stop fertilizing; it only promotes new growth.

- **When you mow, leave grass clippings on the lawn** to retain moisture and add nitrogen. If you use a sprinkler, direct the spray to the grass, not to paved areas.
- **Don't use water to clean off your driveway, steps, or deck.** Sweep them or use a leaf blower. Wash

your car with water from a bucket or go to a commercial car wash that recycles water.

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

- **Reduce lawn size.** 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 any water features unless they use recycled water. To find the best plants for your region, consult your county cooperative extension.

- **Use soaker hoses or drip irrigation** to apply water slowly and evenly. Buy a hose nozzle with an automatic shutoff. Water early in the day when evaporation rates are low and more water is absorbed.



**EXPERT
TOOL PICKS**

These cleaning tools can help get the grime off your grill grates.



**EARTHSTONE
GRILLSTONE
STARTER PACK
(HOME DEPOT)**
\$7



**NEXGRILL
GRILL
BRUSH
(HOME DEPOT)**
\$10

● **Grills**

Grills take a lot of abuse—from in-season smoke and grease to off-season snow and ice. Follow our cleaning and care advice all season long to improve your grill’s performance and keep it working longer.

If you’re looking for specific info about replacing problem parts, we’ve got you covered. Our guide to easy gas grill repairs (opposite) will tell you which fixes you can make yourself, plus how long those repairs will last and what you’ll pay for parts.

PRESEASON

Unless you’re a year-round griller, chances are that your grill will need a good cleaning before you fire it up for your first cookout of the year. Examine the inside and clear away any spiderwebs, which can cause a serious flare-up

if they ignite. Reconnect your propane tank, open the valve, and spritz the flexible gas line with a mixture of water and dish soap. Look for any bubbling, which could indicate a possible leak. If you spot one, order a replacement gas line. Be sure to test the newly installed line with the same soapy water mixture.

BEFORE EACH COOKOUT

Weber, the largest grill manufacturer in the U.S., recommends brushing grates after a 15-minute preheat, because the heated food debris will turn to ash and will be easier to brush off. (See two of our expert grill-brush picks, at right.)

You’ll also need to empty the drip tray, which collects fat, to avoid a mess and reduce the chances of a grease fire. Any flakes you see forming on the inside top of the lid might look

like paint, but they’re actually grease and smoke deposits. Use a stainless steel brush to scrape them off so that they don’t end up in your food.

THROUGHOUT THE SEASON

Scrub the inside of your grill, including the covers on the burners on gas grills, with soapy water and a scouring pad from time to time. How often you need to do this depends upon how frequently you’re grilling, and what you’re cooking—if it’s fatty meats, you’ll need to clean more frequently to help prevent flare-ups.

Protect your grill whenever it’s not in use with a cover made of a waterproof, breathable material, such as heavy-duty polyester (most brands’ covers are designed to fit a particular model). If you live right on the ocean or in a particularly humid

PHOTOS, FROM TOP: GETTY IMAGES; JOHN WALSH/CONSUMER REPORTS (2)



area, however, leave your grill uncovered except during long periods of inclement weather, to avoid trapping salty or moist air that would cause the grill to rust. People in these regions should also wipe down grills once a week to remove salt deposits and accumulated moisture.

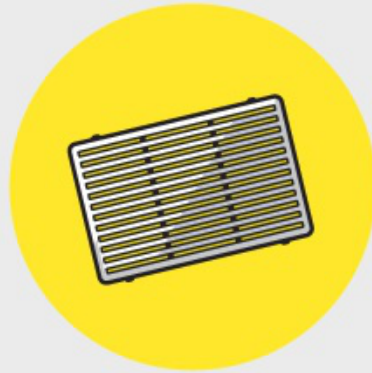
POST-SEASON

At the end of the season, scrub your grill inside and out. Use soapy water in the firebox and on the grates, and a multipurpose cleaner on the exterior. Store your grill covered, with the propane tank disconnected. That way, if anyone bumps into the grill in the off-season, there's no risk of inadvertently turning on a burner. A detached garage or shed is a fine place to store propane tanks, but never bring them into the house.

ILLUSTRATIONS: T.M. DETWILER

EASY GAS GRILL REPAIRS THAT ANYONE CAN MAKE

Over time, gas grill components wear out and break. But that doesn't mean it's time to scrap your sizzler. Certain key parts are relatively easy to replace. Here are the parts most likely to be replaced, plus how long you can expect them to last and how much you'll pay to get new ones.



Cooking Grates

EXPECTED LIFE SPAN: Three to 10 years

COST TO REPLACE: \$25 to \$150 for a set

In a survey of CR members, almost 30 percent who own a gas grill reported problems with grates cracking or flaking. Grates are easily replaced. And to maintain them, clean each side with a stiff wire brush (use nylon on porcelain-coated grates) before and after grilling.

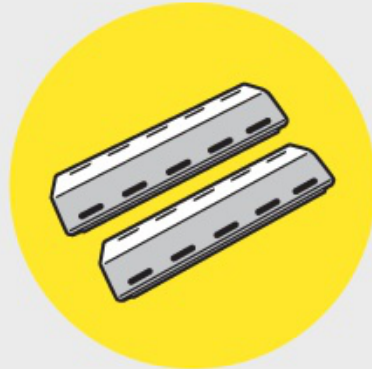


Burner Tubes

EXPECTED LIFE SPAN: Two to 10 years

COST TO REPLACE: \$10 to \$60 per tube

Almost 40 percent of CR members reported uneven heating with a grill they no longer use. A leading cause? Clogged or damaged burner tubes. Some-times the tubes are so damaged that they fail to light at all, which results in extremely uneven cooking.



Burner Covers

EXPECTED LIFE SPAN: Two to eight years

COST TO REPLACE: \$5 to \$30 each

Eighteen percent of CR members reported problems with flare-ups. Burner covers, also called heat tents, shield the burner tubes from dripping fat, helping control flare-ups. If covers on your grill are damaged or missing, replace them for better performance—and safety.



Igniter/Ignition Parts

EXPECTED LIFE SPAN: Two to seven years

COST TO REPLACE AND ASSEMBLE: \$10 to \$90

According to our survey, 92 percent of grills have electronic igniters. If your burners won't light, check the battery that powers the ignition. If only one burner is affected, check the wire that leads to that igniter, next to the burner tube.

SUMMER

SHOP



SHOP THE SALES THIS SUMMER

JUNE

- Cordless Drills P. 59
- String Trimmers P. 60
- Pressure Washers P. 35

JULY

- Dehumidifiers P. 62
- Dishwashers P. 63
- Washing Machines P. 66
- Electric Clothes Dryers P. 69
- Over-the-Range Microwaves P. 72
- Gas Grills P. 28
- Freezers P. 40

AUGUST

- Air Purifiers P. 23

● Cordless Drills

Before you purchase a cordless drill, be sure you're getting the right tool for your needs: heavy-duty, general use, or light-duty. You won't find drills labeled this way, so note the size of the chuck (where the drill bit is inserted). The bigger the chuck, the more powerful the drill.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features							
					Speed	Power	Run time	Charge time	Handling	Noise at ear	Weight (lb.)	Volts	Battery type	Battery recharge time (min.)	Speed ranges	Chuck capacity	Maximum RPM	LED work light
HEAVY-DUTY (1/2-INCH CHUCK)																		
✓	1	DeWalt DCD991P2	85	\$280	↑	↑	↑	↑	↓	↓	4.7	20.0	Li-ion	75	3	0.5	2000	•
✓	2	DeWalt DCD792D2	68	\$240	↑	↓	↓	↑	↑	↓	3.5	20.0	Li-ion	60	2	0.5	2000	•
Ⓢ	3	Kobalt (Lowe's) KDD 1424A-03	68	\$120	↑	↑	↓	↓	↓	↓	4.0	24.0	Li-ion	85	2	0.5	2000	•
Ⓢ	4	DeWalt DCD791D2	67	\$200	↑	↓	↓	↓	↑	↓	3.4	20.0	Li-ion	90	2	0.5	2000	•
✓	5	Craftsman CMCD720D2	64	\$160	↑	↓	↓	↑	↑	↓	3.5	20.0	Li-ion	60	2	0.5	2100	•
✓	6	Makita XFD12R	63	\$210	↑	↓	↓	↑	↑	↓	3.4	18.0	Li-ion	30	2	0.5	2000	•
✓	7	Hitachi DS18DBFL2	62	\$200	↑	↑	↓	↑	↑	↑	3.7	18.0	Li-ion	45	2	0.5	1800	•
✓	8	Ridgid R86116K	62	\$190	↑	↓	↓	↑	↓	↓	4.2	18.0	Li-ion	60	2	0.5	2100	•
✓	9	Hercules HC91K1	62	\$110	↑	↓	↓	↑	↑	↑	3.7	20.0	Li-ion	60	2	0.5	2000	•
✓	10	Ryobi P1815	61	\$130	↑	↓	↓	↑	↑	↑	3.6	18.0	Li-ion	70	2	0.5	1800	•
GENERAL USE (3/8-INCH CHUCK)																		
✓	1	Makita FD07R1	71	\$160	↑	↑	↓	↑	↑	↑	2.3	12.0	Li-ion	60	2	0.375	1500	•
✓	2	Bosch PS32-02	66	\$160	↓	↑	↑	↓	↑	↑	2.0	12.0	Li-ion	90	2	0.375	1300	•
✓	3	Milwaukee 2407-22	60	\$130	↓	↓	↓	↑	↑	↑	2.4	12.0	Li-ion	30	2	0.375	1500	•
Ⓢ	4	Ridgid R82005K	59	\$85	↑	↑	↓	↑	↑	↓	2.6	12.0	Li-ion	45	2	0.375	1500	•
✓	5	Ingersoll Rand D1130-K2	59	\$170	↑	↓	↓	↑	↑	↑	2.5	12.0	Li-ion	60	2	0.375	1600	•
LIGHT-DUTY (1/4-INCH FIXED HEX CHUCK)																		
✓	1	Makita FD06R1	71	\$110	↑	↑	↓	↑	↑	↑	2.1	12.0	Li-ion	60	2	0.25	1700	•
✓	2	Hilti SFD 2-A	69	\$170	↑	↓	↓	↑	↑	↑	2.2	12.0	Li-ion	60	2	0.25	1500	•
✓	3	Worx WX176L	62	\$100	↑	↓	↑	↓	↓	↑	2.8	20.0	Li-ion	300	2	0.25	1500	•
✓	4	DeWalt DCF610S2	58	\$115	↑	↓	↓	↑	↑	↑	2.1	12.0	Li-ion	60	1	0.25	1050	•

HOW WE TEST: **Speed** is how fast the drill can drill holes and drive screws. **Power** represents the amount of work produced by the drill from max RPM to stall. This is accomplished by increasing the applied torque on a dynamometer at a constant rate

for a constant time period. **Run time** indicates how much work the drill can perform per battery charge, as measured on a dynamometer. **Charge time** is how long it takes to fully recharge a discharged battery. Most drill batteries can be recharged

in 30 to 60 minutes, with the worst taking 6 hours. **Handling** is based on the drill's weight and balance, along with the effort needed to position the head. **Noise at ear** denotes sound pressure, measured in decibels. **Weight** Includes the

drill and battery pack, to the nearest tenth of a pound. **Volts** is as specified for the battery pack the cordless drill uses. **Overall Score** is based on the performance of the product in all of our tests.

WHAT IS AVAXHOME?

AVAXHOME-

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● String Trimmers

A good string trimmer will quickly obliterate any unsightly grass encroaching on the clean lines of your property's driveway, footpaths, and fence posts. You can also find them on sale this time of year. Find shopping tips on the facing page.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features							
					Trimming	Edging	Tall grass and weeds	Handling	Ease of use	Weight (lb.)	Engine size	Shaft	Four-cycle engine	Dual line	Line diameter	Clutch	Rotating head
ELECTRIC CORDED STRING TRIMMERS																	
✓	1	Ryobi RY41135	84	\$70	↑↑	↑↑	↑↑	↑	↑	10.0	10-amp	Straight	NA	●	.080	NA	
✓	2	Black+Decker BESTE620	79	\$55	↑↑	↑↑	↑↑	↓	↓	5.0	6.5-amp	Straight	NA		.065	NA	●
	3	Black+Decker GH3000	64	\$70	↑	↑↑	↓	↑	↓	6.9	7.5-amp	Curved			.080	NA	●
BATTERY STRING TRIMMERS																	
✓	1	EGO ST1521S	87	\$230	↑↑	↑	↑↑	↑↑	↑	9.9	56-volt	Straight	NA	●	.095	NA	
✓	2	Echo CDST-58V2AH	84	\$230	↑↑	↑↑	↑↑	↑	↓	10.2	58-volt	Straight	NA	●	.095	NA	
✓	3	EGO ST1502SF	83	\$180	↑↑	↑	↑↑	↑↑	↓	10.1	56-volt	Straight	NA	●	.095	NA	
✓	4	Milwaukee 2725-21HD	79	\$300	↑↑	↑↑	↑↑	↓	↓	11.1	18-volt	Straight	NA	●	.095	NA	
✓	5	Stihl FSA 56	77	\$200	↑↑	↑	↑	↑	↓	7.0	36-volt	Straight	NA	●	.080	NA	
✓	6	GreenWorks ST80L210	76	\$280	↑↑	↑	↑↑	↑	↓	9.7	80-volt	Straight	NA	●	.080	NA	
✓	7	GreenWorks ST60L211	76	\$200	↑↑	↑	↑↑	↑	↓	12.4	60-volt	Straight	NA	●	.080	NA	
✓	8	Toro 51482	76	\$170	↑↑	↑	↑↑	↑	↓	9.2	40-volt	Straight	NA	●	.080	NA	
✓	9	Troy-Bilt TB4200	76	\$280	↑↑	↑↑	↓	↓	↑	12.0	40-volt	Straight	NA	●	.095	NA	
	10	Kobalt (Lowe's) KST-130X-06	75	\$160	↑↑	↑	↑	↑	↓	9.3	40-volt	Straight	NA	●	.080	NA	
	11	Craftsman 98837	74	\$160	↑↑	↑↑	↑	↑	↓	9.6	60-volt	Straight	NA	●	.080	NA	●
	12	GreenWorks ST60L210	69	\$200	↑	↑	↑	↑	↓	10.0	60-volt	Straight	NA	●	.080	NA	
	13	Poulan Pro PPB40T	66	\$200	↑	↓	↓	↑	↓	12.5	40-volt	Straight	NA	●	.080	NA	
	14	Ryobi P2090	65	\$160	↑	↑	↓	↑	↓	8.8	18-volt	Straight	NA	●	.080	NA	
	15	Redback 106065	64	\$140	↑↑	↑↑	↓	↑	↓	8.6	40-volt	Straight	NA	●	.065	NA	●
	16	Stihl FSA 85	63	\$230	↑	↓	↓	↑	↑	9.5	36-volt	Straight	NA	●	.085	NA	
GAS CURVED-SHAFT STRING TRIMMERS																	
	1	Remington RM2510 Rustler	73	\$80	↑↑	↑	↑↑	↓	↓	10.2	25-cc	Curved		●	.095	●	
	2	Bolens BL110	72	\$70	↑	↑↑	↑	↑	↓	10.2	25-cc	Curved		●	.095	●	
	3	Homelite UT33600A	69	\$70	↑	↑	↑	↑	↓	10.2	26-cc	Curved		●	.080	●	
	4	Ryobi RY252CS	67	\$100	↓	↑↑	↓	↑	↑	11.4	25-cc	Curved		●	.095	●	●

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features							
					Trimming	Edging	Tall grass and weeds	Handling	Ease of use	Weight (lb.)	Engine size	Shaft	Four-cycle engine	Dual line	Line diameter	Clutch	Rotating head
GAS STRAIGHT-SHAFT STRING TRIMMERS																	
	1	Echo SRM-230	84	\$290						12.5	23-cc	Straight			.095		
	2	Troy-Bilt TB2044 XP	81	\$170						13.0	27-cc	Straight			.095		
	3	Homelite UT33650A	80	\$100						10.9	28-cc	Straight			.095		
	4	Cub Cadet SS 470	79	\$190						15.3	25-cc	Straight			.095		
	5	Snapper S27SS	78	\$150						13.2	27-cc	Straight			.095		
	6	Troy-Bilt TB35 EC	76	\$130						12.8	25-cc	Straight			.095		
	7	Husqvarna 322L	75	\$260						10.6	22.5-cc	Straight			.095		
	8	Cub Cadet BC 280	73	\$170						13.6	27-cc	Straight			.105		
	9	Troy-Bilt TB6044 XP	72	\$240						15.7	32-cc	Straight			.095		
	10	Honda HHT25SLTA	70	\$330						14.0	25-cc	Straight			.095		
	11	Troy-Bilt TB685EC	67	\$200						14.0	30-cc	Straight			.095		
	12	Ryobi RY253SS	67	\$130						12.2	25-cc	Straight			.095		
	13	Craftsman 79447	64	\$80						11.3	25-cc	Straight			.095		

HOW WE TEST: **Trimming** denotes how quickly and neatly trimmers cut grass around walls, trees, and foundations. **Edging** indicates the

speed and neatness of trimming a vertical line along a walkway. **Tall grass and weeds** reflects cutting power and speed in 2-foot growth.

Handling is the responsiveness and balance while cutting. **Ease of use** includes ease of starting the engine, feeding out new line, use of controls,

and handle comfort. **Overall Score** is based on the performance of the product in all of our tests.

FROM OUR EXPERTS

STRING TRIMMER SHOPPING TIPS

Gas-powered trimmers are usually more powerful and may be more effective at tackling substantial weeds and tall grass growth. **Corded string trimmers** can be easier to maneuver and a good choice for lighter-duty landscaping tasks.

Newer **battery-powered models** have power almost equal to gas trimmers, but they're just as heavy and more expensive. You don't need an expensive, professional-grade string trimmer. For regular jobs, gas trimmers and most

electric trimmers can handle run-of-the-mill grass and weeds just fine. When you're deciding which model suits your needs best, make sure you try it out. Handle a string trimmer in the store to check its balance. After adjusting

the front handle for a comfortable reach, hold the trimmer in the cutting position with both hands. Its weight should feel evenly distributed from top to bottom or slightly heavier at the top. Be sure the controls work smoothly and easily.

Dehumidifiers

A dehumidifier can provide comfort and cut down on mites, mildew, and mold. The damper and larger your space, the greater the capacity you'll need. But a higher price doesn't always mean a better appliance. Newer models offer energy savings, too.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features									
					Predicted reliability	Owner satisfaction	Water removal	Humidistat accuracy	Energy efficiency	Noise	Cool room performance	Fan stays on	Tank size (pt.)	Claimed pt./day	Digital display	Frost control	Auto restart	Pump	Alert for filter cleaning	Timer	Drain hose included
LARGE-CAPACITY DEHUMIDIFIERS																					
✓	1	Emerson Quiet Kool EAD70EP1	87	\$300	↑	↓	↑	↑	↑	↓	↓	13	70	•	•	•	•	•	•	25x16x13	
Ⓢ	2	hOmeLabs HME0200031N	86	\$210	—	—	↑	↑	↑	↑	↑	13	70	•	•	•	•	•	•	25x16x13	
✓	3	Frigidaire Gallery FGAC7044U1	83	\$320	↓	↓	↑	↑	↑	↑	↓	15	70	•	•	•	•	•	•	25x16x11	
✓	4	LG UD701KOG3	82	\$299	↓	↓	↑	↑	↑	↑	↓	•	14	70	•	•	•	•	•	26x17x13	
✓	5	Frigidaire FFAD7033R1	81	\$250	↓	↓	↑	↑	↑	↑	↓	13	70	•	•	•	•	•	•	25x16x12	
✓	6	GE APEL70LW (Walmart)	81	\$299	↓	↓	↑	↓	↑	↑	↓	14	70	•	•	•	•	•	•	24x15x12	
MEDIUM-CAPACITY DEHUMIDIFIERS																					
✓	1	hOmeLabs HME0200006N	88	\$189	—	—	↑	↑	↑	↑	↑	13	50	•	•	•	•	•	•	25x16x13	
✓	2	Keystone KSTAD50B	87	\$180	↑	↓	↑	↑	↑	↑	↑	14	50	•	•	•	•	•	•	23x15x12	
✓	3	Toshiba TDDP5011ES2 (Home Depot)	86	\$170	—	—	↑	↑	↑	↑	↑	14	50	•	•	•	•	•	•	25x17x13	
Ⓢ	4	Arctic King WDK50AE7N (Walmart)	85	\$149	—	—	↑	↑	↑	↑	↑	11	50	•	•	•	•	•	•	23x16x12	
✓	5	Kenmore KM50	83	\$250	↓	↓	↑	↑	↑	↑	↑	15	50	•	•	•	•	•	•	23x15x12	
✓	6	Honeywell TP50WK	82	\$230	↑	↓	↑	↑	↑	↑	↓	6	50	•	•	•	•	•	•	18x13x12	
	7	Hisense DH5019K1G (Lowe's)	82	\$219	↓	↓	↑	↑	↑	↑	↑	9	50	•	•	•	•	•	•	20x14x11	
	8	GE ADEW50LW (Walmart)	81	\$200	↓	↓	↑	↑	↑	↑	↓	15	50	•	•	•	•	•	•	24x15x12	
SMALL-CAPACITY DEHUMIDIFIERS																					
✓	1	Arctic King WDK30AE7N (Walmart)	85	\$162	—	—	↑	↑	↑	↑	↑	6	30	•	•	•	•	•	•	20x15x10	
✓	2	Honeywell TP30WK	84	\$199	↑	↓	↑	↑	↑	↑	↑	6	30	•	•	•	•	•	•	20x13x11	
✓	3	Frigidaire FAD301NWD	84	\$180	↓	↓	↑	↑	↑	↑	↓	10	30	•	•	•	•	•	•	14x11x19	
✓	4	Emerson Quiet Kool EAD30E1	83	\$170	↑	↓	↑	↑	↑	↑	↑	7	30	•	•	•	•	•	•	20x15x12	
Ⓢ	5	Toshiba TDDP3011ES2 (Home Depot)	82	\$150	—	—	↑	↑	↑	↑	↑	7	30	•	•	•	•	•	•	20x17x12	

HOW WE TEST: Water removal measures pints per day removed under 80° F and 60 percent relative humidity. Models closest to claimed removal scored higher. **Humidistat accuracy** is how closely humidistats

came to keeping the humidity levels we set for them in our test chamber. **Energy efficiency** measures kWh needed to remove a pint of water from the air; the fewer the kilowatts,

the higher the score. **Noise** denotes loudness at the highest setting, measured in decibels. **Cool room performance** measures pints of water removed and watts needed to remove this water when the

dehumidifier is used in a room that is 50° F and 60 percent relative humidity. **Overall Score** is based on the performance of the product in all of our tests.

Dishwashers

You can get a dishwasher that does a decent job for less than \$500, but it may be noisy, with basic features and long wash times. At the higher end of the price range—above \$1,000—you'll find more bells and whistles, such as WiFi connectivity and special wash zones.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results				Features					
					Predicted reliability	Owner satisfaction	Washing	Drying	Energy use	Noise	Cycle time (min.)	Ample flatware slots	Adjustable upper rack	Interior material	Self-cleaning filter	WiFi
\$	1	Bosch Ascenta SHX3AR75UC	88	\$645	↑	↑	↑	↑	↑	↑	95	●	●	stainless steel and plastic		
✓	2	Bosch 300 DLX Series SHS863WD5N	85	\$760	↑	↑	↑	↑	↑	↑	150	●	●	stainless steel		
✓	3	Thermador DWHD660WFP	84	\$1,800	↑	↑	↑	↑	↑	↑	155	●	●	stainless steel		●
✓	4	Bosch 100 Series SHXM4AY55N	84	\$670	↑	↑	↑	↑	↑	↑	150	●	●	stainless steel and plastic		
✓	5	Bosch Benchmark SHX89PW55N	84	\$1,665	↑	↑	↑	↑	↑	↑	155	●	●	stainless steel		
✓	6	KitchenAid KDTM354DSS	83	\$750	↓	↑	↑	↑	↑	↑	125	●	●	stainless steel	●	
✓	7	Thermador DWHD770WFM	83	\$2,300	↑	↑	↑	↑	↑	↑	150	●	●	stainless steel		●
✓	8	Bosch 300 Series SHEM63W55N	82	\$760	↑	↑	↑	↑	↑	↑	155	●	●	stainless steel		
\$	9	Whirlpool WDF540PADM	81	\$575	↑	↓	↑	↑	↑	↓	115	●	●	plastic		
\$	10	Ikea Renlig IUD7070DS [288921]	81	\$380	↑	↓	↑	↑	↑	↓	115	●	●	plastic		
	11	Kenmore 14573	80	\$750	↓	↓	↑	↑	↑	↑	145		●	stainless steel		
	12	Kenmore 14543	80	\$740	↓	↓	↑	↑	↑	↑	145		●	stainless steel		
	13	Bosch 800 Series SHPM78W55N	79	\$890	↑	↑	↑	↑	↑	↑	160	●	●	stainless steel		
	14	KitchenAid KDTM704ESS	79	\$1,725	↓	↑	↑	↓	↑	↑	110	●	●	stainless steel	●	
	15	Miele Futura Crystal G6665SCVISF	78	\$1,700	↑	↑	↑	↑	↑	↑	140	●	●	stainless steel		
	16	Kenmore 14523	78	\$600	↓	↓	↑	↑	↑	↑	150		●	stainless steel		
	17	Bosch 800 Series SHXM98W75N	78	\$1,115	↑	↑	↑	↓	↑	↑	160	●	●	stainless steel		
	18	KitchenAid KDTM404ESS	78	\$1,270	↓	↑	↑	↓	↑	↑	110	●	●	stainless steel	●	
	19	Whirlpool WDT720PADM	78	\$420	↑	↓	↑	↑	↑	↑	155	●	●	plastic		
	20	Kenmore Elite 14793	77	\$1,150	↓	↓	↑	↓	↑	↑	145	●	●	stainless steel		
	21	GE Profile PDF820SSJSS	76	\$1,030	↑	↓	↑	↓	↑	↑	150	●	●	stainless steel		
	22	Kenmore Elite 14753	76	\$900	↓	↓	↑	↓	↑	↑	145	●	●	stainless steel		
	23	Miele Dimension G6785SCVISF	76	\$1,800	↑	↑	↑	↑	↑	↑	145	●	●	stainless steel		
	24	Bosch 500 Series SHPM65W55N	76	\$850	↑	↑	↑	↓	↑	↑	160	●	●	stainless steel		
	25	Blomberg DWT25502SS	76	\$530	↓	↓	↑	↑	↑	↓	110	●	●	stainless steel		
	26	Kenmore 13223	75	\$600	↓	↓	↑	↑	↑	↓	160		●	stainless steel		
	27	GE Profile PDT855SSJSS	75	\$1,410	↑	↓	↑	↓	↑	↑	155	●	●	stainless steel		●
	28	Bertazzoni DW24XT	75	\$1,065	—	—	↑	↓	↑	↑	135	●	●	stainless steel		
	29	Equator ST6501	75	\$660	—	—	↑	↓	↑	↑	135	●	●	stainless steel		

Dishwashers *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results				Features					
					Predicted reliability	Owner satisfaction	Washing	Drying	Energy use	Noise	Cycle time (min.)	Ample flatware slots	Adjustable upper rack	Interior material	Self-cleaning filter	WiFi
	30	Kenmore 13473	75	\$450	↓	↓	↑	↑	↑	↓	160		•	plastic		
	31	Thor Kitchen HDW2401SS	74	\$800	–	–	↑	↓	↑	↑	130	•	•	stainless steel		
	32	KitchenAid KDPE204GPS	74	\$700	↓	↑	↑	↓	↑	↑	135	•	•	stainless steel		
	33	KitchenAid KDPE234GPS	74	\$700	↓	↑	↑	↓	↑	↑	135	•	•	stainless steel		
	34	KitchenAid KDTE304GPS	74	\$970	↓	↑	↑	↓	↑	↑	135	•	•	stainless steel		
	35	Blomberg DWT56502SS	74	\$630	↓	↓	↑	↓	↑	↓	110	•	•	stainless steel		
	36	Kucht K6502D	74	\$795	–	–	↑	↓	↑	↑	140	•	•	stainless steel		
	37	Whirlpool WDT730PAHZ	73	\$530	↑	↓	↑	↑	↑	↑	140	•	•	stainless steel and plastic		
	38	LG LDT7808BM	71	\$1,050	↓	↓	↑	↑	↑	↑	145	•	•	stainless steel		•
	39	Whirlpool WDF330PAHS	71	\$490	↑	↓	↑	↓	↑	↓	110			plastic		
	40	Whirlpool WDT970SAHZ	71	\$650	↑	↓	↑	↑	↑	↑	145	•	•	stainless steel		
	41	Maytag MDB4949SHZ	71	\$550	↓	↓	↑	↑	↑	↑	155	•		stainless steel	•	
	42	Ikea Renlig IUD7555DS [90292264]	70	\$550	↑	↓	↑	↓	↑	↑	160	•	•	stainless steel		
	43	GE GDP615HSMSS	70	\$500	↑	↓	↑	↓	↑	↓	155	•	•	stainless steel and plastic		
	44	Miele Futura Lumen G6885SCVIK2O	70	\$2,150	↑	↑	↑	↑	↑	↑	170	•	•	stainless steel		
	45	Ikea VASKAD [50422663]	70	\$850	↑	↓	↑	↑	↑	↑	145	•	•	stainless steel		
	46	Ikea SPOLAD [80422355]	70	\$750	↑	↓	↑	↑	↑	↑	145	•	•	stainless steel		
	47	Samsung DW80K7050US	70	\$700	↓	↓	↑	↑	↑	↑	130	•	•	stainless steel		
	48	Kenmore Elite 14815	69	\$1,035	↓	↓	↑	↓	↑	↑	120	•	•	stainless steel	•	
	49	Bosch 800 Series SHEM78WH5N	69	\$1,225	↑	↑	↑	↓	↑	↑	165	•	•	stainless steel		•
	50	Kenmore Elite 14673	68	\$650	↓	↓	↑	↓	↑	↑	135	•	•	stainless steel		•
	51	Dacor Renaissance RDW24S	67	\$1,650	–	–	↑	↓	↑	↓	150			stainless steel		
	52	Samsung DW80M9550US	67	\$810	↓	↓	↑	↑	↑	↑	135	•	•	stainless steel		
	53	Whirlpool WDF130PAHW	66	\$390	↑	↓	↑	↑	↑	↓	160			plastic		
	54	Ikea LAGAN [00385804]	66	\$270	↑	↓	↑	↑	↑	↓	160			plastic		
	55	LG Signature LUDP8997SN	65	\$1,480	↓	↓	↑	↓	↑	↑	130	•	•	stainless steel		
	56	LG LDP6797ST	65	\$700	↓	↓	↑	↓	↑	↑	130	•	•	stainless steel		

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results				Features					
					Predicted reliability	Owner satisfaction	Washing	Drying	Energy use	Noise	Cycle time (min.)	Ample flatware slots	Adjustable upper rack	Interior material	Self-cleaning filter	WiFi
	57	GE GDT655SSJSS	65	\$655	⬆	⬇	⬆	⬇	⬆	⬆	155	●	●	stainless steel		
	58	GE GDT695SSJSS	64	\$750	⬆	⬇	⬆	⬇	⬆	⬆	155	●	●	stainless steel		
	59	KitchenAid KDPE334GPS	64	\$980		⬆	⬆		⬆	⬆	160	●	●	stainless steel		
	60	Viking RVDW103SS	64	\$1,030	⬇	⬇	⬆		⬆		110	●	●	stainless steel		
	61	Frigidaire FFCD2413US	64	\$390		⬇	⬆	⬆	⬆		145			plastic	●	
	62	Kenmore 13803	63	\$300			⬆	⬇	⬆		115			plastic		
	63	Frigidaire FFID2426TS	63	\$420		⬇	⬆	⬆	⬆		130			plastic		
	64	Samsung DW80M9960US	62	\$1,030	⬇	⬇	⬆	⬆	⬆	⬆	130	●	●	stainless steel		●
	65	Samsung Chef Collection DW80M9990US	62	\$1,300	⬇	⬇	⬆	⬆	⬆	⬆	130	●	●	stainless steel		●

HOW WE TEST: To score **Washing** performance, we run the normal or equivalent cycle to clean a full load with 10 place settings. **Drying** performance is our assessment of how thoroughly a dishwasher dries plastic cups—a tough task—using our test cycle and a rinse aid, which

improves drying. **Energy use** is based on our test cycle. A panel of testers judge **Noise** levels by listening to each machine through its entire cycle. **Cycle time**, rounded to the nearest 5 minutes, is based on running the normal or equivalent cycle to clean a full load. **Overall**

Score combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop problems or break within the first five years. **Owner satisfaction** reflects the

proportion of CR members who are extremely likely to recommend the dishwasher they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

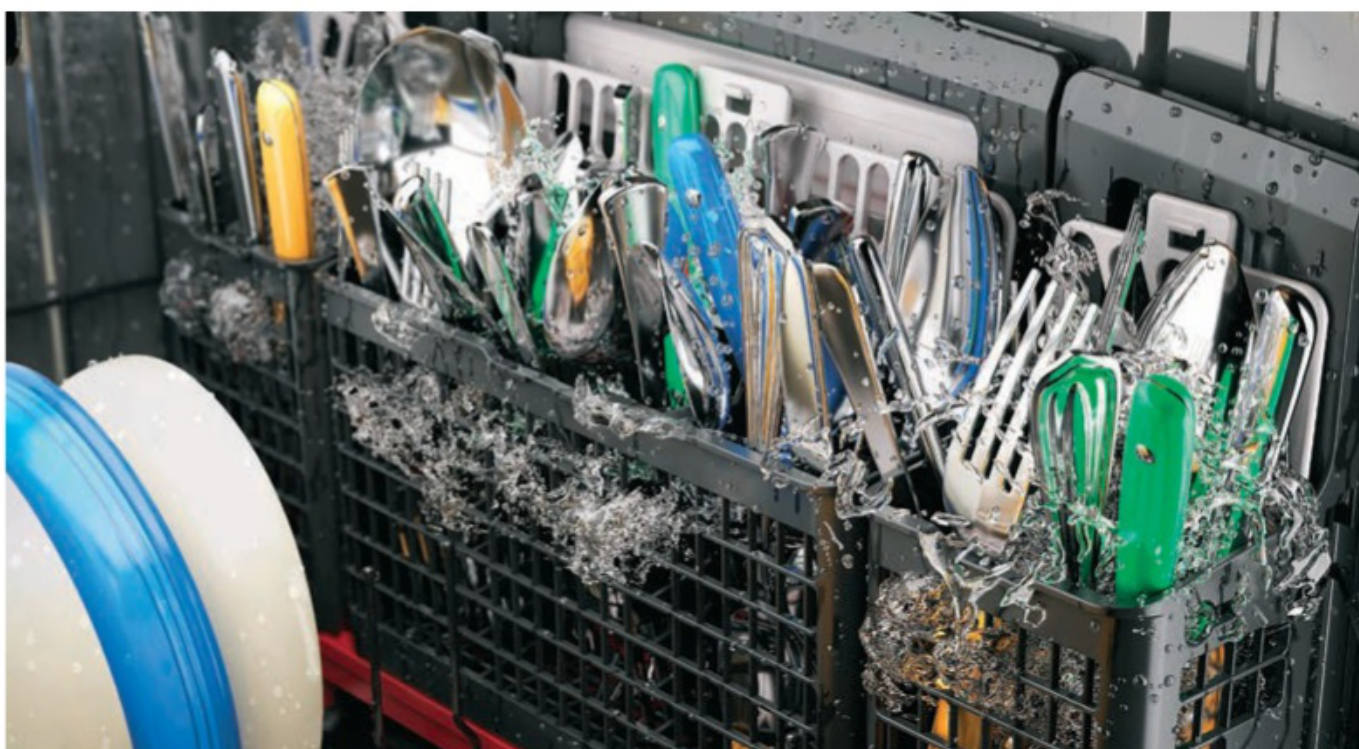


PHOTO: COURTESY GE

● Washing Machines

Prices can run from about \$400 to more than \$2,000, depending on the style, capacity, and features of the appliance. If you're shopping for a large-capacity model, measure your space before you buy, because they can be 2 to 3 inches wider than the standard 27 inches.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Washing performance	Energy efficiency	Water efficiency	Gentleness	Noise	Vibration	Claimed capacity (cu. ft.)	Cycle time (min.)	Dimensions (in.)	Energy Star	Stainless steel tub
TOP-LOAD AGITATOR WASHERS																	
✓	1	Maytag MVWB965HC	70	\$1,280	↓	↓	↑	↑	↑	↓	↑	↑	6.0	80	44 x 29 x 30	•	•
✓	2	Maytag MVWB865GW	64	\$900	↓	↓	↓	↑	↑	↓	↓	↑	5.2	70	43 x 27 x 28	•	•
✓	3	GE GTW465ASNWW	64	\$655	↓	↓	↓	↓	↑	↓	↓	↑	4.5	35	44 x 27 x 27	•	•
✓	4	GE GTW685BSLWS	62	\$630	↓	↓	↓	↑	↑	↓	↓	↑	4.5	50	44 x 27 x 27	•	•
✓	5	Maytag MVWB765FW	62	\$630	↓	↓	↓	↑	↓	↓	↑	↑	4.7	70	41 x 27 x 28	•	•
✓	6	Kenmore 22352	61	\$580	↓	↓	↓	↓	↑	↓	↓	↑	4.2	55	43 x 27 x 28	•	•
TOP-LOAD HE WASHERS																	
Ⓢ	1	LG WT7100CW	81	\$720	↑	↑	↑	↑	↑	↓	↓	↑	4.5	75	45 x 27 x 30	•	•
✓	2	LG WT7600HWA	79	\$1,150	↑	↑	↑	↑	↑	↓	↑	↑	5.2	75	45 x 27 x 29	•	•
✓	3	LG WT7500CW	78	\$1,050	↑	↑	↑	↑	↑	↓	↑	↑	5.2	80	45 x 27 x 29	•	•
✓	4	LG WT7700HVA	76	\$1,440	↑	↑	↑	↑	↑	↓	↑	↑	5.7	75	46 x 29 x 31	•	•
✓	5	LG WT7200CW	76	\$810	↑	↑	↑	↑	↑	↓	↑	↑	5.0	80	45 x 27 x 29	•	•
✓	6	LG WT1901CK	76	\$945	↑	↑	↑	↑	↑	↓	↑	↑	5.0	75	41 x 27 x 29	•	•
✓	7	Kenmore Elite 31552	75	\$850	↑	↓	↑	↑	↑	↓	↑	↑	5.2	75	45 x 27 x 29	•	•
	8	LG WT7300CW	72	\$840	↑	↑	↑	↑	↓	↓	↓	↑	5.0	85	45 x 27 x 30	•	•
	9	Kenmore Elite 31433	71	\$850	↑	↓	↑	↑	↑	↓	↓	↑	5.0	75	42 x 27 x 29	•	•
	10	Whirlpool WTW8700EC	70	\$1,260	↓	↓	↑	↑	↑	↓	↑	↑	5.3	80	43 x 27 x 28	•	•
	11	Maytag MVWB835DW	70	\$900	↑	↓	↑	↑	↑	↓	↑	↑	5.3	70	43 x 27 x 28	•	•
	12	Kenmore 28132	70	\$750	↑	↓	↑	↑	↑	↓	↑	↑	5.3	60	43 x 27 x 28	•	•
	13	Kenmore 26132	70	\$630	↑	↓	↑	↑	↑	↓	↑	↑	4.8	60	41 x 27 x 28	•	•
	14	Kenmore 27132	70	\$710	↑	↓	↑	↑	↑	↓	↑	↑	4.8	60	41 x 27 x 28	•	•
	15	Kenmore 29132	70	\$850	↑	↓	↑	↑	↑	↓	↑	↑	5.3	65	43 x 27 x 28	•	•
	16	Whirlpool WTW8500DW	70	\$1,090	↓	↓	↑	↑	↑	↑	↑	↑	5.3	80	43 x 28 x 28	•	•
	17	GE GTW860SSJWS	69	\$1,035	↓	↓	↑	↑	↑	↓	↓	↑	5.1	70	45 x 28 x 30	•	•
	18	Samsung ActiveWash WA54M8750AV	69	\$800	↓	↓	↑	↑	↑	↓	↑	↑	5.4	75	43 x 27 x 29	•	•
	19	Samsung WA50M7450AW	68	\$810	↓	↓	↑	↑	↑	↓	↑	↑	5.0	70	46 x 27 x 29	•	•
	20	Maytag MVWB955FW	68	\$1,300	↑	↓	↓	↑	↑	↓	↑	↑	6.2	70	44 x 29 x 30	•	•
	21	Whirlpool WTW8000DW	68	\$900	↓	↓	↑	↑	↑	↓	↑	↑	5.3	75	43 x 27 x 29	•	•
	22	Samsung ActiveWash WA52M7750AW	68	\$900	↓	↓	↑	↑	↑	↓	↓	↑	5.2	75	46 x 27 x 29	•	•

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features					
					Predicted reliability	Owner satisfaction	Washing performance	Energy efficiency	Water efficiency	Gentleness	Noise	Vibration	Claimed capacity (cu. ft.)	Cycle time (min.)	Dimensions (in.)	Energy Star	Stainless steel tub	WiFi

TOP-LOAD HE WASHERS *Continued*

	23	Kenmore Elite 31632	67	\$1,000									6.2	70	44 x 30 x 30			
	24	Whirlpool WTW7500GW	67	\$810									4.8	70	41 x 27 x 28			
	25	Samsung ActiveWash WA52M8650AW	67	\$700									5.2	70	43 x 27 x 29			
	26	Whirlpool WTW7300DW	65	\$720									4.8	75	41 x 27 x 28			
	27	Samsung WA45M7050AW	65	\$720									4.5	75	44 x 27 x 29			
	28	Maytag MVWX655DW	64	\$580									4.3	60	44 x 27 x 28			
	29	GE GTW500ASNWS	63	\$700									4.6	55	44 x 27 x 27			
	30	Fisher & Paykel Aqua Smart WL4027P1	63	\$1,000									4.0	60	42 x 27 x 28			
	31	GE GTW680BSJWS	62	\$630									4.6	60	44 x 27 x 27			

FRONT-LOAD WASHERS

	1	LG WM3500CW	86	\$700									4.5	105	39 x 27 x 31			
	2	LG WM9000HVA	86	\$1,300									5.2	105	41 x 29 x 35			
	3	LG Signature WM9500HKA	85	\$1,900									5.8	120	41 x 30 x 34			
	4	LG WM3700HWA	85	\$900									4.5	95	39 x 27 x 31			
	5	LG WM4370HWA	85	\$1,200									4.5	75	39 x 27 x 31			
	6	LG WM3997HWA	84	\$2,000									4.3	100	39 x 27 x 32			
	7	Maytag MHW6630HW	83	\$900									4.8	95	39 x 27 x 33			
	8	Kenmore Elite 41982	83	\$1,100									5.2	105	41 x 29 x 35			
	9	Electrolux EFLS627UTT	82	\$1,000									4.4	85	39 x 27 x 32			
	10	LG WM8100HVA	82	\$1,350									5.2	95	41 x 29 x 32			
	11	Maytag MHW5630HW	82	\$810									4.5	100	39 x 27 x 32			
	12	Maytag MHW3505FW	82	\$810									4.3	85	39 x 27 x 33			
	13	Kenmore Elite 41072	82	\$950									5.2	95	41 x 29 x 33			
	14	Electrolux EFLS527UIW	81	\$850									4.3	85	39 x 27 x 32			
	15	Samsung WF50K7500AW	81	\$1,300									5	100	39 x 27 x 35			
	16	Samsung FlexWash WV60M9900AV	81	\$1,500									5.0	100	47 x 27 x 34			
	17	Samsung WF45K6500AW	81	\$1,100									4.5	100	39 x 27 x 35			
	18	Kenmore Elite 41002	81	\$1,600									4.5	100	39 x 27 x 32			
	19	Kenmore Elite 41682	81	\$950									4.5	75	39 x 27 x 30			

● **Washing Machines** *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features					
					Predicted reliability	Owner satisfaction	Washing performance	Energy efficiency	Water efficiency	Gentleness	Noise	Vibration	Claimed capacity (cu. ft.)	Cycle time (min.)	Dimensions (in.)	Energy star	Stainless-steel tub	WiFi
FRONT-LOAD WASHERS <i>Continued</i>																		
	20	Kenmore Elite 41782	81	\$1,050	↑	↓	↑	↑	↑	↓	↑	↑	4.5	75	40 x 27 x 31	●	●	●
	21	Kenmore 41262	81	\$670	↑	↓	↑	↑	↑	↑	↑	↑	4.5	90	39 x 27 x 31	●	●	
	22	Kenmore 41392	79	\$800	↑	↓	↑	↑	↑	↑	↑	↑	4.5	90	40 x 27 x 31	●	●	
	23	Samsung WF42H5000AW	79	\$720	↑	↓	↑	↑	↑	↑	↓	↑	4.2	80	39 x 27 x 33	●	●	
	24	Samsung FlexWash WV55M9600AW	77	\$1,200	↑	↓	↑	↑	↑	↑	↑	↑	5.5	95	47 x 27 x 34	●	●	●
	25	Samsung WF45M5500AW	77	\$900	↑	↓	↑	↑	↑	↑	↑	↑	4.5	90	39 x 27 x 35	●	●	
	26	Whirlpool WFW6620HW	76	\$900	↓	↓	↑	↑	↑	↓	↑	↑	4.5	100	39 x 27 x 32	●	●	
	27	Electrolux EFLW427UIW	76	\$770	↑	↓	↑	↑	↑	↑	↓	↑	4.3	90	39 x 27 x 32	●	●	
	28	Whirlpool WFW7590FW	75	\$810	↓	↓	↑	↑	↑	↑	↓	↑	4.2	70	39 x 27 x 31	●	●	
	29	Samsung WF45N5300AV	74	\$900	↑	↓	↑	↑	↑	↑	↑	↑	4.5	95	39 x 27 x 35	●	●	
	30	GE GFW450SSMWW	68	\$910	↓	↓	↑	↑	↑	↓	↓	↓	4.5	105	40 x 27 x 34	●	●	
	31	GE GFW480SSKWW	67	\$900	↓	↓	↓	↑	↑	↑	↑	↑	4.9	90	40 x 28 x 34	●	●	

HOW WE TEST: Washing performance reflects the degree of color change to swatches of stained fabric that were included in an 8-pound test load of mixed cotton items using the machine’s most aggressive normal cycle. (We don’t use special cycle or option buttons.) **Energy efficiency** is based on the energy needed to heat the water for 8-pound loads using a warm wash and cold rinse. We consider both

gas and electric water heaters, and include electricity needed to run the washer and energy needed for drying. Washers that extract more water are scored higher. **Water efficiency** denotes how much water it took to wash our 8-pound load. On models that didn’t set the fill level automatically, we used the lowest fill setting that sufficed for the 8-pound load. We then calculated water used per pound of clothing.

Models that earned lower scores for **Gentleness** are more likely to treat your clothes roughly, causing wear and tear. **Noise** reflects judgments by panelists during the fill, agitate, drain, and spin cycles. **Vibration** reflects usage on a suspended wooden floor. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood

that newly purchased models from a given brand will develop problems or break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend the washing machine they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

● Electric Clothes Dryers

Electric dryers are the big sellers, but decades of testing by Consumer Reports has revealed that electric and gas dryers perform similarly. We now test only electric models (see below), but we expect their gas versions to perform comparably.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features							
					Predicted reliability	Owner satisfaction	Drying performance	Convenience	Noise	Claimed capacity (cu. ft.)	Dimensions (in.)	Moisture sensor	Energy star	Stainless-steel drum	Drying rack	Steam option	WiFi
	1	LG DLEX7600WE	91	\$945						7.3	45 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2	LG DLEX7700VE	91	\$1,440						9	45 x 29 x 32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3	LG DLEX3570W	91	\$990						7.3	39 x 27 x 31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4	LG DLEX9000V	90	\$1,300						9	41 x 29 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5	LG DLEX3700W	89	\$800						7.4	39 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	6	LG DLE7200WE	89	\$700						7.3	44 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7	Maytag MEDB955FW	88	\$1,180						9.2	44 x 29 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	8	LG DLE7100W	87	\$720						7.3	44 x 27 x 29	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	9	LG DLEX8100V	87	\$1,100						9	41 x 29 x 32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	10	Kenmore Elite 61632	86	\$1,000						9.2	44 x 29 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11	Maytag MEDB855DW	86	\$990						8.8	43 x 29 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	12	Kenmore Elite 61552	85	\$800						7.3	45 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	13	Kenmore 81382	85	\$730						7.3	39 x 27 x 31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	14	Maytag MED5500FW	85	\$990						7.4	39 x 27 x 31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	15	LG DLEX4370W	84	\$1,080						7.4	39 x 27 x 31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	16	LG Signature DLEX9500K	84	\$1,805						9	41 x 29 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	17	Kenmore 81392	83	\$680						7.3	39 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	18	Kenmore Elite 81582	83	\$900						7.4	39 x 27 x 31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	19	Kenmore 81182	83	\$600						7.3	39 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	20	Kenmore Elite 81782	82	\$950						7.4	39 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	21	Whirlpool WED8500DW	82	\$1,080						8.8	43 x 29 x 32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	22	Maytag MEDB765FW	81	\$630						7.4	40 x 27 x 30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	23	Kenmore 69132	81	\$830						8.8	43 x 29 x 32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	24	Samsung DV50K7500EW	81	\$995						7.5	39 x 27 x 33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	25	GE GFD48ESSKWW	80	\$900						8.3	40 x 28 x 34	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

● Electric Clothes Dryers *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features								
					Predicted reliability	Owner satisfaction	Drying performance	Convenience	Noise	Claimed capacity (cu. ft.)	Dimensions (in.)	Moisture sensor	Energy star	Stainless-steel drum	Drying rack	Steam option	WiFi	
	26	Whirlpool WED7500GW	80	\$595	↓	↓	↑	↑	↑	7.4	40 x 27 x 30	•						
	27	Whirlpool WED8700EC	80	\$1,255	↓	↓	↑	↑	↑	8.8	43 x 29 x 33	•	•				•	•
	28	Kenmore 67132	79	\$680	↓	↓	↑	↑	↑	7	41 x 29 x 28	•					•	
	29	Samsung DV45K6500EW	78	\$900	↓	↓	↑	↑	↑	7.5	39 x 27 x 32	•	•	•			•	•
	30	Samsung DVE50M7450W	78	\$650	↓	↓	↑	↑	↑	7.4	45 x 27 x 30	•					•	
	31	Kenmore Elite 81982	78	\$950	↓	↓	↑	↑	↑	9	41 x 29 x 32	•		•			•	•
	32	Fisher & Paykel AeroCare DE7027P1	78	\$1,000	↓	↑	↑	↑	↑	7	43 x 27 x 30	•		•	•		•	
	33	Fisher & Paykel AeroCare DE7027P2	78	\$1,000	↓	↑	↑	↑	↑	7	42 x 27 x 28	•		•	•		•	
	34	Samsung DVE54M8750V	77	\$800	↓	↓	↑	↑	↑	7.4	43 x 27 x 31	•	•	•			•	•
	35	Samsung DVE52M8650W	77	\$1,000	↓	↓	↑	↑	↑	7.4	43 x 27 x 31	•	•	•			•	
	36	Maytag MEDX655DW	77	\$570	↓	↑	↑	↑	↓	7	43 x 30 x 27	•						
	37	Electrolux EFME427UIW	77	\$720	↓	↑	↑	↑	↑	8	38 x 27 x 32	•	•				•	
	38	Speed Queen ADEE9RGS175TW01	76	\$1,050	↑	↑	↓	↑	↑	7	43 x 27 x 28	•						
	39	Kenmore Elite 61433	76	\$800	↓	↓	↑	↑	↑	7.3	41 x 27 x 30	•	•				•	•
	40	Samsung DVE45M5500W	76	\$900	↓	↓	↑	↑	↑	7.4	39 x 27 x 32	•	•				•	
	41	GE GTD65EBSJWS	75	\$600	↓	↓	↑	↑	↑	7.4	44 x 27 x 31	•	•					•
	42	Electrolux EFME627UTT	75	\$1,000	↓	↑	↑	↑	↑	8	38 x 27 x 31	•	•	•			•	
	43	Samsung FlexDry DVE60M9900V	75	\$1,450	↓	↓	↑	↑	↑	7.5	47 x 27 x 32	•	•	•	•		•	•
	44	Samsung FlexDry DVE55M9600W	75	\$1,150	↓	↓	↑	↑	↑	7.5	47 x 27 x 32	•	•	•			•	•
	45	Samsung DV40J3000EW	74	\$480	↓	↓	↑	↑	↓	7.2	44 x 27 x 30	•						
	46	Whirlpool WED5000DW	74	\$500	↓	↓	↑	↑	↓	7	43 x 29 x 27	•						
	47	GE GFD45ESSMWW	73	\$900	↓	↓	↑	↑	↓	7.5	40 x 27 x 33	•	•	•			•	
	48	Kenmore 62342	73	\$500	↓	↓	↑	↑	↓	7	43 x 29 x 27	•						
	49	Whirlpool WED49STBW	73	\$720	↓	↓	↑	↑	↓	7	43 x 29 x 29	•					•	

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features							
					Predicted reliability	Owner satisfaction	Drying performance	Convenience	Noise	Claimed capacity (cu. ft.)	Dimensions (in.)	Moisture sensor	Energy star	Stainless-steel drum	Drying rack	Steam option	WiFi
	50	Maytag MEDC465HW	72	\$550	↓	↑	↑	↑	↓	7	43 x 29 x 28	•					
	51	Samsung DVE45N5300V	70	\$720	↓	↓	↑	↑	↓	7.5	39 x 27 x 32	•					•
	52	Electrolux EFDE317TIW	68	\$600	↓	↑	↑	↓	↑	8	38 x 27 x 31	•	•				
	53	Maytag MED6630HW	68	\$900	↓	↑	↑	↑	↓	7.3	39 x 27 x 31	•	•				•
	54	Frigidaire FFRE4120SW	68	\$550	↓	↓	↑	↑	↓	6.7	43 x 27 x 29	•		•			
	55	Whirlpool WED6620HW	67	\$900	↓	↓	↑	↑	↓	7.4	39 x 27 x 31	•	•				•
	56	Kenmore 62332	67	\$480	↓	↓	↑	↑	↓	7	44 x 29 x 27						
	57	Insignia FDRE67WH8A	67	\$450	—	—	↑	↑	↓	6.7	43 x 27 x 31	•		•			
	58	Kenmore 65132	65	\$520	↓	↓	↑	↑	↓	7	43 x 29 x 28	•					
	59	GE GTD45EASJWS	64	\$530	↓	↓	↑	↑	↓	7.2	43 x 27 x 30	•					
	60	Maytag MEDC215EW	63	\$585	↓	↑	↓	↑	↓	7	43 x 29 x 28						
	61	Kenmore 60222	61	\$420	↓	↓	↑	↓	↓	6.5	44 x 29 x 28						

HOW WE TEST: Drying performance combines performance on three types of laundry loads of different sizes and fabric mixes: A 12-lb. load, predominantly cotton, representing a family's large weekly load; an 8-lb. load of cotton/polyester blend clothing; and a 3-lb. load of synthetic delicates, women's pajamas,

nightgowns, bras, and underwear. To measure **Convenience**, we judged controls and ergonomics, such as ease of loading and unloading, servicing the lint filter, whether the door could clear a tall basket, and whether the machine had a raised edge to contain spills. **Noise** was determined by a panel of judges

who listened while machines dried an 8-pound load. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop problems or break within the first five years.

Owner satisfaction reflects the proportion of CR members who are extremely likely to recommend the dryer they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

Over-the-Range Microwaves

Over-the-range microwave ovens are a good choice if you have limited counter space. And if your OTR microwave needs to be replaced, it's good to know that you can get a new one for as little as \$200. Installation often won't cost much more than that.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Specs			Features			
					Predicted reliability	Owner satisfaction	Heating evenness	Defrosting evenness	Speed of heating	Microwaving noise	Ease of use	Venting (airflow)	Usable capacity (cu. ft.)	Claimed capacity (cu. ft.)	Watts	Detailed prompts	Convection mode	Sensor	Stainless/SS-look option
✓	1	Whirlpool WMH53521H	83	\$400	↑	↓	↑	↑	↑	↑	↑	↓	0.9	2.1	1000	•		•	•
✓	2	Whirlpool WMH75021HZ	82	\$370	↑	↓	↑	↑	↑	↑	↑	↓	0.9	2.1	1100	•		•	•
✓	3	GE PVM9005SJSS	80	\$425	↓	↓	↑	↓	↑	↑	↑	↑	1.0	2.1	1050	•		•	•
✓	4	KitchenAid KMHS120ESS	79	\$585	↓	↓	↑	↑	↑	↑	↑	↓	1.0	2.0	1000	•		•	•
Ⓢ	5	GE JVM3160RFSS	79	\$250	↓	↓	↑	↑	↑	↑	↑	↑	0.9	1.6	1000	•			•
✓	6	Frigidaire Professional FPBM3077RF	79	\$560	↑	↓	↑	↑	↑	↑	↑	↑	0.9	1.8	1050	•	•	•	•
✓	7	LG LMV2031ST	78	\$350	↓	↓	↑	↑	↑	↑	↑	↑	0.9	2.0	1000	•		•	•
✓	8	Kenmore Elite 83383	78	\$500	↑	↓	↑	↑	↑	↑	↑	↓	0.9	1.8	1050	•	•	•	•
✓	9	LG LMH2235ST	78	\$400	↓	↓	↑	↑	↑	↑	↑	↓	0.9	2.2	1000	•		•	•
✓	10	Kenmore 83337	77	\$340	↑	↓	↑	↑	↓	↑	↑	↑	0.8	1.7	1000			•	•
✓	11	Kenmore Elite 80373	76	\$440	↑	↓	↑	↑	↑	↑	↑	↓	0.9	1.8	1050	•	•	•	•
	12	Kenmore 80353	73	\$360	↑	↓	↑	↑	↑	↑	↑	↓	0.9	2.1	1100	•		•	•
	13	Frigidaire FFMV1645TD	73	\$320	↑	↓	↑	↑	↓	↑	↑	↓	0.8	1.6	1000				•
	14	Frigidaire Gallery FGMV176NTD	73	\$350	↑	↓	↓	↑	↓	↑	↑	↑	0.8	1.7	1000	•		•	•
	15	Kenmore Pro 89393	72	\$650	↑	↓	↑	↑	↑	↑	↑	↓	0.9	1.8	1050	•	•	•	•
	16	Whirlpool WML55011HS	72	\$405	↑	↓	↓	↑	↑	↑	↓	↑	0.6	1.1	1000				•
	17	Frigidaire FFMV1745T	71	\$280	↑	↓	↓	↑	↑	↑	↑	↑	0.8	1.7	1000				•
	18	GE JVM6175DKWW	71	\$320	↓	↓	↑	↑	↑	↑	↑	↓	0.7	1.7	1000	•		•	•
	19	LG LMV1762SB	69	\$220	↓	↓	↑	↑	↑	↑	↑	↓	0.8	1.7	1000	•			•
	20	Bosch 500 Series HMV5053U	69	\$500	↓	↓	↑	↑	↑	↑	↑	↓	0.9	2.1	1100			•	•
	21	Kenmore 80323	68	\$270	↑	↓	↑	↑	↑	↑	↑	↓	0.8	1.6	1000	•			•
	22	KitchenAid KMHC319ESS	68	\$650	↓	↓	↑	↓	↓	↑	↑	↓	1.0	1.9	1000	•	•	•	•
	23	Whirlpool WMH78019HZ	67	\$570	↑	↓	↑	↓	↓	↑	↑	↓	0.9	1.9	1100	•	•	•	•
	24	LG LMV1831ST	66	\$250	↓	↓	↑	↑	↓	↑	↑	↓	0.8	1.8	1000			•	•

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Specs			Features			
					Predicted reliability	Owner satisfaction	Heating evenness	Defrosting evenness	Speed of heating	Microwaving noise	Ease of use	Venting (airflow)	Usable capacity (c.u. ft.)	Claimed capacity (c.u. ft.)	Watts	Detailed prompts	Convection mode	Sensor	Stainless/SS-look option
	25	KitchenAid KMLS311HSS	65	\$720	↓	↓	↓	↑	↓	↑	↑	↑	0.6	1.1	1000	•		•	•
	26	Maytag MMV5220FZ	65	\$420	↓	↓	↓	↓	↓	↑	↑	↓	1.5	2.1	1000	•		•	•
	27	Bosch HMV8053U	65	\$630	↓	↓	↑	↑	↑	↑	↑	↓	0.9	1.8	1000		•	•	•
	28	Samsung ME20H705MSS	64	\$350	↓	↓	↑	↑	↑	↑	↑	↓	1.0	2.0	1000	•		•	•
	29	GE Profile Advantium PSA9120SFSS	64	\$1200	↓	↓	↓	↑	↓	↑	↑	↓	0.8	1.7	925	•	•	•	•
	30	GE PVM9179SKSS	63	\$585	↓	↓	↓	↓	↓	↑	↑	↑	0.8	1.7	950	•	•	•	•
	31	Dacor Discovery PCOR30S	63	\$1100	↓	↓	↑	↑	↓	↑	↑	↓	0.7	1.1	850	•	•	•	•
	32	Electrolux IQ-Touch E130BM60MS	63	\$640	↓	↓	↑	↑	↑	↑	↑	↓	0.9	1.8	1050	•	•	•	•
	33	GE Adora DVM7195SKSS (Home Depot Exclusive)	63	\$360	↓	↓	↓	↓	↓	↑	↑	↑	0.9	1.9	1000	•		•	•
	34	Whirlpool UMV1160CS	63	\$230	↑	↓	↓	↑	↑	↑	↑	↓	0.8	1.6	1000				•
	35	LG LSMC3089BD	62	\$720	↓	↓	↓	↓	↓	↓	↑	↓	0.8	1.7	950	•	•	•	•
	36	Ikea LAGAN IMH160FW [70336457]	61	\$150	↑	↓	↓	↑	↓	↓	↓	↓	0.9	1.7	900				

HOW WE TEST: Heating evenness reflects how evenly a model reheats a dish of cold mashed potatoes. **Defrosting evenness** is based on how well the auto-defrost program defrosts a pound of frozen ground beef. **Speed of heating** is based on the temperature rise of water that's heated. **Noise** reflects how quiet the appliance is while it's on high. **Ease of use** includes how easy it is to set

the microwave without referring to the instructions. **Venting** (airflow) is based on the volume of air drawn in by the internal fan on the highest setting of an over-the-range model. **Usable capacity** is the usable space based on our measurements and excludes the corner spaces for models with rotating turntables. Note that most over-the-range

models allow you to turn off the rotation to fit large dishes. With the rotation off, measured capacity approximates claimed capacity. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop problems or break

within the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend the microwave they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

FALL

Getting your house prepped for cool weather (and holiday entertaining) is job No. 1. Lawn-care season is coming to a close, but there are still outdoor tasks to tackle. And it's a great time to get leaf blowers and more on deep discount.





FALL

CLEAN



YOUR FALL CLEANING CHECKLIST

- Clean blades of ceiling fans. **P. 77**
- Clean filters and reservoirs of humidifiers. **P. 77**
- Clean table and bed linens. **P. 78**
- Rotate or clean mattresses. **P. 9**
- Wash curtains and draperies or have them dry-cleaned. **P. 10**
- Dust coils behind or underneath the refrigerator. **P. 15**
- Go through closets and discard unwanted clothes.
- Put away summer clothes or have them stored at a dry cleaner.

PHOTO, PREVIOUS SPREAD: DEBORAH VERNON/ALAMY STOCK PHOTO. PHOTOS, THIS SPREAD FROM LEFT: TINA CRESPO/STOCKSY; COURTESY CRANE

● Ceiling Fans

Dirty fan blades don't move air efficiently, so clean all household fans at least once each cooling season. A ceiling fan that's covered with dust or pollen might also fling the offending particles around the room as it's whirring away. And if you have a fan in the kitchen, cooking grease can make it a dust magnet. That's why it's important to keep the fan clean, especially if you use it year-round. Doing so requires a ladder, an all-purpose cleaner, and only a little effort. Here are some tips from CR's guide "How to Clean Practically Anything."

- **Cover the floor and furniture.**

Spread a drop cloth or old sheets on the floor and over any furniture that's near or under the fan. Try to cover an area about twice as wide as the full width of the fan. Position the ladder so that you can see the top of the blades. Remove any globes and hand-wash them in the sink.

- **Dust, then wash.** Begin by removing loose dust with a cloth or duster. Then moisten a cloth or sponge with an all-purpose cleaner—don't spray liquid on the fan—and wash each blade. Don't apply heavy pressure, which can bend the blades and cause the fan to not work properly. Dry thoroughly; damp blades attract dust.

- **Cool tools.** You can clean both sides of the fan blades at once using a long-handled U-shaped brush. This special tool is available from hardware stores and home centers. Don't have one? A few cleaning websites recommend slipping an old pillowcase over the blades one by one, then pulling it back to remove dust and dirt. If cleaning a ceiling fan is a chore you hate, try waxing the blades with car wax, which can prevent dust from sticking.



TIP

Microbes can grow in the reservoirs of humidifiers, and that bacteria can be released into the air in the mist. When you use a humidifier, you need to clean it every day no matter what type it is.

● Humidifiers

When Consumer Reports asked consumers how often they cleaned their humidifiers, 59 percent who use one told us they didn't clean it every day—and one in four people said they cleaned it twice a month or less. That's a mistake.

The Consumer Product Safety Commission and the Environmental Protection Agency warn that emissions from dirty humidifiers can cause health problems, especially for folks who suffer from asthma or allergies. And in a past study on safety, we found that microbes can grow in the reservoirs of humidifiers, and that bacteria can be released into the air in the mist.

We tested three types of humidifiers and found that the evaporative ones were the least likely to emit airborne bacteria. But don't depend on the type of humidifier to protect you from bacteria building up.

"Bacteria can only grow in a moist environment, so it's important to wash out the base tray and reservoir, and

let it completely dry," says Doris Sullivan, CR's associate director for product safety.

HOW HUMIDIFIERS WORK

In the heating season, the humidity in your home can drop to 10 percent; a level between 30 and 50 percent is recommended. Humidity levels lower than that can lead to sore throats and dry skin. On the other hand, too much moisture can encourage the growth of mold and dust mites. Here are the types of humidifiers to consider:

- **Ultrasonic humidifiers** use a vibrating nebulizer and emit a cool mist.
- **Evaporative tabletops** blow unheated air over a wet wick.
- **Vaporizer models** use a heating unit to boil water and emit steam. They're not recommended for use around children.

HOW TO CLEAN YOUR HUMIDIFIER

The bottom line? When you use a humidifier, you need to clean it every day, no matter what type it is. Not all manufacturers make that recommendation, but we do. Here's a good routine to follow:

- **Every day.** Empty, rinse, and dry the base tray or reservoir before refilling.
- **Every week.** Remove water scaling with vinegar, and disinfect the unit with a bleach solution following the manufacturer's instructions.
- **Before storing.** Clean to remove scaling, disinfect with a bleach solution, and dry thoroughly.
- **After storing.** Before using the humidifier again, clean it to remove scaling, disinfect with a bleach solution, and dry thoroughly. Don't fill it before you need to.

● Table and Bed Linens

The start of the holiday season often means entertaining—and your table linens might be looking a little dingy. If so, it's time for a little laundry therapy with one of our top-performing detergents on page 80. And while you're at it, make sure the towels and the bed linens in your guest rooms are washed and ready for the next round of visitors. To help, Consumer Reports asked textile experts for their advice on keeping washables in top shape year-round.

NAPKINS AND TABLECLOTHS

"If your napkins or tablecloths are stained, be patient and let stain removers sit 3 to 5 minutes," says a fabric-care expert, Steve Boorstein, also known as the Clothing Doctor. After treating linens with a cleaning solvent, such as Shout or Zout, and machine-washing, make sure that the stain is completely gone before you put the items into the dryer or iron them. (Otherwise, the heat of the dryer or iron might permanently bake in the stains.) If traces of the stain linger after washing, soak the item in

color-safe bleach before tossing it back into the washer.

No stain removers on hand? Make your own by dabbing 3 percent hydrogen peroxide (that's right, the stuff in your medicine cabinet) directly onto the stain. (Make sure it's a fresh container.) Or try dousing the stain with a solution of 1 teaspoon of clear dishwashing liquid and 1 cup of water.

After dinner, if your table linens have greasy stains (such as gravy), scrape off the excess and treat with Fels-Naptha soap before washing. If the stain remains, hit it with the detergent cocktail above, followed by a solution of 1 tablespoon of household ammonia and ½ cup of water. Again, don't put it in the dryer until the stain is gone.

TOWELS AND TERRY ROBES

To get your towels really clean, use a sanitizing hot-water wash, Boorstein says. And promptly put them in the dryer after washing. Before you throw in the towel on stained towels or terry robes, wash—and rewash, if necessary—with chlorine bleach

(if white) or with color-safe bleach (if colored). Place plush or terry-cloth items in the dryer on the high temperature setting until they are completely dry. Add a few tennis balls to help keep them nice and fluffy.

Never leave towels hanging around in a wet, warm washer or bacteria—and bad smells—may start to take hold. And those can be tough to get rid of.

BEDSHEETS

Sheets get pretty dirty, so wash yours every week. Use a powerful hot-water wash on cotton sheets to get them clean. Dry on a high temperature setting. And don't let them linger too long post-cycle; that allows creases to set in.

To make sure bed linens are cleaned properly, don't pack them into the washer. A full load might be simply one queen set (a fitted sheet, a flat sheet, and pillowcases).



TIP

Don't pack sheets into the washer. They need room to circulate in plenty of water to get cleaned properly.





Fold sheets properly before you put them away to control wrinkles. If you don't have an extra set of hands to help you fold, use a table to keep edges off the floor. To fold a fitted sheet, start by folding in the elasticized pocket to create a rectangular shape, then folding end-to-end like a flat sheet.

COMFORTERS, QUILTS, BLANKETS, AND PILLOWS

Some front-loading washers are large enough to accommodate king-sized comforters—and save you a trip to the laundromat. Because they have relatively little direct contact with your body and its soiling oils, comforters “don't need a whole lot of agitation or a whole lot of time in the washer,” Boorstein says. If you're using a top-loader, comforters require a high water level because they're bulky and need room to swish around. And use a

powdered detergent, which helps keep the filling from clumping.

When it comes to washing pillows, check the care label. You might be able to machine-wash them. (Hand-wash or professionally clean down and feather pillows; the care label will advise you.) Nancy Bock, senior vice president of consumer education for the American Cleaning Institute, recommends doing two at a time if you can fit them in your machine. That helps balance the load and allows the water and detergent to move more effectively. For top-loaders, agitate only 1 or 2 minutes on a gentle cycle.

To machine-dry down-filled items, use moderate heat and toss in a few tennis balls to keep the filling from clumping. The balls also keep the items from sticking to the walls of the dryer, Boorstein says. Periodically remove pillows during the drying cycle and fluff them. That helps

prevent clumping and promotes even drying. Then put them back in until they're dry.

If you're putting a blanket or comforter into a top-loading washer, spread the bulk around evenly; don't bunch it up. “That tends to put a lot of wear and tear on the mechanics,” Boorstein says.

Loosely fold and stuff out-of-season down comforters in breathable polypropylene bags and keep them in a dry place.

DUVET COVERS AND DUVETS

Duvet covers—removable outer coverings that protect a duvet casing and keep it clean—should be washed according to the care label. Wash dark-colored ones separately a few times or until you are sure they are colorfast. A blended-fiber cover (such as cotton-polyester) won't need ironing if folded promptly. Others should be ironed when slightly damp, then aired

thoroughly before being put back on the duvet.

Using a duvet cover will protect the duvet inside from body moisture and spills. When you use a cover, you'll need to clean a duvet only infrequently—say, once every two to four years.

Occasionally air a duvet outside in the sun. If that's not practical, drape it over the footboard of the bed or over the back of two chairs.

If you spill something on the casing of the duvet itself, blot up the moisture immediately to avoid staining. Shake the feathers or synthetic filling out of the stained area, tie it off with a string, and treat it with the stain-removal method suitable for the fabric.

For cleaning a down duvet, first check the care label; some recommend dry cleaning only, while others strongly advise against it.

For machine-washing, use a down-specific product or mild powdered detergent, and a gentle wash cycle. Make sure the duvet is completely wet if using a conventional top-load washer. For duvets filled with synthetic material, follow the care instructions. Most can be washed in a washing machine.

If a duvet is too large for your machine, take it to a coin laundry or have it dry-cleaned. Or you can hand-wash it in a bathtub using a solution of a mild powdered detergent and water. (But it's difficult; a wet duvet is very heavy.) Rinse thoroughly, then hang it outside to dry over two or three parallel clotheslines. Dry it in a clothes dryer if the instructions permit.

REMOVING FABRIC STAINS

Here are additional tips for substances that are especially difficult to remove from fabrics. Start by following the instructions on garment labels, and then try the following for these problems.

CHEWING GUM

You can't wash out gum, and freezing then scraping it from a garment can damage the fabric. Believe it or not, Ultra Strength Bengay is what you need. This analgesic rub contains methyl salicylate, which will dissolve the gum base. Heat gum with a hair dryer, scrape off as much as possible with a plastic knife, work in a dab of Bengay, then use a ziplock bag to pick off the resulting goo that's chemically more attracted to the plastic than to a paper towel.

EGGS

Blot with a detergent solution (1 teaspoon of a mild clear or white dishwashing liquid—no bleach—in 1 cup of warm water). Rinse with cold water. An enzyme detergent may help remove the stain. Don't use warm or hot solutions, because they can actually cook the egg.

RED WINE

Forget that advice about using white wine or a clear, sugary soda to remove red wine stains. It may work initially, but over time you'll wind up with a permanent brown stain, our laundry pros say. Instead, wet and blot the fabric immediately. Hand-wash in 2 cups of warm water mixed with 2 teaspoons of liquid dish detergent. While the fabric is wet, liberally apply 3 percent hydrogen peroxide to the garment and then lay it in the sun for several hours to bleach naturally.

GRASS

Brush off any excess grass from the garment. Then pour liquid detergent directly on the stain and let it sit for 20 minutes. Without rinsing off the detergent, place the garment in the washer and wash on the usual cycle and wash on the usual temperature indicated.

CRAYONS

Crayola suggests scraping off as much as possible, then working liquid dish soap into the stain. Wait several minutes, then rub the fabric under warm water to remove the stain. Machine-wash using the heavy-soil setting with the hottest water the care label recommends, and OxiClean. Air-dry the item and repeat if necessary.

LIPSTICK

Blot with acetone-based nail-polish remover. Then try a store-bought cleaning solvent, such as Alba or Goo Gone. If that doesn't work, try the detergent solution, then rinse, our experts say.

KETCHUP

Blot with a detergent solution (see the tip for eggs, above). If the stain remains, try a vinegar solution (1/3 cup of white vinegar with 2/3 cup of water). A solution of 3 percent hydrogen peroxide may help remove the last traces of the stain.

SMART DETERGENT PICKS



88
OVERALL SCORE
✓ TIDE PLUS ULTRA STAIN RELEASE
\$.21 PER LOAD



80
OVERALL SCORE
✓ PERSIL PROCLEAN POWER-LIQUID 2IN1
\$.22 PER LOAD



76
OVERALL SCORE
PERSIL PROCLEAN POWER-LIQUID SENSITIVE SKIN
\$.23 PER LOAD

BLOOD

Quickly rinse the affected area of fabric with cold water and apply detergent right on the stain. Rub the detergent into the stain with your fingers or with a clean, soft toothbrush, then let it sit for 10 minutes before washing the item on a cold cycle. Washing in hot water can set blood and other stains. For any stain, including blood, never put the soiled item into a dryer until you're satisfied with the stain removal. The dryer's heat may set the stain, and that will make it much harder to remove.

MUSTARD

Curcumin not only lends mustard its yellow color but also makes a mustard stain hard to remove from fabric. To deal with a mustard stain, scrape off the condiment without spreading. Then mix the detergent solution suggested for removing an egg stain, work into fabric, rinse well, and hang the item in the sun. (Curcumin is very sensitive to sunlight, nature's bleaching agent.) This method works on almost anything that can be left in the sun for a few hours.

CHOCOLATE

Use your machine's soak cycle and a laundry detergent for high-efficiency and conventional machines. Then wash using a cold cycle.

ROGAINE

A reader told us that Rogaine, a topical treatment approved by the Food and Drug Administration to help regrow hair, stained his pillowcases after he applied it at bedtime. If that happens to you, try soaking the pillowcases in white vinegar for 15 to 30 minutes, then toss them in the washer with detergent but no bleach. Repeat if needed, then line-dry.



HOW TO REMOVE ANY STAIN

Work from the outer edge of the stain toward the center. Apply a small amount of the cleaning agent to a white paper towel or cloth and gently work it into the stained area. Problems can result from working with a large amount of cleaning material (even water), so begin with a little bit and repeat the process as needed.

- **Blot—don't rub or brush.** Rubbing too much can cause unsightly distortion in fabrics. Place the front of the fabric on a white paper towel or cloth and work the cleaning agent into the fabric from the back.
- **Be patient.** Repeat the procedure with clean white paper towels or cloths until you can't transfer anymore stain to the towel or cloth. Don't proceed to the next recommended

cleaning agent until this is done. Complete stain removal may require repeating the same step several times. In many cases it won't be necessary to use all of the recommended steps to remove a stain. When it's gone, flush the fabric with water to remove stain-removal products, then blot.

If the label of the fabric you're cleaning says "dry-clean only," you may want to avoid using a water-based cleaning agent. If you're concerned that your attempt to remove a stain will cause damage, seek help from a dry cleaner, who should evaluate the stain and material, and tell you of any potential risks. Tell him or her about any remedies you've already tried.

70
OVERALL SCORE



MEMBER'S MARK (SAM'S CLUB) ULTIMATE CLEAN
\$.12 PER LOAD

70
OVERALL SCORE



KIRKLAND SIGNATURE (COSTCO) ULTRA CLEAN FREE & CLEAR
\$.13 PER LOAD

FALL

MAINTAIN

YOUR FALL MAINTENANCE CHECKLIST

- Inspect roof and chimney, and clean gutters. **P. 83**
- Check insulation and ductwork. **P. 83**
- Prepare yard for winter. **P. 84**
- Store lawn gear. **P. 85**
- Prep snow blower. **P. 87**
- Store or cover and seal window air conditioners. Cover central A/C units and schedule a cleaning every few years. **P. 19**
- Change furnace filters. **P. 53**
- Close attic louvers.
- Change smoke and carbon monoxide detector batteries.

● House Exterior

ROOFS

Leaks can eventually damage the wood sheathing and rafters below your shingles, leading to thousands of dollars in repairs. Use binoculars to spot cracked, curled, or missing shingles safely from the ground. Consider having a roofing pro check flashing around chimneys, skylights, and roof valleys for leaks, and the rubber boots near vents for cracks that can let moisture seep in.

GUTTERS

Gutters stuffed with leaves, pine needles, and other debris can let water spill over the side, pool around your home's foundation, and seep inside. Water that freezes in gutters can force snow and ice under roof shingles, causing damage and leaks. It costs about \$300 per year for a pro to clean gutters in the fall and spring. That might be worth it rather than risking a fall off a ladder if you do the job yourself. You might also consider a gutter-guard system to keep debris out and water in. Make sure that gutter drains extend 5 feet from the house—and that soil slopes away from the foundation 1 inch per foot for 6 feet or more.

CHIMNEYS

Creosote buildup can impede the flow of smoke and cause chimney fires and carbon-monoxide poisoning. And even unused chimneys can develop cracks that weaken the structure. If your chimney hasn't had a recent inspection, now's the time. Figure on roughly \$150 to \$300 for an inspection and a sweep. Go to csia.org for industry-certified chimney sweeps and check bbb.org for complaints.



TIP

The expense of hiring a pro to clean gutters may be worth it rather than risking a fall off a ladder if you do the job yourself.

● Insulation & Ductwork

If your house is drafty and your furnace needs maintenance (see page 53), you'll be paying more to keep warm come winter than you have to. With a little caulk and elbow grease, you can tighten the building envelope of your home. The swiftest savings comes from sealing air leaks in your home's walls, windows, and especially its ductwork. Sealing and insulating your home's air ducts are jobs best left to a professional. But you can use a combination of caulk, foam board, expandable sealant, and weather stripping to plug leaks around windows, doors, electrical outlets, and other openings in your home. Plugging leaks could lower your annual heating and cooling bills by \$400.

SMART STEPS TO SAVE ENERGY

One of the best ways to cut cold-weather heating costs is by automating your energy savings. Simply lowering temperatures by 10° F to 15° F while you're at work or asleep can trim 15 percent from your heating bill. You can lower temperatures manually on any thermostat or install a smart or programmable thermostat (about \$40 to \$250) to do it for you. Setting temperatures back can save you up to \$100 per year, based on average heating costs. That's \$500 in your pocket in just five years.

● Yards

Cooler temperatures allow individual grass blades to absorb nutrients, so now is the best time to aerate and fertilize. Autumn is also the season to tackle fallen leaves and do a little end-of-season maintenance on mowers and string trimmers. If that sounds like a lengthy list of chores, remember that you'll reap the rewards next spring, when your neighbors are trying in vain to bring life back to their lawns. Here's what to do now.

DEAL WITH LEAVES

First, decide whether you need to collect leaves at all. There are environmental benefits to letting them lie where they fall. But of course, some folks find that unsightly or would rather put them to use in a compost pile or as mulch around trees. A rake will work fine for clearing, but a leaf blower is much faster. See our top leaf blowers on page 89.

TEND TO GRASS

Most grass varieties continue to grow when average soil temperature remains above 55° F. You'll need to continue cutting with a lawn mower or tractor (see our top picks on page 32). Apply fertilizer and aerate now, and if you don't plan to collect your leaves, consider using a mulching kit with your mower. (Churning fallen leaves into fine mulch helps the soil absorb their nutrients, reducing the quantity of fertilizer you'll need to use.)

TAKE CARE OF TREES

Autumn is the best time to prune and transplant most trees and shrubs. Trying to do it in spring or summer can shock them, right when they're budding or blooming. The time is also right to trim back or lop off dead or dangling branches, because hurricane season is immediately

followed by winter storms in much of the country, and any storm can cause a dead limb to fall on your property. Loppers will suffice for small jobs, but only a chain saw will work for larger limbs.

STOW HOSES

Pipes can burst when water inside expands as it freezes, creating an expensive mess in your home. Shut off inside valves that control water flow to hose spigots. Then briefly open the spigots to drain any leftover water in pipes and hoses. Also drain water from supply lines for water sprinklers and pools, and shut off



TIP

Take the time to store and winterize lawn gear now so that it will start up easily in the spring.

inside valves that control them. And help prevent freezing by insulating pipes in unheated areas.

DO A FINAL DECK CHECK

While you're putting away your outdoor furniture and your grill, take a careful look at your deck. Make sure the railings and banisters aren't loose. Check that all of the steps are securely anchored to the risers by resting your weight all along their full width. Inspect all nails, screws, and bolts. Hammer down nails, and tighten screws and bolts as needed with a cordless drill. And to protect the wood from moist-



ure, make sure you clear away all leaves.

STORE THE MOWER AND OTHER YARD GEAR

If you loathe caring for your lawn, one silver lining is that fall coincides with the end of mowing, string trimming, and hedge clipping for much of the country. But unless you plan on moving south, you need to give those tools some TLC so that they'll start easily next season. Take the time to store them properly, and see "How to Winterize Your Lawn Mower," at right.

HOW TO WINTERIZE YOUR LAWN MOWER

The maintenance section of your lawn mower's owner's manual probably runs on for pages, with instructions on everything from greasing the pinion gears to gapping the spark plugs. If you want your mower to last for decades, you'll be smart to follow every step.

But if you don't have an entire weekend to burn and you'll be happy just getting your mower to the point where it will start next spring, you can whittle the task list down to two musts.

Below are the critical steps on how to winterize your mower, from the lawn and garden experts at Consumer Reports. If you get inspired, keep reading—you'll learn about several best practice maintenance measures that you'd also be wise to do if you have time before your kid's soccer game or other weekend obligations.

pot scrubber; wear heavy work gloves to protect your hands from the sharp blade. If you have silicone spray handy, spray the underside of the deck with it to prevent future buildup.

When stowing your mower, we recommend putting a container of mothballs near the deck to prevent mice and other rodents from nesting in the dormant machine.

STABILIZE THE FUEL

Leaving fuel in the mower's tank all winter can wreak havoc on the engine. Water from condensation can combine with ethanol in the gas, causing clogs, corrosion, and other problems throughout the fuel system. Come springtime, you could be in for a professional engine cleaning to the

tune of \$75 to \$100.

If there's only a little fuel left after the final mow of the season, your best bet is to run the tank dry. You can use a turkey baster or siphon to remove larger quantities of fuel. (You can add the leftover fuel to your car.)

If you keep your mower in the basement during the winter, you should remove the fuel regardless of how much is left, because storing it inside could be a fire hazard.

If you store the mower in a garage or shed, it's better to fill the tank with gas, then top it off with a fuel stabilizer, available at home centers and gas stations. For good measure, run the mower for a few minutes before shutting it down for the winter so that the stabilized fuel can work its way through the carburetor.

CLEAN THE MOWER DECK

Ideally, you should be in the habit of doing this throughout the season, because keeping the blade housing clean helps ensure optimal mower performance. But the task is essential before winter to prevent moisture in the grass clippings from causing rust and corrosion to the underside of the deck during the offseason.

A shot with the garden hose might be enough to remove the clippings, especially if they're fresh. For dried-on clippings, try a plastic paint scraper or old bristled



MORE FALL LAWN-CARE TIPS

After tending to your lawn all summer, you're ready for a break. But before the grass goes dormant, tackle these essential autumn tasks so that it will come back green and lush in the spring. From the lawn experts at Consumer Reports, these simple fall lawn-care steps show you how to get the desired results without pumping your yard full of chemicals.

STEP 1

Aerate the soil. The ground in many American yards is as hard as a rock, thanks to years of whiffle ball tournaments and backyard barbecues. That's why aeration is one of the most important treatments you can give your lawn. Fall is the ideal time because you won't have to worry about kicking up weed seeds, as you do in the spring. Aeration involves a pretty heavy-duty piece of outdoor power equipment—called a core aerator—that removes plugs of soil from the ground, allowing air, water, and nutrients to penetrate the lawn's root system. Core aerators cost a few thousand bucks, but you can rent one from a home center for around

\$100 per day. That's nothing to sneeze at, so it's a good idea to go in on the rental with a few of your neighbors. (Aeration party, anyone?) The more moisture in the soil, the easier it will be to aerate. If possible, try to time the aeration for after a recent rainfall; if not, watering the lawn the day before will help. For heavily compacted soil, make multiple passes with the aerator to really loosen the ground. And for best results, give the plugs a few days to dry out, then break them up by going over them with your lawn mower or smacking them with a rake.

STEP 2

Add a layer of compost. Aeration will bring much-needed oxygen to the grass's root systems. But you should also add healthy organic matter to the soil in the form of a quarter-inch top dressing of compost. In addition to improving the soil structure, the compost will help the soil hold water during extreme weather. If you haven't started a backyard compost bin yet, this is another reason to do so (and you'll be amazed at your reduction in household trash). You can also buy bags of compost from a home center or local nursery. The material tends to be moist and clumpy, so it's easier to distribute it by hand rather than by using a mechanical spreader.

STEP 3

Apply fertilizer. You might be able to eliminate this step in the future, especially if you aerate and compost annually and provide additional nutrients throughout the year by mulching lawn clippings. But let's assume your lawn needs an extra shot of nutrition this year, in the form of nitrogen-rich fertilizer, which will help it withstand pests as well as extreme heat and cold. Stay away from fast-release fertilizers, which can leach into the soil and surrounding waterways. Instead, choose a slow-release or organic fertilizer. Both can be applied with a broadcast spreader, available at home centers. Refer to the fertilizer bag to see which setting on the spreader will provide the most even dispersal. If you want to go the extra distance, send a soil sample to your local cooperative extension so that it can perform a soil test, usually for a fee of around \$10. The test will tell you exactly which nutrients are missing from your soil and how to fix the problem. For example, you may need to balance out acidity with an application of lime. That's another item on your to-do list, but your fortified lawn will need less care and attention next season.



● Snow Blowers

Even if the first big snowstorm of the season might be weeks away where you live, now is the time to get your snow blower ready for winter. For one thing, if there's a major issue with your machine, you'll need time to get the repair done. Engine-starting trouble and damaged augers are the most common breakages, based on Consumer Reports' brand reliability reports. For another, you don't want to be fiddling with shear pins or making other spot fixes in frigid weather, with snow piling up on the driveway. Here's what to take care of now.

FILL 'ER UP

Ideally, you either drained the tank of your gas snow blower or filled it with stabilized fuel when you retired the machine for the season last spring. If you didn't, here's hoping your snow blower will forgive you by starting up now.

If it does, you'll have dodged a pretty big bullet because old, unstable fuel can gum up the carburetor and fuel passages. Don't push your luck any further. Instead, drain the old fuel using a siphon or turkey baster. Then fill the tank with gas and top it off with a fuel stabilizer, available at home centers and gas stations. This step obviously doesn't apply to you if you own an electric snow blower.

CHECK THE OIL

You used to have to mix the oil in with the gasoline on many older single-stage snow blowers. With today's models, there's a separate oil reservoir and dipstick, just like you see on a car. Start by checking the oil. If it's dark and dirty, it's time for a change.

Most reservoirs have a bolt that you unscrew; then you tilt the machine back and drain the old oil into a container. Screw the bolt back in place and refill

the reservoir with clean oil, referring to your owner's manual for the proper type and grade.

KICK THE TIRES

We're starting to see multistage snow blowers with airless tires. But unless you have one of these newer machines, your snow blower has pneumatic tires, and there's a good chance they're low on air. Underinflated tires can make handling more difficult.

Check the tire wall or the user's manual for the recommended tire pressure; most manufacturers recommend between 15 and 20 pounds per square inch (psi). A bike pump will do the job, if it has a built-in gauge. Otherwise, you should use a separate tire pressure gauge to make sure you get the pressure just right. Too much air could cause the tires to pop.

INSPECT THE SHEAR PINS

This step applies only to multistage snow blowers. Shear pins are small bolts that are there to protect the transmission in case the auger jams, say, after it scoops up a large stone or chunk of ice. If the pins show signs of corrosion or wear and tear, replace them with new ones. (Many snow blowers come with extras, or you can buy them online or at a home center or hardware store.)

The pins slide into place and tighten with a bolt. Never use bolts without shear pins, because bolts won't break under pressure, increasing the risk of a damaged transmission.

TIGHTEN AND LUBRICATE

As a final measure, tighten all nuts and bolts, especially around the controls, because they tend to loosen as the snow blower vibrates. And lubricate all cables and moving parts as identified in the owner's manual.



FALL

SHOP



SHOP THE SALES THIS FALL

SEPTEMBER

- Leaf Blowers P. 89
- Ranges P. 91

OCTOBER

- Interior Paints P. 95
- Smoke Detectors P. 96
- Carbon Monoxide Detectors P. 96
- Snow Blowers P. 98
- Wall Ovens P. 100
- Cookware P. 101

NOVEMBER

- Coffee Makers P. 102
- Refrigerators P. 106

PHOTO: GETTY IMAGES

Leaf Blowers

Getting a good deal on a leaf blower early in the season could make your autumn easier. Gas handheld models are more portable than corded electric blowers, but they're also heavier and noisier. Whichever type you choose, look for a machine that is easy to carry and offers convenient controls.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features					
					Sweeping	Loosening	Vacuuming	Handling and ease of use	Noise at 50 ft.	Noise at ear	Weight (lb.)	cc/amp	Multiple speeds	Vacuum capability	Four-cycle engine	Spring-assisted starting
ELECTRIC HANDHELD BLOWERS																
	1	Toro UltraPlus 51621	82	\$100							8.9	12 amp			NA	NA
	2	Ryobi RY42102	78	\$40			NA				6.8	12 amp			NA	NA
	3	Worx WG520	76	\$60			NA				6.4	12 amp			NA	NA
	4	Weed Eater WE12B	76	\$50							8.0	12 amp			NA	NA
	5	Toro 51619	75	\$70							9.0	12 amp			NA	NA
	6	Black+Decker BEBL7000	72	\$80							9.0	12 amp			NA	NA
	7	Sun Joe SBJ605E	61	\$70							8.6	14 amp			NA	NA
BATTERY HANDHELD BLOWERS																
	1	Kobalt (Lowe's) KHB 400B-06	86	\$200			NA				10.0	80 volt			NA	NA
	2	Craftsman 98836	85	\$160			NA				9.5	60 volt			NA	NA
	3	GreenWorks BL60L2510	82	\$230			NA				9.0	60 volt			NA	NA
	4	Ego LB5302	80	\$200			NA				7.8	56 volt			NA	NA
	5	Echo CPLB-58V2AH	75	\$230			NA				8.0	58 volt			NA	NA
	6	Troy-Bilt TB4300	74	\$280			NA				11.3	40 volt			NA	NA
	7	GreenWorks GBL80300	73	\$250			NA				9.0	80 volt			NA	NA
	8	Worx WG591	72	\$170			NA				7.8	56 volt			NA	NA
	9	DeWalt DCBL770X1	71	\$250			NA				10.5	60 volt			NA	NA
	11	Ego LB4801	67	\$150			NA				8.0	56 volt			NA	NA
	11	Stihl BGA 85	67	\$300			NA				9.6	36 volt			NA	NA
BATTERY BACKPACK BLOWERS																
	1	Ego LB6002	85	\$300			NA				18.3	56 volt			NA	NA
	2	GreenWorks BPB60L510	83	\$250			NA				14.0	60 volt			NA	NA
GASOLINE BACKPACK BLOWERS																
	1	Husqvarna 350BT	86	\$320			NA				20.2	50.2 cc				
	2	Stihl BR-200	84	\$280			NA				12.6	27.2 cc				
	3	Husqvarna 150BT	83	\$300			NA				22.6	50 cc				
	4	Ryobi RY38BPB	82	\$200			NA				22.5	38 cc				

● Leaf Blowers *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features					
					Sweeping	Loosening	Vacuuming	Handling and ease of use	Noise at 50 ft.	Noise at ear	Weight (lb.)	cc/amp	Multiple speeds	Vacuum capability	Four-cycle engine	Spring-assisted starting
GASOLINE BACKPACK BLOWERS <i>Continued</i>																
✓	5	Stihl BR 350	81	\$350	↑↑	↑↑	NA	↑↑	↓	↓	22.0	63.3 cc	●			
	6	Echo PB-265LN	77	\$270	↑	↑↑	NA	↑	↑↑	↓	13.3	25.4 cc	●			●
	7	Husqvarna 130BT	75	\$250	↑	↑↑	NA	↑	↑	↓	6.8	29.5 cc	●			
	8	Troy-Bilt TB2BP EC	67	\$190	↑	↑↑	NA	↓	↓	↓	17.8	27 cc	●			●
GASOLINE HANDHELD BLOWERS																
Ⓢ	1	Husqvarna 125B	80	\$150	↑↑	↑↑	NA	↑	↑	↓	9.4	28 cc	●			
✓	2	Jonsered B2126	80	\$160	↑↑	↑	NA	↑↑	↓	↓	9.4	28 cc	●			
Ⓢ	3	Hitachi RB24EAP	80	\$130	↑↑	↑	NA	↑↑	↓	↓	8.6	24 cc	●			
✓	4	Echo PB-250LN	79	\$170	↑↑	↑↑	NA	↑	↑	↓	9.5	25.4 cc	●			
Ⓢ	5	Ryobi RY25AXB	78	\$130	↑↑	↑	NA	↑↑	↓	↓	11.4	25 cc	●			
	6	Stihl BG 56 C-E	72	\$190	↑	↑	NA	↑↑	↑	↓	9.0	27.2 cc	●			
	7	Echo PB-255LN	72	\$230	↑	↑	NA	↑↑	↑	↓	10.2	25.4 cc	●			●
	8	Troy-Bilt TB4HB EC	71	\$180	↑	↑	NA	↑	↓	↓	10.9	25 cc	●		●	●
	9	Stihl BG 50	71	\$140	↑	↑	NA	↑	↑	↓	8.0	27.2 cc	●			
	10	Makita BHX2500CA	71	\$190	↑↑	↑↑	NA	↓	↑	↓	9.8	24.5 cc	●		●	●
	11	Toro 51988	70	\$150	↑	↑↑	↓	↓	↓	↓	10.0	25.4 cc	●	●		●
	12	Stihl BG 66L	69	\$230	↑	↑	NA	↑↑	↑↑	↓	9.7	27 cc	●			
	13	Husqvarna 125BVx	69	\$180	↑↑	↑	↓	↓	↓	↓	10.0	28 cc	●	●		●
GASOLINE WHEELED BLOWERS																
✓	1	Troy-Bilt TB672	88	\$400	↑↑	↑↑	NA	↑	↑	↓	78.0	205 cc	●		●	
Ⓢ	2	Powermate P-WB-163150E	87	\$300	↑↑	↑↑	NA	↑	↓	↓	88.0	163 cc			●	
✓	3	Little Wonder C5	85	\$700	↑↑	↑↑	NA	↑	↓	↓	109.0	170 cc	●		●	NA
	4	Troy-Bilt Flex 23AACAAX711	78	\$230	↑↑	↑	NA	↓	↑	↓	70.0	208 cc	●		●	

HOW WE TEST: **Sweeping** indicates the speed of moving a pile of leaves. **Loosening** indicates the speed of removing embedded leaf particles from the lawn. **Vacuuming** reflects how quickly and effectively models

with vacuum capability pick up leaves and how finely they are mulched. **Handling and ease of use** includes ease of maneuvering, using controls, and changing modes. **Noise at 50 feet** is based on industry-standard

measurements at 50 feet. Models rated Very Good or Excellent at 50 feet should meet common municipal limits of 65 decibels (dBA). **Noise at ear** is based on our measurements at the operator's ear level. Models rated

Fair or Poor at ear level emitted at least 85 dBA, loud enough to warrant hearing protection. **Overall Score** is based on the performance of the product in all of our tests.

Ranges

Most electric and gas ranges are 30 inches wide, which is the size we buy and test. Pro-style ranges usually span 36 inches or more. The pro-style ranges are stylish, but they aren't the best-performing ranges we've tested. Regular ranges now have some pro-style touches and stainless trim, for a lot less.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Cooktop high	Cooktop low	Baking	Broiling	Oven capacity	Self-cleaning	High-power elements/burners	Medium-power elements/burners	Low-power elements/burners	Convection mode	Slide-in
SMOOTHTOP, DOUBLE OVEN (30-INCH)																	
✓	1	Whirlpool WGE755C0BS	82	\$1,370	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
✓	2	Samsung NE58F9710WS	81	\$1,600	↓	↓	↑	↑	↑	↑	↑	↑	1	2	1	•	•
	3	LG LDE4415ST	79	\$1,620	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
	4	LG LTE4815ST	78	\$1,700	↑	↓	↑	↑	↓	↑	↑	↑	2	0	2	•	•
	5	GE JB860SJSS	78	\$1,350	↑	↓	↑	↑	↓	↓	↑	↑	2	0	2	•	•
	6	Samsung NE59J7850WS	78	\$1,400	↓	↓	↑	↑	↑	↑	↑	↑	1	2	1	•	•
	7	Maytag MET8800FZ	72	\$1,620	↓	↓	↑	↑	↑	↓	↑	↓	1	2	1	•	•
	8	Ikea Betrodd 602.885.60 [IES900DS]	72	\$1,000	—	—	↑	↑	↓	↑	↑	↑	2	0	2	•	•
SMOOTHTOP, SINGLE OVEN (30-INCH)																	
✓	1	GE Café CS980STSS	86	\$2,550	↑	↓	↑	↑	↑	↑	↑	↓	1	2	2	•	•
✓	2	GE Profile PB911SJSS	85	\$1,085	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
Ⓢ	3	LG LRE3193ST	83	\$1,000	↑	↓	↑	↑	↑	↑	↑	NA	2	0	2	•	•
✓	4	Kenmore Elite 95052	82	\$1,540	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
✓	5	Bosch HEI8054U	82	\$1,980	↑	↑	↑	↑	↑	↑	↑	↓	2	0	2	•	•
✓	6	Kenmore Pro 92583	81	\$2,250	↑	↓	↑	↑	↑	↑	↑	↑	2	1	1	•	•
✓	7	Frigidaire Gallery FGEF3035RF	81	\$810	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
✓	8	LG LSE4613ST	81	\$1,350	↑	↓	↑	↑	↑	↑	↑	↓	2	0	2	•	•
	9	Samsung NE58F9500SS	80	\$1,300	↓	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
	10	GE JS760SLSS	78	\$1,100	↑	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
	11	Kenmore 94242	78	\$1,200	↑	↓	↑	↑	↓	↑	↑	↑	2	0	2	•	•
	12	GE JB655SKSS	77	\$600	↑	↓	↑	↑	↓	↑	↑	↑	2	0	2	•	•
	13	Whirlpool WEE510S0FS	77	\$1,080	↑	↓	↑	↑	↑	↓	↑	↑	2	0	2	•	•
	14	LG LRE3194BD	77	\$850	↑	↓	↑	↑	↑	↑	↑	↓	2	0	2	•	•
	15	Samsung NE59N6650SS	75	\$1,000	↓	↓	↑	↓	↑	↑	↑	↑	2	0	2	•	•
	16	Samsung NE59J7630SS	75	\$900	↓	↓	↑	↑	↑	↑	↑	↑	2	0	2	•	•
	17	GE Adora JB755BJTS	73	\$860	↑	↓	↑	↓	↑	↓	↑	↑	2	0	2	•	•
	18	Samsung NE59M4320SS	73	\$650	↓	↓	↑	↑	↑	↓	↑	↑	2	0	2	•	•
	19	Frigidaire FFEF3054TS	70	\$675	↑	↓	↑	↑	↑	↓	↑	↑	2	0	2	•	•

Ranges *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Cooktop high	Cooktop low	Baking	Broiling	Oven capacity	Self-cleaning	High-power elements/burners	Medium-power elements/burners	Low-power elements/burners	Convection mode	Slide-in
SMOOTHTOP, SINGLE OVEN (30-INCH) <i>Continued</i>																	
	20	GE JS645SLSS	70	\$1,000	↑	↓	↑	↓	↓	↓	↑	↑	2	0	2		
	21	Frigidaire FFEH3054US	67	\$800	↑	↓	↑	↓	↓	↑	↑	↑	2	0	2		
	22	Electrolux EI30EF45QS	67	\$2,205	↓	↑	↑	↑	↑	↑	↓	↑	2	0	2	•	•
	23	Whirlpool WFE515S0ES	67	\$630	↑	↓	↑	↑	↑	↓	↑	↑	2	0	2		•
	24	Frigidaire LGEF3046TF	66	\$900	↑	↓	↑	↓	↑	↑	↑	↑	2	0	2	•	•
	25	GE JBS60RKSS	66	\$605	↑	↓	↑	↓	↓	↓	↑	NA	1	1	2		•
	26	Maytag MER8800DS	65	\$900	↓	↓	↑	↑	↑	↑	↑	↓	2	0	2	•	•
	27	Kenmore Elite 95223	64	\$2,020	↑	↓	↑	↑	↑	↑	↑	↓	2	0	2	•	•
	28	Kenmore 95123	64	\$1,300	↑	↓	↑	↑	↓	↑	↑	↓	2	0	2	•	•
	29	Samsung NE59M4310SS	63	\$530	↓	↓	↑	↓	↓	↓	↑	↑	2	0	2		•
ELECTRIC INDUCTION																	
✓	1	GE Profile PHS930SLSS	85	\$2,435	↑	↓	↑	↑	↑	↑	↑	↑	3	1	0	•	
✓	2	Kenmore Elite 95073	83	\$1,590	↑	↓	↑	↑	↑	↑	↑	↑	2	1	1	•	•
✓	3	GE Café CHS995SELSS	82	\$3,600	↑	↓	↑	↑	↑	↓	↑	↑	3	1	0	•	•
✓	4	Frigidaire Gallery FGIF3036TF	82	\$1,080	↑	↓	↑	↑	↑	↑	↑	↑	4	0	0	•	•
✓	5	LG LSE4617ST	81	\$3,330	↑	↓	↑	↑	↑	↑	↑	↓	2	2	0	•	•
	6	Samsung NE58K9560WS/AA	79	\$2,200	↓	↓	↑	↑	↑	↑	↑	↓	1	3	0	•	•
	7	Frigidaire FFIF3054TS	78	\$1,000	↑	↓	↑	↑	↑	↓	↑	↑	4	0	0		
GAS AND DUAL-FUEL, DOUBLE OVEN (30-INCH)																	
✓	1	LG Signature LUTD4919SN (dual-fuel)	84	\$3,240	↑	↑	↑	↑	↑	↑	↑	↑	2	2	1	•	•
✓	2	Samsung NY58J9850WS (dual-fuel)	80	\$2,700	↑	↑	↑	↑	↑	↑	↓	↓	2	2	1	•	•
✓	3	LG LDG4315ST	76	\$1,710	↑	↑	↑	↑	↑	↓	↑	↑	2	2	1	•	•
✓	4	GE PGB980ZEJSS	76	\$2,130	↑	↓	↑	↑	↑	↑	↑	↓	2	2	1	•	•
✓	5	GE Café CGS995SELSS	72	\$2,800	↑	↓	↑	↑	↓	↑	↑	↓	3	2	1	•	•
✓	6	GE Profile PGS960SELSS	71	\$2,500	↑	↓	↑	↑	↓	↑	↑	↓	2	2	1	•	•
✓	7	Samsung NX58M6850SG	70	\$1,400	↑	↑	↓	↑	↓	↓	↑	↓	2	2	1	•	•
	8	GE JGB860SEJSS	63	\$1,530	↑	↓	↑	↑	↑	↓	↑	↓	2	2	1	•	•

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Cooktop high	Cooktop low	Baking	Broiling	Oven capacity	Self-cleaning	High-power elements/burners	Medium-power elements/burners	Low-power elements/burners	Convection mode	Slide-in
GAS AND DUAL-FUEL, SINGLE OVEN (30-INCH)																	
	1	Samsung NX58F5700WS	80	\$1,530									2	2	1		
	2	Samsung NX58H9500WS	79	\$1,700									2	2	1		
	3	Samsung NX58H5600SS	76	\$680									2	2	1		
	4	LG LSD4913ST (dual-fuel)	75	\$1,600									2	2	1		
	5	Samsung NX58K3310SS	75	\$720								NA	2	2	1		
	6	LG LRG4113ST	74	\$1,170									2	2	1		
	7	Samsung NX58M9420SS	74	\$1,350									2	2	1		
	8	Samsung Chef Collection NX58M9960PS/AA	74	\$4,000									3	0	1		
	9	Samsung NX58M6630SS	73	\$800									2	2	1		
	10	GE JGS760SELSS	73	\$1,300									2	2	1		
	11	LG LRG3193ST	73	\$1,000								NA	2	2	1		
	12	GE Profile PGS930SELSS	72	\$2,340									2	2	1		
	13	GE PGB911ZEJSS	71	\$1,500									2	3	0		
	14	LG LSG4513ST	70	\$1,600									2	2	1		
	15	LG LRG3061ST	70	\$810								NA	2	2	1		
	16	GE JGB700SEJSS	69	\$750									2	2	1		
	17	Frigidaire Gallery FGGF3058RF	69	\$1,150									2	2	1		
	18	Kenmore 75232	68	\$1,340									2	2	1		
	19	GE JGB660SEJSS	67	\$680									2	2	1		
	20	Kenmore 74332	67	\$1,240									2	2	1		
	21	Frigidaire FFGF3054TS	67	\$720									2	2	1		
	22	GE JGBS66EEKES	67	\$675								NA	2	2	1		
	23	Bosch HDI8054U (dual-fuel)	66	\$2,500									2	1	2		
	24	GE JGBS62REKSS	66	\$675								NA	2	1	1		
	25	GE JGSS66EELES	65	\$1,260								NA	2	2	1		
	26	GE JGBS30REKSS	64	\$450								NA	1	2	1		
	27	GE JGBS60DEKWW	64	\$400								NA	1	2	1		

Ranges *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features				
					Predicted reliability	Owner satisfaction	Cooktop high	Cooktop low	Baking	Broiling	Oven capacity	Self-cleaning	High-power elements/burners	Medium-power elements/burners	Low-power elements/burners	Convection mode	Slide-in
GAS AND DUAL-FUEL, SINGLE OVEN (30-INCH) <i>Continued</i>																	
	28	Frigidaire FFGH3054US	63	\$995	↑	↓	↑	↑	↓	↓	↓	↑	2	2	1		
	29	Frigidaire Gallery FGGF3047TF	61	\$980	↑	↓	↑	↓	↓	↓	↓	↑	2	2	1	•	•
	30	Jenn-Air JGS1450FP	61	\$3,000	↓	↓	↓	↑	↑	↑	↑	↓	2	2	1	•	•
PRO-STYLE GAS AND DUAL-FUEL (30-INCH)																	
✓	1	KitchenAid KDRS407VSS (dual-fuel)	70	\$4,230	↓	↑	↑	↑	↓	↓	↓	↑	3	0	1	•	•
✓	2	GE Monogram ZGP304NRSS	68	\$5,000	↑	↑	↓	↑	↓	↓	↑	↓	1	3	0	•	•
	3	Wolf DF304 (dual-fuel)	64	\$6,400	↓	↑	↓	↑	↑	↑	↓	↓	3	1	0	•	•
	4	NXR DRGB3001	61	\$1,700	–	–	↓	↑	↓	↓	↓	NA	4	0	0	•	•
PRO-STYLE GAS AND DUAL-FUEL (36-INCH)																	
✓	1	KitchenAid KDRU763VSS (dual-fuel)	75	\$7,300	↓	↑	↑	↑	↑	↑	↑	↑	3	0	1	•	•
✓	2	GE Monogram ZDP364NDPSS (dual-fuel)	74	\$8,100	↑	↑	↓	↑	↑	↓	↑	↑	4	0	0	•	•
	3	Thermador PRG366JG	67	\$7,700	↓	↑	↑	↑	↑	↓	↑	↓	6	0	0	•	•
	4	Kucht Pro Style KRG3618U	66	\$3,000	–	–	↑	↑	↑	↓	↓	NA	6	0	0	•	•

HOW WE TEST: **Cooktop high** is a measure of how quickly the highest-power burner brings a large pot of water to a near-boil. **Cooktop low** indicates how steadily a low-power burner maintains a simmer, and whether the highest-power burner, set to low, scorches delicate foods, like tomato sauce. **Baking** is a rating of how evenly the oven bakes cakes and

cookies on multiple racks. **Broiling** is a measurement of how well the upper element browns a full tray of hamburger patties, and how even it is. **Oven capacity** is a measure of usable space in the cavity (for double-oven ranges, the rating includes both ovens). **Self-cleaning** evaluates the oven's ability to clean itself of a

lab-calibrated mixture of sticky foods, including pie filling, lard, eggs, and tapioca. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand, not under service contract, will develop problems or break within the first five years. **Owner**

satisfaction reflects the proportion of CR members who are extremely likely to recommend the range they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (–), we assume the model has average reliability and satisfaction.

Interior Paints

The best interior paints hide the original wall color with as little as one coat. They also claim to have low or no VOCs (volatile organic compounds), linked to air pollution and respiratory problems. Because a brand's flat, eggshell, and semi-gloss formulations perform similarly, we've combined the scores into one.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results		Features	
					Hiding	Staining	Self-priming	Claims zero VOCs
INTERIOR PAINTS								
✓	1	Behr Premium Plus Ultra (Home Depot)	83	\$36	↑↑	↑↑	•	•
✓	2	HGTV Home by Sherwin-Williams Showcase (Lowe's)	81	\$39	↑↑	↑↑	•	
✓	3	HGTV Home by Sherwin-Williams Infinity (Lowe's)	80	\$46	↑↑	↑	•	
Ⓢ	4	Behr Premium Plus (Home Depot)	80	\$31	↑↑	↑	•	•
✓	5	Benjamin Moore Aura	77	\$72	↑↑	↑	•	
✓	6	Behr Marquee (Home Depot)	76	\$46	↑↑	↑	•	
Ⓢ	7	Kilz Complete Interior (Walmart)	74	\$27	↑	↑	•	
	8	Valspar Ultra Interior (Lowe's)	71	\$31	↑	↓	•	
	9	Prestige Paints Interior	70	\$41	↑↑	↓	•	•
	10	Valspar Optimus (Ace)	69	\$49	↑	↓	•	
	11	Clark+Kensington Enamel (Ace)	68	\$35	↑↑	↓	•	
	12	Valspar Signature (Lowe's)	67	\$37	↑↑	↓	•	
	13	PPG Timeless Interior (Home Depot)	66	\$36	↑↑	↓	•	

HOW WE TEST: Hiding reflects how well a paint covers dark

colors mainly with one coat. Staining shows how well a paint

resists tough oil and water-based stains. Overall Score is based

on the performance of the product in all of our tests.



PHOTO: LISA SHIN

Smoke Detectors

Fires burn differently: Some flare, some smolder. The best smoke detectors are "dual-sensor" models that combine two types of technology to detect both flaming and smoldering fires, offering you the best protection and saving you the hassle of installing two separate smoke detectors.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results		Features		
					Flaming fires	Smoldering fires	Power supply	Interconnectable	Hush button
DUAL-SENSOR SMOKE ALARMS									
	1	First Alert 3120B	91	\$30			Hardwired, battery backup	<input type="checkbox"/>	<input type="checkbox"/>
	2	Kidde PI2010	91	\$30			Hardwired, battery backup	<input type="checkbox"/>	<input type="checkbox"/>
	3	First Alert SA320CN	87	\$23			2 AA batteries	<input type="checkbox"/>	<input type="checkbox"/>
	4	Kidde PI9010	87	\$25			9V battery	<input type="checkbox"/>	<input type="checkbox"/>

HOW WE TEST: Flaming fires is response time to paper fires with little

smoke. Smoldering fires is response time to wood-fed smoky fires. Overall

Score is based on the performance of the product in all of our tests.

Carbon Monoxide Detectors

Carbon monoxide detectors are needed for any home with fuel-burning appliances, such as a furnace, water heater, range, cooktop, or grill. Some models include digital displays to show the level of CO they detect, and some can read out the CO level via audio messages.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results			Features	
					High CO levels	Low CO levels	Display/voice	Power supply	Peak memory
STANDALONE CO DETECTORS									
	1	First Alert CO615	91	\$30				Plug-in w/BB	<input type="checkbox"/>
	2	First Alert CO410	80	\$30				Battery	<input type="checkbox"/>
	3	Kidde KN-COB-DP2	78	\$30			NA	Plug-in w/BB	<input type="checkbox"/>
	4	Kidde Nighthawk KN-COPP-3	77	\$45				Plug-in w/BB	<input type="checkbox"/>
	5	Kidde Nighthawk KN-COB-B-LP	70	\$25			NA	Battery	<input type="checkbox"/>
INTERCONNECTED CO DETECTORS									
	1	First Alert OneLink SCO501CN	93	\$70				Battery	<input type="checkbox"/>
	2	First Alert OneLink CO511B	89	\$85				Battery	<input type="checkbox"/>
	3	Kidde KN-COSM-IBA	80	\$40				Hardwired w/BB	<input type="checkbox"/>
	4	Kidde Silhouette KN-COPF-1	75	\$60				Hardwired w/BB	<input type="checkbox"/>


HOW WE TEST: High CO levels rates a model's response to CO of 300 parts per million. Low CO levels rates a model's

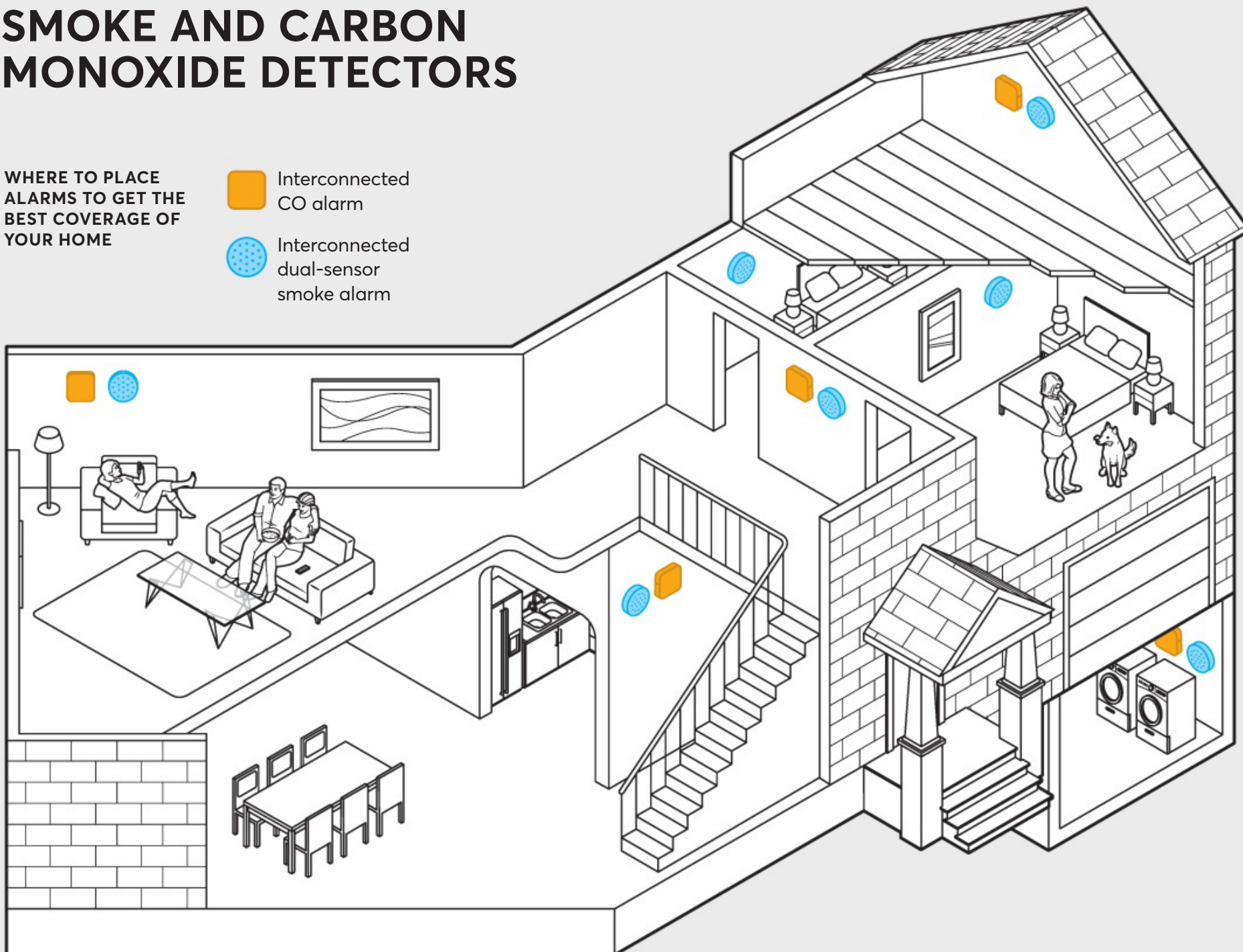
response to CO of 150 ppm. Display/voice rates the accuracy of the CO level either displayed digitally or conveyed by

voice message. Overall Score is based on the performance of the product in all of our tests.

SMOKE AND CARBON MONOXIDE DETECTORS

WHERE TO PLACE ALARMS TO GET THE BEST COVERAGE OF YOUR HOME

-  Interconnected CO alarm
-  Interconnected dual-sensor smoke alarm



With several types to choose from—ionization, photoelectric, dual-sensor, and more—shopping for smoke detectors isn't as straightforward as you might hope. Part of the reason is that fires can burn differently: Some flare, others smolder. And different types of smoke detectors are more sensitive to one type or the other. Unfortunately, not all detectors can adequately detect both fire types,

so we recommend using dual-sensor smoke alarms (see our top-rated models, on the facing page) to ensure the best protection. Interconnected smoke alarms communicate among devices for whole-house protection. Hardwired or wireless, if one alarm in the system senses a problem, all of them will sound.

DUAL-SENSOR These units, such as the First Alert 3120B

or Kidde PI2010 that top our tests, excel at detecting both types of fire and are the most effective smoke alarms in our tests.

IONIZATION

This type of smoke detector is best at detecting the small particles typical of fast, flaming fires. It works by detecting charged smoke particles from the flame, which triggers the alarm, according to the National Fire

Protection Association (NFPA). Ionization smoke detectors are particularly sensitive to burnt food and steam, so to prevent false alarms, avoid mounting this type of detector near the kitchen or bathroom.

But don't rely on these units alone: In our tests, ionization detectors were excellent at detecting flaring fires but unable to detect smoky, smoldering fires adequately. So you'll need to buy photoelectric models, too.

PHOTOELECTRIC

Best at detecting smoky, smoldering fires, photoelectric smoke detectors use an LED light beam inside the detector's inner chamber. When rising smoke particles interrupt or scatter the beam, the NFPA explains, it then triggers the alarm.

In our tests, photoelectric detectors, though excellent at detecting smoldering fires, were poor at detecting flaming fires—so pair them with ionization models.

Snow Blowers

A good snow blower has clearing ability and a smooth, single-lever chute control that sends snow where you want it to go. Compact machines work well on small driveways, and midsized models can dispatch heavy drifts. Large driveways and deep snow demand a larger model with power-driven wheels.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							Features									
					Predicted reliability	Owner satisfaction	Width (in.)	Removal speed	Plow-pile removal	Throwing distance	Surface cleaning	Handling	Noise	Controls	Engine size	Electric start	Multiple speeds	Single hand controls	Freewheel steering	Single-lever chute adjustment	Headlight	Heated handgrips	Warranty (yr.)
THREE-STAGE GAS: BEST FOR HEAVY SNOW UP TO 18 INCHES																							
✓	1	Cub Cadet 3X 30" Pro H	91	\$2,400	↑	↑	30	↑	↑	↑	↑	↑	↑	↓	↑	420 cc	•	•	•	•	1	•	3
✓	2	Cub Cadet 3X 30" HD	91	\$1,650	↑	↑	30	↑	↑	↑	↑	↑	↑	↓	↑	420 cc	•	•	•	•	1	•	3
Ⓢ	3	Troy-Bilt Vortex 2890	90	\$1,200	↑	↑	28	↑	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	1	•	2
✓	4	Cub Cadet 3X 26" Trac	87	\$1,600	↑	↑	26	↑	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	3	•	3
✓	5	Craftsman 88874	85	\$1,400	↓	↑	28	↑	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	1	•	2
Ⓢ	6	Troy-Bilt Vortex 2490	83	\$1,100	↑	↑	24	↑	↑	↑	↑	↑	↑	↓	↑	277 cc	•	•	•	•	1	•	2
	7	Craftsman 88870	77	\$1,200	↓	↑	24	↑	↑	↑	↑	↑	↑	↓	↑	277 cc	•	•	•	•	1	•	2
TWO-STAGE GAS: BEST FOR HEAVY TO MEDIUM SNOW UP TO 16 INCHES																							
✓	1	Ariens 926060	91	\$3,100	↑	↑	28	↑	↑	↑	↑	↑	↓	↑	420 cc	•	•	•	•	1	•	3	
✓	2	Ariens Deluxe 30 EFI	91	\$1,700	↑	↑	30	↑	↑	↑	↑	↑	↓	↑	306 cc	•	•	•	•	1	•	3	
✓	3	Toro Power Max HD 928 OAE 38840	91	\$1,400	↓	↑	28	↑	↑	↑	↓	↑	↓	↑	265 cc	•	•	•	•	1	•	3	
✓	4	Troy-Bilt Arctic Storm 30	91	\$1,500	↑	↑	30	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	•	•	•	3
Ⓢ	5	Cub Cadet 2X 30" HP	89	\$1,100	↑	↑	30	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	2	•	3	
Ⓢ	6	Cub Cadet 2X 28" HP	87	\$1,100	↑	↑	28	↑	↑	↑	↓	↑	↓	↑	277 cc	•	•	•	•	2	•	3	
Ⓢ	7	Toro Power Max 826 OXE 37799	87	\$1,000	↓	↑	26	↑	↑	↑	↓	↑	↓	↑	252 cc	•	•	•	•	1	•	3	
✓	8	Craftsman 88976	87	\$1,600	↓	↑	30	↑	↑	↑	↑	↑	↓	↑	357 cc	•	•	•	•	1	•	2	
Ⓢ	9	Briggs & Stratton 1227MDS	84	\$1,000	—	—	27	↑	↑	↑	↓	↑	↓	↑	250 cc	•	•	•	•	1	•	3	
✓	10	Ariens Deluxe 28 254CC 921046	82	\$1,100	↑	↑	28	↑	↑	↑	↑	↑	↓	↑	254 cc	•	•	•	•	1	•	3	
✓	11	Cub Cadet 2X 26" HP	81	\$1,000	↑	↑	26	↑	↑	↑	↑	↑	↓	↑	243 cc	•	•	•	•	1	•	3	
Ⓢ	12	Troy-Bilt 2860	80	\$900	↑	↑	28	↑	↑	↑	↑	↑	↓	↑	243 cc	•	•	•	•	1	•	2	
Ⓢ	13	Troy-Bilt Storm 2665	79	\$800	↑	↑	26	↑	↑	↑	↑	↑	↓	↑	243 cc	•	•	•	•	1	•	2	
	14	Troy-Bilt Storm 2625	77	\$800	↑	↑	26	↑	↑	↓	↑	↑	↓	↑	243 cc	•	•	•	•	1	•	2	
	15	Craftsman 88394 (Sears)	74	\$1,000	↓	↑	28	↓	↑	↓	↑	↑	↓	↑	243 cc	•	•	•	•	1	•	2	
	16	Husqvarna ST 227P	73	\$1,000	↓	↑	27	↑	↑	↑	↓	↑	↓	↑	254 cc	•	•	•	•	2	•	3	
	17	Yard Machines 31AM6CFG752	71	\$800	↓	↓	26	↓	↑	↑	↓	↑	↓	↑	243 cc	•	•	•	•	1	•	2	
	18	Troy-Bilt Storm 2660	69	\$800	↑	↑	26	↑	↓	↑	↓	↑	↓	↑	208 cc	•	•	•	•	1	•	2	
	19	Troy-Bilt Flex 23AABA6X711	64	\$400	↑	↑	26	↓	↑	↑	↑	↓	↓	↓	208 cc	•	•	•	•	•	•	3	

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results							Features						
					Predicted reliability	Owner satisfaction	Width (in.)	Removal speed	Plow-pile removal	Throwing distance	Surface cleaning	Handling	Noise	Controls	Engine size	Electric start	Multiple speeds	Single hand controls	Freewheel steering	Single-lever chute adjustment

COMPACT TWO-STAGE GAS: BEST FOR MEDIUM SNOW UP TO 16 INCHES

\$	1	Toro Power Max 824 OE 37798	77	\$800	↓	↑	24	↓	↑	↑	↓	↑	↓	↑	252 cc	•	•	•	•				3
\$	2	Briggs & Stratton 1696610	77	\$730	-	-	24	↑	↑	↑	↓	↑	↓	↑	208 cc	•	•						3
✓	3	Honda HSS724AW	74	\$2,200	↑	↑	24	↓	↓	↑	↑	↑	↓	↑	196 cc		•	•	•	•	1		3
✓	4	Craftsman 88640	74	\$800	↓	↑	24	↑	↑	↑	↓	↑	↓	↑	208 cc	•	•	•	•				2
\$	5	Troy-Bilt 2410	73	\$600	↑	↑	24	↑	↑	↓	↑	↑	↓	↑	208 cc	•	•						2
✓	6	Ariens Compact 24 920027	72	\$900	↑	↑	24	↑	↑	↑	↑	↑	↓	↑	223 cc	•	•	•			1		3
✓	7	Briggs & Stratton 1696614	72	\$880	-	-	24	↓	↑	↓	↓	↑	↓	↑	208 cc	•	•	•			1		3
✓	8	Ariens 920025	70	\$700	↑	↑	24	↓	↑	↑	↑	↑	↓	↑	208 cc	•	•	•					3
	9	Husqvarna ST 224P	70	\$900	↓	↑	24	↓	↑	↑	↑	↑	↓	↑	208 cc	•	•	•	•		2	•	3

SINGLE-STAGE GAS: BEST FOR LIGHT TO MEDIUM SNOW UP TO 9 INCHES

✓	1	Toro 824 QXE 36003	76	\$850	↑	↑	24	↑	↑	↓	↑	↑	↓	↑	252 cc	•	•	•	•				3
✓	2	Toro Power Clear 721 QZE 38744	75	\$700	↑	↑	21	↓	↑	↓	↑	↑	↓	↑	212 cc	•		•	NA				2
\$	3	Toro Power Clear 721 R-C 38751	74	\$600	↑	↑	21	↑	↑	↓	↑	↑	↓	↑	212 cc			•	NA				2
✓	4	Honda HS 720AS	72	\$700	↑	↑	20	↑	↑	↓	↑	↑	↓	↓	187 cc	•							2
✓	5	Toro 724 QXE 36002	69	\$750	↑	↑	24	↓	↓	↓	↑	↑	↓	↑	212 cc	•	•	•		•			3
\$	6	Troy-Bilt Squall 208XP	67	\$500	↓	↓	21	↓	↑	↓	↑	↑	↓	↑	208 cc	•		•	NA		2		3
\$	7	Troy-Bilt Squall 179E	64	\$400	↓	↓	21	↓	↑	↓	↑	↑	↓	↑	179 cc	•		•	NA				2
✓	8	Craftsman CMXGBAM1054540	64	\$500	↓	↓	21	↓	↑	↓	↑	↑	↓	↑	208 cc	•		•	NA				2
	9	Briggs & Stratton 1022EX	62	\$550	-	-	22	↓	↑	↑	↑	↑	↓	↑	208 cc	•		•	NA				3

HOW WE TEST: For **Removal speed**, we time how long it takes models to clear a highly controlled mixture of wet sawdust packed in standardized piles. **Plow-pile removal** is an assessment of how quickly, and thoroughly, models cut through a large mound of wet sawdust designed to simulate a plow pile. **Throwing distance** is how far each

model throws the mixture. **Surface cleaning** reflects how much of our mixture each model leaves behind on a blacktop driveway. **Handling** denotes how easy each machine is to push, pull, and turn. **Noise** is measured in decibels at the ear of the operator; a rating lower than 3 means you'll need hearing protection. **Controls** is our

assessment of how easy it is to change speeds, adjust the discharge chute, and move the handlebar. **Overall Score** combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand will develop problems or break within

the first five years. **Owner satisfaction** reflects the proportion of CR members who are extremely likely to recommend the snow blower they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (-), we assume the model has average reliability and satisfaction.

Wall Ovens

The majority of wall ovens are electric, and that's what we test. Available wall oven widths are 24, 27, 30, and 36 inches. The most common are 30 inches wide, which is what we've rated below. If you're replacing a wall oven, be sure to measure the wall oven and the cabinet cutout before you shop.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results				Features			
					Predicted reliability	Owner satisfaction	Baking	Broiling	Oven capacity	Self-cleaning	Width (in.)	Covered element	Convection mode	Temperature probe
SINGLE ELECTRIC WALL OVENS														
✓	1	LG LWS3063	90	\$1,640	↑↑	↓	↑	↑↑	↑	↑↑	30	•	•	
✓	2	GE Café CT9070SHSS	89	\$3,600	↑↑	↓	↑↑	↑	↑	↑↑	30	•	•	•
✓	3	GE Profile PT9051SLSS	87	\$2,340	↑↑	↓	↑↑	↑	↑	↓	30	•	•	•
✓	4	KitchenAid KOSE500ESS	83	\$2,300	↓	↓	↑	↑↑	↑↑	↓	30	•	•	•
💰	5	Maytag MEW9530FZ	82	\$1,300	↑	↓	↑	↑	↑↑	↓	30	•	•	
✓	6	Samsung NV51K7770SG/AA	81	\$2,600	–	–	↑	↑↑	↑	↑	30	•	•	•
	7	GE JT5000SFSS	80	\$1,800	↑↑	↓	↑	↑	↑↑	↑	30	•	•	
	8	GE Profile PT9050SFSS	79	\$2,430	↑↑	↓	↑	↑	↑	↑	30	•	•	•
	9	Whirlpool WOS92ECOAH	79	\$1,500	↓	↓	↑	↑↑	↑↑	↑↑	30	•	•	
	10	Whirlpool WOS51ECOAS	77	\$900	↓	↓	↑	↑↑	↑↑	↑↑	30	•		
	11	Kenmore 49513	77	\$1,350	↓	↓	↑↑	↓	↓	↑↑	30	•	•	
	12	Frigidaire Gallery FGEW3065PW	77	\$1,450	↓	↓	↑↑	↓	↓	↑	30	•	•	•
	13	Jenn-Air JJW3430DS	77	\$3,700	↓	↓	↑	↑↑	↑↑	↓	30	•	•	•
	14	Whirlpool WOS72ECOHS	76	\$1,600	↓	↓	↑	↑	↑↑	↓	30	•	•	
	15	Electrolux EW30EW55PS	74	\$2,100	↓	↓	↑	↑	↑	↑↑	30	•	•	•
	16	Bosch 800 Series HBL8451UC	73	\$2,160	↓	↑	↑	↑	↑	↑	30	•	•	•
	17	KitchenAid KOSE900HSS	73	\$2,970	↓	↓	↓	↑↑	↑↑	↓	30	•	•	•
	18	Electrolux EI30EW38TS	72	\$1,900	↓	↓	↑	↑↑	↑	↓	30	•	•	•
	19	Kenmore Pro 41153	71	\$2,120	↓	↓	↑	↑	↑	↓	30	•	•	•
	20	Kenmore Elite 48363	70	\$2,550	↓	↓	↑	↑	↑	↑	30	•	•	•
	21	Bosch HBLP451RUC	69	\$3,100	↓	↑	↓	↑	↑	↑↑	30	•	•	•
	22	Bosch HBL5351UC	63	\$1,620	↓	↑	↓	↑	↑	↑↑	30	•		
	23	Thermador ME301JS	63	\$2,700	↓	↑	↓	↑	↑	↑	30	•	•	•
	24	Viking VESO5302SS	62	\$4,300	↓↓	↓	↑	↑	↓	↑	30	•	•	•

HOW WE TEST: **Baking** reflects whether cakes and cookies baked on two racks were evenly browned. **Broiling** is based on even browning of a pan of burgers and high-heat searing ability. **Oven capacity** is our measurement of usable space. **Self-cleaning** is a gauge of the self-cleaning cycle's effectiveness

at removing a baked-on mixture of eggs, lard, cherry pie filling, cheese, tomato purée, and tapioca. (All scores for double wall ovens are based on results from the upper oven.) **Price** is approximate retail. **Overall Score** combines test results with survey data

for predicted reliability and owner satisfaction, and is based on a 100-point scale. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand, not under service contract, will break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are

extremely likely to recommend the wall oven they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a dash (–), we assume the model has average reliability and satisfaction.

Cookware

Watching cooking shows may whet more than your appetite: It could leave you hungry for new kitchen cookware. But don't think the most expensive cookware sets are best. Our tests of nonstick and other cookware sets (below) turned up attractive options for every budget.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results														
					Set (pieces)	Material	PFOA-free	PTFE-free	Cooking evenness	Nonstick food release	Nonstick durability	Speed of heating	Sauce simmer	Handle temperature	Handle sturdiness	Dishwasher-safe	Induction cooktop	Warranty	
NONSTICK COOKWARE																			
	1	Cuisinart Green Gourmet Hard Anodized GG-12	81	\$170	12	Anodized aluminum	•	•											Lifetime
	2	Swiss Diamond Reinforced #6010	78	\$600	10	Aluminum	•	•										•	Lifetime
	3	Zwilling J.A. Henckels Motion Grey (Bed Bath & Beyond exclusive)	78	\$350	10	Anodized aluminum	•	•										•	Lifetime
	4	Tasty Titanium Reinforced Ceramic Nonstick (Walmart exclusive)	76	\$79	11	Aluminum	•	•								•	•	Limited lifetime	
	5	Blue Diamond Enhanced Ceramic Nonstick	73	\$100	10	Aluminum	•	•								•	Limited lifetime		
	6	T-Fal 10 pc Stackables Titanium	73	\$100	10	Aluminum	•	•								•	Limited lifetime		
	7	Calphalon Classic Ceramic Nonstick	70	\$250	11	Anodized aluminum	•	•									•	10-yr.	
	8	Rachael Ray Cityscapes Porcelain Enamel Nonstick (Bed Bath & Beyond exclusive)	70	\$99	12	Porcelain enamel aluminum	•	•								•	Limited lifetime		
	9	Pioneer Woman Vintage Speckle Nonstick (Walmart Exclusive)	66	\$75	10	Porcelain enamel aluminum	•	•								•	Lifetime		
	10	Gotham Steel Nonstick	66	\$100	10	Aluminum	•	•								•	Limited lifetime		
	11	KitchenAid Architect Nonstick (Macy's exclusive)	64	\$300	12	Aluminum with a stainless steel base	•	•								•	Limited lifetime		
	12	GreenPan Minneapolis Ceramic Nonstick	64	\$150	10	Stainless steel	•	•								•	Limited lifetime		

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results													
					Set (pieces)	Material	Cooking evenness	Food release	Ease of cleaning	Sauté performance	Speed of heating	Sauce simmer	Handle temperature	Handle sturdiness	Dishwasher-safe	Induction cooktop	Warranty	
COOKWARE, OTHER																		
	1	Calphalon Premier Space Saving 8 piece	70	\$400	8	Stainless steel										•	•	Lifetime
	2	Made By Design (Target)	65	\$100	8	Stainless steel									•	•	1-yr.	

HOW WE TEST: **Cooking evenness** is how well a fry pan turns out evenly browned pancakes. **Speed of heating** measures how fast the largest pot with 4 quarts of water reaches a near-boil. **Ease of cleaning** indicates how hard it is

to remove béchamel from a saucepan. Testers use instruments to check **Handle temperature** and **Handle sturdiness**. **Nonstick food release** is how easily a fried egg slides out of a pan when

new, and when the coating is worn. To test **Nonstick durability**, a machine rubs steel wool over the coating until it has worn through or for up to 2,000 strokes (whichever comes first). **Sauté performance** reflects how well a fry

pan browns potatoes. **Sauce simmer** measures how well cookware maintains a low, even temperature. **Overall Score** is based on the performance of the product in all of our tests.

Coffee Makers

You'll find several varieties of coffee makers in the marketplace, including drip and single-serve pod coffee machines that brew individual cups. Remember to factor in counter space when choosing. All the machines in our tests can fit beneath upper cabinets.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features					
					Predicted reliability	Owner satisfaction	Brew performance	Convenience	Carafe handling	Brew time	Programmable	Thermal carafe/mug	Small-batch setting	Brew-strength control	Dispenser-style
DRIP COFFEE MAKERS WITH CARAFE															
✓	1	Cuisinart PerfecTemp 14 Cup Programmable DCC-3200	85	\$100	↓	↑	↑	↑	↑	10	•		•	•	
✓	2	Calphalon Special Brew BVCLDCG1	85	\$160	↓	↓	↑	↑	↑	10	•			•	
✓	3	Cuisinart Programmable DCC-4000	84	\$95	↓	↑	↑	↑	↑	8	•		•	•	
✓	4	Cuisinart PerfecTemp DCC-2800	84	\$80	↓	↑	↑	↑	↑	9	•		•	•	
✓	5	Zojirushi Fresh Brew Plus EC-YSC100	83	\$160	↑	↑	↑	↑	↓	9	•	•			
Ⓢ	6	Hamilton Beach 12-cup Programmable 49465R	82	\$25	↓	↓	↑	↑	↑	10	•				
✓	7	Ninja 12-Cup Programmable CE201	82	\$80	↓	↑	↑	↑	↑	9	•		•	•	
✓	8	Kenmore Elite 12-cup # 76772	81	\$90	↓	↓	↑	↑	↑	9	•		•	•	
✓	9	Bella Ultimate Elite Collection 12-Cup 14623	81	\$50	↑	↓	↑	↑	↑	9	•		•	•	
✓	10	Mr. Coffee Programmable BVMC-FBX39	80	\$80	↓	↓	↑	↑	↑	9	•		•	•	
✓	11	Cuisinart Brew Central DCC-1200	79	\$90	↓	↑	↑	↑	↑	9	•		•		
✓	12	Mr. Coffee Optimal Brew BVMC-PSTX95	78	\$80	↓	↓	↑	↑	↓	7	•	•			
✓	13	Capresso SG220 12-Cup	78	\$60	↓	↓	↑	↑	↑	9	•			•	
Ⓢ	14	Black+Decker CM4000S	78	\$40	↓	↓	↑	↑	↑	8	•			•	
	15	KitchenAid 12-Cup with 1-touch Brewing KCM1204	76	\$100	↓	↓	↑	↑	↑	8	•		•	•	
	16	Mr. Coffee BVMC-DMX85 HotShot Station	76	\$70	↓	↓	↑	↑	↑	10	•			•	
	17	KitchenAid KCM1202OB	75	\$80	↓	↓	↑	↑	↑	8	•		•	•	
	18	Ninja Coffee Bar System CF097	75	\$230	↓	↑	↑	↑	↓	9	•	•	•	•	
	19	Mr. Coffee Optimal Brew BVMC-PSTX91	74	\$70	↓	↓	↑	↑	↓	7	•	•			
	20	KitchenAid Pour Over Brewer KCM0802	74	\$200	↓	↓	↑	↑	↓	12	•		•	•	
	21	Black+Decker CM2020B	74	\$40	↓	↓	↑	↑	↑	9	•		•	•	
	22	Oxo Barista Brain 9-Cup 8710100	74	\$180	↓	↑	↑	↑	↓	9	•	•	•		
	23	Mr. Coffee BVMC-SJX33GT	73	\$30	↓	↓	↑	↑	↑	10	•			•	
	24	Hamilton Beach The Scoop 2-Way Brewer 49980Z	73	\$80	↓	↓	↑	↑	↑	9	•		•	•	
	25	Mr. Coffee DW13	73	\$20	↓	↓	↑	↑	↑	10					
	26	Krups Savoy EC314050	73	\$80	↓	↓	↑	↑	↑	9	•		•	•	
	27	Cuisinart DCC-3400 12-cup Programmable Thermal	72	\$130	↓	↑	↑	↑	↓	9	•	•	•	•	
	28	Krups Savoy ET353050	72	\$90	↓	↓	↑	↑	↓	8	•	•	•	•	

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features					
					Predicted reliability	Owner satisfaction	Brew performance	Convenience	Carafe handling	Brew time	Programmable	Thermal carafe/mug	Small-batch setting	Brew-strength control	Dispenser-style
DRIP COFFEE MAKERS WITH CARAFE <i>Continued</i>															
	29	Ninja Hot and Cold Brewed System CP307	72	\$180	⬇️	⬆️	⬆️	⬆️	⬆️	6	•	•	•	•	
	30	Betty Crocker 12-cup Stainless Steel BC-2809CB	72	\$30	—	—	⬆️	⬆️	⬆️	9	•				
	31	Mr. Coffee BVMC-PJX23 (Target exclusive)	71	\$30	⬇️	⬇️	⬆️	⬆️	⬆️	9	•			•	
	32	Cuisinart Coffee Plus CHW-12	71	\$100	⬇️	⬆️	⬆️	⬆️	⬆️	9	•		•		
	33	KitchenAid 12-cup KCM1110B	71	\$80	⬇️	⬇️	⬆️	⬆️	⬆️	8	•		•	•	
	34	Black+Decker CM2036S 12-cup Thermal	70	\$50	⬇️	⬇️	⬆️	⬆️	⬇️	11	•	•	•	•	
	35	Cuisinart Coffee Center SS-15	70	\$200	⬇️	⬆️	⬆️	⬆️	⬆️	9	•		•	•	
	36	Capresso ST300 Thermal	70	\$100	⬇️	⬇️	⬆️	⬆️	⬇️	9	•	•	•		
	37	Black+Decker Even Stream CM2035B	69	\$50	⬇️	⬇️	⬆️	⬆️	⬇️	9	•	•	•	•	
	38	Cooks Programmable 12-cup (JC Penney exclusive)	69	\$30	⬇️	⬇️	⬆️	⬆️	⬆️	10	•				
	39	Hamilton Beach FlexBrew 2-way Brewer 49976	69	\$80	⬇️	⬇️	⬇️	⬆️	⬆️	10	•		•	•	
	40	Proctor-Silex 43672	68	\$25	⬆️	⬇️	⬆️	⬆️	⬆️	10	•		•		
	41	Hamilton Beach Easy Access Deluxe 12-Cup 46320	67	\$40	⬇️	⬇️	⬇️	⬆️	⬆️	9	•		•	•	
	42	Mr. Coffee Programmable Automatic BVMC-VMX38-DS	67	\$60	⬇️	⬇️	⬇️	⬆️	⬆️	9	•			•	
	43	Oster Stainless Steel Programmable BVST-JBXSS41	67	\$40	⬆️	⬇️	⬇️	⬆️	⬆️	9	•			•	
	44	Krups KM730D50	67	\$70	⬇️	⬇️	⬇️	⬆️	⬆️	9	•			•	
	45	Mr. Coffee JWX27	67	\$40	⬇️	⬇️	⬆️	⬆️	⬆️	10	•			•	
	46	Mr. Coffee BVMC-MJX41-NWF (BB&B Exclusive)	66	\$40	⬇️	⬇️	⬇️	⬆️	⬆️	7	•			•	
	47	Black+Decker Home BCM1410B	66	\$30	⬇️	⬇️	⬇️	⬆️	⬆️	8	•				
	48	Tru Crossover Brewer CM 2000	66	\$100	⬇️	⬇️	⬆️	⬆️	⬆️	10			•		
	49	Braun BrewSense 12-cup Programmable KF7000BK	66	\$70	⬇️	⬇️	⬆️	⬆️	⬆️	10	•		•		
	50	West Bend Steep & Brew 12-Cup 56911	66	\$35	—	—	⬇️	⬆️	⬆️	10	•		•	•	
	51	Bodum Bistro 12-cup	66	\$40	—	—	⬇️	⬆️	⬆️	8	•				
	52	Behmor Connected Alexa-Enabled Temperature Control	65	\$170	—	—	⬆️	⬇️	⬇️	14	•	•		•	
	53	Hamilton Beach Auto Grounds Dispensing Coffee Maker Model# 45400	65	\$80	⬇️	⬇️	⬇️	⬆️	⬆️	9	•		•	•	
	54	Bella Classics BLA14438	65	\$30	⬆️	⬇️	⬇️	⬆️	⬆️	9	•			•	
	55	Bodum Bistro Automatic Pour Over 11001-01TG	65	\$100	⬇️	⬇️	⬆️	⬆️	⬇️	5		•			
	56	Black+Decker Select-A-Size Easy Dial Programmable, Stainless Steel/Black, CM4200S	65	\$40	⬇️	⬇️	⬇️	⬆️	⬆️	9	•			•	

Coffee Makers *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results			Features				
					Predicted reliability	Owner satisfaction	Brew performance	Convenience	Carafe handling	Brew time	Programmable	Thermal carafe/mug	Small-batch setting	Brew-strength control

DRIP COFFEE MAKERS WITH CARAFE *Continued*

57	Mr. Coffee BVMC-TJX37	64	\$40	↓	↓	↓	↑↑	↑	10	•			•	
58	Hamilton Beach 49467	64	\$30	↓	↓	↓	↑	↑	8	•				
59	Better Chef 91575783M	64	\$20	–	–	↑	↑	↑	9					
60	Cuisinart DTC-975BKN	64	\$100	↓	↑↑	↑↑	↓	↓	7	•	•			
61	Hamilton Beach TruCount 45300	64	\$70	↓	↓	↓	↑↑	↑	10	•		•	•	
62	Magic Chef MCSCM12SS	64	\$30	–	–	↓	↑↑	↑	8	•			•	
63	Hamilton Beach 12-cup Programmable 49618	63	\$30	↓	↓	↓	↑	↑	10	•		•	•	
64	Black+Decker DLX1050B	63	\$30	↓	↓	↓	↑↑	↑	9	•				
65	Hamilton Beach Universal Design 46300	63	\$30	↓	↓	↓	↑	↑	8	•		•	•	
66	NuWave BruHub 3-in-1 45001	63	\$120	–	–	↑	↓	↑	7		•	•	•	
67	Bunn Velocity Brew NHSB	63	\$120	↓	↑↑	↑	↓	↑	17					
68	Cuisinart DCC-2750	63	\$100	↓	↑↑	↑	↑	↓	8	•	•	•	•	
69	Mr. Coffee 12-cup Programmable FTX41	61	\$50	↓	↓	↓	↑	↑	9	•			•	

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features		
					Predicted reliability	Owner satisfaction	First-cup speed	Repeat speed	Temperature consistency	Size consistency	Brewing range	Convenience	Taste	Dimensions, HxWxD (in.)	Average coffee temperature (°F)

POD COFFEE MAKERS

↙	1	Nespresso Pixie Espresso Maker in Aluminum EN125S	90	\$230	↑↑	↑↑	↑↑	↑↑	↑	↑↑	↑	↑	↓	10x4x13	170	5.75
↙	2	Nespresso Essenza Mini	89	\$150	↑↑	↑↑	↑↑	↑↑	↓	↑↑	↑	↑	↓	9x5x13	170	5.25
↙	3	DeLonghi Nespresso Lattissima One Espresso Maker EN500BW/W	78	\$380	↓	↑	↑↑	↑↑	↑	↑↑	↓	↑	↓	11x7x14	170	5.75
💰	4	Bella Single Serve with Water Tank BLA14585	77	\$80	↓	↑	↑	↑	↑	↑↑	↓	↑↑	↓	14x10x10	175	8.15
↙	5	Nespresso VertuoLine Evoluo Deluxe	77	\$200	↑↑	↑↑	↑	↓	↓	↑↑	↑↑	↓	↓	13x9x13	150	7
↙	6	Nespresso VertuoPlus	76	\$200	↑↑	↑↑	↑	↓	↑	↓	↑↑	↑	↓	13x6x17	155	7.75
	7	Cuisinart Premium Single-Serve Brewer SS-10	76	\$150	↓	↑↑	↑	↑	↑↑	↑↑	↓	↑↑	↓	12x10x12	180	7

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results						Features			
					Predicted reliability	Owner satisfaction	First-cup speed	Repeat speed	Temperature consistency	Size consistency	Brewing range	Convenience	Taste	Dimensions, HxWxD (in.)	Average coffee temperature (° F)	Maximum mug height (in.)
POD COFFEE MAKERS <i>Continued</i>																
	8	Illy Y3.2 Espresso/Coffee Machine 60296	75	\$150	—	—	↑	↑	↑	↑	↑	↑	↑	10x4x13	180	5.75
	9	Touch Brewer T214B	72	\$150	—	—	↓	↑	↑	↑	↓	↑	↓	14x9x13	185	7.25
	10	KitchenAid Nespresso by KitchenAid KES0504	72	\$450	—	—	↑	↑	↑	↓	↓	↑	↓	13x9x13	180	5.75
	11	Cuisinart Coffee Center SS-15	70	\$200	↓	↑	↑	↑	↑	↑	↓	↑	↓	15x11x11	170	7.75
	12	Café Vianté Enzo Single Serve Espresso Machine Coffee Maker 3A-C236B	70	\$140	—	—	↑	↑	↑	↑	↑	↑	↓	10x4x14	175	5.75
	13	Mixpresso Single Cup K4GRY00	69	\$100	—	—	↑	↑	↑	↑	↓	↑	↓	12x8x14	180	7
	14	Cuisinart SS-5	69	\$100	↓	↑	↑	↑	↑	↓	↓	↑	↓	13x8x12	180	7
	15	Philips Senseo Original XL Single Serve HD7810	68	\$200	—	—	↑	↑	↓	↑	↓	↑	↓	13x8x15	175	4.5
	16	Keurig K-Elite K90	67	\$170	↓	↑	↓	↑	↑	↑	↓	↑	↓	13x10x13	180	7
	17	Keurig K-Latte Single Serve K-36	67	\$100	↓	↑	↑	↑	↑	↑	↓	↑	↓	13x14x13	185	7
	18	Bosch Tassimo T12 Brewing System	66	\$100	↓	↓	↑	↓	↑	↑	↓	↑	↓	10x7x12	175	5.75
	19	Keurig K-Café™ Special Edition Coffee, Latte & Cappuccino Maker K84	66	\$200	↓	↑	↓	↑	↑	↑	↓	↑	↓	13x16x13	185	7.25
	20	NuWave BruHub 3-in-1 45001	65	\$120	—	—	↓	↑	↑	↑	↓	↑	↓	13x9x15	190	7.5
	21	Keurig 2.0 K425	64	\$110	↓	↑	↓	↑	↑	↑	↑	↑	↓	14x11x14	180	7.25
	22	Keurig K-Mini Plus	62	\$100	↓	↑	↓	↓	↑	↑	↓	↑	↓	13x5x12	175	7.25
	23	Keurig 2.0 K250 Brewing System	62	\$120	↓	↑	↓	↑	↑	↑	↓	↑	↓	14x9x14	185	7.5
	24	Keurig Mini Plus Brewing System	61	\$100	↓	↑	↑	↓	↓	↑	↑	↓	↓	11x8x11	185	5.25
	25	Tru Crossover Brewer CM 2000	61	\$100	↓	↓	↓	↑	↑	↑	↓	↑	↓	14x7x15	185	7.25
	26	Bunn My Café MCU	61	\$160	↓	↑	↓	↑	↑	↑	↑	↓	↓	12x8x12	190	6.25
	27	Hamilton Beach Flex Brew Generation 2 49997	61	\$60	↓	↓	↑	↑	↑	↑	↑	↓	↓	13x7x11	190	7.5

HOW WE TEST: Brew performance means the brew met recommended guidelines of 195° F or more, maintained for 5 or 6 minutes. **Convenience** indicates the machine was fairly convenient to use, based on how easy it was to understand the controls, fill the

reservoir, insert the filter, gauge the amount of remaining coffee, and clean the machine. **Carafe handling** denotes that the carafe was fairly easy to use, based on how comfortable we found its handle, whether it dripped while pouring, its overall balance when full, and how hard it was to empty. **Overall**

Score combines test results with survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand, not under service contract, will develop problems or break within the first five years. **Owner satisfaction**

reflects the proportion of CR members who are extremely likely to recommend the coffee maker they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (—), we assume the model has average reliability and satisfaction.

Refrigerators

There's a refrigerator configuration to suit every household. French-door models have become hugely popular. Some consumers prefer the convenience of bottom-freezers, which put fresh foods at eye level, but top-freezers and side-by-sides can make more efficient use of space in a small kitchen.

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
TOP-FREEZER REFRIGERATORS																		
✓	1	Frigidaire Gallery FGTR2037TF	79	\$880	↑	↓	↑	↑	↑	↓	↓	20.4	70	30	33	16.7	55	•
✓	2	Samsung RT21M6213SG	78	\$850	—	—	↑	↓	↑	↑	↓	21.1	68	33	32	20.2	51	•
✓	3	Samsung RT21M6215SG	78	\$900	—	—	↑	↓	↑	↑	↓	21.1	68	33	32	20.2	62	•
✓	4	LG LTCS20220S	78	\$800	↑	↓	↑	↓	↑	↑	↓	20.2	66	30	33	16.7	61	•
✓	5	Samsung RT18M6215SG	78	\$750	—	—	↑	↑	↑	↑	↓	17.6	67	29	29	13.6	58	•
✓	6	LG LTCS24223S	78	\$1,100	↑	↓	↑	↓	↑	↑	↓	23.8	68	33	33	19.6	65	•
✓	7	Blomberg BRFT1522SS	76	\$1,100	—	—	↑	↑	↑	↑	↓	12.6	68	28	26	12.0	52	•
✓	8	Frigidaire FFHT1832TS	75	\$765	↑	↓	↑	↑	↑	↓	↓	18.0	67	30	31	14.9	52	•
✓	9	Maytag MRT311FFFM	74	\$950	↑	↓	↑	↑	↑	↓	↓	20.5	66	33	31	17.5	56	•
✓	10	LG LTCS20120S	74	\$900	↑	↓	↑	↓	↑	↑	↓	20.2	67	30	34	16.8	50	•
Ⓢ	11	Frigidaire FFTR1821TD	73	\$630	↑	↓	↑	↑	↑	↓	↓	18.0	66	30	31	15.3	52	•
✓	12	Whirlpool WRT549SZDM	73	\$880	↑	↓	↑	↓	↑	↑	↓	19.1	66	30	33	16.0	49	•
✓	13	Frigidaire Gallery FGTR1837TF	72	\$770	↑	↓	↑	↑	↑	↓	↓	18.0	66	30	31	15.2	47	•
✓	14	Frigidaire FFTR2021TS	71	\$650	↑	↓	↑	↑	↑	↓	↓	20.4	69	30	33	16.7	55	•
	15	GE GTS21FSKSS	69	\$700	↑	↓	↑	↑	↑	↓	↓	20.8	67	32	32	17.6	56	•
	16	Maytag MRT711BZDM	68	\$990	↑	↓	↓	↓	↑	↑	↓	21.2	66	33	32	18.1	57	•
	17	GE GTE15CTHRWW	67	\$540	↑	↓	↑	↑	↑	↓	↓	14.6	62	28	30	11.6	43	•
	18	Whirlpool WRT511SZDM	67	\$900	↑	↓	↓	↓	↑	↑	↓	21.2	66	33	32	18.1	57	•
	19	GE GTS18FSLSS	67	\$680	↑	↓	↑	↑	↑	↓	↓	18.2	66	33	32	15.0	53	•
	20	Frigidaire FFHT1821TS	66	\$720	↑	↓	↑	↑	↑	↓	↓	18.0	64	30	30	14.2	47	•
	21	GE GTS18GSHSS	65	\$675	↑	↓	↑	↑	↑	↓	↓	17.5	68	28	29	13.4	51	•
	22	Kenmore 79433	64	\$1,350	↑	↓	↓	↓	↑	↑	↓	23.5	69	33	32	19.4	71	•
	23	Kenmore 78032	63	\$1,370	↑	↓	↓	↓	↑	↑	↓	23.7	69	33	32	19.6	71	•
	24	GE GIE21GSHSS	63	\$1,170	↑	↓	↓	↑	↑	↑	↓	21.2	67	33	33	17.7	62	•
	25	Insignia NS-RTM21SS7	62	\$720	—	—	↓	↓	↑	↓	↓	21.0	67	33	34	18.0	51	•
	26	Kenmore 60412	61	\$480	↑	↓	↓	↑	↑	↑	↓	18.0	66	30	30	15.8	52	•

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features					
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)

BOTTOM-FREEZER REFRIGERATORS

	1	Kenmore Elite 79043	89	\$1,300								23.8	70	33	33	17.1	61	
	2	Kenmore Elite 79023	89	\$1,300								21.8	69	30	34	15.8	60	
	3	LG LDCS24223S	89	\$1,150								23.8	69	33	33	17.1	61	
	4	Kenmore 69313	85	\$700								18.5	66	30	31	13.4	58	
	5	Amana ABB2224BRM	81	\$1,350								21.9	69	33	31	15.3	59	
	6	KitchenAid KRBR109ESS	79	\$1,530								18.7	67	30	31	12.1	61	
	7	Amana ABB1924BRM	78	\$1,170								18.5	66	30	31	12.5	58	
	8	GE GDE25ESKSS	78	\$1,575								24.8	69	33	35	17.1	79	
	9	KitchenAid KRBR102ESS	77	\$1,530								22.1	69	33	31	14.9	75	
	10	GE GDE21ESKSS	75	\$1,485								21.0	70	30	35	14.6	74	
	11	Whirlpool WRB329DMBM	73	\$1,260								18.7	67	30	31	12.1	61	
	12	Fisher & Paykel ActiveSmart RF170WDRUX5	73	\$2,300	-	-						17.3	68	32	28	13.0	69	
	13	Whirlpool WRB322DMBM	71	\$1,260								22.1	69	33	31	14.9	75	
	14	Bosch B11CB50SSS	71	\$2,160	-	-						11.3	79	24	26	8.4	46	
	15	Haier HRB15N3BGS	71	\$900	-	-						15.0	68	28	24	11.9	55	
	16	Blomberg BRFB1822SSN	67	\$1,700	-	-						16.2	60	30	31	13.7	68	
	17	Bertazzoni REF31BEMXR	65	\$1,500	-	-						17.0	69	32	27	13.7	58	

THREE-DOOR FRENCH-DOOR

	1	LG LFXS32766S	85	\$3,510								31.5	69	36	34	20.9	99	
	2	Kenmore Elite 74113	85	\$2,700								31.7	69	36	36	21.5	99	
	3	LG LFC24770ST	83	\$1,705								23.8	69	33	33	17.4	78	
	4	Samsung RF28HDEDPPWW	83	\$2,200								27.8	69	36	34	20.0	89	
	5	Kenmore Elite 73153	81	\$2,400								28.7	69	36	34	19.5	95	
	6	GE GNE29GSKSS	81	\$2,000								28.7	70	36	34	20.9	84	
	7	LG LFXS30766S	81	\$3,400								29.6	69	36	34	19.1	101	
	8	LG LFC22770ST	81	\$1,630								21.8	68	30	33	15.4	76	

● Refrigerators *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
THREE-DOOR FRENCH-DOOR <i>Continued</i>																		
✓	9	GE GFD28GSLSS	80	\$2,455	↓	↓	↑	↑	↓	↓	↑	27.8	70	36	33	19.8	103	●
✓	10	GE GFE28GSKSS	80	\$2,325	↓	↓	↑	↑	↑	↑	↑	27.7	70	36	34	19.5	93	●
✓	11	GE Café CYE22TSHSS	80	\$3,110	↓	↓	↑	↑	↓	↑	↑	22.2	70	36	30	15.1	86	●
✓	12	GE Profile PYE22PSKSS	80	\$3,160	↓	↓	↑	↑	↓	↑	↑	22.2	70	36	30	15.1	86	●
✓	13	GE GYE22HSKSS	80	\$2,350	↓	↓	↑	↑	↓	↑	↑	22.2	70	36	30	15.1	86	●
	14	Kenmore 70333	79	\$1,800	↓	↓	↑	↑	↓	↑	↑	23.9	69	36	32	16.3	97	●
	15	Kenmore Elite 73163	79	\$2,500	↓	↓	↑	↑	↑	↑	↑	28.5	69	36	34	19.2	95	●
	16	GE GFE26GSKSS	78	\$1,855	↓	↓	↑	↑	↑	↑	↑	25.7	70	36	35	17.1	91	●
	17	LG LFXC24726S	78	\$2,600	↓	↓	↑	↑	↓	↑	↑	23.5	69	36	29	15.0	88	●
	18	LG LFXS29766S	78	\$3,080	↓	↓	↑	↑	↑	↑	↑	28.5	69	36	35	19.6	95	●
	19	Kenmore 71323	78	\$1,600	↓	↓	↑	↑	↑	↑	↑	21.8	68	30	33	15.3	76	●
	20	Samsung RF20HFENBSR	77	\$1,380	↓	↓	↑	↑	↓	↑	↑	19.4	71	32	30	14.8	80	●
	21	Kenmore Elite 71313	77	\$1,500	↓	↓	↑	↑	↓	↑	↓	23.9	69	33	33	17.4	78	●
	22	LG LFCS22520S	77	\$1,335	↓	↓	↑	↑	↓	↑	↓	21.8	68	30	33	14.8	76	●
	23	LG LFXS28968S	77	\$2,000	↓	↓	↑	↑	↑	↑	↑	27.9	70	36	34	19.4	94	●
	24	Kenmore Elite 73133	77	\$2,160	↓	↓	↑	↑	↓	↑	↑	24.2	69	33	33	15.7	89	●
	25	Samsung RF265BEAESG	77	\$2,410	↓	↓	↑	↑	↑	↑	↑	24.2	70	36	34	17.3	93	●
	26	KitchenAid KRFC704FBS	76	\$4,175	↓	↓	↑	↑	↓	↑	↑	23.8	71	36	29	15.3	95	●
	27	Kenmore 73115	76	\$2,400	↓	↓	↑	↑	↓	↑	↑	27.7	70	36	34	19.3	102	●
	28	LG LFXS24663S	76	\$2,775	↓	↓	↑	↑	↓	↑	↑	24.4	70	36	32	16.7	89	●
	29	LG LFXS24623S	75	\$2,215	↓	↓	↑	↑	↓	↑	↑	24.2	69	33	33	15.7	89	●
	30	KitchenAid KRFF302ESS	75	\$2,095	↓	↓	↑	↑	↑	↑	↓	21.7	69	33	32	15.2	59	●
	31	KitchenAid KRFF300ESS	75	\$1,930	↓	↓	↑	↑	↑	↑	↓	21.7	69	33	32	15.2	59	●
	32	Samsung RF28HFEDBSR	75	\$2,000	↓	↓	↑	↑	↓	↑	↑	28.1	69	36	34	20.0	94	●
	33	LG LFXS28566S	75	\$2,200	↓	↓	↑	↑	↑	↓	↑	27.7	70	36	34	19.2	93	●
	34	LG LFX21976ST	75	\$2,325	↓	↓	↑	↑	↓	↑	↑	21.0	70	36	28	13.5	82	●

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
THREE-DOOR FRENCH-DOOR <i>Continued</i>																		
	35	GE Profile PFE28KSKSS	75	\$2,970	↓	↓	↑	↑	↑	↑	↑	27.7	69	36	35	20.1	93	●
	36	GE GNE21FSKSS	75	\$1,535	↓	↓	↑	↑	↓	↑	↓	20.8	70	30	35	13.7	74	●
	37	Ikea Nutid IX6HHEXDS [80288757]	75	\$1,800	—	—	↑	↑	↑	↑	↓	20.0	69	36	28	13.6	73	●
	38	GE Profile PWE23KMKES	74	\$2,550	↓	↓	↑	↑	↑	↑	↑	23.1	69	36	29	16.0	77	●
	39	GE GNE25JSKSS	74	\$1,625	↓	↓	↑	↑	↑	↑	↓	24.7	69	33	35	16.4	79	●
	40	KitchenAid KRFC302ESS	74	\$3,225	↓	↓	↑	↑	↓	↑	↓	21.9	73	36	28	14.3	82	●
	41	Samsung RF28HDEDBSR	74	\$2,305	↓	↓	↑	↑	↑	↑	↑	27.8	69	36	34	20.0	93	●
	42	Samsung RF26J7500SR	74	\$2,005	↓	↓	↑	↑	↓	↑	↑	25.5	69	36	34	16.4	90	●
	43	LG LFCS25426D	74	\$1,710	↓	↓	↑	↑	↑	↑	↓	25.4	69	36	32	17.6	80	●
	44	GE Café CFE28TSHSS	74	\$3,120	↓	↓	↑	↑	↓	↑	↑	27.8	70	36	35	15.1	94	●
	45	Maytag MFC2062FEZ	74	\$1,890	↓	↓	↑	↑	↑	↑	↓	20.0	69	36	28	13.6	73	●
	46	GE GFE24JSKSS	73	\$2,135	↓	↓	↑	↑	↓	↑	↓	23.8	70	33	36	15.2	88	●
	47	Kenmore Elite 74023	73	\$3,055	↓	↓	↑	↑	↑	↑	↑	29.8	69	36	34	19.5	96	●
	48	Samsung RF261BEAESR	73	\$1,355	↓	↓	↑	↑	↑	↓	↑	25.5	69	36	35	18.6	80	●
	49	LG LFX25974ST	73	\$1,595	↓	↓	↑	↑	↓	↑	↑	24.7	69	36	32	16.2	97	●
	50	Kenmore 70343	73	\$1,500	↓	↓	↑	↑	↑	↓	↑	27.1	69	36	34	18.2	92	●
	51	GE Profile PYD22KSLSS	73	\$2,970	↓	↓	↑	↑	↑	↓	↑	22.2	70	36	28	19.4	94	●
	52	Samsung RF263BEAESR	73	\$1,600	↓	↓	↑	↑	↑	↑	↑	25.6	69	36	35	17.1	82	●
	53	Fisher & Paykel ActiveSmart RF170ADUSX4	72	\$2,400	—	—	↑	↑	↓	↑	↓	17.2	68	32	28	12.6	75	●
	54	LG LFXS30726S	72	\$3,080	↓	↓	↑	↑	↑	↑	↑	29.8	69	36	34	19.5	96	●
	55	Maytag MFT2776FEZ	71	\$2,520	↓	↓	↑	↑	↑	↓	↑	26.8	70	36	33	18.3	91	●
	56	LG LFXS26566S	71	\$3,600	↓	↓	↑	↑	↓	↑	↑	26.0	70	36	33	15.9	91	●
	57	Samsung RF220NCTASR	71	\$1,320	↓	↓	↑	↑	↓	↑	↓	21.8	67	30	34	16.0	81	●
	58	GE GNE27JSMSS	71	\$1,890	↓	↓	↑	↑	↑	↓	↓	27.0	70	36	34	21.0	82	●
	59	Maytag MFI2570FEZ	71	\$1,800	↓	↓	↑	↑	↓	↑	↓	24.7	70	36	33	15.9	88	●
	60	Kenmore Elite 75053	70	\$2,800	↓	↓	↑	↑	↓	↑	↑	23.5	69	36	33	14.1	88	●

● Refrigerators *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
THREE-DOOR FRENCH-DOOR <i>Continued</i>																		
	61	Kenmore 70443	70	\$1,900	↓	↓	↑	↑	↓	↓	↑	21.9	69	36	29	14.7	85	●
	62	GE Café CYE22USHSS	70	\$3,345	↓	↓	↑	↓	↓	↑	↑	22.2	70	36	30	15.1	86	●
	63	LG LFXC24796D	70	\$3,140	↓	↓	↑	↑	↓	↑	↑	23.5	70	36	29	14.5	92	●
	64	Samsung RF18HFENBSR	69	\$1,260	↓	↓	↑	↑	↓	↑	↓	17.5	71	33	29	13.0	77	●
	65	Maytag MFF2558FEZ	69	\$1,530	↓	↓	↑	↑	↑	↑	↓	25.2	69	36	33	17.1	79	●
	66	GE GFE26JSMSS	67	\$1,700	↓	↓	↑	↑	↑	↓	↓	25.9	70	36	34	17.7	90	●
	67	KitchenAid KRFF305ESS	67	\$2,000	↓	↓	↑	↑	↑	↑	↓	24.8	69	36	33	17.4	79	●
	68	Whirlpool WRF954CIHM	66	\$3,330	↓	↓	↑	↑	↓	↑	↑	23.8	70	36	29	15.4	87	●
	69	Whirlpool WRF532SMHZ	65	\$1,620	↓	↓	↑	↑	↑	↑	↓	21.7	69	33	32	15.2	59	●
	70	GE GWE19JSLSS	65	\$1,400	↓	↓	↑	↑	↓	↓	↓	18.6	70	33	28	12.2	71	●
	71	Whirlpool WRF540CWHZ	65	\$1,890	↓	↓	↑	↑	↑	↑	↓	20.0	69	36	28	13.6	73	●
	72	Whirlpool WRF736SDAM	63	\$1,975	↓	↓	↑	↑	↓	↑	↑	24.7	69	36	34	16.4	88	●
	73	Blomberg BRFD2230SS	63	\$2,600	—	—	↑	↓	↓	↑	↑	18.7	70	36	30	14.3	71	●
	74	Amana AFI2539ERM	63	\$1,885	↓	↓	↑	↑	↓	↑	↓	24.7	69	36	33	15.9	97	●
	75	Whirlpool WRF555SDFZ	62	\$1,800	↓	↓	↑	↑	↓	↑	↓	24.7	70	36	33	15.9	88	●
	76	Whirlpool WRF995FIFZ	61	\$3,420	↓	↓	↑	↑	↑	↑	↑	31.5	70	36	37	21.6	97	●
	77	Fisher & Paykel ActiveSmart RF201ADUSX5	61	\$2,600	—	—	↓	↓	↑	↑	↓	20.1	71	36	28	14.4	69	●
	78	BlueStar FBFD36	61	\$2,995	—	—	↑	↓	↓	↑	↓	19.9	70	36	27	13.6	73	●
FOUR-DOOR (OR MORE) FRENCH-DOOR																		
✓	1	Kenmore Elite 72483	81	\$2,750	↓	↓	↑	↑	↑	↑	↑	29.9	69	36	36	21.1	96	●
	2	LG LMXS30746S	79	\$3,270	↓	↓	↑	↑	↑	↑	↑	29.9	69	36	36	21.1	96	●
	3	Samsung RF23M8070SR	79	\$2,520	↓	↓	↑	↑	↓	↑	↑	22.6	70	36	29	14.5	82	●
	4	LG LNXS30866D	79	\$3,690	↓	↓	↑	↑	↑	↑	↑	29.8	69	36	37	21.7	99	●
	5	LG LMXS30796D	79	\$3,000	↓	↓	↑	↑	↓	↑	↑	29.7	71	36	36	19.4	100	●
	6	Samsung RF22K9381SR	78	\$3,110	↓	↓	↑	↑	↓	↑	↑	22.1	72	36	29	15.8	91	●

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
FOUR-DOOR (OR MORE) FRENCH-DOOR <i>Continued</i>																		
	7	LG Signature LUPXS3186N	78	\$6,325	↓	↓	↑	↑	↑	↑	↑	30.8	70	36	37	21.8	104	●
	8	Samsung RF23M8570SG	78	\$3,320	↓	↓	↑	↑	↓	↑	↑	22.2	70	36	29	14.3	85	●
	9	Samsung RF28K9070SR	78	\$2,700	↓	↓	↑	↑	↑	↑	↑	28.1	71	36	35	20.4	101	●
	10	Samsung RF28N9780SR	77	\$3,300	↓	↓	↑	↑	↑	↑	↑	27.9	72	36	34	13.9	100	●
	11	Samsung RF28HMEBBSR	77	\$2,600	↓	↓	↑	↑	↓	↑	↑	22.6	69	36	29	15.1	86	●
	12	Samsung RF28JBEDBSR	77	\$2,690	↓	↓	↑	↑	↓	↑	↑	27.8	70	36	34	16.8	93	●
	13	Samsung RF31FMESBSR	76	\$3,795	↓	↓	↑	↑	↑	↑	↑	30.5	69	36	36	19.0	87	●
	14	Samsung RF22KREDBSR	76	\$2,800	↓	↓	↑	↑	↓	↑	↑	22.4	70	36	29	14.9	86	●
	15	LG LMXS28626S	76	\$2,100	↓	↓	↑	↑	↓	↑	↑	27.8	70	36	34	18.1	93	●
	16	Samsung RF30KMEDBSR	76	\$2,415	↓	↓	↑	↑	↑	↑	↑	29.7	70	36	36	20.0	95	●
	17	Samsung RF23J9011SR	76	\$2,700	↓	↓	↑	↑	↑	↑	↑	22.5	72	36	29	16.1	88	●
	18	Samsung RF28NHEDBSG	76	\$3,600	↓	↓	↑	↑	↓	↑	↑	27.7	70	36	34	12.7	96	●
	19	Dacor DRF36C100SR	76	\$4,590	—	—	↑	↑	↑	↑	↑	22.6	69	36	31	14.3	71	●
	20	Samsung RF25HMEDBSR	75	\$2,310	↓	↓	↑	↑	↓	↑	↑	24.7	69	33	34	16.6	89	●
	21	Samsung RF28HMEDBSR	75	\$2,000	↓	↓	↑	↑	↑	↑	↑	28.2	69	36	34	18.8	93	●
	22	LG LMXC23746S	75	\$3,900	↓	↓	↑	↑	↓	↑	↑	22.7	71	36	29	14.7	86	●
	23	LG Signature LUPXC2386N	74	\$6,315	↓	↓	↑	↑	↓	↑	↑	22.8	70	36	30	15.5	92	●
	24	Samsung RF22NPEDBSR	74	\$3,600	↓	↓	↑	↑	↓	↑	↑	22.2	70	36	29	15.0	88	●
	25	Kenmore 72595	73	\$2,300	↓	↓	↑	↑	↓	↑	↑	27.8	70	36	34	13.4	102	●
	26	LG LMXC23796D	73	\$3,505	↓	↓	↑	↑	↓	↑	↑	22.5	69	36	30	14.8	76	●
	27	Samsung Family Hub RF28K9580SR	73	\$3,695	↓	↓	↑	↑	↑	↑	↑	27.9	72	36	35	19.0	100	●
	28	Maytag MFX2676FRZ	73	\$2,805	↓	↓	↑	↑	↓	↑	↑	26.2	69	36	34	17.5	100	●
	29	LG LMXS27626S	73	\$2,440	↓	↓	↑	↑	↓	↑	↑	26.7	69	36	33	17.6	92	●
	30	KitchenAid KRMF706EBS	73	\$3,275	↓	↓	↑	↑	↓	↑	↑	25.8	70	36	34	17.1	99	●
	31	Whirlpool WRV986FDEM	71	\$3,285	↓	↓	↑	↑	↓	↑	↑	25.8	70	36	34	17.1	109	●

Refrigerators *Continued*

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
FOUR-DOOR (OR MORE) FRENCH-DOOR <i>Continued</i>																		
	32	Samsung RF30HBEDBSR	70	\$3,200	↓	↓	↑	↑	↑	↑	↑	29.5	69	36	36	20.5	95	●
	33	Bertazzoni Professional Series REF36X	69	\$2,965	—	—	↑	↑	↓	↑	↑	20.7	70	36	29	14.2	80	●
	34	Samsung RF24FSEDBSR	67	\$2,400	↓	↓	↑	↑	↓	↑	↑	23.6	69	36	28	14.3	86	●
	35	Whirlpool WRX986SIHZ	63	\$2,400	↓	↓	↑	↑	↑	↑	↑	28.1	69	36	34	17.9	73	●
	36	Haier HRQ16N3BGS	62	\$1,130	—	—	↑	↑	↑	↑	↓	16.4	71	33	27	12.5	58	●
	39	Whirlpool WRX735SDHZ	62	\$1,700	↓	↓	↑	↑	↓	↑	↓	24.5	70	36	32	16.0	88	●
SIDE-BY-SIDE																		
✓	1	GE Profile PSS28KSHSS	77	\$2,175	↓	↓	↑	↑	↑	↑	↑	28.2	70	36	33	17.0	95	●
✓	2	LG LSXS26366S	76	\$1,550	↓	↓	↑	↑	↑	↑	↑	26.2	69	36	34	20.7	92	●
✓	3	Kenmore Elite 51863	74	\$1,800	↓	↓	↑	↑	↑	↑	↑	21.7	70	36	30	16.2	78	●
✓	4	LG LSXS26326S	73	\$1,300	↓	↓	↑	↑	↑	↑	↑	26.2	69	36	34	20.6	92	●
✓	5	GE Profile PSE25KSHSS	73	\$1,980	↓	↓	↑	↑	↑	↓	↑	25.3	70	36	33	16.1	83	●
✓	6	LG LSXC22486S	73	\$1,800	↓	↓	↑	↑	↑	↑	↑	21.7	70	36	30	16.2	78	●
✓	7	Kenmore 51763	72	\$1,300	↓	↓	↑	↓	↑	↑	↑	24.8	69	36	34	18.7	79	●
	8	Kenmore 51783	71	\$1,300	↓	↓	↑	↑	↓	↓	↑	20.6	69	36	29	14.6	84	●
	9	Whirlpool WRS586FIEM	69	\$1,635	↑	↓	↑	↓	↑	↑	↑	25.6	69	36	33	18.9	83	●
	10	Whirlpool WRS588FIHZ	69	\$1,300	↑	↓	↑	↓	↑	↑	↑	28.5	69	36	33	20.5	96	●
	11	GE GSS23HSHSS	69	\$1,620	↓	↓	↑	↑	↑	↓	↑	23.2	70	33	33	15.2	87	●
	12	LG LSXC22386S	68	\$1,980	↓	↓	↑	↑	↑	↑	↑	21.7	70	36	30	16.2	78	●
	13	Frigidaire FFSS2625TS	68	\$1,190	↓	↓	↑	↑	↑	↓	↓	25.5	70	36	32	17.4	91	●
	14	GE Profile PZS22MSKSS	68	\$2,850	↓	↓	↑	↓	↓	↑	↑	21.9	70	36	29	13.8	86	●
	15	Kenmore Elite 51773	67	\$1,700	↓	↓	↑	↓	↑	↑	↑	27.6	69	36	34	21.8	95	●
	16	Bosch 300 Series B20CS30SNS	67	\$1,980	—	—	↑	↑	↑	↑	↓	20.2	70	36	28	14.5	76	●
	17	Frigidaire FGSS2635TF	67	\$1,000	↓	↓	↑	↑	↑	↓	↑	25.5	70	36	34	18.5	91	●
	18	Whirlpool WRS571CIDM	67	\$1,435	↑	↓	↑	↓	↓	↓	↑	20.6	69	36	28	14.6	84	●
	19	KitchenAid KR5F505ESS	66	\$2,315	↓	↓	↑	↓	↑	↑	↑	24.8	69	36	34	18.7	79	●

Recommended	Rank	Brand & Model	Overall Score	Price	Survey Results		Test Results					Features						
					Predicted reliability	Owner satisfaction	Thermostat control	Temperature uniformity	Energy efficiency	Noise	Ease of use	Claimed capacity (cu. ft.)	Exterior height (in.)	Exterior width (in.)	Exterior depth (in.)	Total usable capacity (cu. ft.)	Energy cost/yr. (\$)	Stainless/SS-look option
SIDE-BY-SIDE <i>Continued</i>																		
	20	Frigidaire FFSS2325TS	66	\$1,105	↓	↓	↑	↑	↑	↓	↓	22.0	70	33	32	15.5	87	●
	21	Kenmore Elite 51823	65	\$1,500	↓	↓	↑	↑	↑	↓	↓	21.9	66	33	32	17.1	78	●
	22	GE GSS25GSHSS	65	\$975	↓	↓	↑	↓	↑	↓	↑	25.3	70	36	33	16.3	91	●
	23	LG LSXS26386S	65	\$1,665	↓	↓	↑	↓	↑	↑	↑	26.1	70	36	34	20.3	84	●
	24	Kenmore 51335	65	\$1,100	↓	↓	↑	↑	↑	↓	↓	24.5	70	36	32	10.8	90	●
	25	Amana ASI2175GRS	64	\$1,035	↑	↓	↑	↑	↓	↓	↓	21.4	67	33	32	12.7	85	●
	26	Frigidaire FGSC2335TF	64	\$1,200	↓	↓	↑	↓	↑	↓	↑	22.0	70	36	29	16.0	87	●
	27	Whirlpool WRS321SDHZ	64	\$1,170	↑	↓	↑	↑	↓	↓	↓	21.4	67	33	32	12.7	85	●
	28	Whirlpool WRS325SDHZ	64	\$1,000	↑	↓	↓	↑	↑	↓	↓	25.4	69	36	33	15.1	90	●
	29	Whirlpool WRS325FDAM	64	\$850	↑	↓	↓	↑	↑	↓	↓	25.4	69	36	33	15.1	90	●
	30	Maytag MSS26C6MFZ	63	\$1,435	↓	↓	↑	↓	↑	↑	↑	25.6	69	36	33	18.6	91	●
	31	Kenmore 51115	63	\$1,050	↓	↓	↓	↑	↑	↓	↓	25.4	69	36	33	15.1	90	●
	32	Samsung RS25H5121SR	62	\$1,595	↓	↓	↑	↑	↑	↑	↑	24.5	69	36	34	18.6	82	●
	33	Frigidaire FFHS2322MW	62	\$945	↓	↓	↑	↓	↑	↓	↓	22.0	70	33	32	15.7	87	●
	34	Maytag MSC21C6MFZ	61	\$1,670	↓	↓	↑	↓	↓	↑	↑	20.6	69	36	28	14.1	84	●
	35	Frigidaire FFSC2323LS	61	\$1,200	↓	↓	↑	↓	↑	↓	↓	22.1	70	36	28	15.3	87	●
	36	Samsung RH25H5611SR	61	\$1,510	↓	↓	↑	↓	↑	↑	↑	24.7	70	36	35	19.0	83	●

HOW WE TEST: **Thermostat control** assesses the ability to reach and maintain a set temperature despite changes in room temperature. **Temperature uniformity** is the ability to mitigate warm and cold spots in the fridge and freezer compartments. **Energy efficiency** indicates energy

consumption based on usable storage space and the national average electricity cost. **Noise** reflects quietness of operation based on noise-meter readings and a panel of listeners. **Ease of use** assesses layout and features. **Overall Score** combines test results with

survey data for predicted reliability and owner satisfaction. **Predicted reliability** estimates the likelihood that newly purchased models from a given brand, not under service contract, will develop problems or break within the first five years. **Owner satisfaction** reflects the proportion of CR members who are

extremely likely to recommend the refrigerator they bought. In cases where we have insufficient survey data to provide a brand-level rating, indicated by a gray dash (-), we assume the model has average reliability and satisfaction.

WINTER

Now's a good time to stay indoors and give your floors a little post-holiday TLC. It's also wise to get in gear for storm season, using pro secrets to combat winter weather. Craving retail therapy? Find small appliances and exercise gear on sale.



WINTER

CLEAN



YOUR WINTER CLEANING CHECKLIST

- Care for wood furniture. **P. 117**
- Clean wood floors. **P. 118**
- Dust refrigerator coils. **P. 15**
- Clean out the basement.

PHOTO, PREVIOUS SPREAD: PETER DAZELEY/GETTY IMAGES. PHOTOS, THIS SPREAD FROM LEFT: IMAGGIO/PLAINPICTURE; DANIEL JEDZURA/ADOBESTOCK

Furniture

Check with the manufacturer, retailer, or dealer for guidance on caring for your furniture. Certain types of furniture may benefit from occasional polishing. Here are a look at some common types of furniture polish and a note on wood cleaning spray.

- **Aerosol polish** is typically silicone-based. It's best on hard surfaces and should not be used for fine furniture.

- **Silicone cream** is intended for use on high-gloss furniture.

- **Cream** is often made up of wax, water, and oil emulsion.

- **Liquid wax** contains natural and synthetic wax as well as a cleaning solvent.

- **Paste wax** is similar in composition to liquid wax but may also contain silicones. It should be applied sparingly, in small circles, and rubbed in the direction of the wood grain.

Note: Aerosol wood cleaner sprays are available, but we recommend pump sprays, which don't contain environmentally problematic propellants. The chemical droplets in pumps are also larger and less likely to be inhaled.

WOOD FURNITURE STAIN REMOVAL GUIDE

A small amount of mild liquid detergent in water can effectively remove many stains. Test in an inconspicuous area to ensure that it doesn't leave a film behind. For more stubborn stains, try the remedies presented in this chart.

ADHESIVE TAPE

Apply a little rubbing alcohol, then rub with a soft cloth moistened with a mild solution of dishwashing liquid. Dry and polish if necessary. Or try WD-40 or a citrus-based cleaner.

ALCOHOL

Rub on the grain with cream polish.

BURNS

If the mark has bubbled or blackened, use a sharp knife to scrape the surface, then sand with extra-fine sandpaper. If the burn is deep, use wood filler, smoothing it to match the surface, then use a repair crayon to match the wood color. For cigarette burns, use the same procedures.

CANDLE WAX

Carefully chip off any excess after hardening the wax with ice cubes. Use a hair dryer to soften the remaining wax. Rub with an absorbent soft cloth to remove excess.

DENTS

Cover with several layers of brown wrapping paper and a damp cloth, and apply a warm, dry iron. Repeat until the wood swells and the dent disappears. Remove old polish, apply fresh polish, and buff. If furniture is veneered or is a badly dented antique, hire professional help.

SCRATCHES

Try a product that is claimed to hide surface scratches. Or use a repair crayon. If those don't work, use wood filler stained to match the wood and apply a similar finish.

WET MARKS

Glasses, alcohol, medicines, and perfume can cause white marks. Blot with an absorbent cloth, wipe with a damp cloth, then dry with a soft cloth. If the stain remains, rub in (with the grain) a little nongel toothpaste or liquid or cream car polish. Wipe with a dry cloth and polish if necessary.

TIP

When possible, protect wood furniture from strong sunlight, temperature extremes, moisture, and humidity.



Floors

Flooring can represent a large investment, and it gets more wear than most other surfaces in the home. Here's how to keep your floors looking great for years. Tip: A doormat at every entrance can help trap dirt and grit before it makes its way inside.

CERAMIC TILE

Mop with a solution of mild detergent and water. Buffing with a chamois cloth will restore shine to the tiles. Use a commercial tile cleanser for heavy-duty cleaning, but make sure it's safe to use on ceramic surfaces. Be careful when walking on wet ceramic tiles.

LAMINATE FLOORING

The top "wear" layer of laminate flooring can withstand a good deal of wear. Even so, surfaces are prone to scratches and dents, so take the same precautions you would with a wood floor: Use glides under furniture legs, don't let copious amounts of water stand on the surface and joints, and never use abrasive cleaners. Vacuum regularly, using the bare-floor attachment rather than one that might scratch the surface. Damp-mop as needed, first with a solution of mild detergent and warm water, then with clear, warm water, and buff with a dry cloth. You'll probably be able to remove most stains with a dry cloth to which you've applied a mild detergent. For stubborn stains, you can safely use a small amount of nail-polish remover on a soft cotton rag.

Once the wear layer becomes worn or damaged, it can't be sanded and refinished, as can a wood floor. You may be able to do minor touch-ups with kits sold by flooring manufacturers.

LINOLEUM

Never get linoleum (which is different from vinyl, right) really wet. Use a mop dampened in a weak

solution of all-purpose cleaner. When you're finished mopping, rinse away all soap residue and wipe dry. Then apply a liquid, water-based emulsion polish (which will not watermark) on kitchen and bathroom floors, and a wax polish on the floors of other rooms. Don't use ammonia or other alkalis; they will break down the linoleum and possibly cause it to crack. You can remove shoe scuffs with paint thinner or a citrus-based cleaner. Check the manufacturer's instructions regarding waxing.

WOOD

Remove dirt regularly with a broom, lightweight vacuum cleaner, or dust mop. Small particles can scratch the flooring. Surface-sealed floors have been finished with solvent-based or water-based coatings. If your wood floor looks as if it has been covered by a layer of clear plastic, it has probably been surface-sealed, making it stain- and water-resistant.

Penetrating-sealed floors have been coated with an acrylic, an oil, or a wax that has penetrated the surface and soaked into the pores of the wood, hardening there. It usually has a satin or matte finish. Such a finish provides much less protection than surface-sealed finishes and requires more attention.

For routine care, clean a surface-sealed wood floor with a broom, dust mop, or vacuum cleaner, then damp-mop. When cleaning hardwood floors with a vacuum cleaner, there are some caveats: For upright vacuums, make sure to turn off the brush-roll to minimize scratching the floor and scattering dirt.

Canisters usually come with a floor brush tool that should be used instead of the powerhead. Every once in a while, damp-mop with water and vinegar

or a neutral pH wood cleaner recommended by the manufacturer. Wring out the mop before using it, and change the cleaning solution often.

For floors with a penetrating sealer, remove sticky marks with a damp cloth. Do not mop. A floor with a penetrating sealer that has become dull can be rebuffed. Occasionally apply a coat of wax with fine steel wool.

VINYL

Sweep a vinyl floor regularly, and occasionally use a mop lightly dampened with water only. To remove visible grime, add some mild detergent to the water, then rinse with clear water. Remove shoe scuffs with baking soda on a damp cloth or sponge. To take care of a new or fairly new no-wax floor, use a plain damp mop or a little detergent followed by a rinse. When the floor really needs a polish, choose a no-wax floor cleaning product or a combination cleaning and polishing product recommended for no-wax floors. Be sure to rinse off combination cleaners after use.

TO WAX OR NOT TO WAX?

An accumulation of tiny scratches will eventually dull no-wax flooring made of vinyl. The polishes in combination floor cleaners may have some ability to fill in tiny scratches, which might improve the shine of worn areas. But until a no-wax floor is worn, don't waste your money on floor polish. You'd be better off saving that money to make up for the extra cost of the no-wax flooring.



REMOVING STAINS FROM NONWOOD FLOORS

When removing stains, work from the outside toward the middle. Before using any of these methods, test on an inconspicuous area. Surface-sealed floors have a finish of solvent-based polyurethane or water-based urethane. Penetrating-sealed-finish floors have been coated with an acrylic, an oil, or a wax that has penetrated the surface. The latter usually require more attention.

ALCOHOLIC BEVERAGES

Rub with a clean cloth dampened with rubbing alcohol.

BLOOD

Before using any detergent, try clear, cold water. If the stain remains, cautiously apply a solution of ammonia and cold water, quickly rinsing to avoid discoloration. If the area is discolored, try 3 percent hydrogen peroxide.

CANDLE WAX

Use ice cubes to make the material brittle. Then use a plastic spatula to carefully scrape the wax or gum from the floor.

GUM

Scrape off what you can with a dull knife or a spoon, apply a teaspoon of Ultra Strength Bengay to the gum, heat it with a hair dryer, then pick off the residue with polyethylene food wrap. Blot the excess up with detergent solution.

CIGARETTE BURN

Rub with a cloth dampened with a solution of lemon juice and water. For heavy stains, try scouring powder and a piece of fine steel wool or a plastic scouring pad dipped in water.

COFFEE OR JUICE

Rub gently with scouring powder and a cloth dampened in hot water. If that doesn't work, try 3 percent hydrogen peroxide.

DYES

After testing on an inconspicuous spot, rub with a cloth dampened with 3 percent hydrogen peroxide. If that doesn't work, try a solution of one part chlorine bleach and two parts water, and then scouring powder and a cloth dampened with hot water.

OIL OR GREASE

Remove as much as possible with newspaper, paper towels, or a plastic spatula. Or rub with a cloth dampened with liquid detergent and warm water or an all-purpose cleaner.

INK

Try a commercial ink remover (follow instructions), or use rubbing alcohol. Amodex did very well in our past tests.

LIPSTICK

First try taking the lipstick up with a paper towel. If that doesn't work, try fine steel wool wetted with all-purpose detergent and water. If the floor has a no-wax finish or is an embossed vinyl composition, use a plastic scouring pad instead of steel wool.

MUSTARD

Remove as much as possible with a detergent solution. Open your curtains for one to two days. Sunlight helps to fade residual mustard stains. Blotting with 3 percent hydrogen peroxide may help if you cannot get sunlight on the area.

PAINT OR VARNISH

Scrub with a concentrated solution of powdered detergent and water, or apply undiluted liquid laundry detergent.

RUST

Use a commercial rust remover intended for your type of floor. Be sure to follow precautions given on the label.

SHOE OR NAIL POLISH

Try a concentrated detergent solution. If that doesn't work, try scouring powder or steel wool. Don't use nail polish remover.

TAR

Use ice cubes to chill the tar to brittleness, then scrape it carefully with a plastic spatula. To remove a tar stain, test kerosene, turpentine, or WD-40 in an inconspicuous area, then apply.

URINE

Try a commercial enzyme-based product (such as those found in pet supply stores). These work for all types of urine.

WINTER

MAINTAIN



YOUR WINTER MAINTENANCE CHECKLIST

- Gear Up for Winter Storm Season. **P. 121**
- Clear Driveways and Walkways. **P. 122**
- Protect Your Pipes. **P. 126**
- Deal With Ice Dams. **P. 127**

PHOTOS: ANDREAS KÖRNER/PLAINPICTURE (LEFT); COURTESY VORNADO (RIGHT)

● Storm Supplies

Along with holidays and cold-season fun comes the spectre of harsh winter weather. There's no way to avoid snow storms, but the right gear can make surviving them and digging out afterward a lot easier.

Just don't wait until the last minute to buy the equipment you need. The eve of a storm is a terrible time to shop for cold-climate tools. "The period leading up to and immediately after a bad storm tends to be the worst time to shop for essentials like generators and snow blowers," says Courtney Pennicooke, CR's market analyst who oversees outdoor power equipment and generators. Instead, start early to make informed purchases of the supplies you'll need to make it through the storm.

Here, we've compiled the five items CR's experts consider to be essential for weathering bad winter weather.

GENERATOR

If you live in an area prone to power outages, consider a stationary generator. These are generally more expensive, but they can run indefinitely on your home's natural gas supply or on propane for up to 13 days. To make it safe, you'll want a licensed electrician to install a transfer switch.

Alternately, a portable generator can save you several thousand dollars (see three of our top picks, at right). You'll still want it connected by a licensed electrician.

SNOW BLOWER

If the allure of easily removing snow from your driveway hasn't motivated you to buy a snow blower, try thinking of it as a safety tool. In a serious winter storm, you'll be glad you've got a snow blower, which can easily

TOP-RATED GENERATORS

Here are three of the best inexpensive generators to help weather an outage.



94

OVERALL SCORE

✓ **CHAMPION**
100174
\$2,200



84

OVERALL SCORE

✓ **GENERAC**
XT8000EFI
\$1,380



67

OVERALL SCORE

✓ **GENERAC**
GP5500 5939
\$730



clear a path to your car, not to mention make it possible to pull out of your driveway once the plows have passed.

For ratings of our top snow blowers, see page 98.

SPACE HEATER

If the power goes out and you're relying on a generator, a space heater will let you hunker down in a room and stay warm while using considerably less energy than an electric heat pump or furnace, both of which heat your whole house.

If you heat your home with gas, propane, or another heating source, skip the space heater in favor of your furnace. And if you rely on propane, heating oil, or wood pellets, and a bad storm makes the roads impassable but doesn't knock out the power, use the heater to stay warm and toasty while you wait for your next delivery.

For ratings of our top space heaters, see page 24.

CHAIN SAW

Heavy snow and ice can down branches long after a storm has passed. That's one of the

struggles faced by utility workers as they attempt to restore power after a storm. So take a hint from them and buy and use a chain saw before a winter storm hits.

Not only will you get to choose from top-performing models, but by trimming precarious limbs before a storm, you'll also minimize damage to your home during snowfall and avoid the tedious yard cleanup after.

SMOKE & CO ALARMS AND FIRE EXTINGUISHERS

All three are safety essentials, but the unusual risks posed by weathering a winter storm power outage make them even more important.

Burning candles for light, operating a generator, or using a space heater can increase the chances you'll need one of these lifesaving devices. Turn the page to learn how to use a fire extinguisher correctly.

For ratings of our top smoke and CO detectors, see page 96.

HOW TO USE A FIRE EXTINGUISHER

If you have a fire extinguisher in the house but you aren't sure where it is or whether it's coated in dust, it's as good as useless. "Owning the right fire extinguisher is crucial," says Don Huber, director of product safety at Consumer Reports. But so is having one in the right place and knowing how to use it.

Our tests have found that heavier extinguishers have more flame retardant and are able to deliver it quicker, so we recommend that you buy the largest ones you can comfortably handle. Also, Huber says, make sure your fire extinguisher can handle the three fire types that are indicated by the letters A, B, and C on the label at right. This ensures that the retardant inside can put out multiple types of fires.

Have one multipurpose fire extinguisher on each level of your house. Also keep one in your garage, plus smaller supplemental units in the kitchen and car.



ALL THE RIGHT MOVES

"You shouldn't be reading the owner's manual during a fire, so learn how to use your extinguisher before an emergency," Huber says. No matter the fire's origin, the four steps for extinguishing a blaze are largely the same.

Remembering the acronym "PASS" will help you do the steps in order. But your safety is paramount, so leave the house immediately if the fire is growing or the room is filling with smoke. Once safely outside, call 911.



Pull the pin. Hold the extinguisher away from you, and release the locking mechanism.



Aim low, pointing the extinguisher at the base of the fire.



Squeeze the lever evenly.



Sweep the nozzle from side to side.

● Driveways & Walkways

1. MARK GARDEN BEDS, PATHS, AND DRIVEWAYS

After a heavy snowfall, it can be tough to see where driveways, flower beds, or walkways end and your lawn begins. Use fiberglass snow poles or driveway markers every several feet to line the edges of these areas. That helps provide a clear path whether you're clearing snow yourself with a snow blower or shovel, or hiring a professional.

2. APPLY ICE MELT—CORRECTLY

Most ice melts are blends of sodium chloride, calcium chloride, or magnesium chloride.

"They're all salts," says David P. Orr, director and senior engineer of the Cornell Local Roads Program. And any salt will seep into porous pavement, potentially causing problems.

We spoke with Orr, our own in-house chemists, and veterinarians to find the best technique for melting away ice while minimizing potential damage to concrete, driveways, and pet paws. Here's what you need to know:

- **Mix it up.** "Chlorides cause concrete to rust, crack, and deteriorate," Orr says. He recommends mixing your ice melt with an abrasive such as sand, which reduces the amount of salt on your pavement and provides traction.
- **Lay it in layers.** Always use a gentle hand when applying any type of ice melt to concrete. Lay down a thin layer before a storm, then another light layer during the storm.

If the temperature is 5° F or warmer, regular rock salt is as good as anything. Salt lowers the freezing point of water to this temperature.

Below 5° F, opt for a salt blend.

TWO PATHS TO SNOW-CLEARING SUCCESS

Look for a product containing calcium chloride, which can melt ice in temperatures as low as -25°F .

■ **Take specialty claims with a grain of—ahem—salt.** Some manufacturers say their ice melts are “environmentally friendly” because they contain calcium magnesium acetate. CMA is sometimes used as a coating on rock salt. Manufacturers claim it’s less damaging than other ice melts, but practically speaking, it’s not. The coating melts off, leaving you with rock salt.

■ **Scoop up salt and throw it away once the ice melts.** Salt can harm a plant’s ability to soak up necessary nutrients. So you don’t want to shovel salty mush onto your lawn. But you also don’t want to leave it sitting on your driveway. Scrape up what’s left and trash it.

■ **Be dubious of “pet friendly” claims on ice melts.** The expert we consulted couldn’t confirm that pet-safe ice melts are safer for pets (and they’re pricey, too). A better plan: Lead pets through a “rinse tray” after a walk. “Salt irritates dogs’ feet,” says a retired veterinarian, Robert Sharp of Hillsboro, Ohio. “It can cause burns and inflammation. Licking can worsen irritation.” He suggests a water-filled pan at the entry to your home, with a towel nearby. In consideration of your pets (and your floors), be sure not to track in salt yourself.

3. REMOVE SNOW

A snow blower can be a powerful weapon in your winter arsenal—if you know the best way to use it. Dave Trezza, who oversees snow-blower testing at Consumer Reports, shares his expertise.

■ **Get Ready ...** Assuming you stored your gas-powered machine in the off-season with

the fuel tank empty, as we recommend, all you need to do is fill it up with gasoline that you have mixed with fuel stabilizer (available at most hardware stores and some gas stations) to protect the fuel system from oxidization that can form between uses. If fuel from last year is still in the tank, use a siphon to remove it before adding new fuel. Inspect and fill the tires (unless your snow blower has airless wheels) and check the engine oil.

■ **Get Set ...** Take a minute to scan your driveway for branches, newspapers, and other detritus that could clog and damage the machine. Make sure kids and pets are safely indoors. Snow blowers can hurl debris such as small stones—at high speeds—30 feet or farther.

If you’re in for a big storm, plan on making several passes rather than one sweep. Single-stage snow blowers typically max out at a depth of 6 to 9 inches, and even the strongest machines will struggle when snow is over 16 inches deep.

■ **Blow!** To clear more efficiently, plan your route. The diagram at right can guide you.

Your approach will depend on the orientation of your driveway.

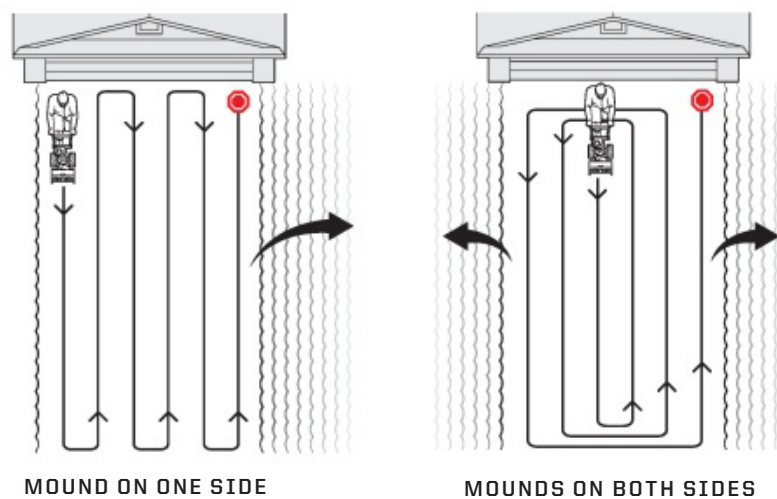
If you want all the snow to end up along one edge of the driveway, (below, left) start on the opposite edge and work your way toward the side where you want snow to land. That way, you’ll clear any snow that falls short of its intended resting place as you work your way across. Each time you turn around at one

end of the driveway, adjust the discharge chute 180 degrees to keep the snow flying in the right direction.

If you want to deposit the snow on both sides of the driveway (below, right), start by cutting a single swath down the center, then work your way out toward the edges.

What about the huge drift the town plow left at the end of your drive? Tackle that mess right away

before it melts, refreezes, and becomes a rock-hard glacier. Turn your snow blower to the slowest possible speed and work very slowly. As you approach the pile, lift up on the handles, forcing the nose of your machine down into the snow, so the auger can dig into the mass rather than just skimming over the top. Clear a couple of feet by blowing it into your yard, move over, and repeat.



TIP

SAFER SNOW REMOVAL

Shoveling after a snowstorm is more than an annoying chore—it can lead to aches, pains, and in some cases, serious health problems, including heart attacks.

If you have cardiovascular disease—or have other problems that might interfere with safe shoveling—get your doctor's okay before taking on the task. For others, these steps can help minimize the health risks of snow shoveling.

PREPARE PROPERLY

The American Heart Association recommends not eating a big meal—which may put further stress on your heart—before shoveling. Skip the alcohol, too. It can dull your perception of the cold and the amount of strain your body is under. And before you head outside, warm up with 10 minutes of light exercise, and do some gentle stretches.

DRESS WARMLY

Opt for several loose layers and a water-resistant coat and boots, along with a hat, scarf, and mittens or gloves to protect your extremities from the cold. Try to keep your gloves dry as you shovel, because dampness limits their ability to insulate your hands.

TAKE IT SLOW

Pace yourself while you work. When you can, push snow along the ground to get it out of the way, rather than lifting it. Instead of a large shovel, use a smaller one, whose lighter load will be easier to lift. If you're using a larger shovel, fill it only partly with snow before lifting. And take frequent breaks to rest, warm yourself up inside, and rehydrate.

USE GOOD FORM

When you lift snow, use the power in your legs instead of your back to avoid injury. Squat with your knees wide and your back straight; don't bend at the

Use the power in your legs instead of your back to lift a shovel full of snow. Rather than tossing snow behind your shoulder, walk it to where you want to dump it.

waist. Rather than tossing snow off to the side or behind your shoulder, walk it over to where you want to dump it.

FALL-PROOF YOURSELF

Wear shoes or boots with slip-resistant soles or add traction with slip-on ice cleats, available at sporting goods stores. Once your walkway is clear, consider spreading salt, sand, or both.

SPOTTING SIGNS OF TROUBLE

As you shovel, stay alert for chest pain or pressure; pain or discomfort in other parts of your upper body, such as your jaw, arms, or back; shortness of breath; or nausea or lightheadedness. Those are possible signs of a heart attack, and if you notice any of them, stop shoveling and call 911 immediately. Keep your cell phone in a pocket so that you can summon help as quickly as possible.

If you start to feel muscle pain in your back, shoulders, or arms, it's smart to stop shoveling to give your muscles a chance to rest.

And know the signs of cold-related illness. For frostbite, that means skin that's red, skin that's white or grayish-yellow, or skin that feels unusually firm or waxy—and you feel pain or numbness in the area. If you notice any of these symptoms, go inside and start slowly warming the affected body parts using warm (not hot) water, without rubbing.

Warning signs of hypothermia include confusion, slurred speech, shivering, arm and leg stiffness, and slow reaction times. If you suspect it, call 911.

ARE SNOW BLOWERS SAFER?

A snow blower may help make the physical act of removing snow easier on your body. Even so, it doesn't remove risk entirely, and using one could still strain



DIGGING IN

Discover the one snow shovel everyone needs, plus three to make faster work of various conditions.

THE ALL-PURPOSE WORKHORSE

Best for a variety of conditions, these lightweight metal or plastic shovels can toss the fluffy stuff or push through heavy accumulation. If you own one shovel, this should be it.

D-Shaped Grip

Provides control and leverage.

Straight, Ribbed Handle

Lightweight, with ribs that provide the strength not to flex under the weight of snow.

Wide Blade

Clears a broad path, cutting down on the number of passes you'll have to make.

Steel Wear Strip

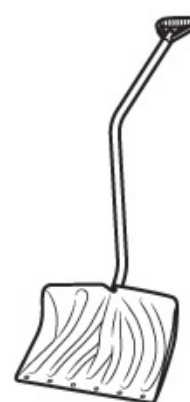
Cuts through compacted snow and scrapes the pavement without damaging it.

THE CORN SCOOP



Narrower than an all-purpose shovel, this typically has a wood or fiberglass handle and a metal scoop, which is more rigid than plastic. The result is an effective tool for a pile of wet snow, but the short handle doesn't lend itself to plowing.

THE BACK-SAVER



The ergonomic handle of this all-around model is bent at roughly 25 degrees, putting the scoop flush with the ground without putting your back out of whack. The trade-off is that you can't settle into your own angle for shoveling, which means your arms may tire faster. Look for a metal lip for most surfaces, but go with an all-plastic version for use on a wood deck, which metal can nick.

THE PUSHER



This design lets you cover a lot of ground after a light dusting. The broad face clears an extra-wide path, and wheels make it easy to roll around while you clear a large driveway or walk.

your heart or other muscles. Doctors have documented cases of heart attacks induced by snow blower use. And the Consumer Product Safety Commission estimates that in 2016 there were almost 18,000 visits to doctor's offices, clinics, and emergency rooms because of injuries specifically related to snow blowers.

So take the same precautions noted above when you use a

snowblower: Pace yourself, take breaks, and be alert for signs of a heart attack, muscle pain, injury, or frostbite or hypothermia.

And resist the temptation to clear a snow clog from your blower's chute by reaching your hand inside. If the blades haven't completely stopped turning, you could severely cut or even break your fingers—a surprisingly common injury

during snow-blowing season.

A better bet: If your snowblower gets clogged, turn it off, wait a few seconds for the blades to stop turning, then use a stick or other implement to clear the blockage. Most models come with a tool specially designed to help clear clogged chutes, according to Dave Trezza, who leads Consumer Reports' testing of snow blowers.

Finally, be aware that even after you finish using a snow blower, you'll probably still need to do a little bit of shoveling on stairs and other areas a blower can't reach. Even the best snow blowers can leave a thin layer of snow behind, which you'll need to remove by hand. And even with shoveling, you might still need to use a little salt to completely remove this thin layer, Trezza says.

Pipes

When temperatures plummet, the risk of your pipes freezing and bursting skyrockets. In fact, burst pipes are one of the most common causes of property damage during frigid weather. They can cause thousands in water damage—easily \$5,000 or more, according to the Insurance Institute for Business and Home Safety (PDF).

The pipes most at risk are those in unheated interior spaces such as basements, attics, and garages. But even pipes running through cabinets or exterior walls can freeze. The good news is that there are some simple things you can do to keep your water running and your house dry.

"Pipe insulation can cost as little as 50 cents per linear foot at your local hardware store," says Susan Millerick, an IBHS spokeswoman. "So for not much more than the cost of the aspirin you'd need, you can avoid the headaches of cleanup, loss of precious keepsakes, and the cost of your insurance deductible." Use the pipe insulation liberally to protect vulnerable pipes.

Both the IBHS and the American Red Cross, which is in the business of emergency preparedness, have useful

advice on how to prevent your pipes from freezing, as well as how to thaw them if they do.

HOW TO BEAT THE FREEZE

Once the temperature starts dropping outside, you should take measures inside to keep your pipes warm and the water running. Research conducted by the Building Research Council at the University of Illinois shows that the "temper-



ature alert threshold" is 20° F, especially if you have uninsulated pipes running through an uninsulated space.

Some of the steps experts recommend may go against your better instincts about conserving water and heat, but the extra expense is nothing compared with a hefty repair bill. Here's what to do:

- **Keep garage doors closed,** especially if there are water

supply lines in the garage.

- **Open kitchen and bathroom cabinet doors** to allow warmer air to circulate around the plumbing, especially if your sinks are on an exterior wall. (If you have small children, be sure to remove any harmful cleaners and household chemicals.)

- **Let the cold water drip from a faucet served by exposed pipes.** Running water through the pipe—even at a trickle—helps prevent pipes from freezing.

- **Keep the thermostat set to the same temperature during day and night.** Again, a cold snap isn't the time to set back the thermostat at night to save a few bucks on your heating bill.

- **If you plan to be away** during cold weather, leave the heat on in your home, set to a temperature no lower than 55° F.

- **For the long term,** add insulation to attics, basements, and crawl spaces. Insulation will maintain higher temperatures in those areas. And to prevent drafts, seal cracks and openings around windows, doors, and at sill plates, where the house rests on its foundation.

HOW TO THAW FROZEN PIPES

If you turn on a faucet and only a trickle comes out, you may have a frozen pipe. "If you suspect the pipes are frozen, be careful when thawing them out because if the pipe has already burst, the water will come flowing

out and flood your home," says John Galeotafiore, who oversees Consumer Reports' testing of home products and power gear.

If a pipe has broken, turn off the water at the main shut-off valve, which is usually at the water meter or

where the main line enters the house. If the water is still running and no pipes have burst, you can take the following steps. (If you suspect a more serious problem, call a plumber.)

- **Turn on the faucet.** As you heat the frozen pipe

and the ice plug begins to melt, you want the water to be able to flow through. Running water through the pipe, as cold as it is, will help melt ice in the pipe.

- **Apply heat** to the section of pipe using an electric heating pad

wrapped around the pipe, an electric hair dryer, or a portable space heater (kept away from flammable materials), or by wrapping pipes with towels soaked in hot water. As tempting as it may be, don't use a blowtorch, a kerosene or propane

TIP

Open the doors of undersink cabinets to allow warmer air to circulate around plumbing pipes.



heater, a charcoal stove, or any device with an open flame. The high heat can damage the pipes or start a fire. Apply heat until full water pressure is restored.

■ **Check all other faucets** in your home to see whether you have

additional frozen pipes. If one pipe freezes, others may freeze, too.

Call a licensed plumber if you're unable to find the frozen area, if the frozen area isn't accessible, or if you can't thaw the problem pipe.

HOW TO DEAL WITH ICE DAMS

Ice dams are formed when the sun and heat from an attic melt snow on the upper parts of a roof. Because the ice dam sits over the unheated eaves, it doesn't melt as fast as the snow higher up on the roof. Melted water pools above the dam and, over time, can back up under the roof shingles and seep through the sheathing into your home. In addition to leaving you with water damage, ice dams can rip off gutters and damage the roof itself.

WHAT TO DO IMMEDIATELY

If water starts to pool on your floors or windowsills or leak from the ceiling, head outside and look at your roof. If you see ridges of ice below piles of snow, an ice dam may be the reason for the leaks. Don't try to remove the ice dam yourself; few outdoor home repairs are as dangerous as working on a ladder resting against an icy gutter. The solution is to call a professional roofing contractor. "A roofing contractor can remove excess snow from the roof and melt the ice that's causing the backup," says Maciek Rupa, technical services director at the National Roofing Contractors Association.

Between 2014 and 2016, there were about 1,600 emergency room visits related to homeowners attempting to remove snow from their roofs.

"To avoid the possibility of a loose ice chunk being freed and falling from the roof onto your head, we strongly recommend that homeowners resist the temptation to climb onto the roof, or use a snow rake to remove the excess snow," says Don Huber, director of product safety for Consumer Reports.

Removal costs depend on how large and accessible your ice dams are, but most roofers will charge \$100 an hour for this kind of hazardous work. You can also call specialists who will spray the

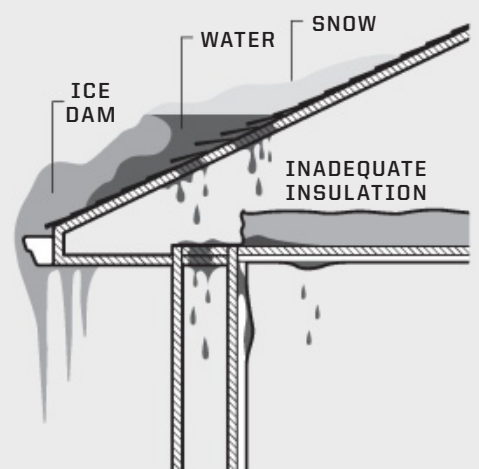
dams with low-pressure steam to melt the ice. Before you schedule the job, check your insurance coverage. "Ice dams are typically covered by your homeowners insurance policy," says Scott Semian, assistant vice president of claims for USAA insurance. "This includes damage to the structure caused by a leak as a result of an ice dam."

If your ceiling or walls have been damaged, don't attempt any repairs until they dry out.

WHAT TO DO AFTER THE SNOW MELTS

Once the weather warms up, you can take corrective action for next season. According to roofing experts, the best way to handle ice dams is to ventilate and insulate your attic. This will minimize the temperature difference between the outside air and the air in your attic, which causes the dams to form. You may want to consult a weatherization contractor, who can help you find and fix the areas of greatest heat loss.

Both the Department of Energy and the Consumer Product Safety Commission offer instructions for do-it-yourselfers. But if your home has a history of ice dams, or if you have ducts or recessed lighting fixtures that extend through the ceiling into the attic, consider hiring a pro.



WINTER

SHOP



SHOP THE SALES THIS WINTER

DECEMBER

- Coffee Makers P. 102
- Cordless Drills P. 59

JANUARY


























- Sheets P. 129
- Ellipticals P. 130
- Food Processors P. 131
- Humidifiers P. 132
- Treadmills P. 134

FEBRUARY

- Humidifiers P. 132
- Interior Paint P. 95
- Mattresses P. 43
- Snowblowers P. 98

Sheets

January brings “white” sales on sheets, pillows, and other types of bedding. But buyer beware: Not all sheets are the same. In our recent tests, we found that many cotton sheets wrinkled, shrank after washing, and eventually did not fit the mattress. Here’s a look at our top picks, plus shopping tips, below.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results				Features			
					Fit	Wrinkling	Strength	Shrinkage	Softness	Fits 10-inch mattress	Fits 14-inch mattress	Fits 18-inch mattress
	1	Matouk Sierra	79	\$258					Soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2	L.L. Bean Pima Cotton Percale (280TC)	74	\$149					Soft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3	Frette Porto	65	\$725					Softer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4	Brooklinen Luxe Core	61	\$149					Softer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5	Boll & Branch Percale Solid Sheet Set	61	\$240					Softer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HOW WE TEST: **Fit** denotes how well a fitted sheet can cover a mattress after a maximum of 25 wash-dry cycles without popping off from under the mattress or at the corners. A Poor rating in our **Fit** test means the sheet could not reach all four corners of the mattress. **Wrinkling** is

a comparison of dried sheets against wrinkle references from the American Association of Textile Chemists and Colorists. **Strength** is a combination of how well the fibers in the sheet stand up to tearing and the strength of the seam, and is evaluated by clamping

the sheet or the seam between two jaws and pulling with increasing force until the sample tears. **Shrinkage** is scored by measuring a section of each sheet before and after 10 washes. To assess **Softness**, a panel of 11 staffers compared sheets with three reference softness cloths and placed each sheet

into one of three categories (soft, softer, and softest). **Price** is for a queen-size sheet set that has one fitted sheet, one flat sheet, and two pillowcases. **Overall Score** is based on the performance of the product in all of our tests.

FROM OUR EXPERTS

SHEET SHOPPING TIPS

LEARN THE LINGO

Along with thread-count, you may see terms like long-fiber, pima, Supima, and Egyptian cotton. (If you see Supima, that’s a brand trademarked by the Supima Association of America that simply means pima cotton grown in America.) Typically, long-fiber cottons are stronger and less likely to pill. Terms like percale,

sateen, and twill are used to indicate how the fabric is woven. Percale is closely woven and feels crisper, while sateen has a softer feel and a glossier look. Twill weaves create a heavier fabric that can feel soft or crisp.

You may also see the term “cotton rich” to indicate that the sheet is made from over 50 percent cotton with the rest from other

fibers. In some cases the word cotton will be in large type with rich in much smaller print, so you might miss the distinction.

Our testing does not show any correlation between these attributes (or thread count) and sheet performance.

Take environmental claims lightly. The Federal Trade Commission has ordered retailers to stop labeling and advertising rayon textiles as eco-friendly bamboo or bamboo viscose. Once the plant fiber has been processed, it’s rayon, not bamboo. In addition, the processing

uses toxic chemicals that emit hazardous air pollutants.

TOUCH TEST

Feeling new sheets in the store will help you figure out how the sheets will feel once they’re washed. Our testers found that even after a year’s worth of washes, most sheets felt close to their initial softness.

CHECK FOR FIT

Measure your mattress’ height, including mattress pads. Remember that padding settles, so measure in at least two spots away from the corners. While you should buy sheets that

have a deeper pocket than the thickness of your mattress, it doesn’t always mean that they’ll continue to fit after you wash them numerous times.

KEEP YOUR RECEIPT

You should wash your sheets before sleeping on them to remove finishes or excess dye. If the fitted sheet shrinks so much that it’s difficult to put on, or if you don’t like how the sheets feel once they’re washed, plan to return them. You’ll need your receipt to do that or to return them for any other reason.

● Ellipticals

Elliptical exercisers are part stair climber, part cross-country ski machine. Unlike a treadmill, which allows you to move free-form, an elliptical constrains your movement. That's why it's especially important to test out the machines in a store before you buy one.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results						Features					
					Ergonomics	Exercise range	Ease of use	Construction	Heart-rate features	User safety	Chest strap included	Resistance levels	Stride length settings	Incline levels	Magazine rack	Multigrip handgrips
NO HEART RATE PROGRAMS																
✓	1	Bodyguard E-40	75	\$1,900	↑	↑↑	↑	↑↑	↓	↑		7	1	1		236
✓	2	Octane Fitness Q35X	68	\$2,200	↑	↓	↑	↑	↓	↑		20	1	1	•	232
✓	3	ProForm Pro 16.9	68	\$1,500	↑	↑	↑	↑	↓	↑	•	26	1	41	•	NS
	4	ProForm Pro 12.9	67	\$1,300	↓	↑	↑	↑	↓	↑	•	24	1	21	•	0
	5	NordicTrack SE9i	67	\$1,500	↑	↑	↑	↑	↓	↑	•	24	1	11	•	190
	6	NordicTrack C12.9	65	\$1,300	↑	↓	↑	↑	↓	↑	•	24	1	41	•	NS
	7	Octane Fitness Q37x	65	\$2,600	↑	↓	↓	↑	↓	↑		20	1	1	•	282
	8	ProForm Endurance 720E	64	\$800	↑	↑	↑	↑	↓	↑		20	1	41	•	228
	9	Horizon Fitness EX 59	63	\$650	↑	↑	↑	↑	↓	↑		10	1	1	•	183
	10	AFG 3.3AE	63	\$1,000	↑	↓	↓	↑	↓	↑		20	1	21	•	233
HAS HEART RATE PROGRAMS																
✓	1	Diamondback 1260 Ef	81	\$2,300	↑	↑	↑	↑	↑	↑	•	20	1	10	•	326
✓	2	Vision S7100	77	\$2,600	↑	↓	↑	↑	↑	↑	•	20	1	20	•	240
✓	3	Sole E95S	76	\$2,200	↑	↑	↑	↑	↑	↑	•	20	11	1	•	309
✓	4	Precor EFX 225	74	\$3,000	↑	↓	↑	↑	↑	↑		16	1	8	•	350
Ⓢ	5	Schwinn 470	74	\$900	↑	↑	↑	↑	↑	↑		25	1	11	•	187
✓	6	Landice E7 Pro Sport	72	\$3,600	↑	↓	↑	↑	↑	↑	•	20	1	1	•	NS
Ⓢ	7	Nautilus E616	71	\$1,000	↓	↓	↑	↑	↑	↑		25	1	11	•	194
✓	8	BH S3Xi	71	\$1,800	↑	↓	↑	↑	↑	↑		24	1	1	•	270
	9	LifeFitness E5 Go	71	\$4,300	↑	↓	↑	↑	↑	↑	•	20	6	1	•	293
	10	Kettler UNIX P	70	\$1,300	↑	↑	↑	↑	↑	↑		15	1	1		192
	11	Bowflex BXE116	68	\$1,500	↓	↓	↑	↑	↑	↑	•	25	1	15	•	263
	12	Kettler ELYX1	66	\$1,000	↑	↓	↑	↑	↑	↑		15	1	1		NS
	13	LifeSpan E2i	64	\$1,300	↑	↓	↑	↑	↑	↑		20	1	21	•	231
	14	True M30	64	\$1,700	↑	↓	↑	↑	↑	↑	•	25	1	1	•	304
	15	Xterra FS5.8e	63	\$1,300	↑	↓	↓	↑	↑	↑	•	20	1	20	•	242
	16	Sole E55	61	\$1,500	↑	↓	↑	↑	↑	↑	•	20	1	20	•	240

HOW WE TEST: Ergonomics considers how well an elliptical accommodates people of various sizes and aspects of the pedaling motion. Exercise range evaluates aspects of exercise intensity and measures incline and

the effort to pedal the machine through the resistance level settings. Ease of use includes ease of use aspects of controls, display, and using the programs. Construction shows elements that indicate good

construction methods, design choices, and our perception of quality based on noise, feel, and ride. Heart-rate features notes features like heart-rate sensor type and heart-rate programs but does not evaluate their

performance. User safety checks for safety features including pinch points, nonslip materials, stability, and static loading strength. Overall Score is based on the performance of the product in all of our tests.

Food Processors

If a healthier diet is on your New Year's resolutions list, investing in a food processor might be worthwhile. These kitchen appliances can shorten tedious preparation time and, perhaps, stave off the urge to order in. They range widely in price, so consider how often you'll use the appliance before you buy.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results							Features							
					Claimed capacity (cups)	Weight (lb.)	Chopping	Slicing	Shredding	Puréeing	Grating	Noise	Controls	Speeds	Height (in.)	Wattage	Dishwasher-safe	Warranty (yr.)	Additional features
✓	1	Breville Sous Chef BFP800XL/A	81	\$400	16	19.3	↑	↑	↑	↑	↑	↑	Touch-button	2	15	960	Yes	1	Food scraper, egg white beater, digital timer, spatula, cord storage
✓	2	Cuisinart Custom 14 DFP-14BCNY	71	\$180	14	14.8	↑	↑	↑	↓	↑	↑	Lever	1	15	720	Yes	3	Spatula
✓	3	Cuisinart Prep 9 9-Cup DLC-2009CHBMY	70	\$150	9	11.7	↑	↑	↑	↓	↓	↑	Touch-button	2	15	600	Yes	3	Spatula, cord storage
	4	Oster Pro 1200 Plus Food Processor Attachment BLSTMB-CBF-000	69	\$90	5	6.0	↑	↑	↑	↑	↑	↓	Touch-button	6	15	1200	Yes, except adapter	3	Cord storage
	5	Cuisinart Elite Collection 2.0 FP-12BCN	67	\$200	12	15.5	↑	↑	↑	↓	↓	↑	Touch-pad	2	16	1000	Yes	3	Cord storage, spatula
	6	Cuisinart Prep 11 Plus DLC-2011CHBY	67	\$180	11	13.4	↑	↓	↑	↓	↑	↑	Touch-button	2	15	625	Yes	3	Cord storage, spatula
	7	Hamilton Beach 8-Cup Stack & Snap 70820	67	\$100	8	7.9	↑	↑	↑	↓	↑	↓	Levers	3	16	450	Yes	1	Bowl scraper, cord storage
	8	Cuisinart DLC-6	66	\$125	8	4.7	↑	↑	↑	↓	↓	↓	Dial	3	15	350	Yes	1	None
	9	Cuisinart Elite Die-Cast 16-Cup	65	\$300	16	18.5	↑	↑	↓	↓	↓	↑	Touch-button	1	18	840	Yes	3	Retractable cord storage, spatula, brush
	10	Breville Sous Chef 12 BFP660 SIL	64	\$300	9	15.9	↑	↑	↑	↓	↓	↑	Touch-button	2	17	1000	No	1	Cord storage
	11	Oster Versa 1100 Series Performance	64	\$150	5	6.5	↑	↑	↑	↓	↓	↓	Touch-button Dial & touch-button	2	18	1100	Yes	7	Blender accessories, cord storage
	12	KitchenAid 11-cup with ExactSlice KFP1133	62	\$250	11	8.6	↑	↑	↑	↓	↓	↑	Touch-button	2	17	360	Yes	1	Cord storage
	13	Cuisinart Elemental 11 FP-11GM	62	\$150	11	7.7	↑	↑	↑	↓	↓	↓	Touch-button	2	16	550	Yes	3	Cord storage

HOW WE TEST: **Chopping** indicates the model's proficiency at chopping onions and almonds. **Slicing** evaluates proficiency at slicing celery and

mushrooms. **Shredding** shows how well the model shreds carrots and cheddar cheese. **Puréeing** tests how well the food processor purées peas and carrots.

Grating tests proficiency at grating Parmesan cheese. We judged **Noise** using the highest speed with a noise meter to measure the decibel level

of the unit. **Overall Score** is based on the performance of the product in all of our tests.

FROM OUR EXPERTS

FOOD PROCESSOR SHOPPING TIPS

Unless you regularly cook for a crowd or like to prepare multiple batches of a recipe, a food processor with a capacity of 7 cups or so should be fine for most tasks. Remember that

models with a larger capacity tend to be heavy and take up counter space. Some models come with accessories, such as a blender or a chopper attachment for smaller jobs, like

cutting onions and mincing garlic. Most of the models in our tests are dishwasher safe, which makes cleanup easier—but always follow cleaning instructions from the manufacturer.

Generally, we've found that price doesn't always correlate with quality, and some are quite pricey, so this is a good time to look out for discounts.

Humidifiers

As the temperatures drop and we crank up the heat in our homes, the air we breathe becomes drier, which can lead to chapped skin, nosebleeds, and sore throats. Thankfully, this is a good time of the year to find humidifiers on deep discount.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features						
					Output	Convenience	Noise	Efficiency	Hard water	Style	Claimed humidification area	Daily output (gal.)	Humidistat	Programmable	Antimicrobial claims	Dual mist
SMALL ROOM (26–299 SQ. FT.)																
\$	1	CVS Health GUL540V1	91	\$30	↑	↑	↑	↑	↑	Ultrasonic	150	1.3				
\$	2	Vicks VUL520	91	\$30	↑	↑	↑	↑	↑	Ultrasonic	250	1.4				
✓	3	Air Innovations MH-701B	90	\$90	↑	↑	↑	↑	↑	Ultrasonic	178	1.5	•	•	•	
\$	4	Honeywell HUL520	88	\$36	↑	↑	↑	↑	↑	Ultrasonic	150	1.3				
\$	5	Crane Owl	87	\$45	↑	↑	↑	↑	↑	Ultrasonic	250	1.4				
✓	6	HoMedics UHE-CM25	87	\$55	↑	↑	↑	↑	↑	Ultrasonic	100	1.3			•	
✓	7	HoMedics UHE-CM45	86	\$70	↑	↑	↑	↑	↑	Ultrasonic	100	1.7			•	
\$	8	Safety 1st Ultrasonic 360	82	\$30	↑	↓	↑	↑	↑	Ultrasonic	215	2.0				
✓	9	Crane Drop	81	\$50	↑	↓	↑	↑	↑	Ultrasonic	250	1.4				
✓	10	Vornado Huey	80	\$80	↑	↑	↓	↑	↑	Evaporative	180	0.8	•			
	11	Dyson AM10	77	\$500	↑	↑	↓	↑	↑	Ultrasonic	172	1.6	•		•	
	12	Crane EE-8619	67	\$20	↑	↓	↑	↓	↑	Vaporizer	250	1.8			•	
	13	Well at Walgreens Vaporizer	63	\$17	↑	↑	↑	↓	↑	Vaporizer	150	2.1			•	
	14	CVS Health GVP110	59	\$19	↑	↓	↑	↓	↑	Vaporizer	150	2.5			•	
	15	Vicks V150SGN	59	\$15	↑	↓	↑	↓	↓	Vaporizer	120	2.5			•	
MEDIUM ROOM (300–499 SQ. FT.)																
\$	1	Vicks V5100NS	86	\$50	↑	↑	↑	↑	↑	Ultrasonic	400	2.1				
\$	2	Comfort Zone CZHD81	82	\$45	↑	↓	↑	↑	↑	Ultrasonic	400	1.8				
✓	3	Hunter 33520	80	\$70	↑	↑	↑	↑	↓	Ultrasonic	325	2.2			•	
✓	4	SPT SU-9210	80	\$70	↑	↑	↑	↑	↑	Evaporative	450	1.9	•			
\$	5	Honeywell HEV320	77	\$40	↑	↑	↓	↑	↑	Evaporative	300	1.6				
	6	Boneco U200	74	\$100	↑	↑	↑	↑	↓	Ultrasonic	430	1.7				
	7	HoMedics UHE-CM65	74	\$60	↓	↑	↑	↑	↑	Ultrasonic	400	1.5			•	
	8	Honeywell HUL 570B	69	\$55	↓	↑	↑	↑	↑	Ultrasonic	300	1.0				
	9	Kenmore 3688	67	\$40	↓	↑	↑	↑	↑	Evaporative	360	1.2			•	
	10	Vicks V4600	67	\$50	↓	↑	↑	↑	↑	Ultrasonic	400	1.3				
	11	Honeywell HCM710	65	\$50	↑	↑	↓	↑	↑	Evaporative	300	1.4			•	
	12	Vicks V3700	62	\$50	↑	↓	↓	↑	↑	Evaporative	400	1.7			•	

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features						
					Output	Convenience	Noise	Efficiency	Hard water	Style	Claimed humidification area	Daily output (gal.)	Humidistat	Programmable	Antimicrobial claims	Dual mist

LARGE ROOM (500-999 SQ. FT.)

	1	SPT SU-4010	86	\$70						Ultrasonic	500	2.6					
	2	Boneco 7135	82	\$155						Ultrasonic	650	3.0					
	3	Crane Germ Defense EE-8065	80	\$85						Ultrasonic	500	2.2					
	4	Honeywell HWM-340	76	\$55						Vaporizer	600	3.3					
	5	Holmes HM495	76	\$50						Ultrasonic	500	2.1					
	6	Honeywell HCM-350	74	\$60						Evaporative	500	2.3					
	7	Vornado EVAP3	74	\$100						Evaporative	700	2.7					
	8	Rowenta HU5230U	72	\$140						Ultrasonic	577	2.0					
	9	Honeywell HEV620W	67	\$90						Evaporative	700	2.9					
	10	Crane EE-5303	67	\$170						Ultrasonic	500	1.7					
	11	Vornado ev200	65	\$90						Evaporative	700	2.5					
	12	Boneco S450	64	\$260						Vaporizer	860	3.0					
	13	Vornado Ultra1	63	\$150						Ultrasonic	900	3.2					

CONSOLE (1,000 SQ. FT. AND MORE)

	1	Essick MA1201	64	\$115						Evaporative	2500	10.5					
	2	Kenmore 15412	62	\$140						Evaporative	2500	9.8					
	3	Vornado EVAP40	62	\$120						Evaporative	1000	4.1					

TRAVEL/PERSONAL (UP TO 25 SQ. FT.)

	1	Hunter QLS-03	87	\$30						Ultrasonic	25	0.6					
	2	Well at Walgreens Personal Humidifier	83	\$30						Ultrasonic	25	0.7					
	3	Crane EE-5950	82	\$30						Ultrasonic	25	0.4					
	4	Boneco 7146	78	\$50						Ultrasonic	25	0.8					
	5	SPT SU-1053	76	\$30						Ultrasonic	25	0.7					

HOW WE TEST: **Output** is based on the number of gallons emitted daily per square foot of the recommended humidification area. **Convenience** is

the ease of operating and maintaining a unit. **Noise** is based on the sound level, in decibels, at the unit's highest operating setting. **Efficiency** is the

energy, in watt-hours, required to emit a gallon of water into the air. **Hard water** is the percentage of the output filled with tap water that a

unit produces when filled with hard water. **Overall Score** is based on the performance of the product in all of our tests.

Treadmills

Treadmills are the most popular workout machines in the U.S., and there's an option for every budget and fitness goal. That can make choosing one complicated. The key is to find a machine that's durable, comfortable, and easy to use. Try one out in the store before making a purchase.

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features									
					Ergonomics	Construction	Ease of use	Exercise range	User safety	Motor (hp)	Maximum incline (%)	Maximum speed (mph)	Weight capacity (lb.)	Quick speed controls	Quick incline controls	Chest strap included	Heart-rate control programs	Reading shelf	Cup holder
FOLDING TREADMILLS																			
✓	1	NordicTrack Commercial 2450	84	\$2,000	↑	↑	↑	↑	↑	4.25	14.2	12.0	300	•	•	•	•	•	2
✓	2	Bowflex BXT216	84	\$1,800	↑	↑	↑	↑	↑	4.00	13.7	12.0	400	•	•	•	•	•	4
💰	3	NordicTrack C1650	83	\$1,350	↑	↑	↑	↑	↑	3.60	14.6	12.0	350	•	•	•	•	•	2
✓	4	Spirit Fitness XT485	82	\$2,000	↑	↑	↑	↑	↑	3.50	12.2	12.0	425	•	•	•	•	•	2
✓	5	Horizon Fitness Elite T9-02	77	\$2,000	↑	↑	↓	↑	↑	3.25	15.9	12.0	350	•	•	•	•	•	2
✓	6	3G Cardio 80i	77	\$1,600	↑	↑	↑	↑	↑	3.00	9.0	11.0	350	•	•	•	•	•	1
	7	LifeFitness F3 Go	75	\$2,600	↑	↑	↓	↑	↑	3.00	11.5	10.0	350	•	•	•	•	•	2
	8	Vision TF20 Classic	74	\$2,000	↑	↑	↓	↑	↑	2.75	13.4	12.0	375	•	•	•	•	•	1
	9	Horizon Fitness Elite T7	74	\$1,500	↑	↑	↓	↑	↓	2.75	16.0	12.0	350	•	•	•	•	•	2
	10	BH S1Ti	74	\$1,200	↑	↑	↑	↑	↓	3.00	12.3	10.0	350	•	•	•	•	•	2
	11	Spirit Fitness XT185	66	\$1,400	↑	↓	↑	↑	↓	2.75	13.1	10.0	295	•	•	•	•	•	2
BUDGET FOLDING TREADMILLS																			
✓	1	Nautilus T616	84	\$1,000	↑	↑	↑	↑	↑	3.00	15.3	12.0	300	•	•	•	•	•	2
✓	2	Sole F63	81	\$900	↑	↑	↑	↑	↑	3.00	14.1	12.0	325	•	•	•	•	•	4
💰	3	NordicTrack C990	77	\$1,000	↑	↑	↑	↑	↑	3.00	11.8	12.0	325	•	•	•	•	•	2
✓	4	Xterra TRX4500	77	\$1,000	↑	↑	↑	↑	↑	3.25	10.1	12.0	300	•	•	•	•	•	2
✓	5	LifeSpan TR2000e	76	\$1,000	↑	↑	↑	↑	↑	2.50	14.9	11.0	300	•	•	•	•	•	2
✓	6	LifeSpan TR1200i	73	\$900	↑	↑	↑	↑	↓	2.50	9.6	11.0	300	•	•	•	•	•	2
	7	AFG 3.3AT	72	\$800	↑	↑	↑	↑	↑	2.50	12.5	12.0	325	•	•	•	•	•	2
	8	Nautilus T614	71	\$900	↑	↓	↑	↑	↑	2.75	13.3	12.0	300	•	•	•	•	•	2
	9	Gold's Gym Trainer 720	70	\$600	↑	↑	↑	↑	↓	2.60	9.5	10.0	300	•	•	•	•	•	2
	10	Horizon Fitness Adventure 3	70	\$900	↑	↑	↑	↑	↑	2.50	11.5	12.0	300	•	•	•	•	•	2
	11	Horizon Fitness T101	69	\$600	↑	↑	↓	↑	↑	2.25	10.2	10.0	300	•	•	•	•	•	2
	12	ProForm Power 995i	68	\$1,000	↑	↓	↑	↑	↓	3.00	14.7	12.0	350	•	•	•	•	•	2
	13	Yowza Delray	67	\$900	↑	↑	↑	↑	↑	2.75	6.7	11.2	300	•	•	•	•	•	2
	14	Xterra TRX2500	66	\$800	↑	↓	↑	↑	↑	2.25	11.1	10.0	300	•	•	•	•	•	2

Recommended	Rank	Brand & Model	Overall Score	Price	Test Results					Features									
					Ergonomics	Construction	Ease of use	Exercise range	User safety	Motor (hp)	Maximum incline (%)	Maximum speed (mph)	Weight capacity (lb.)	Quick speed controls	Quick incline controls	Chest strap included	Heart-rate control programs	Reading shelf	Cup holder
NON-FOLDING TREADMILLS																			
✓	1	Sole TT8	84	\$2,500	⬆️	⬆️	⬆️	⬆️	⬆️	4.00	13.5	12.0	400	•	•		•	•	4
✓	2	Precor TRM 243	84	\$3,200	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	14.9	12.0	500				•	•	2
✓	3	SportsArt T615	81	\$3,200	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	13.6	12.0	400	•			•	•	2
Ⓢ	4	True M30	81	\$1,700	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	14.4	12.0	300	•	•	•	•	•	2
✓	5	Landice L7 Pro Trainer	81	\$3,600	⬆️	⬆️	⬆️	⬆️	⬆️	4.00	12.4	12.0	400			•		•	2
	6	Bodyguard T-30	77	\$3,000	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	13.5	12.0	400				•	•	2
	7	Precor TRM 211	76	\$2,000	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	16.3	12.0	350					•	2
	8	LifeFitness T3 Go	72	\$2,600	⬆️	⬆️	⬆️	⬆️	⬆️	3.00	14.3	12.0	350	•	•	•	•	•	2
	9	Endurance T3	63	\$1,275	⬆️	⬆️	⬆️	⬆️	⬆️	2.20	10.0	10.0	275						1

HOW WE TEST: **Ergonomics** evaluates how well the machine accommodates the needs of users and includes belt size, foot-rail design, and handgrip design. **Construction** notes aspects that impact quality, like the motor and

related components, running deck, and the results of our durability tests. **Ease of use** includes the ease of using the controls, functions, and programs, and reading the display. **Exercise range** considers the aspects that provide an

effective workout to users of various fitness levels, from beginners to very fit individuals. **User safety** assesses operational safety and security, including stop-button size and location, safety-key operation, the possibility

of striking the motor housing, and the security of the deck for folding models. **Overall Score** is based on the performance of the product in all of our tests.



PHOTO: DRAGONIMAGES/A DOBESTOCK

GET IN GEAR

Tackling household chores is a lot easier if you have the right tools for the job and can find them easily. Neat idea: Create a pegboard command center to keep it all organized.

1. STRING TRIMMER

This especially light, battery-powered Stihl trimmer was one of the quietest models ever tested at Consumer Reports, but it still performed impressively in all of our tests.

STIHL FSA 56 \$200

2. PAINT

Top-rated paints like this super-premium brand from Behr deliver good coverage with just one coat (and without priming first).

BEHR MARQUEE \$43

3. DRILL

This Makita is a good all-around choice, thanks to its excellent power, very good speed, and relatively compact size. Recharging the battery takes about an hour.

MAKITA FD07R1 CORDLESS DRILL \$160

4. GRILL BRUSH

The long handle and angled head of this brush keep your hands safely away from the grill's heat, and the wire brush head can be removed and replaced.

NEXGRILL 530-0024 \$11

5. VACUUM

This Shark upright is impressive at cleaning bare floors and at pet-hair removal. At just 14 pounds, it's easy to maneuver.

SHARK ROTATOR POWERED LIFT-AWAY SPEED NV680 \$260



76
OVERALL SCORE

77
OVERALL SCORE

71
OVERALL SCORE

74
OVERALL SCORE

PHOTO: JOHN WALSH/CONSUMER REPORTS; PROP STYLING: KARIN OLSEN

MEMBERSHIP BENEFIT



TESTING IS AT THE HEART OF CONSUMER REPORTS



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