

Eco-friendly Cleaning

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Learning objectives



Create

a healthier home



Give

you 3 eco-friendly cleaners

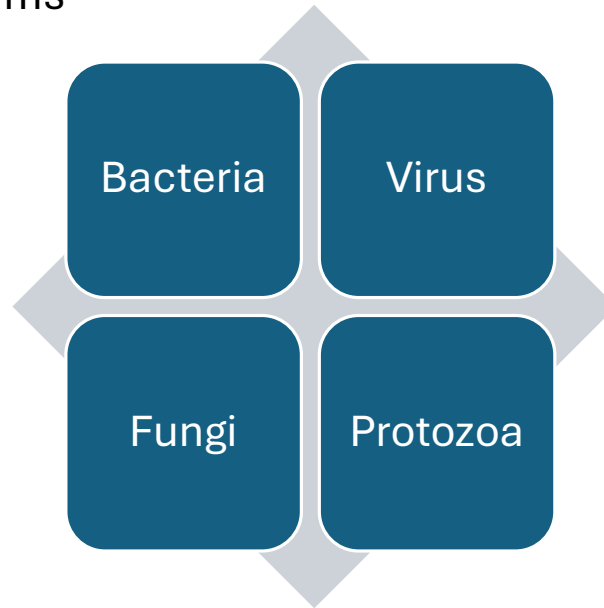


Understand

sanitizing and disinfecting

What are germs?

- Germs are tiny organisms, or living things, that can cause disease
- There are 4 main types of germs



How are germs spread

- Our hands become contaminated when we touch different surfaces.
- Germs enter your body when:
 - We touch our eyes, nose or mouth with our dirty hands
 - We eat without washing our hands first



What about antibacterial soap?

- The health department recommends against using an antibacterial soap, both for cleaning or for washing hands
 - Not all microorganisms are bad, many protect us from disease
 - Antibacterial soap kills good and bad microorganisms, and the bad ones tend to survive and become antibacterial resistant
- Refillable foaming soap dispenser 5 parts water and 1 part liquid Castile soap



A fragrance-free castile soap is safer for you and the environment.

Cleaning, sanitizing and disinfecting

CLEANING is the process of removing dirt, debris and up to 99% of germs.

Sanitizing takes you to 99.9% of germs targeting bacteria on surfaces. It is not intended to kill viruses & fungi.

Disinfecting destroys or inactivates any of the remaining germs on a clean surface including bacteria, fungi and viruses by using chemicals.

Cleaning – the First Step

- Removes dirt and organic matter that contain and protect germs.
- Breaks down oils and allows dirt, contaminants and germs to be more easily removed.
- Store bought cleaners are not necessarily more effective than homemade soapy water solutions.

In most areas of your home, cleaning is enough.

Sanitizing

- Food prep surfaces, cutting boards and utensils.
- Different foods can introduce harmful bacteria during food preparation that can lead to foodborne illness.
- Automatic dishwashers can sanitize for you.
- Isopropyl Alcohol 70% left on wet to air dry



High risk areas



Disinfectants

- What are the health concerns:
 - Hazardous chemicals are common ingredients in disinfecting products.
 - People using these products and people in the spaces where they are used, can get sick or develop illnesses, including asthma.
 - Some ingredients can interfere with your hormonal system and reproductive health.
 - Some ingredients can also damage skin or other body systems.



How to disinfectant

- Apply to a clean surface.
- Disinfectant is not effective on dirty surfaces and does not remove germs.
- Follow label instructions for safe use, concentration and contact time.
- Contact time is the time needed to deactivate germs at given concentrations.
- The frequency depends on the environment.

Overuse of disinfectants does not provide any additional protection and can expose you to harmful chemicals.

Using disinfectants safely

- Do not spray, fog, fumigate or mist chemicals into the air.
 - Aerosolizing chemicals is not recommended and can be harmful to human health.
 - The CDC recommends using liquid products and cloths.



Finding Safer Disinfectants

- Hydrogen peroxide
 - Not the same as hydrogen peroxide in the first aid aisle.
 - Must be registered with the EPA for surface disinfecting. Check the label.
 - <https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>
 - https://www.turi.org/lab/#block_f38d16f5298893d62c91a6b3ae5e441d-5

Does this look familiar?




Cleaning Label Signal Words

Highest hazard	DANGER, POISON		
Less hazardous	CAUTION, WARNING		
Safer	You don't see: DANGER, POISON CAUTION or WARNING		


Non-Toxic - does NOT mean “safe,” it only means it does not qualify for signal words.

Table 4. Typical Statements for Acute Dermal Toxicity

Category	Signal Word	Statement
I	DANGER POISON 	Fatal if absorbed through skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear (<i>specify appropriate protective clothing</i>). Remove and wash contaminated clothing before reuse.
II	WARNING	May be fatal if absorbed through skin. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Wear (<i>specify appropriate protective clothing</i>). Remove and wash contaminated clothing before reuse.
III	CAUTION	Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Wear (<i>specify appropriate protective clothing, if applicable</i>).

<https://www.epa.gov/sites/default/files/2018-04/documents/chap-07-mar-2018.pdf>

Table 5. Typical Statements for Acute Inhalation Toxicity

Category	Signal Word	Statement
I	DANGER POISON 	Fatal if inhaled. Do not breathe (dust, vapor, or spray mist) ¹ . Wear (<i>specify appropriate respiratory protection</i>). Remove and wash contaminated clothing before reuse.
II	WARNING	May be fatal if inhaled. Do not breathe (dust, vapor or spray mist) ¹ . Wear (<i>specify appropriate respiratory protection</i>). Remove and wash contaminated clothing before reuse.
III	CAUTION	Harmful if inhaled. Avoid breathing (dust, vapor, or spray mist) ¹ . Remove and wash contaminated clothing before reuse.

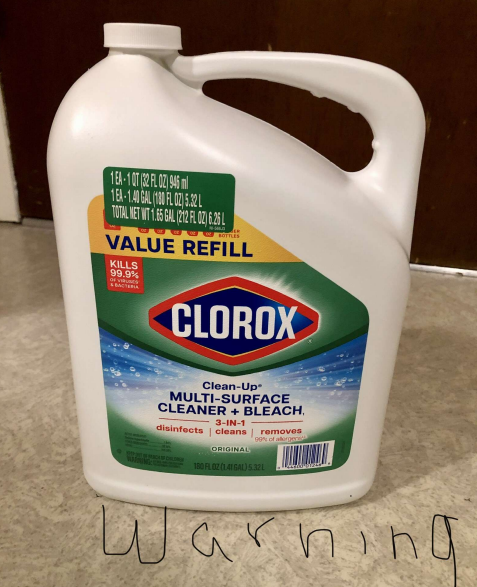
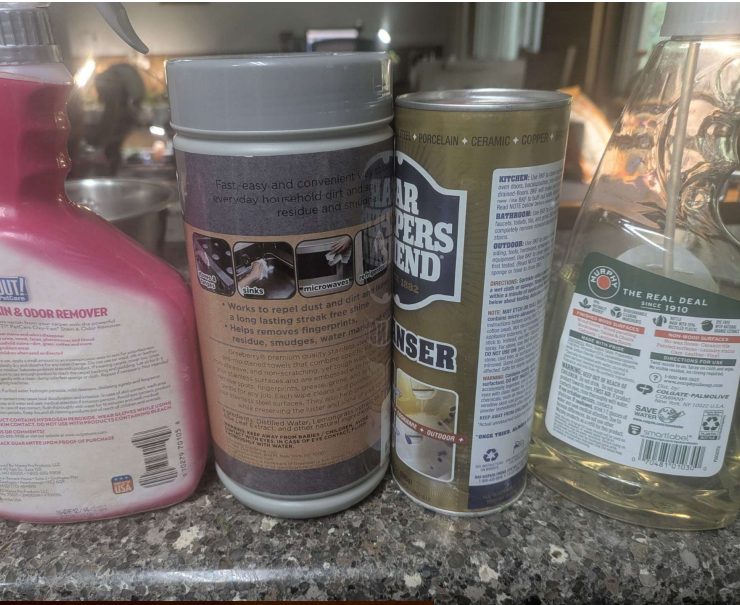
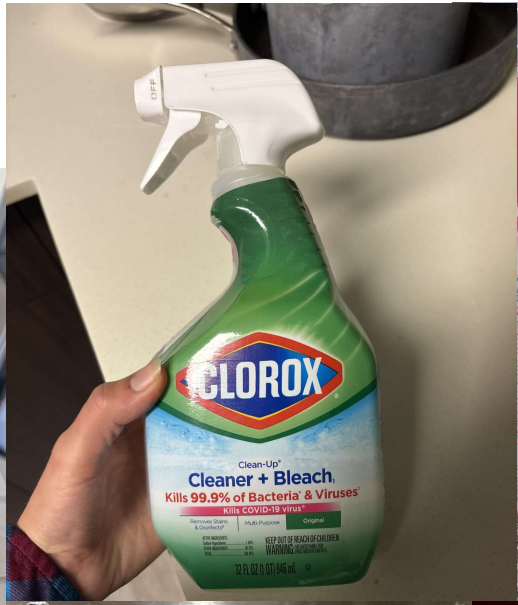
Make Sure To Read The Label



Danger



Warning



EWG SAFETY RATING SCALE

Cleaning Products

realeverything.com



A	LOWEST CONCERN Few/no known or suspected hazards to health or the environment. Good ingredient disclosure.
B	LOW CONCERN Limited potential for hazards to health or the environment. At least some ingredient disclosure.
C	MODERATE CONCERN Some potential for hazards to health or the environment. At least some ingredient disclosure.
D	HIGH CONCERN Likely hazards to health or the environment. May also have poor ingredient disclosure.
F	HIGHEST CONCERN Potentially significant hazards to health or the environment or poor ingredient disclosure.

Skin Deep Database

EWG scientists have rated more than 160,000 food, cosmetics and cleaning products based on the health, safety and transparency of their ingredients. Each product is given a rating on a scale of 1 to 10, or A to

F.

About the ratings: EWG provides information on cleaning product ingredients from the published scientific literature, to supplement incomplete data available from companies and the government. The ratings indicate the relative level of concern posed by exposure to the ingredients in this product - not the product itself - compared to other product formulations. The ratings reflect potential health hazards but do not account for the level of exposure or individual susceptibility, factors which determine actual health risks, if any.

Think, Pair, Share



- Partner up with 2 – 4 classmates
- Have someone search on their phone “EWG cleaning products”
- Type in products that have have/use and discuss the findings

Note: make sure to check spelling (auto correct) e.g. “Fantastik”

What's really in those cleaners?



The scoop on

Fragrances



Synthetics

- Synthetic dyes are generally made from petroleum or coal tar. Due to the manufacturing process, they may carry toxins (such as benzene) or heavy metals (such as mercury)
 - There are approximately 1,200 dyes used in household products
- Synthetic fragrances are increasingly cited as triggers in health conditions, including asthma, allergies, hormone disrupters, and migraines

An Ounce of Prevention...

- Make it a house policy to take off your shoes when you come in the door.
- Use mats at every entrance (a 5-foot-long mat) is recommended inside each door. Buy high-quality commercial-grade mats made of nylon or polypropylene with a rubber (not vinyl) backing.
- Train dogs to stop at the door so you can wipe off their feet when they're muddy. Keep a rag near the door for this purpose

Finding Safer Products

- Buy products certified as safer for human health and the environment by an independent third-party agency
- Look for Safer Choice, Green Seal®, Ecologo®, and Design for the Environment (DfE) labels on products



Greenwashing?



Mouthwash

3 cups water

1 cup hydro peroxide—food grade 3%

1 tbsp salt

1 tbsp baking soda

25 drops spearmint oil

12 clove oil

Cleaning products do not have to list ingredients
Manufacturers do not have to prove that they are safe.

Green Washing labels are unregulated by the government.

products labeled “green” often have as many toxic chemicals as
conventional cleaning products.

Disinfectants only have to list the active ingredient that kills germs.

Look at the label to choose safer cleaners

Safest



Products certified to have safe ingredients or products with no signal words

Somewhat harmful



Products labeled CAUTION should be used with care

Avoid



Products labeled DANGER, WARNING or POISON are the most harmful

Chemicals to Avoid

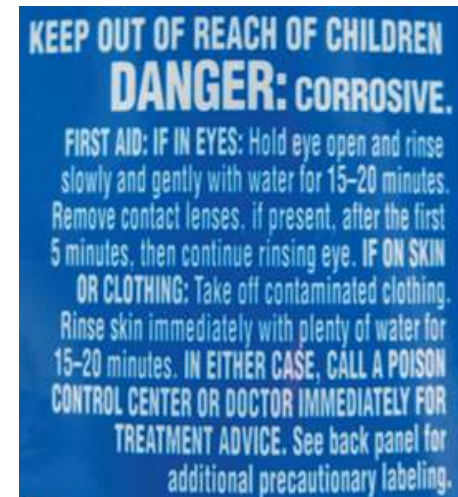
- Any ingredient ending in “-ene” or with “chlor,” or “glycol” in its name
 - Alkylpheno ethoxylate (APE)
 - Kerosene (furniture polishes)
 - Methylene chloride (air fresheners)
 - Napthalene (toilet bowl cleaner, carpet cleaners, deodorizers, moth balls)
 - Perchloroethylene (Perc-spot removers, rug and upholstery cleaners)
 - Sodium hypochlorite (chlorine bleach)
- Ammonium hydroxide (Ammonia – window cleaners)
- Dioxane
- Formaldehyde
- Phenol (furniture polish, mold and mildew cleaners)
- Phosphoric Acid

How to do a chemical lookup

- <https://chemicalsafety.com/sds-search/>

Move Out List

- Drain cleaners
- Oven cleaners
- Toilet bowl cleaners
- Fabric softeners
- Furniture polishes
- Air fresheners
- Chlorine bleach
- Ammonia



Take to the transfer stations household hazardous waste collection site

Properly dispose of unused cleaning products

Central Transfer and Recycling Center	West Van Materials Recovery Center	Washougal Transfer Station
<p>11034 NE 117th Avenue Vancouver, WA (360) 256-8482</p>	<p>6601 NW Old Lower River Rd Vancouver, WA (360) 737-1727</p>	<p>4020 S. Grant Street Washougal, WA (360) 835-2500</p>
<p>Friday, Saturday, Sunday 8 a.m. to 4 p.m.</p>	<p>Friday & Saturday 8 a.m. to 4 p.m.</p>	<p>First & third Saturday 8 a.m. to 4 p.m.</p>





INGREDIENTS TO DIY YOUR SPRING CLEANING PRODUCTS

Borax

super washing soda

liquid castile soap

spray bottles

baking soda

bar castile soap

baking soda sprinkle

essential oils

white vinegar

Cleaner	Find it in	Use it to	It replaces
baking soda (sodium bicarbonate)	grocery store baking ingredients aisle	scrub sinks, pots and stains, polish sterling or silver	abrasive cleaners like Ajax, silver polishes
white distilled vinegar	grocery store condiments aisle	clean glass, remove soap scum, grease and mineral deposits	window cleaners like Windex, drain treatments like Drano
plant-based liquid soap (Castile soap)	grocery store natural products section	mop floors, wash clothes, clean marble counters	laundry detergents, floor care products
washing soda (sodium carbonate)	grocery store laundry supplies aisle	cut oven grease, remove wine stains, boost cleaning power of laundry soap	oven cleaners, all-purpose cleaners like Oxi-Clean

Eco-friendly Cleaning Kit

▶ All-Purpose Cleaner

▶ Safer Scrubber

▶ Window Cleaner



All Purpose Cleaner

Ingredients

3 cups hot water

1 teaspoon washing soda

1 tablespoon vegetable oil soap

Cost

Tap Water = \$0.01

Super Washing Soda = \$0.01

Soap = \$0.40

▶ Total = \$0.42

Add water and soda to a spray bottle and shake. Add soap and mix gently. Spray and wipe clean.

Good for countertops, floors, walls
woodwork, appliances, etc.



Window Cleaner

Ingredients

3 cups hot water
½ cup white vinegar
½ cup rubbing alcohol

Cost

Tap Water = \$0.01

Vinegar = \$0.08

Alcohol = \$0.64

▶ Total = \$0.38

Add ingredients to a spray bottle. Shake gently to combine.

Apply to surface and gently wipe with a cloth or squeegee.



Safer Scrubber

Ingredients

1/2 cup warm water

1/2 cup vegetable oil soap

1 2/3 cup baking soda (approx.)

Cost

Tap Water = \$0.01

Soap = \$0.60

Baking Soda = \$0.03

▶ Total = \$0.70

In an airtight, screw-top container, add water and soap. Stir in baking soda until mixture forms a paste.

Good for sinks, tubs, showers, etc.



Think, Pair, Share



- Partner up with 2 – 4 classmates
- Discuss any cleaning tips/hacks you use or have heard of



Soap Scum

- Soap scum occurs when soap combines with minerals that are in the water.
- The soap encapsulates the dirt and oil and minerals, such as calcium, make it insoluble.
- That is why soap scum sticks to the side of your tub, builds up and starts to look grimy.
- The harder the water the worse the problem.

Glass shower doors

- Squeegee the doors after each use
- If they look dingy scrub with safer scrubber
- Don't forget to clean shower door tracks with vinegar and let sit overnight. In the morning, rinse and wipe dry



Clogged showerheads

- Hard water is the one cause of clogged showerheads. If you've got irregular streams of water, fill a plastic sandwich bag with white vinegar and tie it around the showerhead with a wire tie or rubber band. Allow the showerhead to soak for several hours or overnight and then remove the bag and scrub the showerhead with a brush.



Mold's last stand

If mold has gotten a foothold in your bathroom tackle it with:

- White vinegar
- Hydrogen peroxide
- Oxygen-bleach powder
- Borax
- Steam cleaner

Once you have it under control, spray after each use with vinegar to keep it from returning. The vinegar smell goes away as soon as it dries.

Note: Avoid using vinegar on tile walls

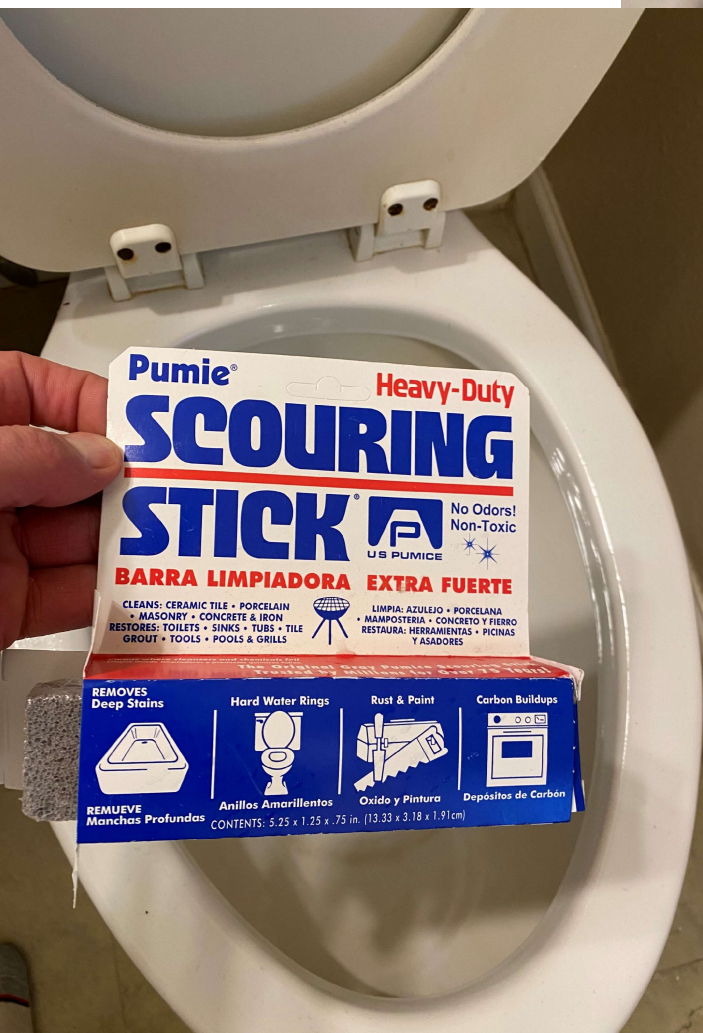
Prevent mold in the first place

- Take away moisture and humidity so mold can't grow
- Make sure your ceiling fan is rated to fit the size of your bathroom
 - A fan must exhaust 1 cubic foot per minute (CFM) for every square foot. So, a 40-square-foot bathroom needs a fan rated for 40 CFM
 - Run the fan during the shower and afterwards for at least 20 minutes.
- Replace your standard wall switch with a timer
- Squeegee / wipe down shower walls / tub
- Leave bathroom door / shower doors open
- Hang up wet towels and mats outside bathroom
- Extend shower curtain fully so there are no folds



Regular Toilet Cleaning

- Spray with all purpose cleaner and then scrub the bowl, getting under the rim, and flush. This should do it if you clean regularly.



Toilet brush trick

- After cleaning spray down with vinegar or hydrogen peroxide
- Leave the brush out to dry before putting it back in its holder



Grout

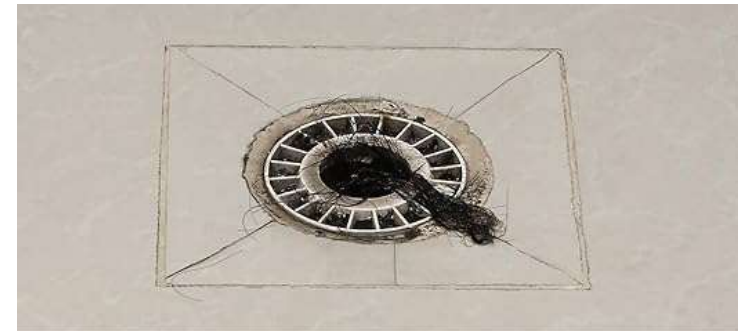
- Spread on safer scrubber use a stiff toothbrush to scrub
- Rinse with vinegar spray.

Note: Don't use vinegar too often because it can dissolve grout

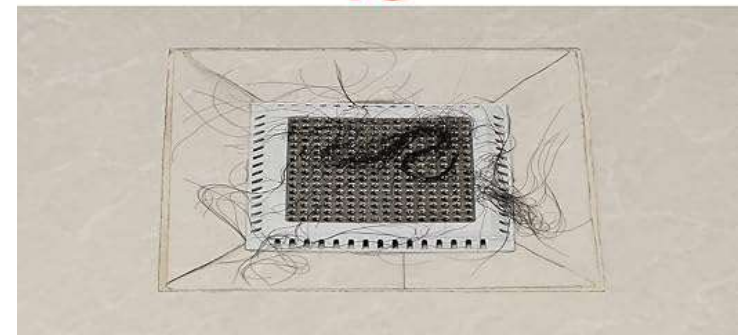


Drains

- Use a hair catcher to prevent clogs in shower drains before they start
- If the shower or tub is clogged remove the drain cover and pull out as much hair and debris as possible
- A 20" hair snake will help (\$3)



VS



White Vinegar Wrap



Air Fresheners



- Commercial air fresheners could have nasty chemicals you don't want to breath.
- Use a spray bottle filled with vinegar to combat odors wherever they occur (optional – several drops of essential oil)
- Fill a decorative box or jar with baking soda mixed with 5-10 drops of essential oil, shake/stir and leave on the bathroom shelf. Add new drops when scent fades
- If you like burning candles use soy or beeswax that only contain essential oils for scent

Creating a scent-free environment

- White Vinegar
 - Neutralizes odors.
 - Can be used on carpet, shoes, trash cans, diaper pails.
 - Fill a spray bottle with white vinegar and spray as needed.
 - Can also be applied with a cloth.
- DIY Air deodorizer
 - 1/4 cup isopropyl alcohol
 - 1 cup water
 - Optional: Approximately 20 drops of a combination of 1-3 essential oils of your choice.
 - Read the label
 - Ensure it is safe to inhale



DIY White Enamel Sink Cleaning



NON-TOXIC DISH SOAP



a



b



c



d



e



f



g

BECAUSE / HEALTH

Dishwasher Powder

- 1 cup citric acid
- 1 cup washing soda
- 15 drops essential oil (optional)

Put all ingredients in a plastic container with a tight-fitting lid and shake well. Use about 1 tablespoon per load.

Citric acid (also called sour salt) is the key ingredient, and you can buy it in bulk online or places that sell canning supplies.

Sponges, Dish clothes, Scrubbers

- Disinfect sponges by boiling them for 5 minutes or microwave wet on high for one minute. Note: Don't run through the dishwasher
- Dishcloths can be laundered or microwaved wet for three minutes
- Scrub brushes and scouring pads can be boiled or run through the dishwasher

Cleaning tools



Sponges

- Not recommended
- Harbor bacteria and are not easily cleaned.
- Should be kept away from raw meat.
- Need to be replaced regularly.



Microfiber clothes

- Releases microplastics into waterways and oceans when washed.
- Negatively impacts marine life and the environment.

Recommended: cotton cloth, old t-shirts, scouring pad, dish brush

Mopping

- Dust mop with a microfiber mop (with a dust pad attached) using an S-shaped motion. Vacuum the dust pad to clean it and wash occasionally with other cleaning rags
- Damp mop when you need more serious cleaning. Spray a 4' x 6' area of the floor with all purpose cleaner and let sit for twenty seconds and then gently scrub it with your microfiber mop or wrung out sponge mop. Rinse and clean when dirty

Uline Heavy Duty Microfiber Mop System - 18"



Make less trips to the bucket. Microfiber pads hold more water than traditional mops for more efficient cleaning.

- Removes most dirt, dust and debris without chemicals.
- Change pads in seconds with attached hook and loop fasteners.
- Pad - Wash up to 400 times.

Ovens

- If you have a self-cleaning oven, take advantage of the cleaning cycle on a regular basis.
- If your oven isn't self-cleaning make a paste of baking soda and water and spread it thickly over the walls and bottom of the oven. Let it sit over night. The next day the grime should be soft enough to scrape with a rubber spatula and warm, wet rags.
- Use a steam cleaner





Laundry

- Wool dryer balls to fluff clothes and speed up drying time (optional add a few drops of essential oil to the balls every couple of loads)
- Bleach alternative
 - Oxygen bleach (mix of hydrogen peroxide and washing soda)
 - Squeeze a $\frac{1}{4}$ cup of lemon juice and put in wash cycle

NON-TOXIC LAUNDRY DETERGENT



a



b



c



d



e



f



g



h



i



j



k

BECAUSE / HEALTH

Laundry Soap

- 1/8 cup liquid soap
- 1 tablespoon washing soda
- 1/4 cup vinegar (for rinse)

Add the liquid soap and washing soda to the washing as it fills with water. Try varying the amount to fine-tune for your needs. If using soap use a warm-water wash. Increase the amount of washing soda if your water is very hard. Add the vinegar to the rinse cycle to rinse away soap scum and soften clothes instead of fabric softener. For particularly dirty load or whites, use oxygen (nonchlorine) bleach.

Stains

- Never rub a fresh stain – gently blot it with a cloth or paper towel
- Rinse protein stains (egg, milk, blood) under cold running water while scrubbing gently. If it doesn't come out, soak in cold water
 - Try hydrogen peroxide
- Pretreat oil-based stains (cooking oil, grease) by applying liquid soap or detergent directly to the stain and rub gently. Rinse with hot water and then wash with hot water
- Soak tannin stains (red wine, coffee, tea) for thirty minutes with 1 teaspoon washing soda per ½ gallon water.



Carpets



- To remove odors from rugs or carpets, sprinkle baking soda and work it in gently with a broom. Let sit overnight and then vacuum
- For stains use a white towel or rag to blot up as much moisture as you can.
 - Work from the outside of the stain inward
 - Spray club soda on the stain, wait 30 seconds and then blot. Repeat several times
 - If the stain persists use a tablespoon of dish soap with $\frac{1}{2}$ cup cold water whisked together into a foam. Press it down with a brush or sponge. Wait 30 seconds and blot. Make sure to dry

Glass rings

- White haze and rings are caused by moisture that gets into the finish and does not evaporate. Rub any type of oil (olive, coconut) into the ring and let it sit until the whiteness disappears and then wipe off with a dry cloth



Steam Cleaning

- A steam cleaner cleans and kills bacteria, mold and dust mites with no chemicals.
- Works on showers, ovens, upholstery, countertops, tile and grout.
- Look for a “vapor” steam cleaner that produces “dry steam.”
 - Has a boiler temperature of at least 245 degrees Fahrenheit
 - A warranty on the boiler of at least three years
 - Will run at least an hour before refilling
- **Not recommended for hardwood floors**



It's not only about us!



Resources

- Clark County Household Hazardous Waste Information
 - <https://www.clark.wa.gov/public-health/household-hazardous-waste>
- OR Metro
 - <https://www.oregonmetro.gov/tools-living/healthy-home/green-cleaning>
- Environmental Working Group – Home cleaning products database
 - <https://www.ewg.org/guides/cleaners/>
- Toxics Free Future
 - <https://toxicfreefuture.org/healthy-living/healthy-homes/>
- HealthData.gov
 - <https://healthdata.gov/dataset/household-products-database>

Other Questions?

<https://clarkcountymcomposts.org/virtual-learning#green-faq>



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