



THE SWITCH YOUR THINKING GUIDE TO

CLEANING WITH CHEMISTRY



Science can help you keep a healthy home
without toxic chemicals and plastic waste

WHY DO WE CLEAN?

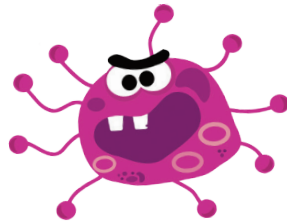
We certainly don't do it for the fun of it!

We clean to remove **dirt, marks, stains, scum, mould, mildew** and to make our homes look fresh and new.

We also clean to help **keep ourselves and our families healthy** because dirt is associated with 'germs' and some 'germs' can cause sickness and disease.



HOW WELL DO YOU
KNOW YOUR GERMS?



THE PURPOSE OF THIS HANDBOOK

Switch your thinking have added a squirt of science to a concoction of common sense to solve your cleaning conundrums.

Use this handbook to:

- get to know your germs
- switch your thinking about cleaning and
- discover the ingredients and recipes you need to save time and money and create a healthy and sustainable home.





YOUR MICROBIAL JUNGLE

BACTERIA OUTNUMBER HUMAN
CELLS IN YOUR BODY TEN TO ONE



Sometimes bacteria cause **illness** but most of the time they live in **harmony** with you.

Some types of bacteria fend off illness and others help digest your food.



Healthy households don't need antibacterial cleaning products – they are more expensive, build bacterial resistance and are no more effective at reducing illness than natural soap and warm water.

**Switch your thinking to save time and money
and create a healthy and sustainable home.**

GET TO KNOW YOUR GERMS

BACTERIA

Single celled organisms that can reproduce by themselves

Earliest form of life on earth and the only form for the first two billion years

Now present in most habitats including: acidic hot springs, deep portions of the Earth's crust and radioactive waste – as well as inside you and your home

Good guys help digestion and prevent invasion of disease-causing bacteria

Bad guys can cause: typhoid
cholera
food poisoning



Bacteria are filled with fluid and may have tail-like structures (flagella) to move themselves

VIRUSES

Have a core of genetic material but **no way to reproduce on their own**

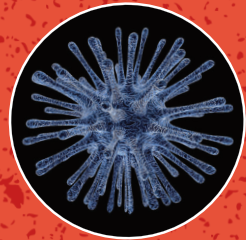
Infect your cells and those of bacteria and take over their reproductive machinery to reproduce

The **most abundant** type of biological entity on earth

Can't move themselves around

Have **no benefit** to humans

Responsible for **chickenpox, ebola and influenza**



Viruses have a spiny outside layer called the 'envelope'

FUNGI

Completely separate to plants and animals, fungi belong to a classification kingdom that includes yeasts and mushrooms, as well as mould and mildew

'Eat' by releasing enzymes outside of their bodies that break down nutrients into smaller pieces that they can then absorb

Good for making bread and decomposing dead plants and animals

Irritating when food goes mouldy, we get athlete's foot or when mildew grows in the shower



Fungi can't move on their own but produce spores that are carried by wind and rain and grow into new fungus cells where they can.



THE FUNGUS AMONG US

MOULD SPORES ARE FOUND ALL
AROUND US – ON PLANTS, IN SOILS
AND IN THE AIR WE BREATHE.



Mould is a fungal growth.



Vinegar (acetic acid) is a non-toxic natural cleaner that kills mould spores.



Bleach (sodium hypochlorite) is an artificial toxic commercial cleaner that turns mould spores white but is **often ineffective** at killing them.

**Switch your thinking to save time and money
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REASONS TO SWITCH YOUR THINKING ABOUT CLEANING

1. Health

Many chemicals used in cleaning products take a **long time to break down** in the environment and can have **long-term and short-term adverse health effects** if used too often or in large quantities.

Cleaning products often contain organic chemicals either as active ingredients or to give off fragrances. Many of these chemicals emit gasses known as **Volatile Organic Compounds (VOC's)**.

VOC's are usually added to give your home that 'fresh clean smell' but they are not a requirement of a clean home and **can be harmful to your health and the health of your environment.**

2. Reduce waste

Cleaning products come packaged in plastic that is often difficult or impossible to recycle. By switching to homemade cleaners and re-using your spray bottle, you can **reduce the amount of plastic going to landfill.**

3. Save money

Persuasive advertising could make you believe you need a different cleaning product for every chore and for every room in your home. **Cleaning like this could cost hundreds of dollars a year!** Switch to a few home-made alternatives and put that money toward something more enjoyable than shower cleaner.

THREE TIPS TO REDUCE YOUR USE OF PLASTIC:

1. Swap your commercial cleaners for home-made cleaners in re-usable containers.
2. Remember your re-usable bags when heading to the shops (including small mesh bags for fresh produce).
3. Say 'no' to bottled water and carry your own re-fillable flask instead.



NEARLY EVERY PIECE OF PLASTIC EVER MADE STILL EXISTS TODAY.

WATER, THE FRIENDLY MOLECULE

WATER IS KNOWN AS THE 'UNIVERSAL SOLVENT' BECAUSE IT CAN DISSOLVE MORE SUBSTANCES THAN ANY OTHER LIQUID.



Water dissolves lots of different types of molecules because of its **polarity** (it is both positively and negatively charged) and its **size** (it is relatively small compared to other molecules).

Its polarity allows it to attract a large number of different molecules and its small size allows it to surround these molecules, breaking them up and dissolving them.



Water **dissolves dirt** and carries it away, no toxic chemicals required, making it the perfect cleaning product!

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TOP FIVE TIPS FOR CLEANING WITH CHEMISTRY



1. **Reduce your use**

If you still love your commercial cleaners, **consider cutting down the amount you use.** You can often clean just as well with half as much – think of all the packaging, chemicals and money you will save.

2. **Ventilate your home**

Closing up your home for long periods of time allows pollutants to build up and air quality to decrease. **Open windows and doors to allow the fresh air in.**

3. **Don't believe the industry hype**

You don't need a different cleaning product for every room in your home and more expensive cleaners don't necessarily do a better job. **Think scientifically about the cleaning jobs in your home** and the best tools to tackle them.

4. **You can create a healthy home with four every day ingredients**

Water, vinegar, bi-carb soda and lemon juice will tackle almost every cleaning job in the average home.

5. **If you have a cleaning conundrum, a green solution is only a few key strokes away**

Join an online community of thousands of people around the world working together to keep clean and healthy homes without chemicals. Start at **switchyourthinking.com**



RECIPES

ALL PURPOSE CLEANER

Perfect for kitchen bench tops and bathroom surfaces. This all-purpose cleaner will reduce microbe numbers and leave your home smelling lemon-y fresh.

- ½ cup white vinegar
- ½ cup water
- Squeeze of lemon juice

Combine all ingredients in a spray bottle. Re-screw the nozzle and shake. Now you are ready to spray and use.

TOILET CLEANER

Clean regularly with this green recipe to keep your toilet bowl fresh and white.

- ¼ cup bi-carb soda
- 1 cup vinegar

Pour bi-carb soda and vinegar into the toilet bowl and leave to soak for a few minutes.

Give it a scrub and a flush. Job done.

Straight vinegar on a cloth or toilet paper can be used to wipe down the seat, lid and cistern.

GROUT CLEANER

Grout can get grubby in the cleanest of homes. Use this method to keep toxic chemicals out of the drain and still have a shiny shower.

- All-purpose cleaner (from left)
- Grout brush (or old toothbrush)
- Small bowl
- Bi-carb soda

First, spray the grout with your All-purpose cleaner. Let the cleaner soak in for five minutes and then scrub away with your grout brush. Rinse with warm water.

Place about a tablespoon of bi-carb soda in the small bowl. Add enough water to make a paste. Dip your grout brush into the paste and then scrub away again at the grout. Spray with your All-purpose cleaner as required. The mixture will bubble as the acid in the vinegar mixes with the bi-carb soda (a base) and the reaction will help dislodge the grime from the grout.

Rinse again with warm water.



YOUR GREEN CLEANING TOOLBOX

MICROFIBRE CLOTHS

Microfibre cloths are made up of **millions of tiny fibres** that attach themselves to bits of dirt.

The dirt stays on the cloth because of an **adhesive force** similar to the forces that allow geckos and spiders to walk up walls. The dirt will only dislodge from the cloth when wet.

This means that your microfibre cloth will **work best without chemicals** and when it is dry or slightly damp.


Use your microfibre cloth to clean:


- Bench tops.
- Basins and baths.
- Windows and mirrors.


VINEGAR

The vinegar you buy from the supermarket makes a great household cleaning agent. It is about five percent acetic acid, giving it **natural anti-microbial properties**.

Vinegar has been found to be really **effective at killing moulds and bacteria** and is also a **powerful solvent**, effective at dissolving grease, soap scum and lime deposits.

 Mix with water and a squirt of lemon juice for a great **all-purpose cleaner**.

 Mix with water and use as a **window cleaner** for a streak-free shine.


 Wipe down counter-tops with your vinegar all-purpose cleaner to help **deter ants**.


LEMON JUICE


Lemon juice is another powerful solvent with **anti-microbial properties**.

Lemon juice can **cut through grease and grime** and kills mould and mildew.

Leaving a **pleasant odour** and a **streak-free shine**, lemon juice is a great ingredient for a clean and healthy home.

 Wipe half a lemon over your chopping boards to **remove stains and disinfect**.


 Cut up a lemon and pop it in your kettle. Fill with water and boil. Let sit overnight then rinse it out and now your **kettle will be clean, fresh and scale free**.


 Use lemon juice and an old toothbrush to **scrub grout**.


BI-CARB SODA

Sodium Bicarbonate (commonly known as bi-carb soda) is slightly salty and alkaline and just like vinegar is non-toxic and often used in cooking.


When added with water to form a paste, bi-carb soda **dissolves dirt and grime easily**.

 **Soak stale-smelling sponges** in strong baking soda solution to neutralise odours.

 **Sprinkle baking soda on the bottom of the oven**, dampen with a spray of water and let sit overnight. Then scrub and scoop the bi-carb soda out along with grease and grime.

 **Sprinkle into smelly sneakers** and leave overnight. Shake out before wearing your shoes again.

WATER

 The must-have ingredient for almost every cleaning task!

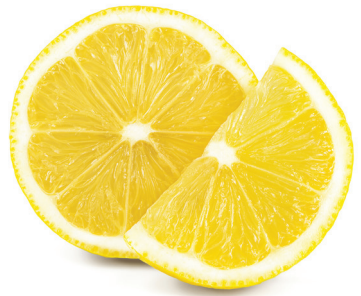
Cheap and plentiful, water is hypoallergenic, and leaves no chemical residue. Hot water is an especially powerful solvent that can fix most sticky messes and steam provides an antibacterial chemical-free clean.



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