

AS10 - Chemicals in the Home Survey

In this activity you will research what chemicals are used in your home and rate them in terms of potential environmental hazards.

Syllabus references:

Core Content: 5.10 d) discuss strategies used to balance human activities and needs in ecosystems with conserving, protecting and maintaining the quality of the environment

Skills: 5.14 a) Follow the planned procedure when performing an investigation

Time: 40 minutes

Ask your parents to help you go through your cupboards and identify what chemicals you have in your home. Read the labels to identify if the bottle is potentially hazardous. (Refer to Handout 5.2 for hazard information). Count how many containers of hazardous chemical are present.

What chemicals are in your cupboards?

ROOM	CHEMICAL	HAZARD RATING	NUMBER OF CONTAINERS
KITCHEN	oven cleaner		
	floor cleaner and wax		
	disinfectant		
	ammonia		
	scouring powder		
	bleach		
	other		
Total containers			
LAUNDRY	carpet cleaner		
	furniture polish		
	air freshener		
	bleach		
	stain remover		
	detergent		
	other		
Total containers			
GARDEN	weed killer		
	insecticide		
	fertiliser		
	other		
Total containers			
BATHROOM	tub/tile cleaner		
	drain cleaner		
	toilet cleaner		
	medicine		
	other		
Total containers			
GARAGE	paint		
	varnish		
	glue		

	paint thinner		
	furniture stripper		
	wood preservative		
	oil and petrol		
	antifreeze		
	rat poison		
	pool chemicals		
	other		
	Total containers		

Total number of containers of hazardous chemicals in your home:

- (a) Class total number of containers: _____ (a)
- (b) Number of households surveyed in class: _____ (b)
- (c) Average number of hazardous materials per household: _____ (a/b)
- (e) Estimate of hazardous chemicals in local catchment area: _____ (number of homes x c)

Can household products harm you?

TOXICITY RATING	LETHAL DOSE FOR 70 KG HUMAN	HOUSEHOLD PRODUCTS
Practically non-toxic	More than 1 litre	Food, candy, lead pencils, eye makeup
Slightly toxic	500 ml to 1 litre	Dry cell batteries, glass cleaner, deodorants, soap
CAUTION: Moderately toxic	20 ml to 500 ml	Antifreeze, automotive cleaners, bleach, detergents, dry cleaners, oven cleaner, general cleaners, fuels, lubricating oils, stain removers, disinfectants, floor polish, shoe polish, paint
WARNING: Very toxic	5 ml to 20 ml	Toilet cleaners, engine cleaners, fertilisers, paint brush cleaner, paint and varnish remover, fireworks, mildew proofing, air sanitiser, lacquer thinner, pesticides, DDT, chlordane, heptachlor, lindane, mirex, diazon, malathion, 2-4D
DANGER: Extremely toxic	1 drop to 5 ml	Some insecticides, fungicides, rodenticides, herbicides, aldrin, eldrin, bidrin, paraquat, some fertiliser and mercury batteries
DANGER: SUPER TOXIC		A few pesticides like: paroxon, phosdrin, parathion, isobenzan, pyrazoyan

Non-toxic alternatives to toxic household cleaning products

Bleach	Oxygen bleaches, sun-bleaching of clothes <i>Key question:</i> Is protecting the environment more important than bright white clothes?
Deodorisers	An open box of baking soda, herbal arrangements, cedar chips, cinnamon and cloves
Drain cleaners	Using a plunger, followed by ¼ cup of baking soda and ½ cup of vinegar. Allow to sit for 15 minutes, then rinse with boiling water. Mechanical methods can also be used – one method involves using a long metal rod called an “eel”. The best alternative is prevention, particularly hair removal and by inserting a screen in the drain to catch material before it enters the drain.
Dusting	Use ¼ cup of white vinegar in two litres of water. Apply using a soft cloth.
Furniture polish	Rub with 20 ml of lemon oil mixed in 500 ml of mineral oil.
Glass cleaner	Use 2 tablespoons of vinegar in 1 litre of water.
Mildew stain remover	Use ½ cup vinegar mixed with 1 litre of warm water.
Spot cleaning carpets	Apply soda water immediately to any spill, blot dry and repeat. Sprinkle with corn flour and vacuum after 30 minutes.
Toilet cleaner	Use baking soda or vinegar.
Pesticide	Herbal sprays and companion planting. Plant native species.
Fertilisers	Use composted food and vegetable waste to maintain soil fertility.

Safe disposal of household chemicals

Do not place dangerous chemicals in your usual garbage collection.

These chemicals cannot be disposed of in the normal waste stream because they are toxic. Special precautions have to be made to dispose of them in special "secure" landfill sites.

Sydney Water and Waste Service NSW have household chemical collection days once a year. To find out the next collection day, call 1800 814 719 or your local council.

The chemicals that can be safely recycled or disposed of at your local Waste Management Centre depend on their policy.

Construct a list of the Waste Facilities in your local area.

What chemicals do you have to dispose of?

Contact the various facilities and list the chemicals that they will or will not accept for recycling or disposal.

Do you have any chemicals that will not be accepted by any of your local waste depots? Why?

What effect could these chemicals have on your local environment?

Could they be re-used?

What other option do you have for their safe disposal?

TO REDUCE CHEMICAL WASTE

- ◆ Use less hazardous alternatives – ask your local hardware for advice.
- ◆ Buy only the quantity that you need.
- ◆ Ask neighbours or friends to use leftover chemicals such as pool chlorine or turps.

FOR MORE INFORMATION:

Total Environment Centre

Level 2, 362 Kent St, SYDNEY NSW 2000

Phone 9299 5599 Fax 9299 4411

Email: toencen@magna.com.au

Website: www.tec.ncc.nsw.org.au

The Clean House Effect (Planet Ark Shop)

445 King St, Newtown NSW 2042

Phone 9516 4681 Fax 9516 3862