

ENVIRONMENTAL EDUCATION & AWARENESS PROGRAMME PLANNER

PROGRAMME TYPE (circle/cross): community/adult education programme - WATER

DETAILS

Name of school/ group			
No learners/ participants expected	No learners/participants actual	Programme length/duration	1 hour
Location (reserve/site)		Grade/age group	Adults/ teenagers
Date of event			
Is this part of the work plan?	YES/ NO	If no, motivate why the programme is needed	

CONTENT

	Theme (circle/cross)	Water
Know	Topics covered (e.g. water cycle/ importance of water)	Why water is important What threatens water How to do a water audit
	Curriculum link (for curriculum aligned programmes only) – note subject/strand/topics (if not listed in topics above)	N/A
	Prior knowledge required (if applicable)	N/A
Do	Skills practiced (cross/circle)	Explain, Identify, Name, Analyse, Present, Read, Record, Report, Commit, Choose, Decide
Value	Key message (e.g. we must save water)	We need to save water

GENERAL LOGISTICS

	Responsible person	Done (tick)	Status
Invite *			
Venue			
Transport			
Booking confirmed			
WCED permission *			
Presentation equipment & camera			
Risk assessment done, confirmation and checklist sent			
Catering *			
Indemnity *			
Budget and cost centre			

Other:

Plan requested by: _____ (name)

_____ (date)

Plan approved by: _____ (name)

_____ (date)

*If applicable

LESSON PLAN

Time	Location	Activity & explanation	Resources & person responsible for bringing/preparing the resource	Facilitating staff (if more than 1, indicate lead facilitator & timekeeper)
INTRODUCTION & ICEBREAKER				
5 min		<p>Icebreaker – our need for water</p> <p>How did you start your day: Give everyone a pen/pencil and piece of scrap paper? Everyone has to write down what they did from the start of their day that involved water. If writing is a problem, they can discuss it in their groups and give verbal feedback. Facilitator asks group if they realised or noticed how many times they used water. Highlight the importance of water in our daily lives. Discuss.</p>	Pens/Pencils, Scrap paper	
BODY/ ACTIVITIES				
25 min		<p>Introduction to water –</p> <p>a) Presentation</p> <p>b) Show the water DVD or story of water</p> <p>c) Dripping taps discussion or Water on Demand</p> <p>Introduce the concept of “sustainable living”.</p> <p>DRIPPING TAPS DISCUSSION</p> <p>Referring back to the icebreaker/tuning in exercise. As let each person mention one way in which we use water. Write this on a water droplet shaped paper and stick on flipchart. Discuss how the uses outweigh the available sources. Have a brief discussion on this theory and how we may need to adapt into the future, especially as population increases.</p> <p>OR</p> <p>WATER ON DEMAND DEMONSTRATION</p> <p>Fill a small jug with water; imagine this water represents all the freshwater that are available for use. Pour all the water into the different glasses/cups (you can ask the group to hold the glasses). Everyone should have a full glass/cup of water (explain how they will have enough water to drink, cook with, take deep baths, water the garden whenever etc. there was basically more than enough water for everyone). Now pour all the water back in the jug and add a few more glasses/cups. The extra cups will represent the population growth thus adding to the water demand. Now every cup/glass will have less water (less to drink, cook, and no more deep baths). For the last time add more glasses/cups and repeat exercise. By now every glass will only get a little bit of water.</p>	<p>Whiteboard</p> <p>Whiteboard marker</p> <p>Energy presentation</p> <p>Story of bottled water – YouTube</p> <p>Plastic cups and water (NOT IN TOOLBOX)</p>	

		<p>The idea is to show how the demand for the little bit of water which is available for us to use is increasing and how it is affecting us. Also remember to link the following with pop. Growth; need to produce more food, thus more agriculture - need more water, more clothes - need more water, more houses etc.</p> <p>The demand is getting so big that we are looking at different ways to reuse water. It is also very important not to waste water as we don't have water to waste. Briefly discuss with the group.</p>		
20 min		<p>Conduct a household water audit</p> <p>Use the water audit forms below. Discuss each persons water use and then see where water savings can be made.</p> <p>OR</p> <p>Divide into 3 groups. Each group researches 1 aspect of water saving and reports back and explains to the concept to each other group:</p> <ul style="list-style-type: none"> •How to detect a toilet leak •How to replace a float valve washer •How to read your water metre <p>(Give each group the relevant info below printed out. They need to draw to explain to everyone else) Allocate 5 min for preparation and discussion, 5 min to each group to present and questions.</p>	<p>Water Audit sheets (Smart Living Handbook) and pencils – see info below</p> <p>Print copies for each person so they can fill in on the form</p> <p>Calculator or two</p> <p>OR</p> <p>Print out of 3 topics to present</p>	
CONSOLIDATION & EVALUATION				
10 min		<p>One thing we WILL do to save water</p> <p>Discuss one thing that each person will do moving forward to save water. Ask each person to write their pledge down on a piece of paper, come up to the front, read it and paste it on the wall or flipchart.</p> <p>Ask the group to think about what all the changes were that were discussed and ask each to think of one thing that they would pledge to do from here-on after leaving.</p> <p>IDEAS: Short Shower Pledge; Bucket Pledge – re-use grey water on your garden; Cup Pledge – use a cup when brushing teeth; Water your garden at night or late afternoon. Pledge – water gardens before 10:00 or after 16:00; Tight Taps Pledge – close taps properly and report leaks; Go Indigenous Pledge.</p>	<p>Paper cut up, pens/cocccis, flipchart board</p>	

Home water audit

Do you know how much water your household uses? A home water audit can help.

By monitoring how much water you use and fixing leaks promptly, you can save water and money.

How much water do you use?

There are several ways to measure your water use:

- ◆ Check your rates notice. This may show your household's daily water consumption, as well as an average figure for households in your area.
- ◆ Check your water meter, which is generally located in the ground outside, towards the front of the property.
- ◆ Use this handy audit table to find out how much water you use at home.

By checking your water consumption monthly, you can quickly detect any unexplained increases in water use that indicate a possible leak.

Are your appliances water-efficient?

If your appliances are reasonably new, the manufacturer's product information will tell you how much water they use. When buying new appliances, choose those with a higher water efficiency rating where possible. The water rating label on the product will help you identify the most water-efficient products—look for the product with the most stars.

If your appliances are older, you can use your water meter to work out how much water each appliance uses. To do this, ensure all water-using devices are turned off and then record the water meter reading. Use only one appliance while all other water-using devices remain switched off. When the appliance is finished, check the meter reading again. The difference in the meter readings is the amount of water, in litres, used by the appliance. For more information please refer to the *Detecting leaks and reading your water meter* information sheet available from www.dews.qld.gov.au.

Alternatively, contact a licensed plumber to help determine the water consumption of individual appliances and your overall household.

A simple audit checklist

Complete the checklist below to work out approximately how much water you use and where you use the most water. Use the water usage calculator overpage to help you estimate quantities. The total could be compared with the water usage on your water bill. Any major discrepancies may be due to undetected leaks, requiring further investigation by a licensed plumber.

Water Use	No. of people in home (A)	No. of uses per week (B)	Litres of water per use (C)	Total per week (AxBxC)
Toilet				
Shower				
Bath				
Teeth cleaning				
Shaving				
Washing hands				
Drinking				
Washing dishes				
Dishwasher				
Washing machine				
Inside cleaning such as showers, floors				
Washing cars/bikes/boats				
Washing pets				
Watering gardens/lawns				
Outside cleaning such as driveway, balconies				
Pool/spa/water features				
Cooking/food prep				
Other				
			Total	

More information

Other waterwise information is available at www.dews.qld.gov.au

Water usage calculator

Location	End use	Litres of water used
Bathroom	Toilet: dual flush 6/3 (or 4.5/3) single flush only	3 litres per half flush or 6/4.5 litres per full flush 11 litres per flush
	Shower	6–11 litres per minute
	Bath	120 litres per filled bath
	Brushing teeth: with water running with a cup	3 litres per minute 0.5 litre per person
	Shaving: with water running with a cup	3 litres per minute 0.5 litre per person
	Washing hands with water running	3 litres per minute
	Cleaning showers: with the shower running with a bucket	6–11 litres per minute 9 litres per filled bucket
Kitchen	Washing dishes: by hand dishwasher	15 litres per half-filled sink 7 litres per load (5 star WELS rated) Older dishwashers up to 25 litres per load
	Drinking	2 litres per person per day
Laundry	Washing clothes: by hand	22 litres per half-filled laundry trough
	washing machine* (e.g. 6kg load capacity)	30 litres per load (6 star WELS rated) 88 litres per load (3 star WELS rated) Older machines up to 180 litres per load
Outdoors	Washing outdoors, including pets, furniture, car: using running hose using a filled bucket	15 litres per minute 9 litres per bucket
	Watering gardens: with a hose with a sprinkler	15 litres per minute 9–15 litres per minute
	Hosing driveways/pavements	15 litres per minute
	Topping up pool/spa/water features:	15 litres per minute
Leaks	Leaks: slow-dripping tap leak toilet cistern leak pool/spa small leak	3–27 litres per day 10 litres per day (barely visible) to 260 litres per day (large) 130 litres per week

All figures quoted are approximate. Please use the figure you feel best represents your household water usage.

* Check WELS rating at www.waterrating.gov.au

WATER IN YOUR HOME

HOUSEHOLD WATER-SAVING TIPS

Households consume some 70% of the water in Cape Town, making our homes a very important area of focus for saving water. We all need to incorporate wise water-saving habits into our daily lives to ensure that we adapt to our “new normal” – water scarcity. Any action we take to use water more efficiently makes a difference to the sustainability of our water resources. Remember, the more water you save, the less you pay – and the more water remains in our dams.

The residential water-saving tips in this section are based on Capetonians’ experience during the recent drought crisis.

TOILET FLUSHING AND SANITATION

- ✓ Only flush the toilet when necessary. Let the “yellow mellow” at home, work, school, gym and the shops. And do not use the toilet as a dustbin.

- ✓ Flush the toilet with greywater (laundry, bath and shower water) or another form of alternative water, such as rainwater, borehole or well-point water.⁴ If you’re using only alternative water, you can close the toilet stopcock (angle valve).
- ✓ Place a full glass bottle in your cistern to reduce each flush to a maximum of six litres (if you have no choice but to use municipal drinking water for flushing).
- ✓ Use less toilet paper to minimise the risk of sewer blockages.
- ✓ Use bleach or disinfectant to regularly sanitise toilets and surrounding areas, and keep hands sanitised to prevent health risks.

BODY WASHING AND PERSONAL HYGIENE

- ✓ Take short, stop-start showers. Wet your body. Turn off the tap. Soap. Rinse quickly.
- ✓ No shower? Take a sponge bath. Use minimal water in a basin, bowl or washtub (waskom).

cold water wherever possible, or heat your water for a sponge bath in a kettle or on the stove.

- ✓ Collect as much washing water as possible and reuse for flushing toilets. Excess greywater can also be used for plants or washing vehicles.
- ✓ Do not let taps run for too long or at full flow. Use a cup for brushing teeth or shaving.
- ✓ Use waterless hand sanitiser instead of washing your hands with water every time.

LAUNDRY AND DISHES

- ✓ Only wash what is necessary.
- ✓ Wait for a full load before running washing machines and dishwashers. Some washing machine models even let you use final rinse water for the next washing cycle.
- ✓ Washing laundry by hand can use less water than many washing machines, especially older models with no eco-cycles. Check your machine's usage.
- ✓ Use as little soap as possible to save on rinse water.
- ✓ Reuse rinse water for the next wash wherever possible.
- ✓ Reuse laundry water for flushing toilets.

FITTINGS AND FIXTURES

- ✓ Fit flow restrictors on indoor taps to reduce the flow rate to less than six litres per minute, as per the City's current Water By-law.
- ✓ Install low-flow showerheads or fit a flow restrictor to your existing showerhead to reduce flow to a maximum of seven litres per minute, as per the City's current Water By-law.
- ✓ Reduce water pressure to your property by turning your stopcock lower and/or installing a flow restrictor on the main pipe connection from your meter.
- ✓ Find and fix leaks on your property - see page 24 for more in this regard.

GARDENS AND OUTDOOR AREAS

- ✓ Use a broom and harvested rainwater to clean hard outdoor surfaces.
- ✓ Cover your topsoil with a layer of mulch to reduce evaporation. Mulch with materials like grass clippings, shredded leaves, bark chips or straw.
- ✓ Modify your gutters and downpipes to collect rainwater in containers.

SWIMMING POOLS⁵

- ✓ Fit a pool cover to significantly reduce evaporation.
- ✓ Recycle backwash water.
- ✓ Harvest rainwater and direct it to your pool for top-ups by attaching pipes or plastic sleeves to your gutters.

OTHER WAYS TO SAVE WATER

- ✓ Use much less wherever you go in and around Cape Town. Remember, the municipal drinking water you use in other places (e.g. at work or at the shops) comes from the same dam system.
- ✓ Use minimal water for food preparation. For instance, do not run water to defrost or rinse food.
- ✓ Place a container in sinks, basins, the bath and shower to capture water for reuse.⁶ Containers in showers should be large enough to collect all shower water - a bucket may not be big enough to do the job. Water is heavy, so use jugs to flush your toilets with greywater.

⁵ At some water restriction levels, no municipal drinking water may be used for pools, ponds or water features.

⁶ Note, however, that dirty, greasy water from dishwashing is not suitable for reuse.

- ✓ Harvest as much rainwater as you can. Store in sealed containers in a cool place and use for cleaning floors, outdoor hard surfaces (such as verandas, decks, paths and driveways), windows and vehicles, washing laundry and flushing toilets. Do not use for drinking, cooking or bathing, as per the City's Water By-law.

ESSENTIAL ITEMS FOR YOUR WATER-SAVING KIT

- ✓ A waskom (washtub container) for use in showers and baths to collect as much water as possible.
- ✓ Buckets or jugs to transfer water from the waskom to the toilet or outside.
- ✓ Containers to catch water in all basins and sinks for reuse.
- ✓ Bleach or disinfectant to keep the toilet area sanitised when using grey/alternative water for flushing.
- ✓ Pipes or plastic sleeves for your gutters to harvest rainwater for pool water top-ups or water tank collection.
- ✓ Single-ply toilet paper to prevent sewer blockages.
- ✓ Waterless hand sanitiser.

1

Listen for water trickling into the toilet bowl.



2

Press a piece of toilet paper against the inside back surface of the bowl. If it gets wet, you probably have a leak.

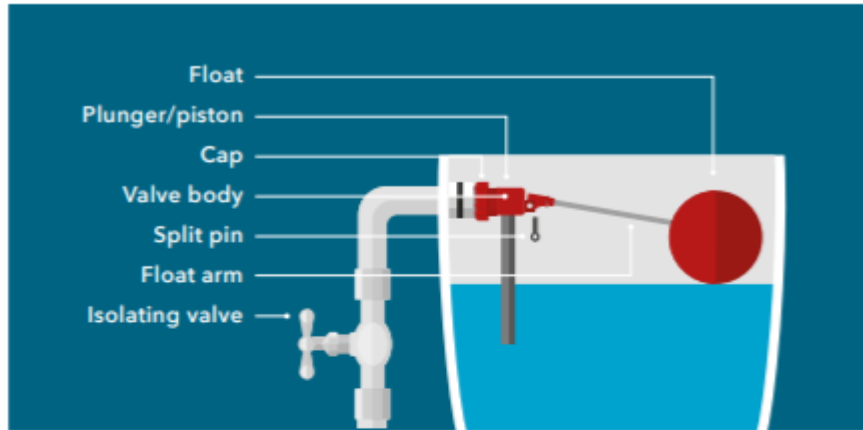


3

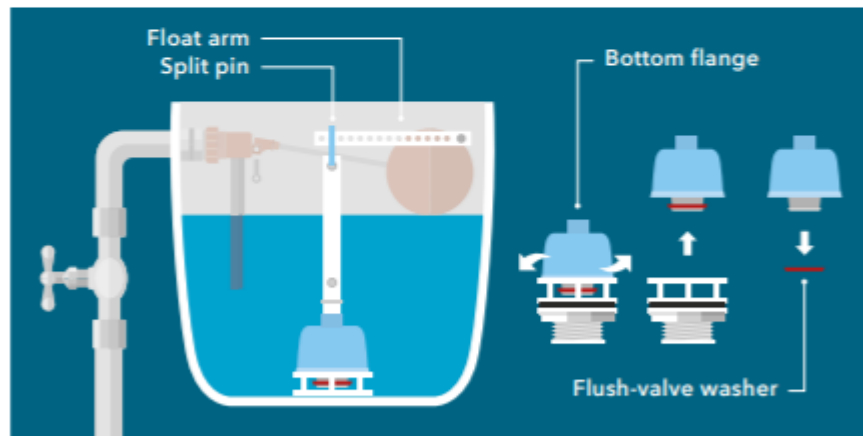
Put 15 drops of food colouring into the toilet cistern. If, after 15 minutes, the water in the toilet bowl has changed colour, there is a leak.



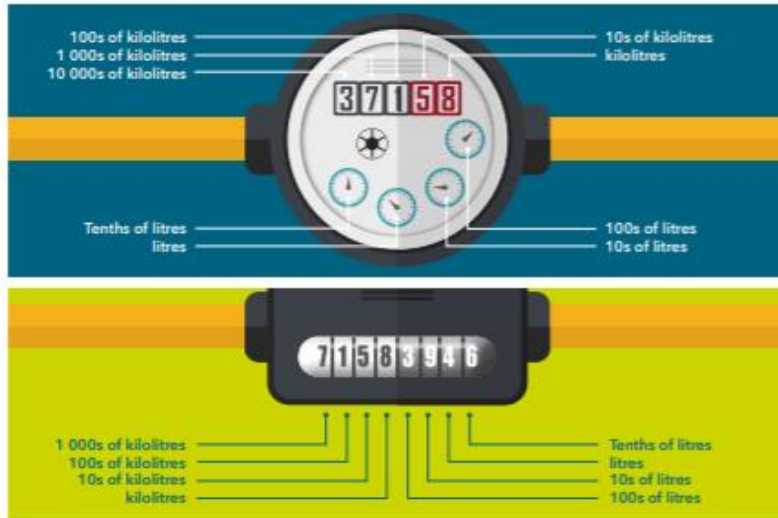
REPLACING THE FLOAT-VALVE WASHER



REPLACING THE FLUSH-VALVE WASHER



TIP: Different manufacturers use different mechanisms. To ensure that you get the correct replacement washer, take your existing old washer along when visiting the hardware store.



HOW TO READ YOUR WATER METER

Reading a water meter is simple. Open your water meter box. If it is locked, the City meter reader can unlock it when (s)he comes around next to read your meter.

Your meter will likely be one of the two kinds illustrated above. Both record the same information, but display it slightly differently.

The one kind has a set of numbers at the top, and some round dials (top illustration). The other kind has numbers only, and no round dials (bottom illustration). There are various makes and models, but all have these basic features.

When monitoring your meter reading to confirm a leak, look for where the meter shows movement of the smallest volumes of water used, indicated by litres or fractions of litres. If there is a leak, and you have stopped all other water usage in the house, you will likely notice a change in the small volumes during the 15-minute monitoring period. On the face with round dials, the small volumes are indicated by the dials for litres (0,001) or tenths of litres (0,0001). On the meter with numbers only, look to the far right of the set of numbers, where the litres (second from the right) and tenths of litres (furthest to the right) are.