

## ENVIRONMENTAL EDUCATION & AWARENESS PROGRAMME PLANNER

**PROGRAMME TYPE (circle/cross):** community/adult education programme – INVASIVE SPECIES

### 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

Know	Theme (circle/cross)	Water
	Topics covered (e.g. water cycle/ importance of water)	What invasive species are Why invasive species are a threat What can be done to combat invasive species
	Curriculum link (for curriculum aligned programmes only) – note subject/strand/topics (if not listed in topics above)	N/A
Do	Prior knowledge required (if applicable)	N/A
	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 adhere to the law with regard to invasive species

### 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)
<b>INTRODUCTION &amp; ICEBREAKER</b>				
10 min		<p><b>Icebreaker – Space invaders</b></p> <p>Select around 10 – 20 % of participants to be invaders. Ask them to stand up around the table or away from chairs to one side. Ask everyone else to introduce themselves and where they from. At random, each invader must come in and knock the other person off their chair and replace them (then introduce themselves instead).</p> <p>Ask the group how it felt to be knocked out of place? Explain that this is what invasive species do to our indigenous species every day. Have a very brief discussion from the invaders on how it felt to be the invader.</p> <p>Ask everyone to sit down.</p>	Pens/Pencils, Scrap paper	
<b>BODY/ ACTIVITIES</b>				
25 min		<p><b>Introduction to invasive species –</b></p> <p>Presentation</p> <p>Discuss the presentation with specific reference to local invasive species that are a problem in your area. Ask the group to discuss these and their impact on the community and biodiversity in the area. Note any particular important facts on the whiteboard, as well as a list of species.</p>	Whiteboard Whiteboard marker Presentation	
20 min		<p>Finding solutions</p> <p>Divide participants into teams. Each team must tackle a particular issue and map out possible solutions at 3 levels; government, society/organisations and individuals.</p> <p>Ask each group to report back. You can let groups discuss particular issues and real scenarios for your area.</p>	Flipchart paper and coccis for each group	
<b>CONSOLIDATION &amp; EVALUATION</b>				
10 min		<b>One thing we WILL do to combat invasive species</b>	Paper cut up, pens/coccis, flipchart board	

		Ask each person to pledge one thing they will personally commit to do to help control and eradicate invasive species. Note any future actions.		
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## 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](http://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](http://www.dews.qld.gov.au)

## Water usage calculator

Location	End use	Litres of water used
Bathroom	<b>Toilet:</b> 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](http://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.<sup>4</sup> 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 POOLS<sup>5</sup>

- ✓ 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.<sup>6</sup> 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.

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

<sup>6</sup> 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.



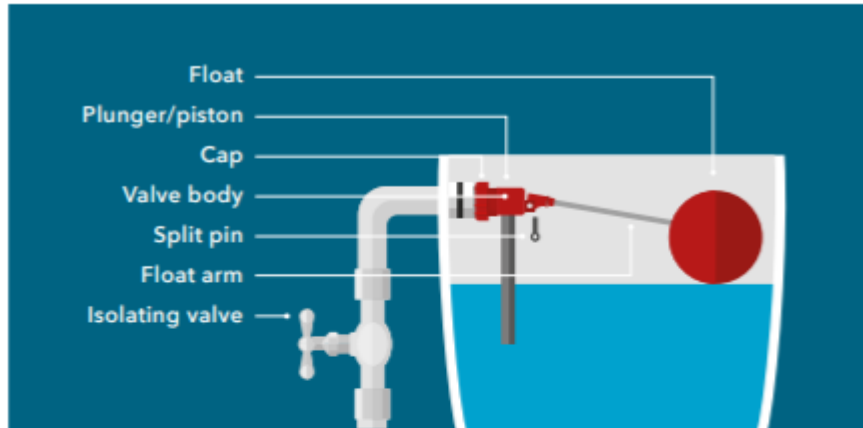
3

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.

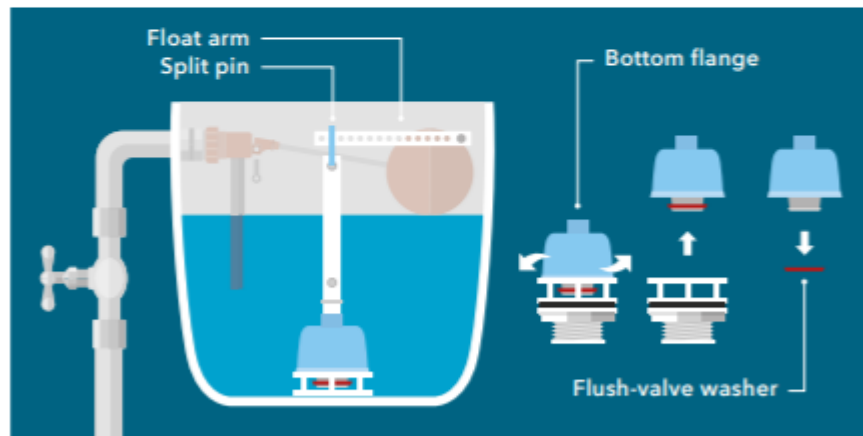




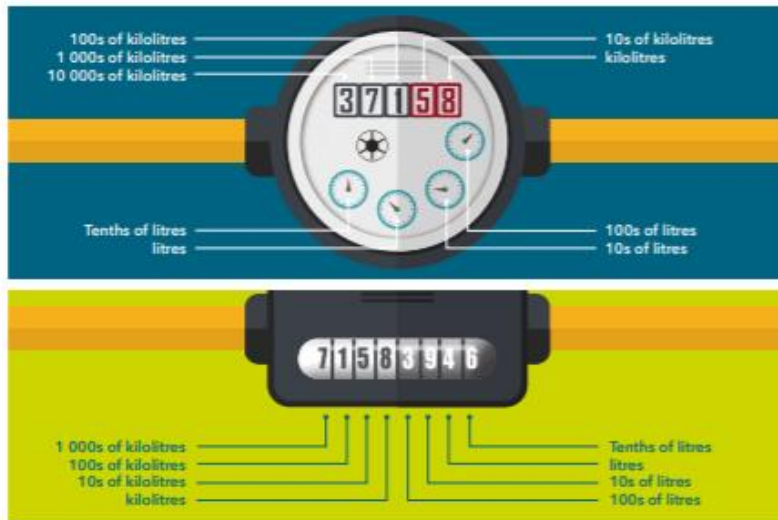
## REPLACING THE FLOAT-VALVE WASHER



## 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.