WATER WISE INFORMATION CENTRE

Everything you need to know before taking the Challenge

Water is essential to every person, household, community and ecosystem. We use it every day for drinking, cooking, washing, sanitation, gardening, industry and many other activities. Yet clean water is a limited resource, particularly in a water-scarce country such as South Africa.

Being Water Wise means understanding where our water comes from, appreciating the effort required to make it safe to drink, using only what we need, preventing unnecessary water losses and protecting our rivers, wetlands and other water resources from pollution.

READ BEFORE YOU PLAY.

Everything you need to answer the Water Wise Challenge is contained on this page.

01 SOUTH AFRICA AND WATER

A water-scarce country

About **70% of the Earth's surface is covered by water**, but most of it is saline ocean water. Only a small proportion is freshwater that is readily available for people and ecosystems.

South Africa is a **water-scarce country** with highly variable rainfall. The country's average annual rainfall is approximately **464 mm per year**, considerably lower than the world average. Rainfall is also unevenly distributed: some parts of the country receive relatively high rainfall while others are naturally dry.

Droughts, population growth, increasing demand, pollution, ageing infrastructure and climate variability place additional pressure on available water resources. Water coming out of a tap should therefore never be taken for granted.

South Africa obtains water from a combination of **surface water, groundwater and other sources**. Surface water stored in rivers and dams supplies much of the country's needs, while groundwater from underground aquifers is particularly important in some areas. Dams store water during wetter periods so that it remains available when rainfall and river flows are lower.

KEY IDEA

Every litre matters because South Africa has limited and variable water resources.

02 GAUTENG AND JOHANNESBURG

Water has helped shape Gauteng's development

Gauteng is South Africa's economic powerhouse and has a large population, but it is not situated beside a natural water source large enough to meet all of its demand. Johannesburg's rapid development was closely associated with the discovery of **gold in 1886**. Mining, industry and growing settlements created a major need for reliable water supplies.

Rand Water's early supply to Johannesburg included groundwater from the **Zuurbekom underground wells**. As Johannesburg and the wider region grew, much larger surface-water sources and major infrastructure became necessary.

Today, Gauteng depends on an extensive network of dams, rivers, pumping stations, pipelines and inter-basin transfer schemes. The **Vaal Dam** is a central storage component of the wider water-supply system serving Gauteng and the surrounding economic region.

KNOW THE REGIONAL SYSTEM

The
VAAL AND WILGE RIVERS

contribute directly to the Vaal Dam. The
TUGELA-VAAL WATER TRANSFER SCHEME

moves water from KwaZulu-Natal toward the Vaal system, while the
LESOTHO HIGHLANDS WATER PROJECT

transfers water from Lesotho toward the Vaal River system. Farther downstream, the
VAAL RIVER JOINS THE ORANGE RIVER

.

Because demand is high and the province relies on this large interconnected system, reducing unnecessary household water use helps relieve pressure on a shared regional resource.

03 FROM SOURCE TO TAP

What Rand Water does

Rand Water is a **bulk water services provider**. Its role includes abstracting raw water from water resources, treating it to drinking-water standards and supplying large quantities of treated water to municipalities and other bulk customers.

Municipalities then distribute water through their local reticulation networks to homes, schools, businesses and other consumers. Water must therefore be collected, stored, treated, pumped and transported before it reaches a household tap.

When treated drinking water is wasted, more than the water itself is lost: some of the energy, infrastructure and resources used to deliver it are wasted too.

04 DRINKING-WATER TREATMENT

Making raw water safe to drink

Water taken directly from a river or dam is called **raw water**. It may contain suspended material, microorganisms and other substances, so it needs to be properly treated before being supplied as drinking water.

Water treatment uses carefully controlled processes to remove undesirable substances and make the water safe for its intended use. Providing safe drinking water is therefore not as simple as taking water from a dam and sending it directly to a household tap.

Sometimes tap water can look temporarily **white or milky**. If a glass of water clears after standing for a short time, the appearance is often caused by **tiny air bubbles dispersing from the water**, rather than the water actually being white.

05 KNOW YOUR CONSUMPTION

Your water meter is a Water Wise tool

A **water meter** measures the amount of water passing into a property. Municipal water meters are generally installed on the water-supply connection to homes and other properties. Their readings can be used to determine consumption and may form part of the calculation of a municipal water bill.

If all taps are closed, appliances using water are switched off and nobody is intentionally using water, but the meter continues to indicate flow, there may be a **hidden leak or other unintended water use**. Checking your meter and consumption regularly can help identify unusual changes before they become larger problems.

06 AFTER THE DRAIN

What happens after we use water?

The water journey does not end when water disappears down a drain. In homes connected to municipal sewer systems, wastewater from toilets, baths, showers, basins, kitchens and other activities is generally conveyed through sewer networks to **wastewater treatment works**.

At treatment works, contaminants are removed before treated water is discharged or otherwise managed according to applicable requirements. Wastewater treatment is important because untreated wastewater can pollute rivers, wetlands, groundwater and other environments.

07 REUSE RESPONSIBLY

Greywater and blackwater are not the same

Greywater generally refers to relatively lightly contaminated wastewater from activities such as bathing, showering, hand basins and some laundry uses. It does **not** include toilet wastewater.

Wastewater containing human excreta, particularly water from toilets, is commonly referred to as **blackwater**. It can contain pathogens and requires appropriate sanitation and treatment.

Greywater can sometimes be reused, but it is not automatically suitable for every purpose. Before reusing it, consider what the water was used for, what soaps or products it contains, how the reused water could affect people, plants, soil and the environment, whether the proposed use is appropriate and hygienic, and whether local requirements apply.

> **REMEMBER**
>
> Reuse greywater responsibly. Toilet wastewater is blackwater and should not be treated as ordinary greywater.

08 PROTECT WATER QUALITY

Water Wise means preventing pollution too

Being Water Wise is not only about using less water. It also means protecting the quality of the water we have. Litter, oils, chemicals, sewage and other pollutants should never be allowed to enter rivers, wetlands, stormwater systems or other water resources.

Stormwater drains are **not the same as household sewers**. Rainwater flowing along streets can carry litter, oil and other pollutants through stormwater systems toward streams, rivers, wetlands and other water bodies. It should never be assumed that everything entering a stormwater drain will first be treated like sewage.

Polluted water can damage aquatic ecosystems, affect wildlife, threaten human health and make water more difficult and expensive to treat. Keeping litter out of streets and stormwater drains helps prevent it from reaching rivers and wetlands.

09 WATER AND PEOPLE

The human body depends on water

Water is essential for life. Approximately **60% of an adult human body is water**, although the exact proportion varies according to age, body composition and other factors.

Water helps regulate temperature, transport substances, support normal cellular processes and remove waste. We continually lose water through breathing, perspiration and urination, which is why maintaining adequate hydration is important.

Water conservation does not mean avoiding the water we genuinely need. It means preventing unnecessary use and waste.

10 AT HOME

Understand where your household water goes

Households use water for showering, bathing, flushing toilets, washing clothes, washing dishes, food preparation, cleaning, gardening, swimming pools and washing cars. The amount used by each activity depends on household behaviour and the efficiency of fittings and appliances.

Among common indoor household activities, **toilet flushing** can account for a significant amount of water use. A toilet may be flushed many times each day, so the volume used by each flush accumulates across the household. Efficient toilets, appropriate flushing and prompt repair of leaking cisterns can therefore make a meaningful difference.

11 BATHROOM HABITS

Showers, baths, teeth and toilets

A shower can use very different amounts of water depending on its **flow rate and duration**. The longer the shower runs, the more water it generally uses. Keeping showers short and turning the water off while soaping can reduce unnecessary flow.

Water can also be lost while waiting for a shower to warm up. Instead of letting clean cold water run down the drain, **collect it in a clean container for a suitable later use**.

If you choose to bath, keep the bath **shallow** rather than filling it more deeply than necessary.

When brushing your teeth, turn the **tap off while brushing** and use only the water needed for rinsing.

A **dual-flush toilet** provides different flush volumes. Use the smaller flush for liquid waste and the larger flush when needed for solid waste. If a toilet cistern continues running after a flush, investigate and repair it promptly because water may be leaking continuously into the bowl.

12 KITCHEN AND LAUNDRY

Use appliances and washing water efficiently

Where the appliance and type of laundry allow it, it is generally better to run **full appropriate washing-machine loads** rather than repeatedly washing small or half-full loads. Always follow the appliance manufacturer's loading guidance.

When washing dishes by hand, using a **basin or plugged sink** lets you control the water used for washing and rinsing instead of leaving a tap running continuously.

Fruit and vegetables should be washed appropriately, but suitable clean rinse water does not always need to go directly down the drain. Where practical, collect it in a container and use it promptly for another suitable purpose, such as watering appropriate plants.

13 STOP WATER LOSSES

Find and fix leaks

A small leak may not look serious, but a leak that continues all day and night can waste considerable water over time. **Dripping taps should be repaired promptly.** Running toilets should be investigated and repaired. Leaking pipes should be checked, and unexplained changes in consumption should not be ignored.

If your water meter continues to show flow when nobody should be using water, investigate for a possible hidden leak or unintended water use.

INVESTIGATE BEFORE YOU ACT

If household consumption is unexpectedly high, first check for leaks and unusual meter movement, then identify high-use activities and target avoidable consumption. Do not assume the meter is wrong or cut a single activity without first understanding where the extra water is going.

14 GARDEN AND OUTDOORS

Make every outdoor litre count

During hot weather, watering in the hottest part of the day can increase evaporation. Where garden watering is necessary and permitted, it is generally better to water during a **cooler period such as early morning**. Always comply with municipal water-use restrictions.

Where washing a car at home is permitted, use a **bucket and sponge** and control the amount of water used rather than leaving a hosepipe running continuously.

Swimming pools lose water through evaporation, splashing and leaks. A suitable **pool cover** can reduce evaporation when the pool is not being used, while proper maintenance helps identify leaks. Do not top up a pool automatically; add water only when necessary.

15 SHARED RESPONSIBILITY

Report public water leaks

Water Wise responsibility extends beyond your own property. If you see a significant municipal pipe leak, burst water main or other obvious water loss in a public area, **report it promptly to the responsible municipality or water service provider**.

Do not simply assume somebody else has reported it. The sooner the responsible authority knows about a leak, the sooner it can investigate and arrange repairs.

16 THE HABIT BEHIND EVERY HABIT

Think before you turn on the tap

One of the most powerful Water Wise habits requires no technology at all. Before using water, ask:

> **“Do I need to use water for this task, and if I do, how can I use only what is necessary?”**

Could a tap be turned off while the water is not actually needed? Could clean water that would otherwise be wasted be collected? Could a leak be repaired? Could an appliance wait until it has an appropriate full load? Could water be reused safely? Could another method accomplish the same task using less water?

Small decisions repeated by millions of people can make a substantial difference.

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THE WATER WISE WAY

Five principles to remember

1. Don't Waste Water	Use water efficiently, repair leaks and avoid unnecessary consumption.
2. Respect Water, Respect Life	Water supports people, plants, animals and entire ecosystems. Treat it as a valuable resource.
3. Don't Pollute Water	Keep litter, chemicals, oils, sewage and other pollutants out of rivers, wetlands and water systems.
4. Pay for Water Services	Reliable water and sanitation services require treatment, infrastructure, maintenance and management.
5. Environmental Action	Take practical action to protect water resources and encourage others to do the same.

Water Wise
RAND WATER

EVERY DROP HAS A JOURNEY

Now put your knowledge into practice

The water coming from your tap may have fallen as rain far away, entered a river, been stored in a dam, travelled through a major transfer and supply system, undergone treatment and been pumped through kilometres of infrastructure before reaching you. After you use it, another journey begins through drains, sewers and wastewater treatment systems.

Water Wise living is therefore about much more than simply using less water. It is about understanding the value of water throughout its entire journey.

Use it wisely. Don't waste it. Don't pollute it. Fix leaks. Reuse responsibly.

Protect freshwater ecosystems.

You're ready.
Choose Quick Check, Water Wise Living or the Full Challenge.