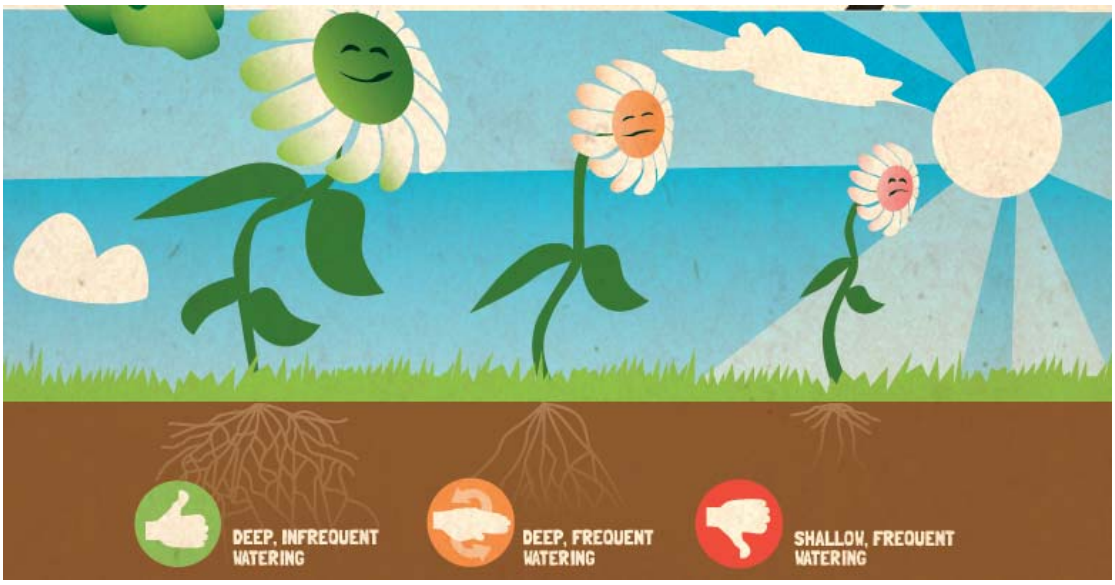
Being a Smart Water Early Childhood Education centre

Water-saving tips for your centre

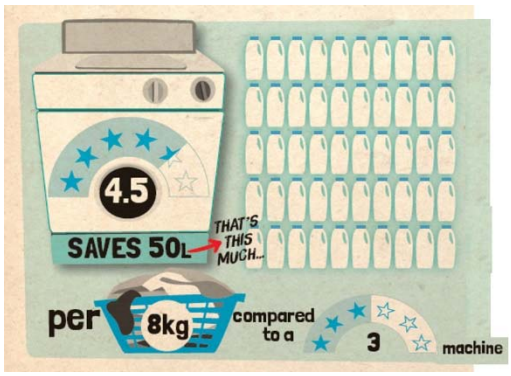
- **TALK & SING** to children about using water like they love it but not wasting it.
- **MODEL** sustainable water behaviours to young children.
- **RE-USE** the water from the trough onto an area of garden that needs it.
- **SWEEP** rather than hose paths and paved areas.
- Plant **NATIVE DROUGHT-RESISTANT PLANTS** that don't require much watering. For a list of plants visit http://www.smartwater.org.nz/plant-gallery
- Put at least **10CM OF MULCH** around your plants. It will help retain moisture in the soil and prevent 70% of water being lost through evaporation. You'll also have far less weeds to manage too.
- Mark or **LABEL WITH A DOT** the half flush button on the toilet to empower children to make a 50% saving.
- Set a **TIME LIMIT** when using the hose or use a tap timer.
- Have a **RAINWATER TANK** for water play and garden use – it makes a great teaching and visual aid helping children to see the water filling up when it's raining and going down in hot weather.
- **FILL A CONTAINER** of water in the sandpit rather than leaving the tap running for long periods of time.
- **REPORT AND FIX** leaking/drippy taps & toilets
- **SOAK** your paint pots and brushes first before washing.

- On hot days, only **WATER GARDENS EARLY MORNINGS AND EVENINGS** to avoid rapid evaporation which can damage plants. It is also best to **WATER DEEPLY & LESS FREQUENTLY** rather than frequent shallow watering.



Did you know? - Smart Water facts

In the Waikato, each person uses on average 250 litres per day.



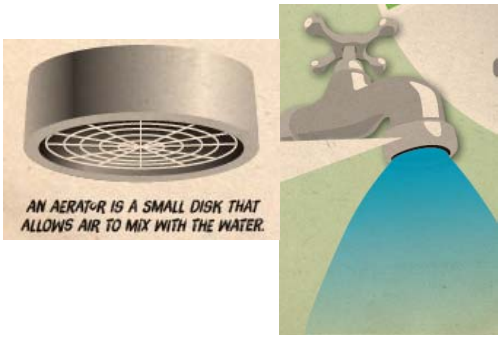
A 3-star WELS rated washing machine uses 120 litres of water per cycle. A 4.5 WELS rated washing machines uses just 70 litres per full load which is a saving of 50 litres per load.

A hose running for 1 hour uses 900 litres of water.
A hose running for 20 minutes uses 300 litres of water.
Source: Anglian Water

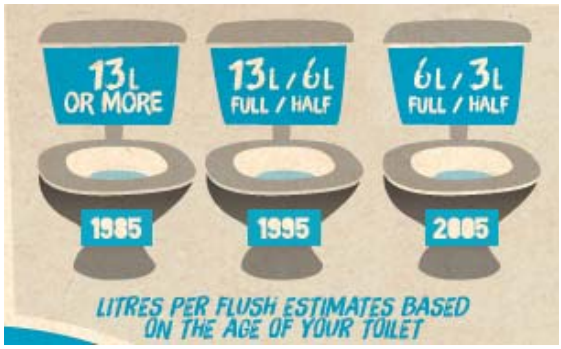
A Sprinkler – up to 1,500 litres per hour.
Source: Ruapehu District Council

Just 10 minutes in the shower is equivalent to having a bath.

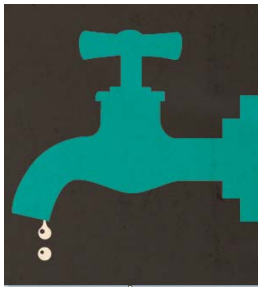
Smart water starts with you!



Install or fit taps with aerators. Aerators reduce the amount of water flowing from the tap by up to 50%, while maintaining the pressure.



Modern toilets with dual flush buttons use about 6 litres per full flush and 3 litres per half flush. Toilets with just one flush button use 12 litres per flush.



A huge amount of water can be wasted in a day if a tap is leaking or not turned off properly:

Leaking tap – 1 drop a second = 33 litres a day
Steady dribble (4 drops a second) = 131 litres a day
Trickle 0.27 litres/minute = 388.8 litres
Stream = 1196 litres
Source: Drinktap.org

A tap left running on full for 10 minutes uses 136 litres of water.
Calculation based on Drinktap.org

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Exploring water

Understanding our water

Te Ao Maori world view
From a Te Ao Māori perspective, the sky (Ranginui), the Earth (Papatuanuku), water (wai) and the river (awa) are living entities, while for western science they are objects and substance with no life force.

In Aotearoa's cities and towns people have important relationships with water. Water provides for the basic needs of our community and supports the natural and built environment that many New Zealanders call home. However, as our urban areas grow and change we also need to be mindful of our impact on this taonga.

We must hold in the highest regard the life-giving properties of water – by upholding and fostering kaitiakitanga (guardianship and protection).

Where does water come from?
Water drops fall as rain from clouds. Rain plops on roofs, swirling into gutters, disappearing down the pipes. Mountains and hills catch the rain. It runs along gullies into dams and lakes. Water flows downhill into creeks and rivers, then out to sea. Finally, the hot sun sucks water into the sky. Invisible water vapour rises up and forms into new clouds. Soon it will rain again.

The water cycle
The heat of the sun evaporates water from the sea, lakes and rivers and from the ground, plants and animals. This forms water vapour which is suspended in the air. When air is cooled, usually by being forced to rise, some of this water vapour will condense.

As more and more water is condensed the drops get bigger, until they are heavy enough to fall to earth as rain, snow or hail, if air temperatures are cool enough.

The rain water may evaporate again; or fall to the earth to be used by plants and animals. It runs into streams and rivers and back to the ocean to continue the cycle.

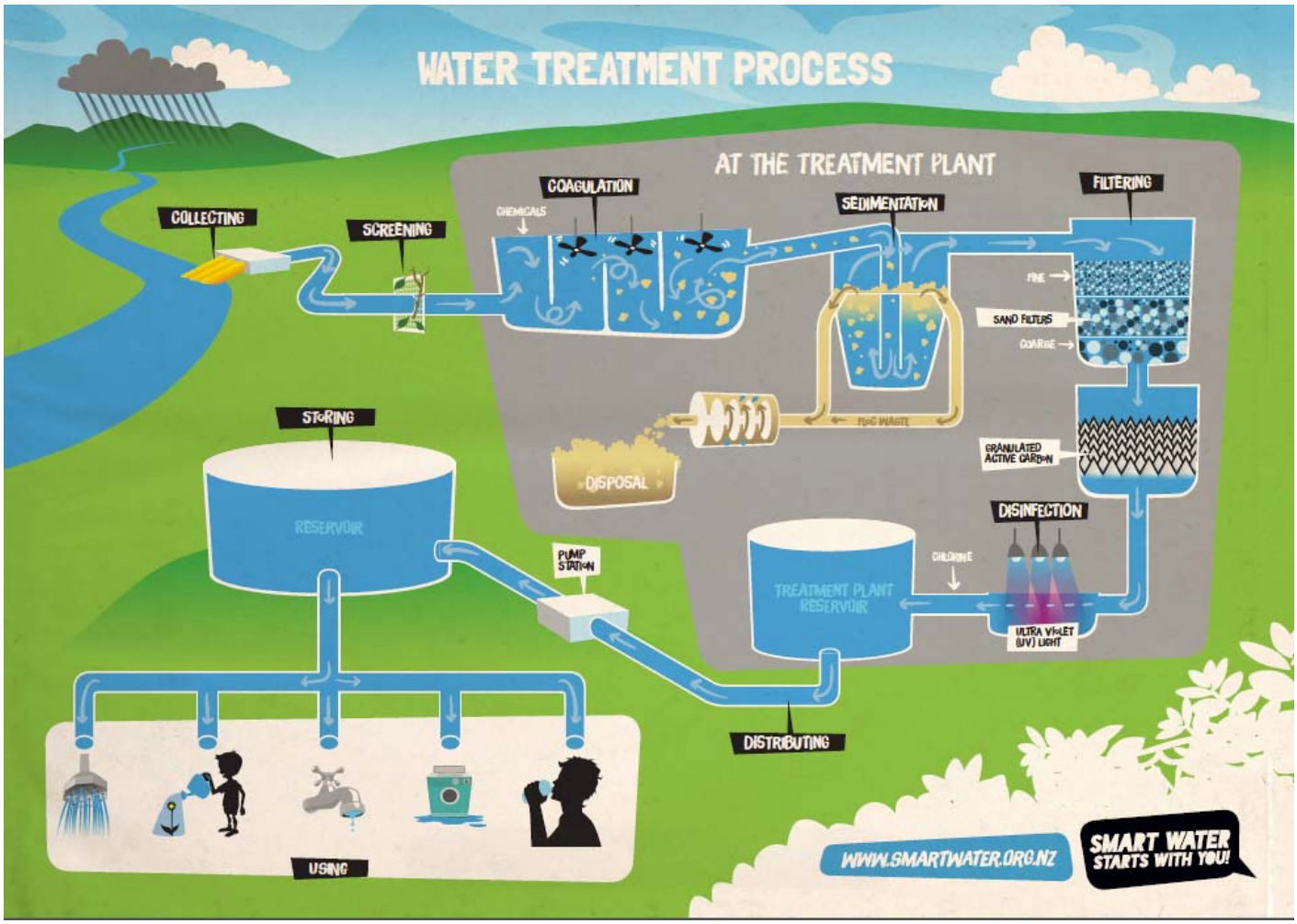
Where does the water we use come from?
Our water comes from the Waikato River or local springs and streams. The water is pumped through pipes to a water treatment plant where it is cleaned and tested. The clean water flows through underground pipes to your homes and childcare centres. When we want to use water we just turn on the tap and out it runs.

What do we need water for?
Water is life, all living things need water – people, plants and animals
We drink it.
We grow food with it.
We use water for cooking and cleaning.

We use water for washing.
Animals drink and wash with water.
Many plants, animals and insects live in water.

Why should we look after water?
Water is needed by everyone so we need to be careful not to waste it. Our environment and all the creatures that live in it depend on water to survive. It is up to us to make sure we are careful how much water we use so our environment can stay healthy for future generations.

The Water Treatment process



For further information and an explanation of each stage, go to:
http://www.smartwater.org.nz/uploads/files/educate/section_5.pdf

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Learning about water - Activity ideas

Sandpit water treatment process

What you need:

- Water
- Leaves
- Pebbles
- Sand
- Sieves

How to do it:

Fill a container with water and get the children to add dirt and leaves. Pour some of the water through a sieve so that the leaves and big bits of dirt get trapped. Place another sieve with sand & stones underneath the first sieve so that as the water is poured, it goes through this second filter. Alternatively, if the sand is too dirty, use a paper towel or something similar in the sieve to use as a filter.

Place a container underneath the second sieve to catch the water. The water that comes through should be a lot cleaner compared to the 'river' water at the beginning. Compare water from the beginning and the end to see the difference in clarity.

Blue dye can be added with a pipette at the end to represent the chlorine that is added to kill any bugs you can't see before it is safe to drink.

Freeze and melt me (related to water cycle)

Incorporate the properties of water into musical experiences. Involve the children in the instrument choice, which ones will be good for making the sound for rain, sun and ice. Start by playing an instrument for rain. Encourage the children to move. Play the ice instrument and tell the children that the air around them is getting colder and colder and they are turning into ice. Children freeze into a shape or a puddle.

Play the sun instrument and tell the children that the sun is shining and the air around them is getting warmer and they are starting to melt and melt and melt. Play the rain again and children move as water again. Use the terms "solid" and "liquid" during the experience.

Repeat this game but this time add that the children are tiny drops of water in a puddle lying on the ground. Play the sun instrument and have children imagine that the sun is warming them now and they are getting hotter and hotter until they change into water vapour and go up, up, and up into the sky. Use the terms "liquid" and "gas" during the experience.
Source: 'Exploring Water ', Rous Water

Drawing water stories

Use an easel and a big piece of paper and draw the pictures as you go (don't be concerned about how well or not you can draw. Children love drawing stories no matter what kind of an artist you are). Make up a story about a child waking up and finding out that no water

would come out of the tap. Children can help with the story and think of all the things that they could not do in a household without water.
Source: 'Exploring Water ', Rous Water

Links to Te Whāriki

Smart water Goal:	**To foster positive attitudes and values for sustainable water use in young children and for teachers & parents to model sustainable water behaviours to young children.**

Strand 2 - Belonging | Mana whenua **Why water is precious**

- making connections between people, places and things in their world | te waihanga hononga
- taking part in caring for this place | te manaaki i te taiao
- showing respect for kaupapa, rules and the rights of others | te mahi whakaute.

Strand 4 - Communication | Mana reo **Smart water show**

- using gesture and movement to express themselves | he kōrero ā-tinana
- understanding oral language and using it for a range of purposes | he kōrero ā-waha
- enjoying hearing stories and retelling and creating them | he kōrero paki
- expressing their feelings and ideas using a range of materials and modes | he kōrero auaha.

Strand 5 – Exploration | Mana aotūroa **Exploring water through play**

- playing, imagining, inventing and experimenting | te whakaaro me te tūhurahura i te pūtaiao
- using a range of strategies for reasoning and problem solving | te hīraurau hopanga
- making sense of their worlds by generating and refining working theories | te rangahau me te mātauranga.

Case Study: Newcastle Kindergarten, Ngaruawahia

Newcastle Kindergarten are doing some great work around water conservation both in how they teach their children the value of water and the things they have put in place to help conserve water and not waste it. I hope you will be inspired after reading this…

Children's drinking water

Children have access to a fountain tap – they are allowed to help themselves, but they are only allowed to fill their cups half way and not full. Children tip leftover water into a water jug. This water is then used to water the plants.

Children's individual access to water for outdoor play

Most of the children's outdoor water use is supplied by 3 x rain tanks – children can fill up containers and take water when the tap is unlocked. The children know that when the water is gone its gone and they have to wait for rain before they can start to use it again.

Water play

A water trough is filled for water play. The centre has a policy of not using running mains water for play.

Cleaning Concrete areas

Concrete and paved areas are swept and a blower used to clear leaves.

Rain water tanks

Three rain water tanks capture water from the roof which flows into a gutter and down a pipe into a tank. The corrugated iron tanks were specially commissioned to be in keeping with the centre's 'natural' theme however rain barrels/tanks can come in all shapes and sizes. If you can source a food-grade barrel these are often cheap or even free to pick up.

Smart water starts with you!

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Smart water starts with you! song lyrics

The Smart Water Song encourages pre-school children to save water and turn off leaky taps. It has been written and performed by well-known NZ children's entertainer, Chris Lam Sam from THE FUNKY MONKEYS. View the Smart water song video here.

CHORUS
Smart Water! Smart Water!
Save it to share it yes please do!
Smart Water! Smart Water!
Smart Water starts with you!

VERSE 1
Water's used by everyone
We all need it to grow
Water's used by everyone
We need to slow the FLOW!

Saving wai is TINO PAI!
Let's save enough to share
Saving wai is TINO PAI!
That's good Smart Water care!

VERSE 2
Little drips from leaky taps
Can waste our water fast
Little drips from leaky taps
Won't help our water last

Check your taps and TURN THEM OFF!
If you see a drip
Check your taps and TURN THEM OFF!
That's one Smart Water tip!

CHORUS
Smart Water starts with you!
Smart Water starts with you!

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