

# Bundaberg Regional Council Water Education



## School Water Audit Exercises For Students



There are only a few natural resources in the world that is essential to human survival. Water is possibly the most vital.

Australia is the driest inhabited continent on earth and yet we continue to use our scarce water resources carelessly. Most of us take it for granted that simply turning on a tap will solve all our water needs. Schools throughout Queensland are major users of water.

This booklet has been especially compiled to help students understand how water is being used within their school. Outcome of the exercises will help and encourage students to implement achievable strategies for themselves and fellow students to be water wise. Information provided can also encourage students to assist in establishing a water wise program for their school.

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# How Much Water Comes From a Tap In a Minute?

## Water Flow Measurement...

This activity will develop topics like: volume and measurement of water flow and includes a number of simple mathematic calculations.

Form into small groups of 3 or 4 and solve the following calculations.

How much does a bucket of water, a plastic container of milk, an ice cream container, a baby bath hold?

- Bucket of water \_\_\_\_\_
- Plastic container of milk \_\_\_\_\_
- Container of ice cream \_\_\_\_\_
- Baby bath \_\_\_\_\_

Make comparisons between the different measuring containers.

- How many times does it take to use the plastic milk container to fill up an ice cream tub? \_\_\_\_\_
- How many times does it take to use an ice cream container to fill up a water bucket? \_\_\_\_\_
- How many times does it take to use a water bucket to fill up a baby bath? \_\_\_\_\_

Turn on a tap to see how long it takes to fill up a bucket.

NOTE: - this will depend on how fast the tap is turned on - if turned on full it will take 10 - 15 seconds to fill up a 9 litre bucket.

Once your group has worked out the timing of one bucket of water, estimate how many buckets of water would come out of the tap in 1 minute, 3 minutes and 10 minutes.

# Water Leak Check Procedure Sheet

This exercise increases the awareness of where water can be wasted at school through leaks.

It involves a quick and easy check for leaking pipes and appliances. Your teacher's assistance will be required for this activity. After reading tips from your procedure sheet and with your teacher assistance check all the water fixtures within your school and record your findings onto the water leak worksheet.

Within your group discuss the importance of attending to leaks at the school and the amount of water consumed by leaks. Estimate the amount of water that can be used in a day, one month and a year.








**TAPS:** Check if taps can be turned off properly. If you turn it off tight and it is still dripping, the tap needs attention. See how much water is being wasted in a minute by putting in a plug or by using a bucket. (After a minute, measure how much water has been collected.)



**TOILET:** Place a few drops of food dye in the cistern. If there is colouring in the bowl before the toilet is flushed, the cistern is leaking.

- PIPES:**
- ◆ At the start of the lesson make sure that all the taps are turned off
  - ◆ Find the water meter
  - ◆ Read the numbers on the water meter
  - ◆ During the lesson, no water should be used within the school.
  - ◆ Turn off automatic urinals
  - ◆ Check the water meter again at the end of the lesson
  - ◆ Write the numbers down
  - ◆ If the numbers have changed, water is being lost through a leaking pipe
  - ◆ Don't forget to turn the taps and urinals back on where required

# Water Leak Worksheet

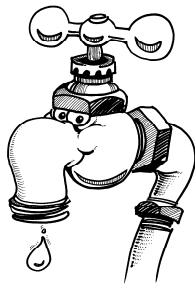
|   | NOT LEAKING | LEAKING<br>NEEDS ATTENTION |
|---|-------------|----------------------------|
| <p>Kitchen Taps</p>      |             |                            |
| <p>Basin Taps</p>        |             |                            |
| <p>Toilet Cistern</p>  |             |                            |
| <p>Urinals</p>         |             |                            |
| <p>Classroom Taps</p>  |             |                            |
| <p>Drink Troughs</p>   |             |                            |
| <p>Garden Taps</p>     |             |                            |



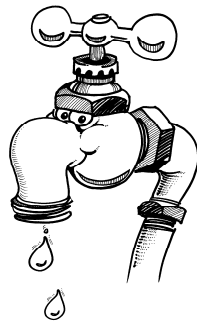
# Monitoring Leaky Taps at School

## Types of Leaks

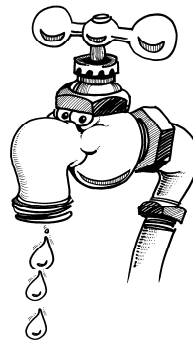
For this exercise there are four different types, drips, broken stream, a trickle and stream.



1 Drop per second



Broken stream



Trickle



Stream

Demonstrate the above flows using a tap in the School grounds. Use a container to measure how much water is wasted over a one minute period.

- 1 drop per second \_\_\_\_\_
- Broken stream \_\_\_\_\_
- Trickle \_\_\_\_\_
- Stream \_\_\_\_\_

Using the information gathered calculate how much water will be wasted by the different types of leaks over the period of an hour.

- 1 drop per second \_\_\_\_\_
- Broken stream \_\_\_\_\_
- Trickle \_\_\_\_\_
- Stream \_\_\_\_\_

Please complete "School Water Use Survey" on the following page.

At the conclusion of the survey make up some school rules about leaks and discuss them with the class. For example. Turn off all taps tightly; Report leaks to a teacher.

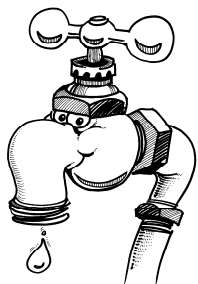
# School Water Use Survey

The object of this exercise is to identify where water is being wasted and to identify approximately how much. Use the colour coded leak system and key words as a guide. (eg: Monday, outside taps - leaking, red. See below table)

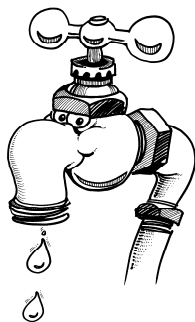
|                        | Monday | Tuesday | Wednesday | Thursday | Friday |
|------------------------|--------|---------|-----------|----------|--------|
| Outside Taps           |        |         |           |          |        |
| Inside Taps            |        |         |           |          |        |
| Drinking Fountains     |        |         |           |          |        |
| Toilet Wash Basin Taps |        |         |           |          |        |
| Sprinkler              |        |         |           |          |        |
| Garden Taps            |        |         |           |          |        |

Key Words: Leaking  
Not Leaking

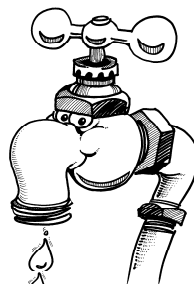
Colour code: Type of leak (see below)



1 Drop per second  
**Red**



Broken Stream  
**Yellow**



Trickle  
**Orange**



Stream  
**Blue**



# Water Efficient Products

In addition to saving water by education, water consumption can be greatly reduced by installing water efficient devices and appliances. Some of these include-

- Water efficient washing machines and dishwashers
- Flow controlled aerator adaptors
- Dual flush toilets and on-demand controlled or waterless urinals
- Tap timers

Also the Commonwealth and State Governments have worked together to introduce a mandatory Water Efficiency Labelling and Standards (WELS) Scheme that will involve the introduction of water efficiency labelling and minimum performance standard for domestic water-using devices. The scheme is being introduced to cover products like showerheads, washing machines, dishwashers, toilets, taps, flow regulators and urinals.



Labels will display from 1 to 6 stars, with more stars meaning the product is more water efficient. Some products may also be labelled with a zero star rated label, which indicates that the product is either not water efficient or does not meet basic performance requirements.

Replacement of all water using appliances may not be economical. Selective replacement of ageing appliances or retro-fitting appliances with water efficient components may be a viable alternative.

