

# How to Read a Water Account

**Why record?** Recording information from the school water accounts helps determine how much water we are using over time and if the actions we are taking to be efficient are making a difference.

## Learning Intention

We are reading and recording information from the school water accounts to help us understand how much water is being used at our school.

**You will need:**

- School water accounts (preferably for one school year)
- Charged Water Supply Data Collection Sheet

**Activity**

1. Ask your school office administrator to help you collect the water accounts for the last school year. These accounts may look like the example below.
2. For each account transfer this information to your **Charged Water Supply Data Collection Sheet**:
  - The dates from This Reading and Last Reading. This is your Actual Billing Period.
  - The Consumption Period ( the number of days within this billing period).
  - Subtract the Last Reading from This Reading. This will give your Volume of Water Used in this period. Remember one m<sup>3</sup> is equivalent to one kl.
  - Add the Fixed Service Charge and Water Costs to give your Total Water Usage Cost. Don't include the Wastewater cost.
3. If you are missing data for one account, use an average of the Volume and Cost entries before and after.
4. If your consumption period is not for a full year and does not equal 365 days, work out the percentage of days it is for and make this adjustment. For example, if your consumption period is for 300 days, ( $300 \div 365 = 0.82$ ). Divide your Volume of Water used and Total Water Cost by 0.82.

**Example showing the information to collect off a Water Account.**

Your Enviroschool Your Address New Zealand			<b>WATER OF LIFE</b>		
			Invoice Date		5.2.08
Meter No:	xxx	Property Location	Your Enviroschool, New Zealand		
		<b>Fixed service charge</b>	32 days	@ \$65.00 pa	<b>\$5.70</b>
<b>This Reading</b>	<b>5-2-2008</b>	<b>150 Actual</b>	Water @ 100%	55m <sup>3</sup> or kl @ \$1.50	<b>\$82.50</b>
<b>Last Reading</b>	<b>4-1-2008</b>	<b>95</b>	Wastewater @ 75%	.. ..	..
<b>Consumption Period</b>	<b>32 days</b>	<b>55m<sup>3</sup> or kl</b>	Total for meter	..	
				Total Amount Due	\$ xx.xx



# How to Read a Water Meter

**Why monitor?** Monitoring the water meter helps determine how much water we are using and if the actions we are taking to be efficient are making a difference.

## Learning Intention

We are learning to read a water meter to help us monitor how much water is being used at our school.

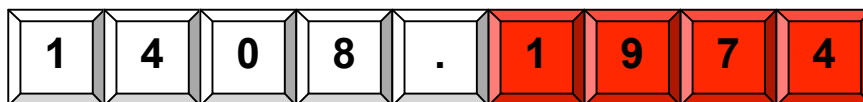
### You will need:

- Water meter (installed on reticulated and/or rain water supply) and swimming pool supply
- Pencil and clipboard

### Activity

Your Reticulated Water Meter is usually located at the school's front gate, just inside your boundary. It may be in a timber, plastic, metal or concrete box. If your school has a rainwater tank or a swimming pool it may have a water meter on it. Ask your caretaker for help to locate the water meters.

Lift up the lid on the meter box and you will see the meter dial. Most water meters are a digital metric type. Your meter may show some numbers that look like this.



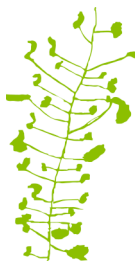
This meter reads 1,408.19 m<sup>3</sup>. All metric water meters show cubic metres (m<sup>3</sup>) in black on white and parts of cubic metres in red. Round your readings to 2 decimal places for data collection sheets. In this case, you would record 1408.20 m<sup>3</sup>.

### Data Collection

To collect the data for the **WATER OF LIFE ANNUAL SUMMARY** you will need to set up a monitoring system. Discuss the best way to measure your reticulated and rain water supply meters every month or perhaps once a term. You will need to read the water meter for the **RETICULATED AND RAINWATER SUPPLY** and **SWIMMING POOL** data collection sheets. When checking for **LEAKS** in your school you will also need to read the water meter for this activity.

### Reflection

- Why is it important to monitor the water meter? How can you use the water monitoring data to help make informed decisions on conserving water in the school?



# Location of Water Outlets

**Why map?** The mapping of all water outlets will raise awareness of the number of water fixtures and fittings. When identifying the locations of water outlets, students can also note any leaks and water saving devices.

## Learning Intention

We are mapping water outlets to inform us where and how water is currently being used. We will use the information to investigate and monitor water efficiency at these outlets.

### You will need:

- Map of the school
- Pencil
- Ruler
- Colouring pencils and felts
- School plans

### Instructions:

1. Decide on roles and responsibilities for finding and placing water outlets on the map.
2. Include a key to show type of outlets.
3. On the completed map, record important information about water in your school.
4. Show location of water meters.
5. Use the base map for other activities such as Activity: Little Drips Turn Into...

### Reflection:

1. What aspects of the school's water outlets reflect sustainable practice?
2. Make recommendations on water saving devices /actions that could reduce water consumption.

### Future learning:

Brainstorm possible projects, select projects of interest and create action plans.



# Little Drips Turn Into...

**Why worry about drips?** Measuring the drips from a leaking tap gives an appreciation of how easily a precious resource can be wasted.

## Learning Intention

We are learning about how easy it is to waste a precious resource like water. We will become aware of how necessary it is to make sure water outlets aren't dripping.

### You will need:

- A dripping tap
- Container marked at 250 ml
- Timer
- Paper and pencil
- Calculator

### Instructions:

There are two ways to measure leaks.

- For smaller leaks count the number of drips in one minute. Ten drips are equivalent to 3 mls of water. Calculate litres per minute (1 litre = 1000ml, so divide your mls by 1000 to get litres). Convert this to litres per day (multiply by 60 minutes to get litres per hour, they by 24 hours to get litres per day).
- For larger leaks mark 250 mls on a container. Hold the container under the tap and time in seconds how long it takes to reach the 250ml mark.

1. Find a dripping tap.
2. Decide on which measuring method is the most appropriate.
3. Conduct the test 3 times and average the results.
4. Decide on what action needs to be taken.
5. How much water will have been wasted if the tap is not fixed for 2 weeks?

### Data Collection

1. Using the Water Outlet Map completed in Activity 2 to identify and highlight leaking fixtures.
2. For each leaking fixture calculate water wasted per minute, hour and day.
3. Calculate water wasted in a year (multiply by 365 days).

### Reflection:

1. We know the best possible solution to dripping taps. How can we ensure action is taken?



# Walk-Through Audit

**Why should we use a walk-through audit?** Looking at how we use water and our impact upon water in the environment is an essential part of creating more sustainable schools and communities. The audit results can be used to help make informed decisions on actions that will lead to more sustainable practice.

## Learning Intention

We are using the walk-through audit to give information on water fixtures and usage. We will identify ways to reduce use and conserve water in our school.

### You will need:

- Paper
- Clipboard
- Pencil
- To consult with the Caretaker on some aspects of the audit.

### Instructions:

1. Divide school into manageable areas.
2. Prior to the Walk-Through Audit clarify any aspects of the audit that are not clear, so that there is a shared understanding of the task.
3. Conduct the Walk-Through Audit.
4. Collate data from all groups. Write up results.
5. Using the results of the audit, brainstorm possible actions that could be taken to reduce the amount of water being used by the school.
6. Decide upon actions that are achievable and produce a plan of action to share with interested stakeholders.

### Reflection:

1. How will we measure the effectiveness of any actions taken?
2. Often significant water conservation can be achieved easily through awareness education. What can be done to increase awareness of conserving water in our school and homes?



<b>Walk-through audit</b>				
<b>Indoors</b>				
Do the toilets have dual flush capability?		Number	%	
Are toilets in good working order?		Yes/No Record problems		
Do you have urinals in your school?		Yes/No		
What type of urinals do you have?		Continuous / Motion Sensor / Pull Chain / Push Button		
Are they in good working order?		Yes/No		
Does your school have showers?		Yes/No	How many?	
Are handbasins/ sinks in good working order?		Yes/No Record problems		
Tap type		Automatic turn off	Manual off	
Do taps have any leaks?		Yes/No Record problems		
Are there signs to remind people to conserve water?		Yes/No		
How many dishwashers are there in the school?				
Are dishwashers used only when full?		Yes/No		
<b>Outdoors</b>				
Is there an irrigation system?		Yes/No		
Drip/micro system	Sprinkler	Manual	Automatic time controlled watering system	Tap timer
Are gardens mulched to retain moisture?				
Are gardens and lawns watered at night when there is less evaporation?				
<b>Drinking Fountains</b>				
Are they regularly checked for leaks?		Yes/No		
What percentage is spring loaded?		%		
What percentage is manual turn on/off?		%		
<b>Other</b>				
Are the outdoor taps vandal proof (don't have handles)		Yes/No		
Does your school re-use grey water? If so how?		Yes/No		
Is water being used (wasted) to clean the paths and playgrounds?		Yes/No		
Does your school have a pool?		Yes/No		