

# 3 CAPTURING THE RAIN TEACHER'S NOTES

*There are many ways to use the resource material provided in this package and the following day by day approach is just one suggestion. Please feel free to adapt and experiment with these ideas.*

*We are always keen to hear about how you are using this material and to receive your feedback about the resource.*

*EcoWater Solutions is developing a range of educational material relating to water and water use. A visiting speaker is also available to spend time with your class. Please contact us for further details.*

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## Day One

module 1:

Water Cycle

Capturing the Rain

Activity Sheet 1

- Talk with the class about how we catch and store rainwater to ensure a continuing supply throughout the year. It is important for children to understand the 'savings bank' concept of having sufficient reserves to cover periods without rain. Make comparisons with other times and places e.g. how do wildlife in Africa get their water?..... nomadic people? .....people in rural areas who don't have 'town supply' ..... how might stone age groups have managed their water supply? .....pre European Maori? ..... ancient Romans? What happens when a community runs out of water?
- Revise how the natural water cycle works (module 1: Water Cycle) and introduce students to the idea that people interrupt the natural water cycle by 'capturing' and storing water, making it dirty, then cleaning it up (wastewater treatment) before returning it to the sea, ready to be evaporated again. A useful group activity for reinforcing this, is to have groups study the two pictures on activity sheet 1, and list all similarities and differences to do with water. Through this, they should come to understand that the cycle of rainfall and evaporation is on-going, despite human intervention.

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## Day Two

Capturing the Rain  
Activity Sheet 2

- Students work through activity sheet 2.

### Notes

Rainwater in the Auckland region is stored behind dams in the Waitakere and Hunua Ranges. 60% of our water comes from the Hunuas, 35% from the Waitakeres and 5% from underground aquifers in the Auckland isthmus.

Most properties in Waitakere City (45,488) are connected to reticulated water and sewer services. There are 4,800 properties in outlying areas which rely on water tanks for supply and use septic tanks for on-site wastewater disposal.

The Stockholm Water Foundation estimates that at least 1 billion people in the world must walk 3 hours or more each day to fetch water.

"Most people in Waitakere City use about 60,000 litres of water a year. How many litres would your family use? ~ many primary school and backyard swimming pools hold about 60,000 litres of water so this is a lot of water for one person to use in a year! Council research shows the following pattern of domestic water use over a year:

- Bathroom 28%
- Toilet 27%
- Laundry 21%
- Outdoor Activities 15%
- Kitchen 9%

Most adults underestimate how much water they actually use, and children will need some help to see the less obvious ways of using water at home e.g. toilet flushing, clothes washing.

Students will appreciate that some of their water use is 'personal' e.g. bathroom & toilet, and some of their water use is 'shared' e.g. laundry & kitchen.

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### Day Three

*Capturing the Rain  
Activity Sheet 3*

- Stories of contaminated water supplies, and the threat of Giardia and Cryptosporidium have been in the news recently. Ensuring an adequate supply of safe water is a very important responsibility of councils and water utilities. Urban water supply is a good example of an everyday technological system in operation. Today's activity introduces students to some of the process steps in capturing the rain and delivering it to our taps.
- The crossword and wordsearch on activity sheet 4 are provided as follow up, perhaps homework activities.

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### Day Four & Five

*Capturing the Rain  
Activity Sheets 4 to 10*

*Watercare Services  
634 7840*

*EcoWater's educational adviser  
836 9805*

*Watercare Services  
634 7840*

- A selection of 'hands on' activities are provided on activity sheets 5 to 10. These look at various aspects of water supply and distribution and are designed to reinforce earlier work. Most are outdoor activities and require teacher supervision.  
**Use of alum needs to be closely supervised and students should not drink any water they have treated. (It may look very clean but this water has not been sterilised in any way.)**
- There are lots of good research projects for your students around the topic of urban water supply. Watercare Services Ltd is the bulk supplier of water to all councils in the Auckland region. Ask for their free fact sheets on water supply. The pamphlet, Where do we get our H<sub>2</sub>O? is very easy for children to follow.
- There is a wealth of material about urban water supply on the internet, and many attractive educational web sites. Although the data will be different, students can still make interesting comparisons with N.Z. and appreciate the importance which many countries attach to water use education. (Lost in cyberspace? EcoWater will be happy to provide you with some good starting points)
- Consider a class trip to visit a dam and filter station. The Rainforest Express train trip to the Upper Nihotupu Dam is very popular with students

For further assistance, contact Sue Langton, EcoWater's Educational Advisor  
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Sue has worked as researcher, information centre coordinator and a teacher in secondary schools. Her teaching skills are in Science, Biology and information skills. She is able to assist Waitakere City teachers in the following ways:

- participate in syndicate / departmental planning sessions
- provide professional development sessions for groups of teachers about NZCF linked learning opportunities within the themes of water and water use
- provide a 'helpdesk' service for student research enquiries about water and water use
- supply a range of resource materials with links to other relevant organisations such as Watercare Services and the Auckland Regional Council
- arrange for a visitor from EcoWater Solutions to work with your class as part of a about water / water use study