

Tapstar

Where does water come from?

**Education
Program**

**Teacher resource book
Stage Two**



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Introduction

The Tapstar Waterwise Education Program was established in 2002 and has continued to fill an important gap in water awareness and education. Tapstar and his best friend Dripette are water conservation hero's and here in the Shoalhaven are well recognised within the community.

Shoalhaven Water, with the support of Eaton Gorge Theatre Company have produced fun performances which offer an excellent lead into the activities included in this kit. The Tapstar performances have been designed to view in the classroom prior to undertaking the lesson plans in this kit.

The lesson plans within have been constructed for primary school teachers to assist students achieve outcomes from the current NESA resources.

The benefits of this education program will be the conservation of our precious drinking water and the protection of our environment. It will also enhance the image of schools as they are seen to be environmentally conscious and aware of sound water conservation outcomes and will ensure the active and informed participation of the community in creating a sustainable future.

For more information on how to access the performances email us at:

water@shoalhaven.nsw.gov.au

Acknowledgements

The contribution of those listed below was highly valued and is gratefully acknowledged:

- Robert Horner, Shoalhaven Water, Executive Officer
- Brenden Logue, Shoalhaven Water, Business and Support Manager
- Michelle Murden, Shoalhaven Water, Education and Marketing Officer
- Maggie Bridgford, Educational Consultant
- Ian McColm, Eaton Gorge Theatre Company
- Juliet Scrine, Eaton Gorge Theatre Company

Stage 2

Outcomes

Outcomes		Indicators
GE2-2	Describe the ways people, places and environments interact	<ul style="list-style-type: none"> Investigate the importance of natural resources to the environment, animals and people
ST2 -1WS-S	Questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations	<ul style="list-style-type: none"> Conduct scientific investigations to find answers to questions Reflect on investigations, including whether testing was fair or not Use a range of methods to represent data, including tables and column graphs Describe how living things depend on each other and the environment to survive
ST2 -2DP-T	Selects and uses materials, tools and equipment to develop solutions for a need or opportunity	
ST2 - 4LW-S	Compares features and characteristics of living and non-living things	
MA2-1WM	Uses appropriate terminology to describe, and symbols to represent mathematical ideas	<ul style="list-style-type: none"> Recognise that there are 1000 millilitres in one litre Use the millilitre as a unit to measure volume using a device calibrated in millilitres e.g. place a measuring cylinder under a dripping tap to measure the volume of water lost over a particular period Convert between millilitres and litres
MA2-11MG	Measures, records, compares and estimates volumes and capacities using litres, millilitres and cubic centimetres	
EN2-1A	Communicates in a range of informal and formal contexts by adopting a range of roles in a group, classroom, school and community contexts	<ul style="list-style-type: none"> Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and information Identify key elements of planning, composing, reviewing and publishing in order to meet the demand of composing texts on a particular topic for a range of purposes and audiences
EN2-2A	Plans, composes and reviews a range of texts that are more demanding in terms of topic, audience and language	
DRAS2.2	Builds the action of the drama by using the elements of drama, movement and voice skills	<ul style="list-style-type: none"> Interprets everyday and imagined situations to make drama by deciding about drama elements Engages in drama as a respectful and appreciative audience for live and recorded performances
DRAS2.4	Responds to, and interprets, drama experiences and performances	

Assessment:

Teacher observes and notes student contributions to discussions, responsiveness in tasks and their engagement in the content being explored.

Lesson 1

Where does water come from?

Introduction

Introduction:

Discuss students' prior knowledge on water and create a whole class mind map e.g. where it comes from, why it's important, water cycle, colour.

Body

Watch Tapstar video

Discuss brainstorm again, seeing if more information needs to be added. Rewatch as necessary.

In groups, students research how much each local dam holds, using the [Shoalhaven Water website](#). Students then research how much water they use daily using the [gwmwater](#) site e.g. a 10min shower, flushing the toilet 3 times during the day, washing hands for each meal, etc. Students calculate how much water their whole group would use in a day using multiplication and addition strategies.

Conclusion

Students share their research and discuss ways they could reduce the amount of water they use daily e.g. shorter showers.

Resources

IWB

Computers or iPads

Dams in the Shoalhaven

<https://shoalwater.nsw.gov.au/about-us/our-systems-operations/our-water-supply>

How much water is used research <https://www.gwmwater.org.au/conserving-water/saving-water/how-much-water-you-use>

Science or HSIE Book

Evaluation

Lesson 2

How is water collected?

Introduction

Rewatch Tapstar video and discuss previous lesson.

Body

As a class or in small groups, students will investigate how much rain falls in a week. Students choose a location to place a measuring jug, a cup and/or a bucket.

Students use their book to write down their hypothesis of how much will be collected and why. At the end of the week students will measure how much rainfall there was. They will record their findings and check if their hypothesis was correct. Students will write their reasoning for why their hypothesis was proven right or wrong e.g. collected during the rainy/hot/dry/cold season.

Students then brainstorm what they would be able to use the water for.

Ask:

- If it was cleaned properly, is there enough water to drink? Wash your hands in? Shower in?
- What would happen to our water supply if it didn't rain a lot? Why would that be good/bad?
- Imagine if we could have used bigger containers; what could the school use the collected water for?

Conclusion

Students share their findings and ideas with the class. Remind students that rainwater is cleaned before it is drinkable and comes out of our taps.

Extension Activities

Students research appropriate ways to collect rainwater and how it can be used safely in daily life.

Resources

IWB
Measuring vessels
Science or HSIE Book

Evaluation

Lesson 3

How much water do you use?

Introduction

Rewatch Tapstar video and discuss what was learnt in previous lessons. Discuss Water Restrictions - What happens in the Shoalhaven when water flows are low in the Shoalhaven River?

Body

Discuss what students do to limit water waste at home e.g. turning off the tap when brushing their teeth, collecting rain water to use in the garden, timing showers etc. As a class, or in small groups, students will look at how much water they use whilst washing their hands.

One student will wash their hands in the sink for as long as they think is necessary as another student times it. Placing a bucket under the sink, turn the tap on for the recorded time. Using 1L measuring jugs, measuring out how much water was used. Repeat with the tap dripping and/or full pressure for the same amount of time.

Ask how the students would limit the amount of water used and wasted e.g. fill a small basin and wash hands in that, collect the water to use on plants.

Repeat the activity throughout the week when washing paintbrushes, filling up drink bottles, wetting sponges for clean-up.

Conclusion

Remind students that it is important to wash and use water; however, they should be aware of how much they use throughout the day. Reiterate how they can make small changes to help preserve water.

Extension Activities

Students place a clear measuring cup under a dripping tap and time how long it takes to fill it up. Students then calculate how many millilitres and litres would be wasted in an hour. Students share their findings with the class.

Resources

IWB
Plugs for the sink
1L measuring jug/s
Timer
Large bucket/s
Science or HSIE Book

Evaluation

Additional Activity

Water Filtration Experiment

Read the following books:

A Drop Around the World by Barbara McKinney

One Well: The Story of Water on Earth by Rochelle Strauss

The Magic School Bus at the Waterworks by Joanna Cole

Resources

2 clear cups

Sand

Gravel

3-4 Coffee Filters

Dirty Water

A Plastic Cup with a Hole in the Bottom

Method:

In the plastic cup, start by lining the bottom with the coffee filters. Then place a layer of clean sand followed by a layer of gravel.

Place the cup into an empty jar. Pour the dirty water into the cup so it can filter down through the gravel, sand and coffee filters.

Look at the difference in the water before and after! The filter collects all the dirt and particles in it making the water much cleaner.



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Shoalhaven Council's
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WATER