

5 STORMWATER 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.

Stormwater poses a major environmental threat to the whole Auckland region. Water quality in many streams is now compromised, and there are serious concerns about the impact of polluted stormwater on our beaches and harbours. This module is designed to help students understand some of the issues relating to stormwater. It is intended to be used alongside material supplied by the Auckland Regional Council. To obtain this (free) material, telephone Jami Williams, ARC, 366 2000 extn 8183. The colourful posters, and the leaflet, Urban Stormwater are popular with students.

Day One

*Stormwater
Activity Sheet 1*

- Discuss the notion of stormwater with students. Stormwater is rain which runs off roads, roofs and other hard surfaces then flows down gutters and drains. Stormwater drains flow straight into streams and harbours. Stormwater is not treated in any way, and is usually polluted. Motor vehicle use is a major cause of stormwater pollution.
- Draw a simple map on the board, showing school and major roads in the area. Talk about the nature of catchments (also known as drainage basins or watersheds) and mark in the catchment boundaries in the school neighbourhood. It will probably be necessary to remind students that water runs downhill, seeking the lowest level.
- Take class for a walk about the school neighbourhood. Look for higher land and ridgelines that form the catchment boundaries. Note the direction towards which the catchment is draining. Locate stormwater drains in the road gutters. In built up areas, the metal grilles will be easy to spot. The actual pipes are visible if you look down into these pits. Talk about where these drains might run to. Perhaps some students will know of a discharge pipe at the local stream or beach. EcoWater can provide a drainage plan if required. Use Activity Sheet 1 to record any dirt or rubbish you see which might wash into the stormwater drains. (mud, grit, paper, plastic, cigarette ends, lawn clippings, dog faeces etc)
- Back in the classroom, update your catchment map with any additional information gained from the trip.

Day Two

*Stormwater
Activity Sheets 2 & 3*

- Discuss the idea that it is not always possible to see pollution in stormwater, and that the most serious pollutants are actually invisible.
- Students work on Activity Sheets 2 & 3.

Notes

Activity Sheet 3 Teachers who would like their classes to study how our streams have changed over the years, should request the three booklet set ~ Once Upon a Time; Why our streams have changed; What we can do to help our streams. Available free on request.

Day Three

*Stormwater
Activity Sheets 4 & 5*

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- Students work on activity sheets 4 & 5. These are designed to consolidate the ideas already covered.

Notes

Activity Sheet 4 This returns to the idea that urban / suburban development with all its waterproof ('impervious') surfaces is a major contributor to our stormwater problems ~ instead of soaking into the ground, rain falling on impervious surfaces becomes surface run off ... this run off water is large in volume, travels fast, is erosive and polluted. It further develops the idea introduced first in the picture strip from module 2, It's Raining (activity sheet four).

Activity Sheet 5 The fish stencils are a great idea to get the students involved and ARC has a selection with different wording e.g. "Tip no waste, Drains to Manukau". Permission to paint on Waitakere City roadways / footpaths is still needed. Please contact Educational Adviser, EcoWater.

Day Four

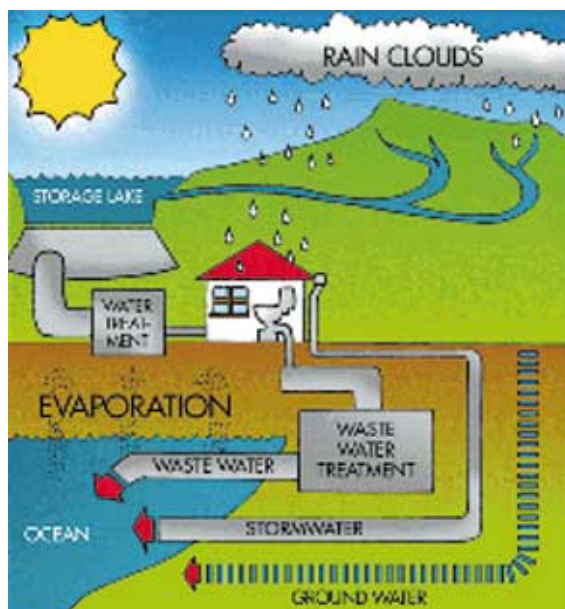
Students work on activity sheet 6. This makes a good group task. Copies of the poster 'Simple Ways to Keep Our Streams Clean' have been provided for this activity.

Stormwater
Activity Sheet 6

Posters, 6 provided

Notes

Activity Sheet 6 While it is true that most stormwater pollution is caused by motor vehicles, there are many ways that people can contribute to the problem, just as there are ways they can help to ease it ~ also important for students to understand is that there are 2 independent water disposal systems ... water used inside the house (toilet, laundry, kitchen, bathroom) becomes wastewater in the sewer / wastewater system while water used outside the house can find its way into the stormwater system.



Day Five

- Students work with ARC material or perhaps have a visiting speaker from the ARC or WCC

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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