# Raingardens: Managing our stormwater

Lesson plan

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| Victorian Curriculum F–10[[1]](#footnote-1) links:**Levels 7 and 8****Geography****Geographical Knowledge****Water in the world**Classification of environmental resources and the forms that water takes as a resourceWays that flows of water connect places as they move through the environment and the ways this affects places The quantity and variability of Australia’s water resources compared with those in other continents and how water balance can be used to explain these differences**Place and liveability**Influence of accessibility to services and facilities; and environmental quality, on the liveability of places**Landforms and landscapes**The spiritual, cultural and aesthetic value of landscapes and landforms for people, including Aboriginal and Torres Strait Islander peoples, that influence the significance of places, and ways of protecting significant landscapes  |

## Introduction

### In unbuilt areas, stormwater that is not infiltrated into the soil, flows over the ground. If there are agricultural chemicals and other pollutants on the ground, this gets carried along with the stormwater.

### In urban areas, rainwater from the roof of your house, driveways, roads and footpaths is carried away through drains and pipes. It can also carry with it anything that is lying in the soil or drains – cigarette butts, cans, paper or plastic bags, detergents, oil, fertilisers, leaves, garden clippings, animal droppings and sediment from soil erosion, building sites and unsealed roads.

### All of this can end up polluting our waterways.

### Activity 1: How does a raingarden help protect waterways?

Students explore what raingardens are and the ways that they can protect waterways.

### Activity 2: Where is my local waterway?

Students investigate their local catchment and identify potential sources of pollution.

### Activity 3: Building a school raingarden

Students explore the feasibility of building a raingarden in the school.

### Equipment

Interactive whiteboard or data projector

## Activity 1: How does a raingarden help protect waterways?

Students explore what raingardens are and the ways that they can protect waterways.

Activity steps

1. Show this short video to the class. It is found on the Melbourne Water web page **What is a raingarden** and it explains how a raingarden works: <<http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/What-is-a-raingarden.aspx>> Students use annotated diagrams (sketches with notes) to describe how a raingarden works.

 A raingarden in a suburban home

Source: Melbourne Water

1. Students read the information at the following link. <<http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/Why-build-a-raingarden.aspx>> Ask them to list the ways that raingardens help protect waterways and answer the following questions.
* What is stormwater?
* Have you ever heard a warning not to swim at a beach after heavy rain? Why do you think this happens?
* Describe the problem to the environment if there is too much stormwater reaching rivers, creeks and bays.
1. As a class, list all the different types of pollutants that could end up in waterways.
2. Now use this list to brainstorm all the different ways that people could stop these pollutants from entering our waterways. Some hints – cleaning paint brushes; washing cars; dog droppings; litter etc. Work as a class or in smaller groups. Go to <<https://bubbl.us/>> and use this online tool to record your brainstorm ideas.

## Activity 2: Where is my local waterway?

Students investigate their local catchment and identify potential sources of pollution.

Many schools and homes will be near a waterway. Sometimes in urban areas they are hard to recognise as they may have been modified into concrete channels to allow water to flow more quickly during heavy downpours.

### Activity steps

1. Find out where your nearest waterway is. Your students could be detectives to find this, so get them to work in groups or as a class. Use Google Maps or Google Earth to help you locate your local waterway. If you are not sure, get in touch with your local council environment officer and ask them for help.
2. The groups produce an annotated Google map with the following features—name of the waterway, your location (school and/or home), where did the water flow from, where is it going and label potential pollution sources for your waterway.
3. If possible, organise a fieldwork visit to the waterway. You could do this with the Geography and Science teachers. Measure the water quality of your local waterway (visual pollution, turbidity, etc.), take lots of photos and create videos, and produce a report at the end that summarises the water quality found.

## Activity 3: Building a school raingarden

Students explore the feasibility of building a raingarden in the school.

It may be possible for you to build a raingarden at your school.

1. Watch the video on how to build a raingarden <<http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/Raingardens.aspx>> . At this link, you can see how a raingarden is built. There are also many fact sheets here to provide you with different raingarden designs.
2. Ask students to list the main features of the gardens and how they help filter the water.
3. The Geography students at Eltham High students won a raingarden award. Watch the video about this project at <<http://www.youtube.com/watch?v=8075YANcvDk&feature=youtu.be>>



The winning raingarden at Eltham High School

Source: Melbourne Water

1. Other raingarden projects can be viewed at <<http://www.melbournewater.com.au/getinvolved/protecttheenvironment/raingardens/Pages/Raingardens-in-Melbourne.aspx>>

The Geography teacher could work with the Science teacher to create a series of lessons on soil infiltration and permeability to help plan the best location for a raingarden at your school. Use the information sheets and videos to help you plan the garden, including the costs.

1. Have a fundraiser group to plan activities to raise funds to pay for the raingarden.

### Going further

Find out about raingardens and stormwater projects in your local area. Your students may like to suggest to a local council where a raingarden project could be undertaken. At <http://www.clearwater.asn.au/resource_library/Case%20studies> you will find a list of many projects across Victoria. Read about a number of these. If any are in your local area, see if you can visit as part of a fieldwork activity.

See what your council is doing in innovative stormwater management or visit their websites or contact them directly for information. There may be someone willing to come to the school and speak to your students about the project.

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| **SOUTHEAST** | **NORTH** | **WEST** | **EAST** |
| Kingston | Banyule | Brimbank | Knox |
| GreaterDandenong | Manningham | Greater Geelong | Yarra Ranges |
|  | Hume |  | Boroondara |
|  | Whittlesea |  |  |
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1.  Victorian Curriculum and Assessment Authority (VCAA) <<http://victoriancurriculum.vcaa.vic.edu.au/>> Accessed 14 August 2016. [↑](#footnote-ref-1)