

**Stage 4 – Geography – Water in the world/ Place and Liveability**

Title - Stormwater Audit



**Key inquiry questions**

- How do natural and human processes influence the distribution and availability of water as a resource?
- What approaches can be used to improve the liveability of places?

Time: 3 x 45-60 min

**Syllabus Outcomes**

GE4-3 explains how interactions and connections between people, places and environments result in change  
 GE4-4 examines perspectives of people and organisations on a range of geographical issues  
 GE4-5 discusses management of places and environment for their sustainability  
 GE4-7 acquires and processes geographical information by selecting and using geographical tools for inquiry  
 GE4-8 communicates geographical information using a variety of strategies

**Geographical concepts, skills and tools**

Interconnection: no object of geographical study can be viewed in isolation.  
Space: ways people organise and manage the spaces that we live in.  
Processing geographical information - apply geographical concepts to draw conclusions based on the analysis of the data and information collected.  
Communicating geographical information – present findings, arguments and ideas in a range of communication forms selected to suit a particular audience and purpose; using geographical terminology and digital technologies as appropriate.  
Visual Representation – maps, photographs, multimedia

**Syllabus Content**

**Place and Liveability**

**Environmental Quality.** Students – investigate the impact of environmental quality on the liveability of places.

**Enhancing Liveability.** Students – investigate strategies used to enhance the liveability of places using examples from different countries – assessment of the role of government, non-government, organisations, communities and individuals in enhancing liveability.

**Water in the World**

**The value of water.** Investigate the economic, cultural, spiritual and aesthetic values of water for people, including Aboriginal and Torres Strait Islander Peoples and/or peoples of the Asia region, for example:




- Description of the ways water is used by people eg agricultural, commercial, industrial and recreational uses
- Discussion of variations in people’s perceptions about the value of water eg economic versus aesthetic

**Sydney Water aim for activity**

One of our objectives is to protect the environment. We do this by working in partnership with local councils managing our network of stormwater drains and channels. We also work with our customers to ensure that our stormwater connections are operating correctly. The value people have had for our stormwater network has changed over time, becoming increasingly more important in managing our waterways. Our interactions with the environment will influence what ends up in our stormwater drains and waterways.

Teaching and learning	Resources
<p><b>Lesson 1 – Before the stormwater audit</b></p> <p><b>Q.</b> What is Stormwater?  <b>A.</b> Stormwater is water that falls from the sky and runs across roofs, roads and parks into stormwater drains.</p> <p><b>Q.</b> What do stormwater drains look like?</p>	<p><b>Sydney Water resources</b>  <a href="#">Stormwater</a></p>

<p><b>A.</b> Large, small, underground, open, grates, pits, <b>not all</b> some are naturalised, open green spaces with vegetation</p> <p><b>Q.</b> What is the purpose of Stormwater drains?</p> <p><b>A.</b> For example</p> <ul style="list-style-type: none"> <li>• To catch excess rainfall and to stop flooding - slow the flow of water</li> <li>• Caught in grates, drains or open pipes, wetlands, trash racks (both large and small contaminants are stopped from entering our rivers and oceans)</li> <li>• Return water back to creeks/rivers/oceans</li> </ul> <p><b>Did you know?</b> That Sydney Water manages 12% of the stormwater network in Sydney. The rest is managed by local councils.</p> <p><b>Q.</b> What is my contribution to stormwater? What actions are we all making that are having an impact? Should I change what I do at home and at out in the environment?</p> <p><b>A.</b> We are going to do a stormwater audit to discover this!</p> <p>A stormwater audit can help you find out:</p> <ol style="list-style-type: none"> <li>1. what's in our stormwater?</li> <li>2. how much waste do we contribute?</li> <li>3. how can you make a positive impact on stormwater quality and the environment?</li> </ol>	
<p><b>Lesson 2 - doing the stormwater audit</b></p> <p><b>Activity:</b> Go to our Stormwater audit webpage for everything you need to manage a stormwater audit activity.</p>	<p><b>Sydney Water Resources</b></p> <p><a href="#">Stormwater audit</a></p>
<p><b>Lesson 3 – after the stormwater audit and assessment</b></p> <p><b>Q.</b> What did we find out about the stormwater near our homes or schools?</p> <p><b>A.</b> Students can share some of their results verbally.</p> <p><b>Q.</b> Why did we do the stormwater audit?</p> <p><b>A.</b> To find out our stormwater behaviour. You don't usually think about what goes down the stormwater drain so even doing it for one day is a good way to become aware of how you impact water. We want to know whether we're eco-warriors or if there are ways, we can improve by applying our scientific knowledge.</p> <p><b>Assessment</b></p> <p><b>Activity:</b> Follow the instructions on the stormwater audit webpage to review and present your findings to present way changes can be made to protect the environment and manage stormwater.</p> <p><b>Did you know</b> - We use these geographical skills every day at Sydney Water. We use audits and surveys to get data about what people think and feel about water (perceptions research) which help shape our projects. We research how people use water to helps us predict environmental impacts, the technology we should use and influences how we communicate to the public on issues such as drought and wastewater.</p>	<p><b>Sydney Water resources</b></p> <p><a href="#">Stormwater audit</a></p>
<p><b>Extension</b></p>	

<p><b>Option 1</b> - View the video on Stormwater to drinking water and using other information create a 2-minute speech that will encourage people to drink water that is sourced from stormwater. In your speech include the process of stormwater to drinking water, the benefits to people and the community.</p> <p><b>Option 2</b> - Do you think you can help others understand how to protect our water and the environment? Students are to present what good behaviours they learnt by creating a poster or social media post to tell the public (fellow schoolmates, parents, or local area) to help improve stormwater quality and protect the environment.</p> <p>See our Stormwater audit webpage under the Make a change tab and our social media channels as a source of inspiration. Feel free to share what they come up with our contacts below.</p>	
<p><b>Conclusion</b></p> <p><b>Evaluation questions</b></p> <ul style="list-style-type: none"> <li>• How does the design and construction of our urban areas affect the flow and quality of water?</li> <li>• Did the stormwater audit make you appreciate water a little more?</li> </ul> <p><b>Reflection activity</b> - Students finish these statements</p> <ol style="list-style-type: none"> <li>1. I used to think ... (at the start of these lessons)</li> <li>2. But now I think ... (at the end of these lessons)</li> </ol>	<p><b>Sydney Water resources</b></p> <p><b>Find out more</b></p> <ul style="list-style-type: none"> <li>• <a href="https://sydneywater.com.au/education">sydneywater.com.au/education</a></li> <li>• <a href="https://facebook.com/SydneyWater">facebook.com/SydneyWater</a> </li> <li>• <a href="https://instagram.com/sydneywater">instagram.com/sydneywater</a> </li> <li>• <a href="https://twitter.com/SydneyWaterNews">twitter.com/SydneyWaterNews</a> </li> </ul>