

Teacher lesson plan			<div>Sydney <b>WATER</b></div>
Stage 3 – The natural and urban water cycle			
KLAs : HSIE, English, Science and Technology	Class :	Length:	
<p><b>Outcomes and indicators</b></p> <p><b>Human Society and its Environment</b></p> <p>ENS3.5 Demonstrates an understanding of the interconnectedness between Australia and global environments and how individuals and groups can at in an ecologically responsible manner.</p> <p><b>English</b></p> <p>EN3-1A communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features.</p> <p>EN3-3A uses an integrated range of skills, strategies and knowledge to read, view and comprehend a wide range of texts in different media and technologies.</p> <p><b>Science and Technology</b></p> <p>ST3-14BE describes systems in built environments and how social and environmental factors influence their design.</p> <p><b>Australian Curriculum</b></p> <p>ACELY 1796 use interaction skills, for example paraphrasing, questioning and interpreting non-verbal cues and choose vocabulary and vocal effects appropriate for different audiences and purposes</p> <p>ACELY 1816 use interaction skills, varying conventions of spoken interactions such as voice volume, tone, pitch and pace, according to group size, formality of interaction and needs and expertise of the audience</p>		<p><b>Resources provided</b></p> <ul style="list-style-type: none"><li>• Interactive Whiteboard (IWB) Resource – <i>Stage 3 The natural and urban water cycle</i></li><li>• <i>Making a water cycle model</i> fact sheet</li><li>• <i>The urban water cycle</i> activity sheet</li><li>• <i>The water cycle</i> activity sheet</li></ul> <p><b>Sydney Water webpages to support this lesson plan</b></p> <ul style="list-style-type: none"><li>• The water cycle</li><li>• The urban water cycle</li></ul> <p><b>Resources required</b></p> <ul style="list-style-type: none"><li>• IWB with internet connection or computer and data projector</li><li>• Making a water cycle model equipment (See <i>Making a water cycle model</i> fact sheet)</li></ul>	
<b>Cross-curriculum priorities</b> Sustainability			
<p><b>General capabilities</b></p> <p>Students will learn about:</p> <ul style="list-style-type: none"><li>• how the natural water cycle works including the stages of the natural water cycle</li><li>• the need to modify and manage the natural water cycle to meet human needs</li><li>• the components of the managed water cycle.</li></ul> <p>Students will learn to:</p> <ul style="list-style-type: none"><li>• identify stages of the natural and managed water cycle.</li></ul>			

<b>Teaching and learning</b>  This lesson sequence involves students exploring the natural and urban water cycle through completing activity sheets and computer based resources. Students will also perform a play based on water drops passing through the water cycle and make a water cycle model.  The learning sequence involves four lessons designed so that teachers can use all or part/s of the sequence best suited to the needs and interests of the class and time available.	<b>Assessment</b>	<b>Evaluation</b>	<b>Timing</b>	<b>Resources</b>
<div data-bbox="184 545 308 578"><b>Register</b></div> <div data-bbox="380 561 861 594"><b>Lesson 1 - The natural water cycle</b></div> <ol style="list-style-type: none"> <li data-bbox="380 610 1157 1276">1. Use the <i>The water cycle</i> (found in IWB resource –Stage 3 The natural and urban water cycle) to introduce the stages of the water cycle (evaporation, transpiration, condensation, precipitation, infiltration and runoff). Explain the concept of the natural water cycle as a fixed amount of water on earth that moves continuously in a never-ending cycle. During its journey, water is continuously reused and recycled. Water also changes form as it falls as rain, snow, sleet or hail (<b>precipitation</b>) and is <b>evaporated</b> back to the atmosphere as water vapour. Water may seep into the ground and move slowly as groundwater to nearby lakes, streams or oceans. Some groundwater is taken up by plants, travels through plants and evaporates back into the atmosphere (<b>transpiration</b>). It may remain frozen in the water cycle for a long time as ice, but will eventually thaw and move on. It may be heated by the sun, evaporate into the atmosphere, condense into tiny droplets and form clouds (<b>condensation</b>). Eventually it falls back to earth and the journey begins again.</li> <li data-bbox="380 1300 1129 1390">2. Students fill in the stages of the water cycle on <i>The water cycle</i> (on IWB resource) Discuss each stage of the water cycle. Students write the definitions for each</li> </ol>				

	<p>stage next to the term from the definition boxes. Students complete their own activity sheet.</p> <p>3. Test students' understanding of the water cycle by playing the <a href="http://apps.southeastwater.com.au/games/education_kid_sroom_wcactivity.asp">water cycle game</a> at <a href="http://apps.southeastwater.com.au/games/education_kid_sroom_wcactivity.asp">http://apps.southeastwater.com.au/games/education_kid_sroom_wcactivity.asp</a> (also available through the '<i>Water cycle in nature</i>' page of the Sydney Water education website) The click and drag format allows students to move water through the water cycle and name its parts.</p>				
	<p><b>Lesson 2 – The water cycle adventure play</b></p> <p>1. View the '<i>Water cycle adventure</i>' play found at <a href="http://www.enchantedlearning.com/rt/weather/watercycle">www.enchantedlearning.com/rt/weather/watercycle</a></p> <p>The play follows the adventures of two water drops as they pass through the water cycle. Make copies of the play, assign students roles and read the play in class.</p> <p>After reading the play, students could illustrate the journey of the water drops through the water cycle.</p>				
	<p><b>Lesson 3 – A water cycle model</b></p> <p>Use the <i>Making a water cycle model</i> fact sheet to make a mini water cycle and demonstrate the natural processes involved in moving water in the natural water cycle.</p>				
	<p><b>Lesson 4 – The urban water cycle</b></p> <p>1. Discuss the concept of natural and built features of the environment and provide examples.</p> <p>2. Discuss how and why people need to modify the natural water cycle by building structures to provide a reliable water supply. Information is found under '<i>The urban water cycle</i>' on the Sydney Water education website.</p>				

	<p>3. Use Sydney Water's website showing the urban water cycle diagram connected to a smartboard to show stages in the urban water cycle</p> <p>4. Complete the <i>Urban water cycle</i> activity sheet to test students understanding of the components of the urban water cycle.</p>				
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