Teacher lesson plan

Stage 3 – The natural and urban water cycle

KLAs : HSIE, English, Science and Technology	**Class :**	**Length**:

Outcomes and indicators

Human Society and its Environment

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.

English

EN3-1A communicates effectively for a variety of audiences and purposes using increasingly challenging topics, ideas, issues and language forms and features.

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.

Science and Technology

ST3-14BE describes systems in built environments and how social and environmental factors influence their design.

Australian Curriculum

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

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

Cross-curriculum priorities Sustainability

General capabilities

Students will learn about:

- how the natural water cycle works including the stages of the natural water cycle
- the need to modify and manage the natural water cycle to meet human needs
- the components of the managed water cycle.

Students will learn to:

- identify stages of the natural and managed water cycle.

Resources provided

- Interactive Whiteboard (IWB) Resource – *Stage 3 The natural and urban water cycle*
- M*aking a water cycle model* fact sheet
- *The urban water cycle* activity sheet
- *The water cycle* activity sheet

Sydney Water webpages to support this lesson plan

- The water cycle
- The urban water cycle

Resources required

- IWB with internet connection or computer and data projector
- Making a water cycle model equipment (See *Making a water cycle model* fact sheet)

Teaching and learning		Assessment	Evaluation	Timing	Resources
This lesson sequence in 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.					
Register	**Lesson 1 - The natural water cycle** 1. Use the *The water cycle* (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 (**precipitation**) and is **evaporated** 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 (**transpiration**). 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 (**condensation**). Eventually it falls back to earth and the journey begins again. 2. Students fill in the stages of the water cycle on *The water cycle* (on IWB resource) Discuss each stage of the water cycle. Students write the definitions for each				

	stage next to the term from the definition boxes. Students complete their own activity sheet. 3. Test students' understanding of the water cycle by playing the water cycle game at http://apps.southeastwater.com.au/games/education_kidsroom_wcactivity.asp (also available through the '*Water cycle in nature'* 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.				
	Lesson 2 – The water cycle adventure play 1. View the '*Water cycle adventure'* play found at www.enchantedlearning.com/rt/weather/watercycle 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. After reading the play, students could illustrate the journey of the water drops through the water cycle.				
	Lesson 3 – A water cycle model Use the *Making a water cycle model* fact sheet to make a mini water cycle and demonstrate the natural processes involved in moving water in the natural water cycle.				
	Lesson 4 – The urban water cycle 1. Discuss the concept of natural and built features of the environment and provide examples. 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 '*The urban water cycle'* on the Sydney Water education website.				

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