

Summary	Duration
<p>This excursion addresses outcomes from the (NESA) Geography Syllabus.</p> <p>This unique and highly engaging fieldwork program allows students to first hand investigate the value of water, local water resources, and to evaluate on-site water management strategies associated with the development of the Penrith Lakes Scheme. As a part of the day students visit 'Waterside' a housing development site based on 'Water Sensitive Urban Design' principles, and two newly council constructed native wetlands / stormwater management projects.</p> <p>Students are guaranteed to be involved in a number of engaging and 'hands on' experiences during the course of the day through which students will further develop their geography inquiry, field work and group work skills.</p>	<p>4 hour on-site excursion to Penrith Lakes Environmental Education Centre.</p> <p><i>Arrival time</i> - 10:00am <i>Departure time</i> – 2:00pm</p> <p>Arrival and departure times are guides only. Distance and bus schedules may require modifications to the timetable.</p>

About Penrith Lakes	Learning across the curriculum
<p>Penrith Lakes Environmental Education Centre is located on Old Castlereagh road inside the Sydney International Regatta Centre at Penrith (Entry via Gate A). This great location allows us to provide studies of land and water management at Penrith Lakes along with local heritage sites and the environmental issues associated with the Nepean River and Blue Mountains.</p>	<p><i>Cross-curriculum priorities enable students to develop understanding about and address the contemporary issues they face.</i></p> <p>Sustainability is concerned with the ongoing capacity of the Earth to maintain all life. It provides authentic contexts for exploring, investigating and understanding systems in the natural and made environments. Relationships, cycles and cause and effect are explored, and students develop observation and analytical skills to examine these relationships in the world around them to design solutions to identified sustainability problems.</p>

Key Inquiry questions
<ul style="list-style-type: none"> • How do natural and human processes influence the distribution and availability of water as a resource? • What effect does the uneven distribution of water resources have on people, places and environments? • What approaches can be used to sustainably manage water resources and reduce water scarcity?

Overview
<p>Students:</p> <ul style="list-style-type: none"> • examine water as a resource and the factors influencing water flows and availability of water resources in different places • investigate the nature of water scarcity and assess ways of overcoming it

- discuss variations in people’s perceptions about the value of water and the need for sustainable water management’

Outcomes

A student:

- locates and describes the diverse features and characteristics of a range of places and environments **GE4-1**
- describes processes and influences that form and transform places and environments **GE4-2**
- explains how interactions and connections between people, places and environments result in change **GE4-3**
- discusses management of places and environments for their sustainability **GE4-5**
- acquires and processes geographical information by selecting and using geographical tools for inquiry **GE4-7**

Teaching and learning activities

Resources

Activity 1 – Introduction to Penrith Lakes Scheme

- Introduction to Penrith Lakes Scheme from the back of the Castlereagh Community Hall located on top of a hill at the Northern end of the Scheme.
- Scheme’s map location, history and design principles are discussed, including flood mitigation strategy.

Provided by PLEEC:

- Student worksheets (soft copy)
- All of the filed work equipment

Provided by visiting school:

- Student worksheets (hard copy)
- Student hats
- Sunscreen
- First aid kit and student medications

Activity 2 – Penrith Council’s ‘BioRetention’ Basin Project

- The flow of stormwater is introduced
- The purpose and design principles of the basin discussed and a ‘hands on’ water filtration activity is conducted by the students to simulate the purpose of the basin.

Provided by PLEEC:

- Filter paper, beakers and funnels for all students

Activity 3 – Penrith Council’s ‘Mountain View Reserve Wetlands’ Project

- A walk around the wetland and its purpose in stormwater water management is discussed.

N/A

Activity 4 – Waterside Development

- A visit to the ‘Waterside’ housing development to learn about ‘Water Sensitive Urban Design’ principles.
- The first water testing activity is conducted by the students here.

Provided by PLEEC:

- Water testing equipment for all students

Activity 5 – Final Detention Basin

- Here students will observe the various water management practices employed to clean the stormwater to a high quality / primary contact recreational use. Methods used include; floating treatment wetlands, perched wetlands, silk curtain, trash boom, air pumps

Provided by PLEEC:

- Water testing equipment for all students

Teaching and learning activities	Resources
<p>and sluice gate.</p> <ul style="list-style-type: none">▪ A second water testing activity is conducted by the students here.▪ Wrap Up Activity – Evaluation of the water management methods investigated.	