

Summary	Duration
<p>This excursion addresses outcomes from the NSW Preliminary Geography Stage 6 Syllabus.</p> <p><i>Focus</i> – Biophysical Interactions</p> <p>This unique and engaging case study allows students to learn about how stormwater is being managed to ensure healthy ecosystems and recreational quality water at Penrith Lakes. Students learn about various stormwater management methods used at Penrith Lakes Scheme and first hand collect data using a variety of water testing equipment to understand the overall importance of these to the maintenance of high quality water. As a part of the day students also visit a new development site based on ‘Water Sensitive Urban Design’ principles where stormwater treatment is embedded within the facilities and it is treated as a valuable resource. Hands on experiences during the course of the day will help students further develop their geography knowledge and understanding, field work and group work skills.</p>	<p>4 hour (approximate) 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>

Outcomes

Geography - Stage 6

1. Biophysical Interactions

Students learn about:

a case study investigating ONE issue in ONE of the biophysical components, to illustrate how an understanding of biophysical processes contributes to sustainable management in the environment. The investigation will include:

- identification and explanation of the key biophysical processes which relate to the issue
- scale of operation
- interactions with other components of the biophysical environment
- the sensitivity of the biophysical environment to change
- the importance of understanding key biophysical processes for effective management
- the issue should be selected from ONE of the following components:
 - in the hydrosphere, one issue – URBAN RUN-OFF

Teaching and learning activities

Activity 1 – Introduction to Penrith Lakes Scheme and water management methods

- Introduction to Penrith Lakes Scheme and water management methods used to clean the stormwater to a high quality / primary contact that can be then used for a variety of recreational purposes eg; triathlons.

Resources

Provided by PLEEC:

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

Provided by visiting school:

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

Teaching and learning activities	Resources
<p>Activity 2 – Waterside Development</p> <ul style="list-style-type: none"> ▪ At this stop, students will go to ‘WaterSide’ development and learn about ‘Water Sensitive Urban Design’. Here they will learn about the basic principles of it and how they are implemented within this residential development to reuse stormwater as a resource, reduce runoff and maintain high quality water within the development’s lakes scheme that feeds into the greater Penrith Lakes. 	
<p>Activity 3 – Final detention basin and main regatta lake walk</p> <ul style="list-style-type: none"> ▪ Here students will observe the various water management methods employed to clean the stormwater to a high quality / primary contact quality. Methods used include: floating treatment wetlands perched wetlands, silk curtain, trash booms, air pumps and sluice gates. ▪ Water testing - Students will first hand collect water quality data using a variety of scientific fieldwork equipment such as turbidity tubes to establish which lake has cleaner water. 	
<p>Activity 4 – Scope Creek Water Treatment Works</p> <ul style="list-style-type: none"> ▪ Here students will learn about how various stormwater management methods are used to used to clean storm water before it enters Penrith Lakes Scheme. 	