

Human Impacts – Water management (Full Day Program) | Stage 6 | Earth and Environmental Science

Students work scientifically and achieve fieldwork outcomes.

Note: This excursion can also be used as a model for a **DEPTH STUDY (5 hours)**.

Summary	Duration
<p>This excursion addresses outcomes from the NESA Stage 6 Earth and Environmental Science.</p> <p><i>Focus – ‘Human Impacts’- Water Management</i></p> <p>This unique and highly engaging program allows students to perform a first-hand investigation of the movement of stormwater from the urban and industrial catchment to recreational water use at Penrith Lakes. Students perform primary data testing that gives an insight into the success of water management practices at Penrith Lakes. Secondary data on the flow of water throughout the catchment is also described, with adequate opportunity for further research. Ways in which human activity can indirectly influence the availability and quality of water are also highlighted.</p> <p>Students are guaranteed to be involved in a number of engaging and hands on experiences during the course of the day. Through these, students will further develop their knowledge and understanding, fieldwork and group work skills.</p>	<p>Approximately 4 hour on-site and off-site excursion to Penrith Lakes Environmental Education Centre.</p> <p><i>Arrival time - 10:00am</i> <i>Departure time – 2:00pm</i></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. 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, Yarramundi Lagoon and the 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 question

- How can water be managed for use by humans and ecosystems?

Outcomes for students

A student:

- evaluates questions and hypotheses for scientific investigation EES11/12-1
- evaluates investigations in order to obtain primary and secondary data and information EES11/12-2
- conducts investigations to collect valid and reliable primary and secondary data and information EES11/12-3
- describes human impact on Penrith Lakes in relation to hydrological processes, geological processes and biological changes EES11-11

Students:

- represent the distribution of the Earth's water, including the amount available to plant and animals.
- investigate the treatment and potential reuse of stormwater
- describe ways in which human activity can influence the availability and quality of water indirectly.

Teaching and learning activities

- Activity 1: Overview of Penrith Lakes, emphasising stormwater flows.
- Activity 2: Instruction on use of abiotic instruments.
- Activity 3: Tour of Penrith lakes following stormwater flows.
- Activity 4: Primary data abiotic collection
- Activity 5: Primary data biotic collection
- Activity 6: Secondary data on water management practices and primary observation.
- Activity 7: Wrap up and conclusions from first hand investigations and secondary data. Looking at key inquiry questions.

Resources

Provided by PLEEC:

- Water testing equipment

Provided by visiting school:

- Clipboards
- Student hats
- Sunscreen
- First aid kit and student medications