

Year 5

Lesson 1

Where water comes from

www.logan.qld.gov.au

Learning objectives

Students will be able to determine:

- how water moves through the water cycle
- the terminology associated with the water cycle

Learning outcomes

Subject	Strand & content descriptors
Science	Science understanding: <ul style="list-style-type: none">• Solids, liquids and gases have different observable properties and behave in different ways. (ACSSU077) Science as a human endeavour <ul style="list-style-type: none">• Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena. (ACSHE081) Science inquiry skills <ul style="list-style-type: none">• With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be. (ACSIS231)
Geography	Geographical knowledge & understanding <ul style="list-style-type: none">• Environment: Human activities can change environments and places over time.
English	Literacy <ul style="list-style-type: none">• Plan, rehearse and deliver presentations for defined audience and purposes incorporating accurate and sequenced content and multimodal elements. (ACELY1700)

Important questions

- Why is water important?
- How does water move through the environment?
- What is evaporation, transpiration, condensation, precipitation and infiltration?

Discuss: Do we drink the water we swim in at the beach?

Background information – the water cycle

The water on earth remains constant. However, it is continually recycled through the hydrological or water cycle process. As water travels through the cycle it changes taste, shape and form. Three processes drive the water cycle: evaporation, condensation and precipitation. Transpiration is also important.

- **Evaporation:** when water is heated it changes from liquid to gas (water vapour) – the sun heating the ocean produces most of the water vapour in the atmosphere.



- **Condensation:** as water vapour rises, it cools and changes into tiny droplets of water seen as clouds, fog or mist.
- **Precipitation:** rain, hail or snow – as water vapour continues to rise, the water drops join and become heavier and eventually fall out of the air.
- **Transpiration:** water emitted by plants through pores in the leaves is evaporated and released into the atmosphere as water vapour.
- **Runoff:** water that flows directly into rivers, streams and dams.
- **Infiltration:** water that soaks into the soil to be used by plants or stored as groundwater.
- **Groundwater:** rain that has drained underground and collected in impermeable layers.

Linking locally

Elements of the water cycle can be easily observed in your local district:

- Rainfall evaporating from a footpath.
- Clouds of water vapour moving from the ocean toward the hinterland.

The city of Logan is dominated by the catchment and tributaries of the Logan and Albert rivers. Covering over 4,000 square kilometres, the catchments drain to Southern Moreton Bay.

Please review 'The urban watercycle' poster included in the appendices of this kit.

Lesson plan – the water cycle

Initiate a discussion to establish student knowledge of water and how it is used.

Reinforce or introduce key elements of the water cycle. (**Activity sheet 1 'The water cycle'**) Discuss how water moves through the environment and how it changes form, explaining the processes of evaporation, condensation, precipitation, infiltration and transpiration.

In pairs or small groups ask students to develop simple experiments that could model a process from the water cycle; students should identify tools required and a suitable techniques for collecting and recording data.

Students should be encouraged to make predictions regarding the experiment; compare results with other groups of students and determine if the test was fair. The results of the experiments can be presented utilising multimodal texts including diagrams and appropriate scientific terminology.



www.logan.qld.gov.au

Note: Common experiments may include evaporation tests undertaken using a variety of materials and vessels situated in different locations; transpiration – bagging leaves on a variety of plants and recording water loss. Investigating the ways solids, liquids and gases perform under different situations such as heating or cooling.

Additional activities

Geography: Utilising knowledge of natural water cycle processes students investigate the environmental impacts of human activity, such as wetland reclamation; river engineering and urban development, and influence on processes associated with the natural water cycle.

English: Develop and deliver presentations on their area of investigation, incorporating graphics, sounds and visual elements.

Resource requirements

- Activity sheet 1 'The water cycle'
- Poster - "Our urban watercycle" (see appendices or online resources)