Lesson 2  Water — Discovering the water cycle

Lesson concepts

Some of Earth’s resources are renewable, but others are non-renewable

Water cycles through the environment

Experiments are collaboratively conducted ensuring safety guidelines are followed

Representations are constructed to represent relationships

Ideas and findings are communicated using scientific language and representations

Example learning sequence

Review water cycle knowledge

• Review and discuss water cycle representations.

Define components of the water cycle

• View a model or representation of the water cycle.
• Define terms from the water cycle.
• Perform phase change experiments and relate these to the water cycle.
• Add information to water cycle representation.

Explore renewable and non-renewable resources (Alternative Energy) ½ group

• Identify that water is a renewable resource.
• List other renewable resources.
• Define renewable resources.
• Identify that coal is a non-renewable resource.
• List other non-renewable resources.
• Define non-renewable resources.

Explore Water phases through experiment ½ group

• Work through experiments on phases.
• Make connections between the experiment and parts of the water cycle

Example resources

Materials and equipment list
Sheet — Phase change experiments

Helpful information
Website — The Water Cycle (EPA — United States Environmental Protection Agency)
http://www.epa.gov/safewater/kids/flash/flash_watercycle.html

Sheet — Phases in the water cycle
Learning object — Making Water Drinkable: Water cycle jigsaw © State of Victoria (Department of Education & Training), 2000
Website — Water: Learn it for life! (The State of Queensland — Department of Environment and Resource Management)

categorise renewable and non-renewable resources?

Ideas for monitoring
Monitor students’ ability to:
identify phase changes in the water cycle
categorise resources as renewable or non-renewable.

Learning alerts
Be aware of:
students stating that water in an open container disappears or is absorbed by the container
students identifying water as being used up and unable to be re-used.

Suggested next steps for learning
Review phase changes in the water cycle.
Review definitions and examples of renewable and non-renewable resources.

Ideas for differentiation
Support
Use animated or pictorial representations of the water cycle.

Extension
Investigate the role of aquifers in the water cycle.

Safety
Teachers need to:
• identify safety issues relevant to using water during the practical activities and conduct risk assessments
• refer to Workplace health and safety (WHS) policy pertaining to schools.

Australian Curriculum references for this lesson

Science Understanding
Earth and space sciences
Some of Earth’s resources are renewable, but others are non-renewable
Water is an important resource that cycles through the environment

Science Inquiry Skills
Processing and analysing data and information
Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed
Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships, including using digital technologies as appropriate

Communicating
Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate

View a mapping of the Science Content descriptions for this unit
View a mapping of the Science Content descriptions for this year level

General capabilities

Literacy
• Comprehending texts through listening, viewing and reading
• Composing texts through speaking, writing and creating
• Text knowledge
• Word knowledge
• Visual knowledge

ICT capability
Queensland Student ICT Expectations:
• Operating with ICT

Student ICT Expectations — by the end of Year 7
[accessed on 31 July 2012]
Australian Curriculum ICT learning continuum:
• Managing and operating ICT

Critical and creative thinking
• Inquiring — identifying, exploring and clarifying information
• Generating innovative ideas and possibilities
• Reflecting on thinking, actions and processes

Personal and social competence
• Social management

View a mapping of the General capabilities learning continua for this unit