





Stage 2/3 - Overview

In this lesson find out how, and what part, snow plays within the Snowy Scheme in generating clean, renewable energy. Use knowledge to pose questions, gather data, solve problems, navigate a website, investigate ideas and reflect on findings. Opportunity to extend this topic with other activities across English, digital technology and research skills through the extension suggestions.

Learning area	Content descriptions
Science - stage 2 ACSSU046	Science understanding Chemical sciences A change of state between solid and liquid can be caused by adding or removing heat
Science - stage 3 ACSSU077	Science understanding Chemical sciences Solids, liquids and gases have different observable properties and behave in different ways
ACSSU095	Changes to materials can be reversible or irreversible
ACSHE100	Science as a human endeavour Use and influence of science Scientific knowledge is used to solve problems and inform personal and community decisions
ACSSU097	Science understanding Physical science Electrical energy can be transformed in electrical circuits and can be generated from a range of sources
Maths - stage 2 ACMMG066	Measurement and geometry Location and transformation Identify symmetry in the environment
ACMMG091	Create symmetrical patterns, pictures and shapes with and without digital technologies

 ACMMG088	Shape Compare and describe two-dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies
 Maths - stage 2 ACMMG114	Measurement and geometry Location and transformation Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries
 ACMMG115	Apply the enlargement transformation to familiar two-dimensional shapes and explore the properties of the resulting image compared with the original
 Digital technologies - stage 2 ACTDIP011	Digital technologies processes and production skills Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input

The subject of sustainability is a foundation for all learning areas and key concepts - [sustainability](#) - [cross-curriculum priority \(ACARA\)](#)

Resources

Activity sheet - Snowflakes

Please download this document before printing - supply one per student

Website - Snowy Hydro snowy snow depths - [click to view snow depth](#)

Hands-on activity - Make your own snow

Hands-on activities - **Precipitation experiment** and **Observation & conclusion sheet**

Activity sheet - story board template

Lesson ideas and activities

Introduction

Introduce the concept of snow. Ask the class if anyone has seen what snow looks like, or has experienced it in real life. Show photos of snow-covered landscape and snow flakes to initiate class discussion.

Lesson

Hand out the snowflake colouring in fact/activity sheet - *one per student*

- Stellar Dendrites - research the internet for photos of snowflakes and observe the individuality of them and the tree-like features
- Fun Fact 1 - locate the Australian Alps on a map and investigate temperatures, terrain and snow sports

- Fun fact 2, 3, 4 & 5 - research pictures of ice crystals to identify individuality and to assist with understanding of snowflake formation - particularly make note of six sides and symmetry in the environment
- Fun fact 6 - Snow falling is part of the water cycle and is called precipitation. This is when tiny water droplets come together to form clouds and grow bigger and bigger. When the clouds get too heavy, the snow, hail or rain falls to the ground
- To demonstrate precipitation - hands-on activity - water cycle precipitation experiment
- The snowmelt is a very important part of the water cycle. Snowy Hydro later uses the water from melted snow to generate renewable electricity observation & conclusion sheet
- Use the storyboard work sheet for students to draw the journey of water from melted snow that is later used to generate electricity. See storyboard template under resources
- Snow trivia - to gain a better understanding go to the Snowy Hydro website, click on 'live data' and select, view 'snow depth'. This is an interactive graph. Have students enter the year they were born to look at data collected, or any other year of interest
- Colour in the snowflake on the sheet. Demonstrate the concept, lines of symmetry, by folding the page in half. When a shape can be folded in half so that the two halves match, it is called a symmetrical shape
- Hands-on activity - Make your own snow

Extension ideas

- **Activity sheet - water cycle precipitation experiment**

Video the students doing and speaking about their experiment. Remember to record results - observation & conclusion sheet. Other subject areas to investigate are - weather and seasons

Maths lines of symmetry

- Explore reflections using a mirror as another way to introduce the idea of symmetry

Art activity - cut out a six-sided paper snowflake

Make a collage, collaborative (class) or individual piece - using the cut out paper snowflakes, paper doilies, or newspaper - get creative

- Make a symmetrical print - fold a piece of paper in half, open it back up, blob paint on one side of the fold, refold the paper, squash down and carefully open it back up!

Digital technologies

- Enlarge the snowflake to A3 and print, compare the two images and sizes with the class

Further associated lesson plans and activities

- The Snowy Scheme water cycle module lesson plan and activities
- Water lesson plan and activities