

TEACHER RESOURCE

L I F E A R T M I N D

Science

Social Sciences

Technology

Weather

Permanent Programme

Year 2 – Year 10

Participate in practical activities to investigate different aspects of weather and the water cycle. This includes looking at clouds and rain, wind, and air pressure, and how meteorologists measure factors that influence the weather we experience every day.

Supported by the Ministry of Education

ADDRESS 326 MAIN STREET, PALMERSTON NORTH, 4410
POSTAL PRIVATE BAG 11055, PALMERSTON NORTH, 4442
WEBSITE www.temanawa.co.nz

PHONE 06 355 5000 or 0800 426 873
FAX 06 358 3552
E-MAIL education@temanawa.co.nz



Te Manawa
MUSEUM GALLERY SCIENCE CENTRE
L I F E A R T M I N D

INTRODUCTION

Weather is one of the main influences on daily living, from the clothes we wear to the food we eat to the houses we live in. In New Zealand it is changeable, varying within the day as well as from day to day, and we are constantly adjusting to its swings. Manawatū weather is known for the steady westerly winds which are used now to generate electricity and for the cloudy days that keep us cool. Here we are sheltered by the Taranaki Bight from the weather extremes that neighbouring areas experience so that we don't get either the worst or best weather.

ABOUT THE EDUCATION PROGRAMME

This programme is suitable for **Year 2 – Year 10** students and takes **1 ½ hours**. The programme may be shortened for younger students.

Students participate in practical activities to investigate different aspects of weather and the water cycle. This includes looking at clouds and rain, wind, and air pressure, and how meteorologists measure factors that influence the weather we experience every day.

Special Requirements:

Some prior knowledge of students' level of understanding within this subject area would be appreciated, and can be provided by filling out our pre-visit questionnaire or by contacting a Science Educator via email:

Barbara Arnold barbara.arnold@temanawa.co.nz

This will mean that your students' specific learning needs will be better catered for.

CURRICULUM LINKS

Science Level 1 – 5

Nature of Science
Planet Earth and Beyond
Living World

Social Science Level 4

Technology Level 3 and 4

Nature of Technology

Key Competencies

Using language, symbols and texts

Students will learn and become familiar with the specialist language (including symbols and text) associated with weather.

Thinking

Students will use creative, critical, metacognitive, and reflective processes to make sense of and question information, experiences and ideas about weather.

LEARNING OUTCOMES

We are learning to:

- Examine major elements that together contribute to the weather we experience.
- Understand how wind and air pressure can be measured.
- Appreciate the considerable influence weather has on our daily lives.

We will know we have achieved this when:

- We can conduct experiments that demonstrate some of the properties of water, air, clouds and rain.
- We can make working models of a barometer and an anemometer.
- We can list three or more adjustments we have to make to our daily living as a result of weather change.

UNIT STANDARDS

Earth Science Level 1

18981 Demonstrate basic knowledge of weather

PRE AND POST VISIT ACTIVITIES

- **Going Up**
Pencil
Sheet of thick paper
Scissors
30cm of string
Lamp/ heater
Draw a large circle on the paper, and then make it into a spiral. Decorate it to look like a snake and cut it out. Thread the string through the head of the snake and hang it over a warm heater. The warm air moving upwards will make the snake turn.
(From: *Science Through Art – Air* by Hilary Devonshire)
- **Make a Snowflake**
Paper squares – white or silver
Scissors

Fold the paper into quarters and then cut out a snowflake shape. These can be displayed on black paper or by taping to a window.

- **Make a rain gauge** and measure rainfall in your area for a few weeks. Compare your results with those from Met Service www.metservice.co.nz and discuss why they might be different.
- A **wind vane** is another instrument that is simple to make and the information can be displayed in a wind rose. To make a wind rose, draw a compass on a sheet of paper to show N, E, W and S and the points in between. Then draw a set of boxes from each point radiating out. Plot the wind for each day by colouring in one of the boxes for the correct direction. After a week or more the prevailing wind direction will start to show on your wind rose as this will be the one with the most boxes coloured in.
- **Wind speed** can be measured using a length of cassette tape and timing how long it takes to move a known distance. Speed is calculated by dividing distance by time (speed = distance/time).
- **Investigate the effect of sun on soils** of different types by measuring the temperature change as the soil heats up over time. Compare this with ice as a simulation of global warming.

RESOURCES

BOOKS:

Check out the Palmerston North City Library catalogue online at www.citylibrary.pncc.govt.nz.

VIDEOS AND DVDS:

Raging Planet: Tornado/Hurricane
Wonders of Weather

WEBSITES:

www.niwa.co.nz has information on long term weather patterns and also on climate change and how this affects NZ.

www.metservice.co.nz gives daily (updated through the day) and longer term weather readings for each region. The tables of 30 year data can be used for longer comparisons.

NATIONAL LIBRARY SCHOOLS' SERVICE

For books, videos and CD ROMs:

Website: <http://www.natlib.govt.nz>

Telephone: 0800 171717 Fax: 0800 907000

Palmerston North

Monday - Friday 8.30am - 5.00pm

Thursday 8.30am - 6.00pm (during term)

Online request form: <http://www.natlib.govt.nz/cis-online-request>