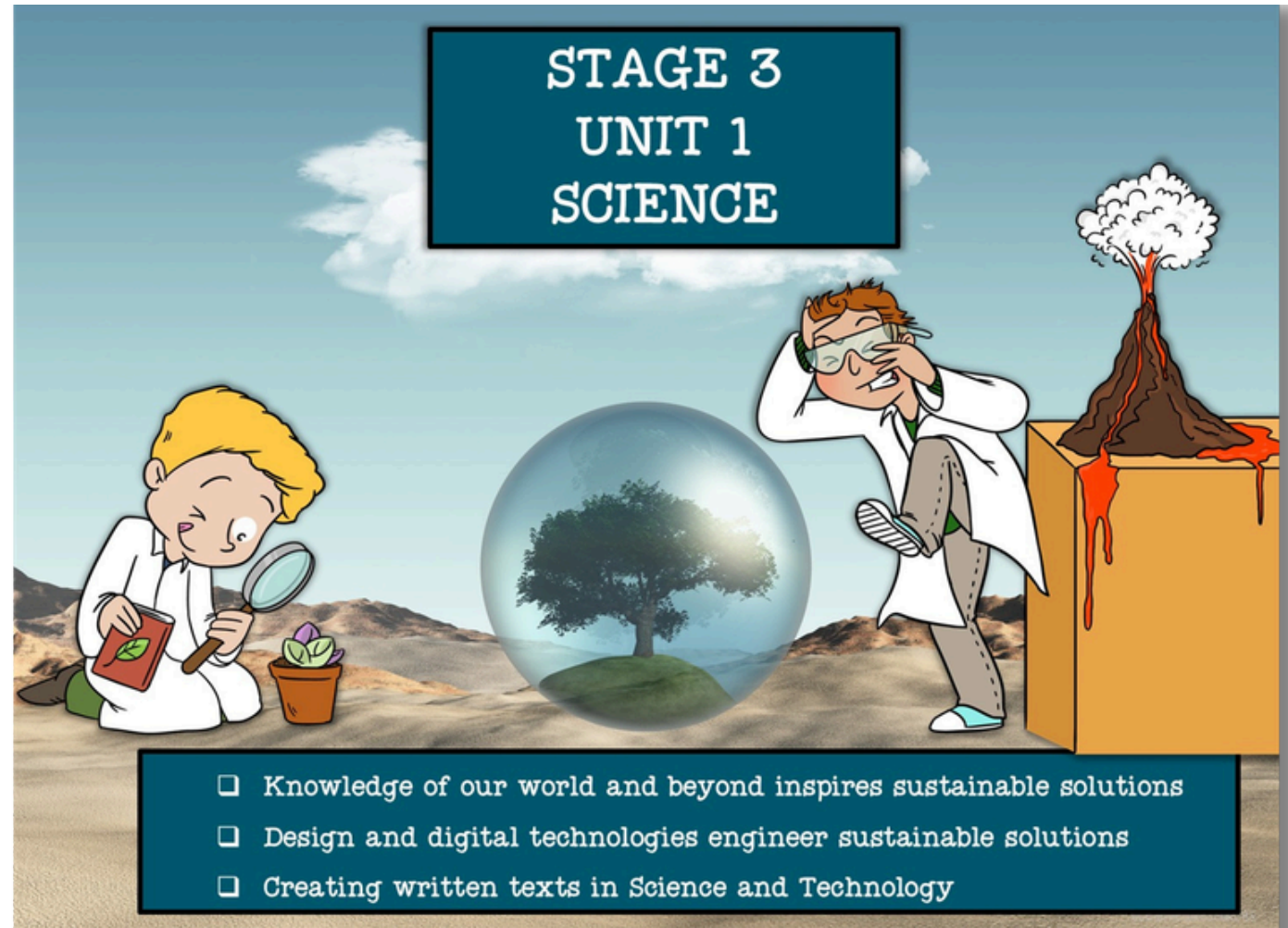


STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES

What is included?

- PowerPoint with over 530 slides
- Student workbook and assessment tasks
- PDF for easy printing
- Teaching notes under each slide



STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES

What is included?

- Quick links to units.
- Sections for each lesson included in the PowerPoint presentation.
- Self Assessment tasks.
- Anchor Charts

Anchor Chart

Weather	Weather is the state of the atmosphere at a particular place and time, with respect to wind, precipitation, temperature, cloud cover, humidity and air pressure.
Atmosphere	Atmosphere is the layer of air or other gases around a planet.
Temperature	Temperature is the degree of hotness or coldness. In Australia, temperature is measured in degrees Celsius .
Wind Speed	Wind speed is the rate at which air moves horizontally across Earth's surface. Wind speed is measured in kilometers per hour .
Precipitation	Precipitation includes all forms in which water falls from the sky to the surface and open water bodies as rain, sleet, snow, or hail.

Name:

Date:

Self Assessment

I can describe the difference between weather and climate.	😊 😐 😞
I can explain the terms 'precipitation', 'wind', 'humidity' and 'air pressure'.	😊 😐 😞
I can explain the importance of collecting data about the weather.	😊 😐 😞



LESSON 14.17

HUMAN ACTIVITIES - transport

Respond to each of the following scenarios as we read them, with ideas for how the transport problem can be solved with less impact on climate. Share your thinking with the class.

- ☐ Students need to travel to school which is 8 blocks from their home.
- ☐ A man needs to go to work in the next town.
- ☐ A woman needs to travel across the state for a work event.
- ☐ A busy family has many appointments across the large town they live in.
- ☐ A teenager needs to get to work in the next suburb.



STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES

Lesson 12: 4/8

Human Activities - Transport

Most methods of transport are powered by fossil fuels such as petrol or diesel.

Petrol and diesel fuels both come from oil which is a fossil fuel.



- ❑ In Australia, 22% of all greenhouse gas emissions are from transport.
- ❑ This is mostly due to the burning of fossil fuels in cars, trucks, ships and planes.

Renewable means a resource that cannot be exhausted and that can be restored in a human lifetime.

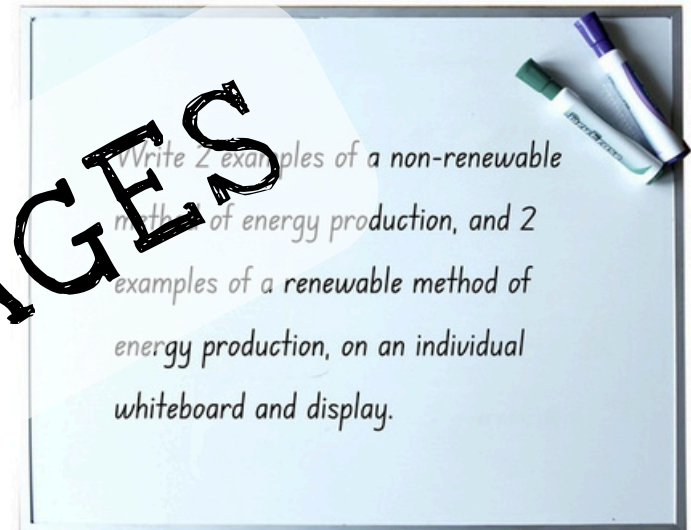
Non-renewable means a resource that can be exhausted and that cannot be

RENEWABLE

NON-RENEWABLE

Lesson 11: 25

Human Activities-Energy



Lesson 11: 8/9

Human Activities-Energy



- ❑ Turbines are most commonly driven by steam.
- ❑ Steam is produced by boiling water.
- ❑ Water can be heated by burning fossil fuels such as coal, natural gas or oil which is a type of petroleum.
- ❑ Water can also be heated by burning wood or agricultural waste which is called biomass.
- ❑ The steam is then used to turn the turbines to generate electricity.

How you can use it:

All lessons are planned to be 60 minutes long.

There are 16 units plus 4 additional extension units.

20 hours of teaching time

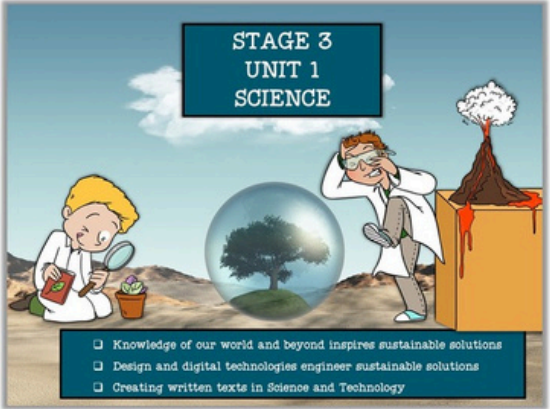
This unit aligns with the new NSW syllabus documents.
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Science Units

STAGE 3 SCIENCE UNIT 1 OUR WORLD

Oceanview Resources

- ❑ PowerPoint with over 530+ slides
- ❑ Student workbook and assessment tasks
- ❑ PDF for easy printing
- ❑ Teaching notes under each slide
- ❑ Google Slides™ version included

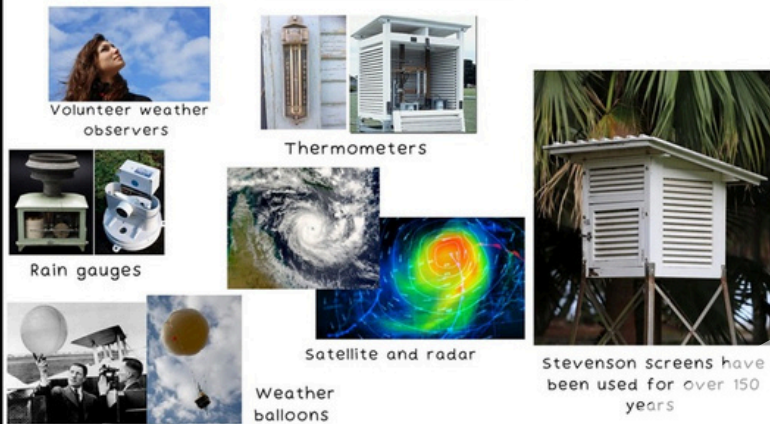


STAGE 3
UNIT 1
SCIENCE

- ❑ Knowledge of our world and beyond inspires sustainable solutions
- ❑ Design and digital technologies engineer sustainable solutions
- ❑ Creating written texts in Science and Technology

- ❑ natural events and human activities on the atmosphere and climate.
- ❑ Aligned to the NSW Sample units for Science 2025.

STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES



Lesson 1: 26/27

Weather Versus Climate

Measuring air pressure is important as it is one of the main factors influencing weather.

Rising pressure indicates improving weather or fair conditions.

Falling pressure suggests increasing clouds or precipitation.

Rapidly falling pressure indicates imminent storms or significant weather changes.

Anchor Chart

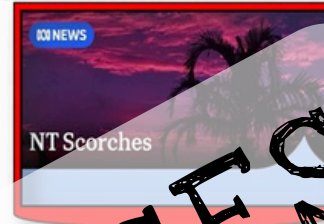
Weather	Weather is the state of the atmosphere at a particular place and time, with respect to wind, precipitation, temperature, cloud cover, humidity and air pressure.
Atmosphere	Atmosphere is the layer of air or other gases around a planet.
Temperature	Temperature is the degree of hotness or coldness. In Australia, temperature is measured in degrees Celsius .
Wind Speed	Wind speed is the rate at which air moves horizontally across the Earth's surface. Wind speed is measured in kilometres per hour .
Precipitation	Precipitation includes all forms in which water falls on the land surface and open water bodies as rain, sleet, snow, hail, or drizzle.
Meteorologist	A meteorologist is a scientist that deals with the atmosphere and its phenomena and especially with weather and weather forecasting.

Anchor Chart

Meteorologist	A meteorologist is a scientist that deals with the atmosphere and its phenomena and especially with weather and weather forecasting.
Air Pressure	Air pressure is the weight of the air in the atmosphere. Air pressure is measured using a barometer. Air pressure is also called atmospheric pressure. Air pressure is measured in millibars .

Lesson 1: 5/6

Weather Versus Climate



This video is from Central Australia in the Northern Territory which is why the news reporter refers to the people in the video as 'Territorians'.

The video also refers to the monsoon.

Monsoon season is a time of year where there is a lot of rain, often called the **wet season**.

TEMPERATURE

Temperature is the degree of hotness or coldness. In Australia, temperature is measured in **degrees Celsius**.

Lesson 1: 28/31

Weather Versus Climate



Fill in the missing answers together.

The degree of hotness or coldness is called ...?

The weight of the air on Earth is called ...?



HUMIDITY

What is humidity?

What does it feel like to be in a place with high humidity?

Share your ideas with the class.

Relative humidity is the amount of moisture in the air. Humidity is measured as a **percentage**.

STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES

Lesson 1: 4/3/3

Weather Versus Climate



Thumbs up or thumbs down?

Thumbs up for **yes**, thumbs down for **no**



1. Wind speed is the rate that air moves horizontally across the surface of the Earth.
2. Humidity is measured in millimetres.
3. Relative humidity is how much moisture is in the air.

Open the [Bureau of Meteorology](#) home page. Scroll down and select the **National Weather Forecast** video and watch the forecast for tomorrow. Listen for some of the terms we have been discussing.



Lesson 1: 4/4/3

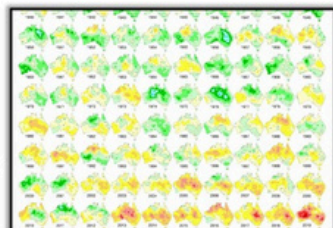
Weather Versus Climate

Let's discuss what each colour represents. This data is collected over time and shows long-term patterns in rainfall.

1. What do you notice about the change in rainfall from year to year?
2. Which years show the lowest rainfall on record?
3. Which years show the highest rainfall on record?



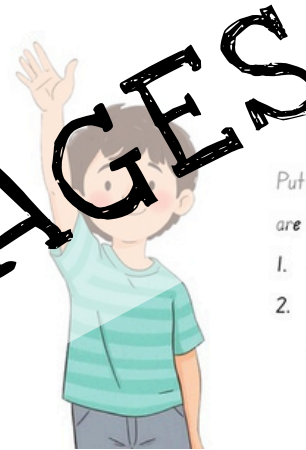
Repeat this activity using the temperature map.



Lesson 1: 4/4/6

Weather Versus Climate

What do you notice about the long-term trends in temperature in Australia since the 1970s and 1980s?



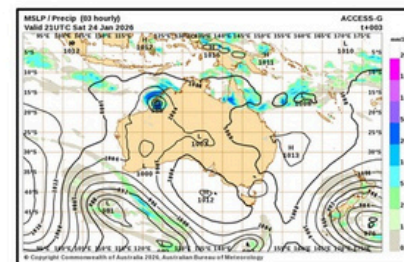
Put your hand up if you think the following statements are true.

1. Climate and weather are the same thing.
2. Weather describes short term events. Climate is determined by long term data.

Lesson 2: 3/4

Climate Over Time

1. What new information did you learn from this video, or what did you find interesting?
2. What types of weather data was collected to inform these maps?



Open the Bureau of Meteorology [Interactive Weather and Wave Forecast Maps](#).

STAGE 3 UNIT 1 - NATURAL EVENTS AND HUMAN ACTIVITIES

What is included?

- Video links
- Created for use with the IWB.
- Suggested teaching prep for each lesson.
- Outcomes and indicators included for each lesson.

LESSON 13: 13/20 **Weather Data Collection**

Duration: 40 minutes

Weather data collection

Record the readings from your weather data collection devices and log this information in your group's recording template, [Resource 13 - recording template](#).

Take photos and record your observations about general weather you notice at that time such as clouds and cloud cover, wind or rainfall.



LESSON 14: 14/20 **Meteorological Measurements - Teaching Notes**

- ☐ Discuss each of the requirements for placing the weather data collection devices.
- ☐ Students discuss where the best locations might be in the school for each device.
- ☐ Groups set up their devices and take an initial reading.



LESSON 15: 15/20 **Digital Systems**



Discuss the path the data travels from the satellite, radar or weather balloon to ACCESS, then to an API, and then to a website or app. Collect the main points on the board for use in a writing task. **For example:** first the data is collected by the weather balloon, second the weather balloon sends the information to ACCESS, third ACCESS organises the data to create a weather forecast, lastly this data goes to an API where it is organised in a way that it can be used in a weather app.

Teaching Notes

Syllabus Outcomes and Content

The table below outlines the syllabus outcomes and range of relevant syllabus content covered in this unit.

Outcomes and content	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Knowledge of our world and beyond inspires sustainable solutions																
Earth's climate is affected by natural and human activities																
ST3-SCI-01, ST3-DAT-01																
• Identify the technologies used to collect weather data and describe how they are used	x	x	x	x	x											
• Describe the differences between climate and weather	x	x		x												
• Research the effects of natural events on the atmosphere							x									
• Explain the effects of natural events and human activities on climate								x		x	x	x	x	x	x	x
Design and digital technologies engineer sustainable solutions																
The future can be shaped by building and connecting digital systems																
ST3-DDT-02																
• Recognise that data are entered, processed and transmitted in digital systems					x			x								
• Select and use appropriate digital tools to share files online following an agreed code of conduct							x								x	x
Creating written texts in Science and Technology																
Creating written explanations of concepts and processes supports understanding of Science and Technology																
ST3-CWT-01																

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