

Stage 3

Guardians of the grassy box woodlands

Learning from the Past • Caring for the Present • Restoring the Future



Stage 3

Guardians of the grassy box woodlands



Unit Materials

Australia's Grassy Box Woodlands are one of the nation's most endangered ecological communities. Once widespread across south-eastern Australia, these unique ecosystems supported a rich diversity of native plants, animals and other living organisms that worked together to create healthy, resilient landscapes. Today, the remaining woodlands continue to provide essential habitat for wildlife, protect soils and waterways, and support biodiversity across agricultural and natural environments.

This unit provides students with opportunities to investigate Grassy Box Woodland ecosystems through scientific inquiry, geographical investigation and hands-on learning experiences. Students explore the relationships between living and non-living components of ecosystems while developing an understanding of biodiversity, habitat, woodland health and environmental stewardship.

Throughout the unit, students investigate how Grassy Box Woodlands function as interconnected ecosystems by identifying native plant communities, assessing woodland health and examining the relationships between plants, animals, soil and water. Using the Grassy Box Woodland Ecosystem Game, students progressively build, investigate, disturb and restore a woodland ecosystem, discovering how changes to one part of the environment influence the health of the whole system.

Students also explore how Grassy Box Woodlands have changed over time by comparing Aboriginal land management with contemporary land use practices. Through field investigations, cultural perspectives and collaborative learning, students examine how caring for Country, sustainable land management and community action contribute to restoring healthy landscapes.

The unit concludes with Every Drop Matters. Restoring the Small Water Cycle, where students discover how healthy vegetation, living soils and biodiversity work together to retain water in the landscape. Students apply their learning by becoming Woodland Guardians, designing practical solutions that support biodiversity, restore ecosystem health and contribute to a more sustainable future.

Through observation, collaboration, scientific investigation and critical thinking, students develop the knowledge, skills and confidence to care for Grassy Box Woodlands while recognising that everyone has a role to play in protecting Australia's natural environments.

- Grassy Box Woodland Ecosystem Game
- Ecosystem Game Cards (Habitat, Species, Disturbance and Restoration)
- Field journals
- Clipboards
- Pencils and coloured pencils
- Magnifying glasses
- Plant identification guides
- Grassy Box Woodland Species Identification Cards
- Local flora and fauna field guides
- Quadrat frames
- Measuring tapes
- Soil Health Assessment Sheets
- Buckets and trays
- Thermometers (optional)
- Historical and current vegetation photographs or maps
- Guided Woodland Visualisation
- The Useful Possum worksheet
- Kurrajong worksheet
- Native seed samples (optional)
- Regenerative Agriculture Principles Poster
- How to Build a Regenerative Farm Activity Poster
- Mulloon Institute Small Water Cycle demonstration materials
- Large poster paper
- Sticky notes
- Digital camera or tablet (optional)

Lesson 1: Discovering Grassy Box Woodlands	Duration: 50min
Lesson 2: Woodland Communities - Plants, Habitats and Biodiversity	Duration: 70min
Lesson 3: Healthy Woodlands - Becoming a Woodland Scientist	Duration: 45-60min
Lesson 4: Land Use Today - Understanding Change	Duration: 70min
Lesson 5: Learning from Country - Caring for Grassy Box Woodlands	Duration: 45-60min
Lesson 6: The Useful Possum and the Kurrajong - Nature's Connections	Duration: 75min
Lesson 7: Restoring Healthy Woodlands	Duration: 45-60min
Lesson 8: Designing Resilient Landscapes	Duration: 45-60min
Lesson 9: Every Drop Matters - Restoring the Small Water Cycle	Duration: 45-60min

Stage 3: Overview

Curriculum Outcomes

NESA Science and Technology Outcomes (Stage 3)

This unit aligns with the NSW Science and Technology K-6 Syllabus and provides opportunities for students to investigate ecosystems through scientific inquiry. Students ask questions, conduct investigations, collect and interpret data, and use evidence to explain how living things interact within Grassy Box Woodland ecosystems.

Students will:

- Investigate the characteristics of Grassy Box Woodland ecosystems
- Identify interactions between living and non-living components
- Investigate biodiversity and habitat requirements
- Explore ecosystem resilience and environmental change
- Collect, record and interpret scientific observations
- Use evidence to explain ecological relationships
- Investigate strategies that support healthy ecosystems and sustainable

land management.

NESA Geography Outcomes

This unit aligns with the NSW Geography K-10 Syllabus by investigating Australian environments, environmental change and sustainable land management through geographical inquiry.

Students will:

- Investigate the characteristics of Grassy Box Woodland environments
- Compare historical and contemporary land management practices
- Examine the impacts of environmental change
- Investigate how people influence places and environments
- Explore strategies used to conserve biodiversity
- Use geographical tools to collect, record and communicate information.

Australian Curriculum Outcomes Science

Students investigate the relationships between living things and their environment while planning and conducting scientific investigations, analysing evidence and communicating explanations using scientific language.

Humanities and Social Sciences (Geography)

Students investigate the characteristics of environments, examine how people influence landscapes over time and propose actions that contribute to sustainable environmental management.

Key Inquiry Questions

- What makes Grassy Box Woodlands unique?
- How do living and non-living components work together to create healthy ecosystems?
- Why is biodiversity important?
- How has the Grassy Box Woodland changed over time?
- How have Aboriginal peoples cared for Country for thousands of years?
- How do human activities influence woodland health?
- How can Landcare and regenerative practices restore ecosystems?
- Why does healthy biodiversity support healthy soil and water?
- What role can I play in protecting Australia's natural environments?

Key Concepts

Throughout this unit, students investigate:

- Grassy Box Woodland Ecosystems
- Biodiversity
- Biotic and Abiotic Factors
- Habitat
- Ecological Relationships
- Adaptations
- Native Plant Communities
- Soil Health
- Food Webs
- Woodland Health
- Habitat Fragmentation
- Conservation
- Restoration
- Caring for Country
- Sustainable Land Management
- Regenerative Agriculture
- The Small Water Cycle
- Environmental Stewardship



Tamworth Regional
LANDCARE
ASSOCIATION

Stage 3: Overview

Curriculum Alignment

New South Wales Science and Technology

This unit supports Stage 3 Science and Technology through authentic investigations that develop students' understanding of ecosystems, biodiversity and environmental sustainability. Students engage in scientific inquiry by observing, questioning, investigating and using evidence to explain ecological relationships within Grassy Box Woodland ecosystems.

Students investigate:

- The interactions between living and non-living components of ecosystems
- The importance of biodiversity in maintaining healthy ecosystems
- Habitat features and the needs of native plants and animals
- Ecosystem health and resilience
- Environmental change and its impacts
- Strategies that restore and protect

Grassy Box Woodland ecosystems. Students develop scientific inquiry skills by:

- Posing questions
- Planning and conducting investigations
- Collecting and recording observations
- Interpreting evidence
- Communicating scientific ideas using appropriate scientific language
- Applying scientific understanding to real-world environmental challenges.

New South Wales Geography

This unit complements Stage 3 Geography by exploring the characteristics of Australian environments and investigating how people influence landscapes over time.

Students investigate:

- The characteristics of Grassy Box Woodland environments
- Environmental change
- Aboriginal and contemporary land management
- Biodiversity conservation
- Sustainable environmental management
- Geographical inquiry through authentic fieldwork.

Students develop skills in:

- Observation
- Mapping
- Recording field data
- Interpreting evidence
- Evaluating environmental issues
- Proposing sustainable management strategies.

Australian Curriculum

This unit supports learning across the Australian Curriculum by integrating science, geography and sustainability through inquiry-based learning experiences that encourage students to investigate, question and take action.

Cross-Curriculum Priorities

- Sustainability
- Aboriginal and Torres Strait Islander Histories and Cultures

General Capabilities

- Critical and Creative Thinking
- Ethical Understanding
- Personal and Social Capability
- Literacy
- Numeracy
- ICT Capability

Local Species (North West NSW)

Trees: White Box, Yellow Box, Blakely's Red Gum, Cypress Pine

Groundcover: Kangaroo Grass, Wallaby Grass, native herbs, wildflowers and understorey shrub layer

Animals: Echidna, Sugar Glider, Eastern Grey Kangaroo, Microbats

Birds: Kookaburra, Superb Fairy-wren, Galah, Wedge-tailed Eagle

Invertebrates: Earthworms, ants, beetles, fungi

Student Resource

The Forest in the Tree: How fungi shape the earth. Ailsa Wild, Avira Reed, Briony Barr e Gregory Crocetti (ISBN: 9781486313310)
Belonging Jeannie Baker (ISBN: 0-7445-9227-5)
The Story of Rosy Dock Jeannie Baker (ISBN: 0091828112)



Lesson 1

Discovering Grassy Box Woodlands



Lesson Overview

Grassy Box Woodlands are one of Australia's most endangered ecological communities, providing essential habitat for native plants and animals while supporting healthy soils, water and biodiversity. In this lesson, students are introduced to the unique features of Grassy Box Woodlands and begin to investigate how living and non-living components work together to create healthy ecosystems.

Students explore what makes a Grassy Box Woodland unique and why these landscapes are important to both wildlife and people. Through discussion, observation and the Grassy Box Woodland Ecosystem Game, students begin building their own woodland ecosystem, recognising that every organism and habitat feature has an important role to play.

This lesson establishes the foundation for the unit by introducing the concept that healthy ecosystems depend on the relationships between plants, animals, soil, water and people.

Learning Intentions

Students will:

- Identify the characteristics of a Grassy Box Woodland
- Recognise the difference between living and non-living components of an ecosystem
- Investigate how plants, animals, soil and water are connected
- Begin constructing a Grassy Box Woodland Ecosystem
- Develop an appreciation for the importance of biodiversity.

Success Criteria

Students can:

- Describe the features of a Grassy Box Woodland
- Identify living and non-living components within an ecosystem
- Explain why biodiversity is important
- Contribute to building the class ecosystem
- Record observations using scientific vocabulary.

Materials Required

- Grassy Box Woodland Ecosystem Game
- Ecosystem Game Cards
- Habitat Cards
- Native Species Cards
- Field journals
- Clipboards
- Pencils
- Coloured pencils
- Large Grassy Box Woodland poster or map
- Photographs of healthy Grassy Box Woodlands
- Sticky notes
- Home Sweet Home Life In a Woodland Tree Poster.

Teacher Preparation

Before the lesson:

- Prepare the Grassy Box Woodland Ecosystem Game and organise the habitat, species and ecosystem cards.
- Display photographs showing healthy Grassy Box Woodland landscapes.
- Arrange students into collaborative groups.
- Prepare field journals for recording observations and reflections.

DOWNLOAD 
Grass & Herb
Identification Sheet

Aboriginal Perspective

Language: Winanga-y - Understand
Kamilaroi/Gomeri Perspective

Understanding a Grassy Box Woodland from a Kamilaroi perspective means seeing more than the plants, animals, soil and water that make up an ecosystem. Country also includes people, sky, seasons, cultural places, knowledge, stories and relationships. These are not separate parts; together they contribute to how Country is known and understood. Knowledge grows through spending time on Country, observing it and learning the relationships held within a place.

Consider: Kamilaroi people hold generations of knowledge about Country. Understanding Country means looking beyond what is immediately visible and recognising the relationships, cultural knowledge and importance of place that Aboriginal people have known, maintained and passed on through generations.

Discussion / Yarning Circle: Sit together and share one thing you noticed about Country that you may not have noticed when you first arrived or first looked at the woodland. What relationships can you see between people, plants, animals, soil, water, sky and seasons? Listen to what others notice and consider how spending more time observing a place might deepen our understanding of it.

Assessment

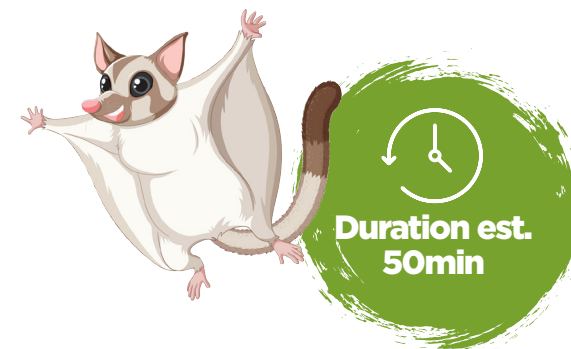
Students demonstrate their learning by:

- Identifying the characteristics of a Grassy Box Woodland
- Distinguishing between living and non-living components
- Contributing to the class Ecosystem Game
- Participating in class discussions
- Recording observations and reflections in their field journals.



Lesson 1

Discovering Grassy Box Woodlands



Introduction

Begin by displaying several photographs of Grassy Box Woodland landscapes.

Ask students:

- What do you notice?
- What plants can you identify?
- What animals might live here?
- What makes this place different from a rainforest or a beach?
- Why do you think these woodlands are important?

Record students' ideas and explain that over the next nine weeks they will become Woodland Guardians, learning how these remarkable ecosystems function and how they can be protected and restored.

Introduce the term ecosystem and explain that it describes the relationships between living and non-living things within an environment.

DOWNLOAD 
Woodland Communities
Student Worksheet

DOWNLOAD 
Plant Communities
Worksheet

Teaching and Learning

Activity 1

What Makes a Grassy Box Woodland?

Working in small groups, students examine photographs, maps and species cards to identify the key features of a Grassy Box Woodland.

Students identify:

- native trees
- shrubs
- grasses
- wildflowers
- fallen timber
- leaf litter
- rocks
- soil
- water
- wildlife habitat.

Groups share their observations and discuss why each feature contributes to a healthy ecosystem.

As a class, create a large anchor chart titled:

“A Healthy Grassy Box Woodland Has...”

Students contribute ideas throughout the lesson.

An anchor chart is a large, co-created classroom display made during instruction that captures key ideas, strategies, vocabulary, or procedures for students to reference later.

Anchor charts are instructional tools created with students during a lesson. They record the most important

information, such as steps, strategies, or concepts and remain visible in the classroom so learners can revisit the content independently.

Activity 2

Building Our Woodland Ecosystem

Introduce the Grassy Box Woodland Ecosystem Game. Explain that the class will gradually build a woodland ecosystem throughout the unit and observe how it changes as different events occur. Each group receives a selection of Ecosystem Game Cards. Students work together to place habitat features and native species into the ecosystem, explaining why each belongs there.

Encourage students to justify their thinking by asking:

- Why does this animal need this habitat?
- What would happen if this plant disappeared?
- Which species depend on one another?
- Where would water be found within this ecosystem?

Bring the class together to discuss how all parts of the ecosystem are connected.

Explain that they will continue adding to and investigating the ecosystem throughout the unit.

Activity 3

Living and Non-Living Connections

Students return to their ecosystem and identify examples of:

Living (Biotic)

- trees
- grasses
- fungi
- insects
- birds
- mammals
- reptiles

Non-living (Abiotic)

- soil
- rocks
- sunlight
- water
- air
- temperature.

Students use sticky notes to label examples within the ecosystem. As a class, discuss how living things rely on non-living components to survive.

Challenge students to think about what might happen if one component changed.

Reflection

Students complete the following prompt in their field journals: Today I discovered that... One question I still have is... Invite volunteers to share their reflections with the class. Conclude by asking: “If one part of an ecosystem changes, what else might change?” Explain that this question will guide their investigations throughout the unit.

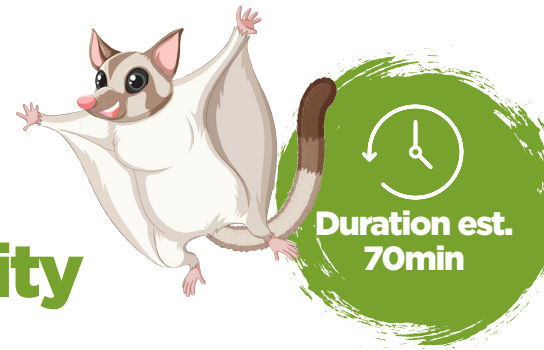
If you remove the tree hollows, what would change in the woodland? Think about the animals that use hollows for shelter, nesting, breeding and protection. What might happen to these animals, and how could the loss of hollows affect other parts of the woodland ecosystem?

Explore: Life in a Woodland Tree Murrumbidgee Landcare (PDF)

Consider: Why is protecting old, hollow-bearing trees important for maintaining biodiversity in a healthy Grassy Box Woodland?

Lesson 2

Woodland Communities Plants, Habitats and Biodiversity



Lesson Overview

Healthy Grassy Box Woodlands support an incredible diversity of plants, animals and other living organisms that depend on one another for survival. Every species, from towering eucalypts to tiny insects, plays an important role in maintaining a healthy ecosystem.

In this lesson, students investigate the different plant layers of a Grassy Box Woodland and explore how these provide food, shelter and habitat for wildlife. Through field observations, species identification and the Grassy Box Woodland Ecosystem Game, students discover that biodiversity strengthens ecosystems and helps them remain healthy and resilient.

Learning Intentions

Students will:

- Identify the different vegetation layers within a Grassy Box Woodland
- Investigate the importance of biodiversity
- Recognise how plants provide habitat for wildlife
- Identify native species found within Grassy Box Woodlands
- Continue developing the class Ecosystem Game.

Success Criteria

Students can:

- Identify the vegetation layers of a woodland
- Explain why biodiversity is important
- Identify native plant and animal species
- Describe how plants provide habitat
- Contribute evidence-based ideas during class discussions.

Materials Required

- Grassy Box Woodland Ecosystem Game
- Habitat Feature Cards
- Native Plant Species Cards
- Native Animal Species Cards
- Plant identification guides
- Field journals
- Clipboards
- Pencils
- Magnifying glasses
- Quadrat frames (optional)
- Photographs of Grassy Box Woodland vegetation

Teacher Preparation

Before the lesson:

- Prepare Habitat Feature Cards and Species Cards.
- Organise a nearby outdoor area for observations or prepare photographs of local Grassy Box Woodland vegetation.
- Review the Ecosystem Game from Lesson 1 and prepare additional habitat features and species to introduce.

Teacher Notes

Extension

Students research a local Grassy Box Woodland species and create a “Species Spotlight” profile, including its habitat, diet, role in the ecosystem and any threats to its survival.

Differentiation

- Provide illustrated species cards for students requiring additional support.
- Challenge confident learners to investigate ecological relationships between multiple species and explain how they contribute to ecosystem resilience.

Transition to Lesson 3

Conclude the lesson by revisiting the class ecosystem.

Ask: “Our woodland now has many different plants and animals... but how do we know if it’s actually healthy?”

Explain that in the next lesson students will become Woodland Scientists, using observation, evidence and field investigations to assess the health of a Grassy Box Woodland.

Aboriginal Perspective

Language: Guumali - Gather

Kamilaroi/Gomeroi Perspective

Grassy Box Woodland Country provided Kamilaroi people with many of the resources needed for everyday life. Plants, animals and other materials could provide food, medicines, fibres, tools and useful materials, but gathering required knowledge - knowing what could be used, where it was found, when it was ready and how much was needed. Living within Country meant making use of what the landscape provided while carrying knowledge and responsibilities about those resources.

Consider: Kamilaroi people have gathered from and lived within woodland Country for generations, carrying knowledge of where resources are found, when they are available and how they should be used. Think about the knowledge you would need to live with and gather from Country, rather than simply visit or move through it.

Discussion / Yarning Circle: Imagine you needed to gather what you needed from the woodland. What knowledge would you need before taking anything from Country? Discuss why knowing what, where, when and how much might be just as important as knowing what a resource can be used for.

Assessment

Students demonstrate their learning by:

- Identifying the vegetation layers of a Grassy Box Woodland
- Matching habitat features with native species
- Contributing to the Ecosystem Game
- Recording observations in their field journals
- Explaining the importance of biodiversity during class discussions.



Lesson 2

Woodland Communities

Plants, Habitats and Biodiversity



Introduction

Revisit the class Ecosystem Game created during Lesson 1.

Ask students:

- What plants did we include?
- Which animals might live here?
- What would happen if some plants disappeared?
- Would every animal still have a home?
- Identify remnant trees and discuss with students that it takes 80-100 years to form hollows. These trees still provide environmental services even when they are dead.

Explain that today they will investigate how different plants create homes for many different species.

Introduce the term biodiversity.

Discuss how biodiversity refers to the variety of living things within an ecosystem and explain that ecosystems with greater biodiversity are generally healthier and more resilient.

Teaching and Learning

Activity 1 Exploring Woodland Layers

Teacher Resource:
Vegetation Profile / Species
Identification Worksheet.

Display photographs of a healthy
Grassy Box Woodland.
Introduce the four vegetation layers:

- Tree canopy
- Shrub layer
- Ground layer (native grasses and wildflowers)
- Leaf litter and fallen timber

Discuss how each layer provides
different habitat opportunities.

Working in pairs, students use species
cards to identify which plants belong
in each vegetation layer.

Students record examples in their field
journals.

DOWNLOAD 
Vegetation Profile of the
Western Slopes

Activity 2 Habitat Detectives

Students investigate how plants
provide habitat.
Using Habitat Feature Cards, students
match native animals with the habitat
features they depend on.

Examples include:

Habitat Feature	Wildlife Supported
Tree hollows	Owls, parrots, possums, microbats
Native grasses	Insects, reptiles, small mammals
Fallen logs	Lizards, beetles, fungi
Leaf litter	Worms, spiders, beetles
Flowering shrubs	Native bees, butterflies, birds & spiders.

Discuss why removing just one habitat
feature can affect many different
species.

Activity 3 Growing the Ecosystem

Each group now adds:

- additional native plants
- habitat features
- animal species

As students add each card, they
explain:

- why the species belongs there
- what it depends on
- what depends on it

Encourage students to make
connections between different parts
of the ecosystem.

For example:

*"If native grasses disappear, which
animals might be affected?"*
*"If old trees are removed, what
happens to hollow-dependent
animals?"*

Record students' ideas on the class
ecosystem display.

Reflection

Students complete the
following sentence in their
field journals:

Today I learnt that biodiversity
is important because...
Invite students to share one
new species or habitat feature
they discovered during the
lesson.

Finish by asking:
"Can an ecosystem stay healthy
if it loses many different
species?"
Explain that this question
will guide the next lesson as
students investigate what
makes a woodland healthy.

Lesson 3

Healthy Woodlands Becoming a Woodland Scientist



Lesson Overview

Healthy ecosystems contain a rich diversity of plants, animals and habitat features that work together to support life. Scientists assess ecosystem health by carefully observing biodiversity, habitat condition and the relationships between living and non-living components.

In this lesson, students become Woodland Scientists, investigating the health of a Grassy Box Woodland through field observations and scientific inquiry. They learn how to identify indicators of a healthy ecosystem and compare these with signs of environmental disturbance. Students continue building their understanding of ecosystem resilience by assessing both a real woodland (where possible) and their class Ecosystem Game.

Learning Intentions

Students will:

- Identify indicators of a healthy Grassy Box Woodland
- Investigate the condition of woodland habitats
- Collect and record field observations
- Interpret evidence to assess ecosystem health
- Continue developing scientific observation skills.

Success Criteria

Students can:

- Identify features of a healthy woodland
- Explain why habitat diversity is important
- Record accurate scientific observations
- Use evidence to support conclusions
- Communicate their findings using scientific vocabulary.

Materials Required

- Woodland Health Assessment Sheet (insert worksheet)
- Field journals
- Clipboards
- Pencils
- Magnifying glasses
- Quadrat frames (optional)
- Species Identification Cards
- Grassy Box Woodland Ecosystem Game
- Camera or tablet (optional)

Teacher Preparation

Before the lesson:

- Select an outdoor learning area or use photographs of a Grassy Box Woodland if fieldwork is not possible.
- Prepare Woodland Health Assessment Sheets.
- Review the Ecosystem Game with students and ensure it includes the species and habitat features introduced in Lessons 1 and 2.

Teacher Notes

Extension

Students compare two different locations within the school grounds and explain which area provides better habitat for wildlife.

Differentiation

- Provide a simplified observation checklist for students requiring additional support.
- Challenge students to justify each conclusion using multiple pieces of evidence from their observations.

Transition to Lesson 4

Ask students:

"If our woodland isn't as healthy as it could be... what caused it to change?"

Explain that in the next lesson students become Landscape Investigators, exploring how human activities have changed Grassy Box Woodlands over time and what those changes have meant for biodiversity.

Aboriginal Perspective

Language: Bamba ngarrili - Watch carefully
Kamilaroi/Gomerioi Perspective

Watching Country carefully builds knowledge over time. Kamilaroi people observe changes in plants, flowering and fruiting, animal and insect behaviour, water, weather and the sky. When these observations are made repeatedly across generations, patterns can be recognised and knowledge of seasons and changes within Country can be carried forward. Knowing Country therefore involves not only seeing what is there today, but remembering what has happened before and noticing when something begins to change.

Consider: A single observation tells us what is happening now; observations carried over time can tell us what is changing.

Discussion / Yarning Circle: Share one change in nature you have noticed at different times of the year. It might involve flowering, insects, birds, weather, water or plants. How could sharing and remembering observations over many years help people recognise when Country is changing?

Assessment

Students demonstrate their learning by:

- Completing the Woodland Health Assessment
- Recording field observations
- Identifying indicators of ecosystem health
- Contributing to discussions
- Using evidence to explain their conclusions.

Lesson 3

Woodland Communities Plants, Habitats and Biodiversity



Teaching and Learning

Introduction

Display two contrasting photographs.

Photograph 1:

A healthy Grassy Box Woodland with mature trees, native grasses, fallen logs and diverse groundcover.

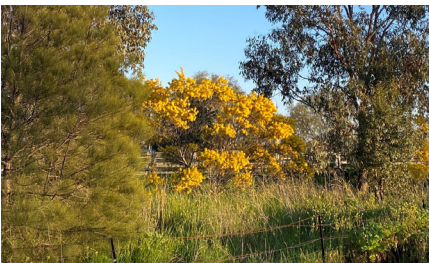
Photograph 2:

A degraded landscape with little vegetation, compacted soil and few habitat features.

Ask students:

- Which woodland appears healthier?
- What evidence supports your thinking?
- What differences do you notice?
- Which landscape would support more wildlife?

Explain that scientists don't guess whether an ecosystem is healthy they collect evidence. Today, students will become Woodland Scientists.



Source: Nviro Media - LANDSCAPE A



Source: Nell & Wayne Chaffey - LANDSCAPE B

Activity 1

What Makes a Healthy Woodland?

As a class, brainstorm the features of a healthy ecosystem.

Record responses under headings such as:

- Trees
- Native grasses
- Wildflowers
- Fallen timber
- Leaf litter
- Healthy soil
- Wildlife
- Water
- Diversity

Discuss why each feature is important. Introduce the idea that the absence of one feature can affect many other organisms.

Activity 2

Woodland Health Investigation

Teacher Resource:

Woodland Health Assessment Sheet.

Using the Woodland Health Assessment Sheet, students investigate a section of the school grounds or a nearby natural area.

Students observe and record:

- tree canopy
- shrubs
- native grasses
- groundcover
- evidence of wildlife
- habitat features
- leaf litter
- fallen timber
- signs of insects
- soil condition
- understorey shrub layer
- evidence of human impact.

Encourage students to record both observations and questions in their field journals.

If fieldwork is not possible, complete the investigation using photographs.

DOWNLOAD 
Woodland Health Check

Activity 3

Growing the Ecosystem

Return to the class Grassy Box Woodland Ecosystem Game.

Students compare their field observations with the ecosystem they have created.

Working in groups, students ask:

- Which habitat features are missing?
- Which species could be added?
- Is our ecosystem healthy?
- What evidence supports our conclusion?

Students add additional habitat features or native species where appropriate.

Discuss how healthy ecosystems contain many interconnected parts rather than just a large number of plants or animals.

Reflection

Students complete the following prompt:

The healthiest part of our woodland was...

One way we could improve habitat is...

Invite students to share one observation they found surprising.

Conclude by asking:

"If a woodland begins to lose habitat, what might happen over time?"

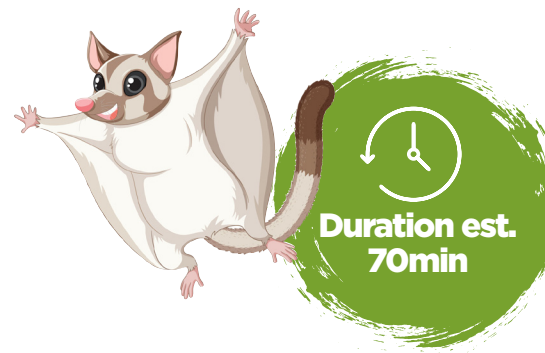
Explain that the next lesson explores how human activities can change landscapes and affect biodiversity.

Lesson 4

Land Use Today

Understanding Change

(known as the sheep/wheat belt since colonisation)



Lesson Overview

Australia's landscapes have changed significantly over time as people have used the land for farming, towns, roads and other purposes. While these changes have supported communities and food production, they have also affected native vegetation, wildlife habitats and biodiversity.

In this lesson, students investigate how Grassy Box Woodlands have changed by comparing historical and contemporary landscapes. Through photographs, maps, field observations and discussion, students explore the impacts of land use on ecosystems and begin to consider how sustainable land management can balance environmental, social and agricultural needs.

Learning Intentions

Students will:

- Investigate how Grassy Box Woodlands have changed over time
- Identify different types of land use
- Explore how land-use change affects biodiversity
- Interpret photographs and maps as historical evidence
- Consider how sustainable land management supports healthy ecosystems.

Success Criteria

Students can:

- Identify different land uses within a landscape
- Compare historical and contemporary environments
- Explain how land-use change can affect ecosystems
- Use evidence to support observations
- Suggest actions that improve woodland health.

Materials Required

- Historical and current photographs of Grassy Box Woodlands
- Local aerial photographs or maps
- Land Use Comparison Worksheet
- Field journals
- Clipboards
- Coloured pencils
- Sticky notes
- Grassy Box Woodland Ecosystem Game

Teacher Preparation

Before the lesson:

- Collect historical and current images of local Grassy Box Woodland landscapes where possible.
- Prepare the Land Use Comparison Worksheet.
- Organise students into collaborative groups for discussion and investigation.

Teacher Notes

Extension

Invite students to investigate a local Landcare project that has restored habitat, improved biodiversity or protected waterways. Students share how community action can positively influence landscapes.

Differentiation

- Provide annotated photographs with key features identified for students requiring additional support.
- Challenge students to consider how one land-use decision may have both environmental and social benefits, encouraging balanced thinking about sustainable land management.

Transition to Lesson 5

Conclude the lesson by asking:

"Before farms, towns and roads, how was this landscape cared for?"

Explain that in the next lesson, students will explore Learning from Country, investigating how Aboriginal peoples have cared for Grassy Box Woodlands for thousands of years and how this knowledge continues to inform environmental stewardship today.

Aboriginal Perspective

Step Back in Time

Before exploring how Grassy Box Woodlands have changed, students will step back approximately 200 years through Nell Chaffey's Grassy White Box Woodland: Yesterday - Guided Visualisation. As they listen, students are encouraged to imagine the sights, sounds and life of the woodland and notice the connections between people, plants, animals and Country. Think about: What might this woodland have been like before many of the changes we see in the landscape today?

Language: Burranba-li - Cause a change

Kamilaroi/Gomeri Perspective

Grassy Box Woodlands are cultural landscapes as well as ecological ones. Kamilaroi people have lived with, used and managed these landscapes across generations. Aboriginal land management is not something that belongs only to the past; Aboriginal people continue to care for and manage Country today. Changes brought by clearing, farming, roads, towns and other land uses have altered woodland Country and can also affect access to cultural places, resources and cultural heritage.

Caring for Country can include practices that respond to the needs of a particular landscape, including the careful use of fire, looking after water, plants and animals, and protecting culturally important places.

Consider: When a landscape changes, more can be affected than plants and animals - cultural places, resources, access to Country and knowledge connected with that place can also be affected.

Discussion / Yarning Circle: When we change a landscape, what might change that we cannot immediately see? Discuss how changes to vegetation, water or access to a place might also affect cultural places, resources, knowledge and people's connections with Country.



Lesson 4

Land Use Today Understanding Change



Assessment

Students demonstrate their learning by:

- Comparing historical and contemporary landscapes
- Identifying different land uses
- Explaining how land-use change affects biodiversity
- Participating in discussions
- Completing the Land Use Comparison Worksheet.

Reflection

Students complete the following statement:
One change that surprised me today was...
One positive action people can take to protect Grassy Box Woodlands is...
Invite students to share their ideas with the class.

Finish by asking:
“Have people always managed the land in the same way?”
Explain that the next lesson explores how Aboriginal peoples have cared for Country for thousands of years and what we can learn from this knowledge today.

Teaching and Learning

Introduction

Display two photographs of the same or similar landscape taken at different times.

Ask students:

- What differences can you see?
- What has stayed the same?
- What has changed?
- Why do you think these changes occurred?

Explain that landscapes naturally change over time, but people also influence how land is used. Today, students will investigate how Grassy Box Woodlands have changed and what those changes mean for plants, animals and people.

DOWNLOAD 
Woodland Land Use
Comparison



Activity 1 Then and Now

Teacher Resource: Insert Land Use Comparison Worksheet.
Working in small groups, students compare historical and current photographs or maps.

Using the Land Use Comparison Worksheet, students identify:

- native vegetation
- cleared land
- paddocks
- roads
- buildings
- waterways
- habitat features
- wildlife corridors.

Students record observations and identify both positive and challenging changes.

Encourage students to think about why these changes may have occurred.

Extension Activity Six Maps (observational lesson activity)

DOWNLOAD 
Maps: City of Tamworth
and Klori TSR

DOWNLOAD 
Looking from Above
Worksheet

Activity 2 Investigating Change

As a class, discuss different ways people use the land.

Examples may include:

- agriculture
- conservation
- recreation
- housing
- transport
- community infrastructure.

Students work together to sort these land uses into a class chart and discuss how each may influence biodiversity. Emphasise that land use often involves balancing environmental, social and economic needs, and that many land managers work hard to care for both productive farms and healthy ecosystems.

Introduce examples of positive land management practices, such as:

- retaining paddock trees
- protecting waterways
- fencing remnant vegetation
- planting native species
- creating wildlife corridors.

Activity 3 What Happens to Our Ecosystem?

Return to the Grassy Box Woodland Ecosystem Game.
Introduce several Disturbance Cards, such as:

- vegetation clearing
- road construction
- weed invasion
- removal of fallen timber
- prolonged drought.

Students predict how each disturbance may affect:

- plants
- animals
- habitat
- soil
- water.

As each card is added, students discuss:

- Which species are most affected?
- What habitat has been lost?
- How has biodiversity changed?
- What could be done to improve the situation?

Explain that the ecosystem will continue to evolve throughout the unit as students investigate ways to restore woodland health.

Lesson 4 Yesterday - Guided Visualisation

By Nell Chaffey

Aboriginal Perspective - Guided Visualisation Activity

Close your eyes, sit comfortably and relax

Breathe deeply in out in out in out

The buildings, fences, roads and sounds of machines begin to fade.

Listen to the sounds of the natural world around you bird noises

..... insect noises leaves rustling as a breeze catches them

There are many trees, ancient, twisted gums, shrubs, the tall grasses a mixture of green and straw colours in scattered tufts, thicker in the clearings where there is little or no woodland canopy

It is spring about two hundred years ago (c.1800) ... it is the time between The Dreaming and the coming of the Wunda (ghost/white people) to this place.

The land is vast..... in each direction bluish hills meet the sky, some close, others a distant irregular line on the horizonto the west, the line of hills ends, you glimpse the stretch of the plains, a far off sea of grasses dotted with islands of shrubby trees

..... trees blanket the countryside from the hilltops to the river, then hugging the rivers curving course, they stay with it across the plain.

The woodlands are all about you. You stand on a track used at times by all who pass this way, maybe a bandaarr (bundar/kangaroo) in a rush, or Murri (people) harvesting their land

Following the contours of the slope, the track makes its way down through trees yarraan and bibil (gum and white box trees), alongside scattered tall, straight gurraray (cypress pine), shiny leafed, kurrajongs, weeping myall or wilga a shrubby undergrowth of cassia, hopbush, wattle and others till it reaches the grassier open areas further down with their patchwork of grasses and leafy groundcoversthe woodland of the lower slopes, river and creek flats is more open

It is day..... the bush is alive with the activities of birds and insects in the air, on the ground, in, on and among the plants creatures feeding, building, resting. Some creatures aren't so obvious,bandaarr ('bundar'/kangaroo) resting in the cool hollows and dappled shades of the woodland, mudhay ('moodai'/possum) sleeping in tree hollows, termites and grubs mining the trees and soil

The bilbil (white box tree) beside you, you cannot fit your arms around it, how old can it be? many limbs have fallen over time,the hollow remnants of these lost branches stick out at odd angles from the trunk and branches of the tree. You observe and tend 'your country' well for this tree, like others of its kind, has been well managed and will continue to provide for the Murri (people), there is a hollow with the fresh, telltale marks of a possum den. Around another guni (native bees) come and go; mmm, sticky golden honey to be enjoyed. From others you hear the monotonous rasping call of young gilaa (galah), reminding their tired pink and grey parents, perched and grooming in the branches, they are awake and hungry yurran thaali (tree goanna) will want to visit this tree, looking for unhatched, unguarded eggs. Listen, the sharp, raucous call of a muraay (white cockatoo) flying above the tree tops toward the river.....

At ground level, ripening grass seeds, when collected, will be ground into flour and baked into cakes... look, the native iris have multiplied from the roots left last year, the harvest of roots will be good again you think about how good they are to eat when roasted.

Still following the track down towards the river, the leaf litter is thick on the ground, you step over logs, fallen branches, some housing termites, good places t for bigibilla (echidna), galibilalaa (red-bellied black snake), ...and lizard to live. Good tucker. Closer to the river, trees become larger, twisted, lumpy, river gums and whispering she-oaks stand among the bank and billabong clusters of bottlebrush, tea tree and reed beds which fringe the river's course.

..... the smell of smoke drifts through the air,..... you hear murri (people) laughing, talking, small groups are returning from the work of the day in the bush and along the river,..... they have fared well the young men, using spears they traded axe heads for with tribes to the west, have proved their worth, there is a bandarr (bundar'/kangaroo), and the women and young children have a bigibilla (echidna), roots, fruit, leaves, and a harvesting of ginbaay (small mussels) from the bend in the river and fresh garrangay (black duck) eggs, gathered from the reedbeds; the children only taking what can be eaten tonight and leaving at least one or two in each nest for the bird to hatch.

The afternoon is the time to prepare the fire and food for the evening meal, the main meal of the day. The murri (people) are busy. As yaraay (the sun) sets, the gugurrgaagaa (kookabura) chuckle in the trees..... the woodland birds and ants cease their labours and begin to settle for the night

Tonight each shall eat according to his/her position and totem. After the meal, when darkness creeps to the edge of the camp, and surrounds it, the young children go, ... to sleep among mudhay (moodai'/possum) skin rugs in the refurbished gundi (bark shelters) at this camp by the bend in the river.

Clapping sticks clink, a singer recounts a Dreaming while the elders sit about the fire planning tomorrow, the older boys will be taken to select and remove bark from a tree to begin a canoe, there is goodoo (guduu/Murray cod) and thagaay (yellow belly) to be found in this place and stone for axe heads to trade with tribes down the river for ochre for ceremony, and good spear lengths for hunting.....

Families sit around small fires close to their gundi (bark shelters/huts). Men are shaping and carving barran (boomerang) or mending bilaar (spears), their women, making nets from the fibre of kurrajong and other plants to catch birds and fish or to make gulay (bags) to carry tools and food, or stitching together mudhay (moodai'/possum) skins; another possum skin to a cloak for a growing child. The night is quiet now except for the call of the bulul (mopoke), the rustle of busy mudhay (moodai'/possums) moving about the tree canopy, the territorial call of a far off koala.

As night begins to fade, you begin to wake up, you are leaving the camp in the woodland and returning to the present, you start to hear the sounds of machines again, you are aware of the classroom and fellow class members around you. the buildings, fences and roads are returning, when you open your eyes, it will be (today's day/date) again.

Lesson 5

Learning from Country

Caring for Grassy Box Woodlands



Lesson Overview

For tens of thousands of years, Aboriginal peoples have cared for Country through deep observation, knowledge and respect for the natural environment. Grassy Box Woodlands provided food, medicine, shelter and materials, while also holding important cultural, spiritual and ecological significance.

In this lesson, students investigate how Aboriginal peoples cared for Country by observing seasonal changes, understanding plant and animal relationships, and using resources sustainably. Through storytelling, guided observation and collaborative learning, students explore how Traditional Ecological Knowledge continues to inform environmental management and biodiversity conservation today.

Learning Intentions

Students will:

- Develop an understanding of Caring for Country
- Recognise the importance of Traditional Ecological Knowledge
- Investigate how Grassy Box Woodlands provided resources for Aboriginal peoples
- Explore sustainable use of natural resources
- Identify connections between people, plants, animals and Country.

Success Criteria

Students can:

- Explain the meaning of Caring for Country
- Identify ways Aboriginal peoples sustainably used woodland resources
- Recognise the importance of observing nature
- Describe how Traditional Ecological Knowledge supports healthy ecosystems
- Reflect respectfully on different ways of understanding the environment.

Materials Required

- Guided Woodland Visualisation worksheet
- Local cultural information (where appropriate)
- Photographs of Grassy Box Woodland plants and animals
- Field journals
- Clipboards
- Pencils
- Grassy Box Woodland Ecosystem Game

Teacher Preparation

Before the lesson:

- Review local Aboriginal cultural information and consult any approved local resources where appropriate.
- Prepare the Guided Woodland Visualisation activity.
- Identify a quiet outdoor learning area where students can safely observe the natural environment.
- Encourage respectful discussion and remind students that Aboriginal cultures are diverse across Australia.

Teacher Notes

Extension

Invite students to compare two approaches to observing the environment: a scientist collecting field data and an Aboriginal Elder observing seasonal and environmental indicators. Discuss how both approaches contribute valuable knowledge about ecosystem health.

Differentiation

- Encourage students to express their reflections through writing, drawing or oral discussion.
- Provide sentence starters or visual prompts for students requiring additional support.

Transition to Lesson 6

Finish the lesson by displaying a Kurrajong tree or a photograph of one. Ask: "If one tree could provide food, fibre, shade, habitat and medicine... how important would it be?"

Then introduce the next lesson:

Next time, we'll investigate two remarkable woodland species the Kurrajong and the Common Brushtail Possum and discover how plants, animals and people are connected through the Grassy Box Woodland ecosystem.

Aboriginal Perspective

Language: Winangay-la-nha - loving, knowing, thinking, learning and understanding.

Kamilaroi/Gomeroi Perspective

Learning from Country is more than observing the environment. Kamilaroi knowledge is carried through generations and can be held in language, stories, Lore, cultural practices and the knowledge of particular places, plants, animals and seasons. Country itself is part of that learning: changes in the landscape, plants, animals, water, weather and sky can hold signs that knowledgeable people learn to recognise.

Knowledge is also carried in different ways. Stories, song, dance and other cultural practices can hold and pass on understandings about people, places, responsibilities and Country. Some knowledge is shared widely, while other knowledge may belong to particular people, families, places or cultural responsibilities.

Consider: Knowledge does not have to be written in a book to be carried accurately from one generation to the next.

Discussion / Yarning Circle: What are some ways knowledge can be remembered and passed from one generation to another without being written down? Listen to the different ideas shared by the group. Consider why some knowledge may be shared widely while other knowledge belongs to particular people, families, places or cultural responsibilities.

Assessment

Students demonstrate their learning by:

- Participating respectfully in discussions
- Completing the Guided Woodland Visualisation activity
- Recording observations in their field journals
- Identifying examples of Caring for Country
- Explaining how observation supports environmental stewardship.

Lesson 5

Learning from Country Caring for Grassy Box Woodlands



Introduction

Begin by asking students:

- What does the word Country mean to you?
- Is Country just the land?
- How might people develop knowledge about a place over thousands of years?

Explain that for Aboriginal peoples, Country includes the land, waterways, plants, animals, skies and people, all connected through relationships and responsibility.

Introduce the idea that caring for Country means understanding these connections and looking after them for future generations.

Teaching and Learning

Activity 1 Guided Woodland Visualisation

Teacher Resource: Guided Woodland Visualisation Worksheet.

Using the Guided Woodland Visualisation worksheet, invite students to imagine standing quietly within a healthy Grassy Box Woodland.

Encourage them to think about:

- the sounds they hear
- the smells around them
- the plants they notice
- the movement of wildlife
- the textures beneath their feet
- the changing seasons.

Following the visualisation, students record or sketch their observations in their field journals.

Discuss how careful observation helps people understand the health of an ecosystem.

[DOWNLOAD](#) 
Guided Visualisation

Activity 2 Learning from Nature

Display photographs or examples of native woodland plants.

Discuss how Aboriginal peoples carefully observed plants and animals to understand:

- seasonal change
- food availability
- flowering and fruiting times
- animal behaviour
- weather patterns.

Working in groups, students investigate several native species and discuss:

- What role does this species play?
- Why might it be important?
- How could careful observation help people care for Country?

Encourage students to recognise that every species contributes to the health of the ecosystem.

Discussion: How are they caring for country?

Introduce this video to students:

[INTRODUCE](#) 
VIDEO TO STUDENTS

Activity 3 Caring for Country and Our Ecosystem

Return to the Grassy Box Woodland Ecosystem Game.

Students revisit the ecosystem they have built and discuss:

- How would someone caring for Country look after this woodland?
- Which habitat features would be protected?
- Why is biodiversity important?
- How could careful observation help keep this ecosystem healthy?

Students identify practical actions that support healthy ecosystems, such as protecting old trees, caring for waterways, encouraging native grasses and respecting wildlife habitat.

Record these ideas beside the Ecosystem Game as examples of environmental stewardship.

Reflection

Students complete the following prompt:
One thing I learnt about Caring for Country is...

One way I can show respect for nature is...
Invite students to share their reflections with the class.

Conclude by asking:
“How can knowledge passed down through generations help us care for the environment today?”

Lesson 6

The Useful Possum and the Kurrajong – Nature's Connections



Lesson Overview

Every plant and animal within a Grassy Box Woodland has an important role to play. Some species provide food and shelter, while others help maintain healthy ecosystems through pollination, seed dispersal and nutrient cycling. For thousands of years, Aboriginal peoples have also understood the many uses of native plants and animals, developing deep knowledge of how to live sustainably with Country.

In this lesson, students investigate two remarkable woodland species the Common Brushtail Possum and the Kurrajong Tree. Through scientific inquiry and cultural perspectives, students explore how these species contribute to biodiversity and discover the many ways people, plants and animals are connected within healthy ecosystems.

Learning Intentions

Students will:

- Investigate the ecological role of the Common Brushtail Possum
- Explore the environmental and cultural significance of the Kurrajong tree
- Identify how plants and animals depend on one another
- Recognise the importance of protecting native species and their habitats
- Apply their understanding to the class Ecosystem Game.

Success Criteria

Students can:

- Describe the habitat needs of the Common Brushtail Possum
- Identify the features and uses of the Kurrajong tree
- Explain how both species contribute to a healthy woodland
- Recognise connections between biodiversity and ecosystem health
- Communicate their ideas using appropriate scientific vocabulary.

Materials Required

- The Useful Possum worksheet
- The Kurrajong worksheet
- Species Identification Cards
- Field journals
- Clipboards
- Pencils
- Photographs of possums, tree hollows and Kurrajong trees
- Grassy Box Woodland Ecosystem Game

Teacher Preparation

Before the lesson:

- Prepare copies of The Useful Possum and The Kurrajong worksheets.
- Display photographs of Common Brushtail Possums, tree hollows and mature Kurrajong trees.
- Review the Ecosystem Game and ensure tree hollows and Kurrajong trees are represented.

Teacher Notes

Extension

Invite students to research another Grassy Box Woodland species that provides habitat or food for multiple organisms. Students create a simple “Species Connections” diagram showing how that species supports biodiversity.

Differentiation

- Provide labelled photographs to support species identification.
- Challenge confident learners to explain how protecting one habitat feature can have cascading benefits across an ecosystem.

Transition to Lesson 7

Return to the class Ecosystem Game.

Point to the disturbance cards introduced in Lesson 4 and ask: “If we know what healthy habitat looks like... and we know how important these species are... how can we help restore places that have been damaged?”

Explain that in the next lesson students become Woodland Restoration Teams, investigating how Landcare, landholders and communities work together to restore Grassy Box Woodlands and create healthier habitats for wildlife.

Aboriginal Perspective

Language: Wuurri - Give

Kamilaroi/Gomeri Perspective

Woodland plants and animals can give much to people, but the relationship is not simply about taking resources from Country. Kamilaroi knowledge includes understanding how resources can be used with purpose and responsibility. Animals and plants may provide food and materials, and different parts of a resource can have different uses, reducing unnecessary waste. Some species can also hold cultural relationships or responsibilities beyond their practical uses.

This reflects reciprocity - Country provides for people, and people also hold responsibilities towards Country.

Consider: Kamilaroi people have long known that one woodland plant or animal can provide many different things. How might knowing all the ways a species can provide for people change the way you value it?

Discussion / Yarning Circle: Choose one woodland plant or animal and think about everything it contributes—to people, other animals, plants and the wider ecosystem. How might understanding all of these connections change the way we think about taking from and giving back to Country?

Assessment

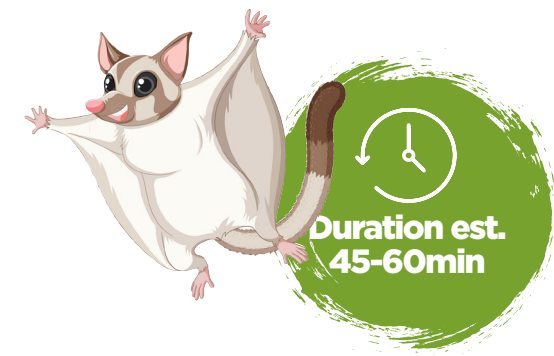
Students demonstrate their learning by:

- Completing The Useful Possum worksheet
- Completing The Kurrajong worksheet
- Identifying ecological relationships within the Ecosystem Game
- Participating in discussions
- Recording observations in their field journals.



Lesson 6

The Useful Possum and the Kurrajong – Nature's Connections



Introduction

Display photographs of a Common Brushtail Possum and a mature Kurrajong tree.

Ask students:

- Where might you find these species?
- What do you already know about them?
- Why might they be important within a woodland ecosystem?
- Could one tree support many different living things?

Explain that today students will investigate how two familiar woodland species contribute to the health of Grassy Box Woodlands and why they have been important to both wildlife and people.

Teaching and Learning

Activity 1 Investigating the Useful Possum

Teacher Resource:
The Useful Possum Worksheet.
Students complete The Useful Possum worksheet.

Discuss:

- Where possums live
- Why tree hollows are important
- What possums eat
- How possums contribute to woodland ecosystems
- The challenges possums face when habitat is removed.

Encourage students to identify other hollow-dependent animals they discovered in previous lessons. As a class, discuss why protecting mature trees is essential for maintaining biodiversity.

DOWNLOAD 
Useful Possum Worksheet

Activity 2 Discovering the Kurrajong

Teacher Resource:
The Kurrajong Worksheet.
Students investigate the Kurrajong worksheet.

Discuss the many features of the Kurrajong tree, including:

- its distinctive appearance
- drought tolerance
- wildlife habitat
- seasonal changes
- traditional uses by Aboriginal peoples
- importance within Australian landscapes.

Students examine photographs or, where possible, observe a local Kurrajong tree and record its features in their field journals.

Discuss how one native tree can support many different species throughout its lifetime

DOWNLOAD 
Kurrajong Worksheet

Activity 3 Nature's Connections

Return to the Grassy Box Woodland Ecosystem Game.

Students add or identify:

- Kurrajong trees
- tree hollows
- Common Brushtail Possums
- other hollow-dependent wildlife.

Working in groups, students draw connection lines between species and habitat features.

For example:

- Kurrajong → flowers → insects
- insects → birds
- mature trees → hollows → possums
- leaf litter → insects → reptiles

Discuss how removing one habitat feature may affect many different species.

Challenge students to identify as many ecological connections as possible within the ecosystem.

Reflection

Students complete the following prompt:
Today I discovered that one species can...

One way we can protect native wildlife is...
Invite students to share one interesting fact they learnt about either the possum or the Kurrajong.

Finish by asking:
“If we can restore habitat for one species, who else might benefit?”
Explain that the next lesson focuses on restoring Grassy Box Woodlands and helping biodiversity recover.

Lesson 7

Restoring Healthy Woodlands



Lesson Overview

Healthy ecosystems can recover when people work together to restore habitat, improve biodiversity and care for the land. Across Australia, Landcare groups, landholders, Aboriginal communities, schools and volunteers are restoring Grassy Box Woodlands by planting native vegetation, protecting habitat and improving the health of soils and waterways.

In this lesson, students investigate practical restoration strategies and discover how small actions can make a significant difference to woodland health. Through collaborative activities and the Grassy Box Woodland Ecosystem Game, students become Woodland Restoration Teams, identifying ways to improve degraded landscapes and support biodiversity. This lesson explores how degraded Grassy Box Woodlands can be restored through practical revegetation and habitat restoration. Students investigate how restoring plant diversity means rebuilding the different layers of the woodland, including groundcover, mid-storey and canopy vegetation, rather than simply planting trees. They consider the importance of protecting revegetation areas from livestock, as grazing and trampling can impede plant establishment and natural regeneration. Students also explore how lost habitat features can be returned to the ecosystem, including the installation of nest boxes and engineered hollows where natural tree hollows are limited. Through these examples, students discover that restoring a healthy woodland involves rebuilding plant diversity, habitat, ecosystem structure and ecological connections so that wildlife can return and the woodland can become more resilient over time.

Learning Intentions

Students will:

- Investigate how Grassy Box Woodlands can be restored
- Identify practical actions that improve biodiversity
- Understand the role of Landcare in environmental restoration
- Evaluate different habitat restoration strategies
- Apply restoration techniques to the Ecosystem Game.

Success Criteria

Students can:

- Identify actions that restore woodland ecosystems
- Explain how restoration benefits biodiversity
- Recognise the role of community action in conservation
- Work collaboratively to improve an ecosystem
- Justify restoration decisions using evidence.

Materials Required

- Ecosystem Restoration Cards
- Habitat Feature Cards
- Species Cards
- Restoration Planning Worksheet
- Grassy Box Woodland Ecosystem Game
- Field journals
- Clipboards
- Pencils
- Large poster paper
- Sticky notes

DOWNLOAD 
Ecosystem Restoration
Cards

DOWNLOAD 
Restoration Planning
Worksheet

Teacher Preparation

Before the lesson:

- Prepare the Ecosystem Game with the disturbance cards introduced in Lesson 4.
- Organise the Restoration Cards and Planning Worksheets.
- Prepare photographs of local Landcare restoration projects where available.

Teacher Notes

Extension

Invite students to investigate a local Landcare or community restoration project. Students identify the goals of the project, the restoration techniques used and the environmental benefits achieved.

Differentiation

- Provide illustrated Restoration Cards with visual prompts for students requiring additional support.
- Challenge confident learners to explain how one restoration action can create a chain of positive effects throughout an ecosystem.

Transition to Lesson 8

Gather students around the completed Ecosystem Game.

Ask:

“We’ve restored this woodland... but what if we could design a landscape that supports both nature and farming from the very beginning?”

Explain that in the next lesson students become Landscape Designers, using the principles of regenerative agriculture to create productive, biodiverse and resilient landscapes.

Aboriginal Perspective

Language: Maaruma-li - Heal

Kamilaroi/Gomeroi Perspective

Healing Country can involve restoring more than vegetation and habitat. Damage to woodland Country can also affect cultural places, access to Country and the ability to practise and pass on knowledge connected with that landscape. Kamilaroi people continue to be involved in caring for Country through cultural knowledge and contemporary land management, working to protect and restore places for the generations that follow.

Healing Country can therefore also help strengthen people’s continuing cultural relationship with place.

Consider: For Kamilaroi people, healing Country can also help protect cultural places, knowledge and connections that have been held across generations. What might be restored when Country is healed, besides the plants and animals?

Discussion / Yarning Circle: When we talk about “restoring” a woodland, what are we trying to bring back? Share ideas that go beyond trees and animals. Could restoration also involve places, relationships, knowledge, access and opportunities for future generations to care for Country?

Assessment

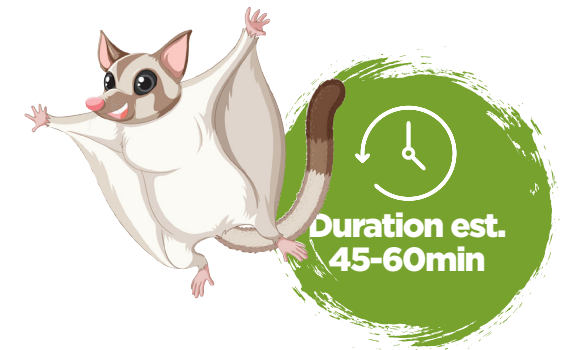
Students demonstrate their learning by:

- Completing the Restoration Planning Worksheet
- Contributing restoration ideas during the Ecosystem Game
- Explaining how restoration actions improve biodiversity
- Participating in collaborative discussions
- Presenting a woodland restoration plan.



Lesson 7

Restoring Healthy Woodlands



Introduction

Display photographs showing a degraded woodland alongside a restored woodland.

Ask students:

- What differences do you notice?
- Which landscape would support more wildlife?
- How might people restore a damaged woodland?
- Can one action make a difference?

Explain that across Australia, thousands of people work together to restore landscapes through practical conservation projects.

Today, students become part of a Woodland Restoration Team.

Teaching and Learning

Activity 1 Restoration Detectives

Teacher Resource:
Restoration Planning Worksheet.
Working in groups, students examine photographs of restoration projects. Students identify restoration actions such as:

- planting native trees
- restoring native grasses
- protecting paddock trees
- fencing remnant vegetation
- installing nest boxes
- removing weeds
- protecting waterways
- leaving fallen timber
- reconnecting wildlife corridors.

Using the Restoration Planning Worksheet, students discuss how each action supports biodiversity.

Encourage students to explain why each strategy is important.

DOWNLOAD 
Restoration Planning
Worksheet

Activity 2 Restoring the Ecosystem

Teacher Resource:
Ecosystem Restoration Cards.
Return to the Grassy Box Woodland Ecosystem Game.

Students review the disturbance cards introduced in Lesson 4.

Working collaboratively, each group selects Restoration Cards to improve their woodland.

Examples include:

- planting native trees
- protecting old trees
- restoring native grasslands
- controlling weeds
- installing nest boxes
- fencing creek lines
- reducing erosion
- planting shrubs for small birds.

As each Restoration Card is added, students explain:

- Which problem does it solve?
- Which species benefit?
- How does it improve ecosystem health?

Discuss how restoration often takes time and requires ongoing care.

Activity 3 Woodland Restoration Challenge

Each group receives a restoration scenario.

Examples:

- A paddock has very few trees.
- A creek line has become eroded.
- Hollow-bearing trees have been removed.
- Native grasses have disappeared.
- Wildlife can no longer move safely between habitats.

Students develop a simple restoration plan by identifying:

- the problem
- possible solutions
- expected outcomes
- species likely to benefit.

Groups present their ideas to the class.

Encourage respectful discussion about different approaches to restoration.

Reflection

Students complete the following prompt:

One restoration action I think would make the biggest difference is...
I chose this because...
Invite students to share one action they would like to see in their own community.
Conclude by asking:
“If we restore habitat today... who will benefit tomorrow?”

Explain that the next lesson explores how people can design landscapes that support both productive farming and healthy ecosystems.

Lesson 8

Designing Resilient Landscapes



Lesson Overview

Healthy landscapes provide food, fibre, clean water, wildlife habitat and resilient ecosystems. Across Australia, many landholders are adopting regenerative land management practices that improve soil health, increase biodiversity and strengthen ecosystem function while continuing to produce food.

In this lesson, students investigate how healthy farming landscapes can support both people and nature. Using the Regenerative Agriculture Principles Poster and the How to Build a Regenerative Farm activity, students explore how thoughtful land management can restore ecosystem health and design their own resilient landscapes.

Learning Intentions

Students will:

- Investigate the principles of regenerative land management
- Explore how biodiversity contributes to healthy farming systems
- Identify landscape features that support ecosystem health
- Design a resilient landscape using regenerative principles
- Evaluate how productive farming and conservation can work together.

Materials Required

- Regenerative Agriculture Principles Poster
- How to Build a Regenerative Farm activity
- Plant Species Cards
- Habitat Feature Cards
- Ecosystem Game
- Large poster paper
- Coloured pencils
- Field journals
- Sticky notes

Teacher Preparation

Before the lesson:

- Display the Regenerative Agriculture Principles Poster.
- Prepare copies of the How to Build a Regenerative Farm activity.
- Organise landscape design materials for student groups.
- Review the restoration ideas developed during Lesson 7.

Teacher Notes

Extension

Invite students to compare their landscape designs with aerial photographs of local farms. Discuss how regenerative principles could be incorporated into real landscapes while meeting the needs of landholders and the environment.

Differentiation

- Provide partially completed landscape templates for students requiring additional support.
- Challenge confident learners to explain how their design improves biodiversity, soil health, water retention and agricultural productivity simultaneously.

Transition to Lesson 9

Gather students around their completed landscape designs.

Ask: “We’ve created healthy habitats, restored biodiversity and designed resilient landscapes... but what happens when it rains?”
Pause.

Then ask: “Where does the water go?”

Explain that in the final lesson students will discover that healthy landscapes don’t just support plants and animals they also help restore one of nature’s most important processes: the Small Water Cycle.

Aboriginal Perspective

Language: Ngaarr - Strong

Kamilaroi/Gomeri Perspective

A strong landscape is one that can continue to support life and respond to change.

Kamilaroi people have lived through environmental changes across generations, carrying knowledge about Country and adapting to changing conditions. Cultural heritage within a landscape can also help tell parts of this story, providing evidence of where people lived, travelled, gathered resources and maintained connections with Country.

Looking at both the condition of the woodland today and the cultural evidence held within it can help us understand that people and Country have histories together.

Consider: Cultural heritage in a landscape can help tell us about how people lived with Country and responded to change over time. Country tells the story.

Discussion / Yarning Circle: Look at the landscape as though it were telling a story. What evidence might help us understand what has happened here in the past? Discuss why both ecological and cultural evidence can be important when learning about the history of a place.

Assessment

Students demonstrate their learning by:

- Completing the How to Build a Regenerative Farm activity
- Designing a resilient landscape
- Explaining how regenerative practices support healthy ecosystems
- Participating in class discussions
- Presenting their landscape designs.

Success Criteria

Students can:

- Identify features of a resilient landscape
- Explain how regenerative practices support biodiversity
- Justify design decisions using scientific understanding
- Recognise how healthy soils, plants and water are connected
- Communicate their ideas clearly using diagrams and discussion.

Lesson 8

Designing Resilient Landscapes



Introduction

Display two landscape photographs.

Landscape A:

A paddock with little vegetation, bare soil and limited habitat.

Landscape B:

A landscape with native trees, healthy pasture, shelterbelts, creek vegetation and diverse groundcover.

Ask students:

- Which landscape appears more resilient?
- Which might better support wildlife?
- Which landscape might hold more water after rain?
- Which landscape would provide more habitat?

Explain that today's lesson investigates how thoughtful land management can benefit both agriculture and the environment.

Teaching and Learning

Activity 1 Investigating Regenerative Landscapes

Teacher Resource:
Regenerative Agriculture Principles Poster.

Using the Regenerative Agriculture Principles Poster, introduce the key principles of healthy landscape management.

Discuss ideas such as:

- maintaining groundcover
- encouraging biodiversity
- protecting healthy soils
- supporting living roots
- integrating livestock thoughtfully
- reducing unnecessary disturbance.

Working in pairs, students identify examples of these principles within photographs of healthy farming landscapes.

Discuss how these practices can support both productive farms and healthy ecosystems.

DOWNLOAD 
Regenerative
Agriculture Poster

Activity 2 Build a Regenerative Farm

Teacher Resource: Insert How to Build a Regenerative Farm Activity.
Students complete the How to Build a Regenerative Farm activity.

Using the activity poster and species cards, students design a landscape that includes:

- remnant woodland
- native shelterbelts
- paddock trees
- native grasses
- waterways
- wildlife corridors
- productive grazing areas
- habitat for native species.

Students explain why they included each feature and how it contributes to the health of the landscape.

Encourage students to think about both environmental and agricultural outcomes.

DOWNLOAD 
Build a Regenerative
Farm Activity

Activity 3 Landscape Design Challenge

Working in small groups, students become Landscape Designers. Each group receives a simple farm map and designs a landscape that supports:

- biodiversity
- healthy soils
- clean water
- productive farming
- wildlife movement
- resilient ecosystems.

Students label key features and prepare a short presentation explaining their design.

Encourage students to refer to everything they have learnt throughout the unit, including biodiversity, habitat, restoration and Caring for Country.

Reflection

Students complete the following prompt:

One feature I included in my landscape was...

It is important because...

Invite groups to share one design decision they are particularly proud of.

Finish by asking:

“What role does water play in keeping every part of our landscape healthy?”

Explain that the final lesson explores how healthy vegetation, living soil and biodiversity work together to restore the Small Water Cycle.

Lesson 8



Source: Nviro Media - LANDSCAPE A



Source: Nell & Wayne Chaffey - LANDSCAPE B

Lesson 9

Every Drop Matters – Restoring the Small Water Cycle



Lesson Overview

Throughout this unit, students have discovered that healthy Grassy Box Woodlands depend on biodiversity, healthy soils and connected ecosystems. In this concluding lesson, students investigate how these same features also influence one of nature's most important processes—the Small Water Cycle. Through hands-on investigations and landscape models, students compare how water behaves in healthy and degraded landscapes. They observe how vegetation, living roots, leaf litter and healthy soils slow rainfall, increase infiltration and support the continuous movement of water through plants, soil and the atmosphere.

Students conclude the unit by recognising that restoring biodiversity also helps restore water, creating healthier and more resilient landscapes for people, plants and wildlife.

Learning Intentions

Students will:

- Investigate how water moves through healthy landscapes
- Compare water movement in healthy and degraded environments
- Recognise how vegetation influences water infiltration
- Understand the importance of the Small Water Cycle
- Connect biodiversity, soil and water within healthy ecosystems.

Success Criteria

Students can:

- Explain how healthy landscapes retain water
- Identify the features that improve water infiltration
- Compare healthy and degraded landscapes
- Describe the Small Water Cycle using scientific language
- Explain why restoring ecosystems also restores water.

Materials Required

- Two shallow trays or tubs
- Healthy soil with grasses, leaf litter and mulch
- Bare or compacted soil
- Small native plants (optional)
- Spray bottles or watering cans
- Measuring cups
- Collection trays
- Food colouring (optional)
- Field journals
- Observation recording sheet

DOWNLOAD 
Small Water Cycle
Observation Sheet

Teacher Preparation

Before the lesson:

Prepare two simple landscape models.

Landscape One: A healthy landscape containing vegetation, leaf litter, mulch and living roots.

Landscape Two: A degraded landscape containing bare or compacted soil with very little vegetation.

Ensure equal amounts of water can be applied to each model. Encourage students to observe carefully before drawing conclusions.

Teacher Notes

Extension:

Challenge students to investigate how restoring vegetation along creeks and rivers improves water quality, reduces erosion and supports wildlife.

Differentiation:

Provide labelled diagrams of the Small Water Cycle to support students who need additional guidance.

Challenge confident learners to explain how one restoration action (such as planting native grasses) can positively influence soil, biodiversity, water and climate.

Aboriginal Perspective

Language: Gali Banaga-waa-nha - Water flowing
Kamilaroi/Gomeri Perspective

Water is an important part of Country and connects places across a landscape. For Kamilaroi people, knowing Country includes knowing where water occurs, how it moves through different places and how changes in rainfall, waterways, plants, animals and seasons affect the availability of water. Water places can also hold cultural importance and knowledge beyond their physical role in the environment.

Looking after water is therefore not only about maintaining an environmental resource; it is part of looking after Country and the life, places and relationships that depend upon it.

Consider: Kamilaroi people understand that water is part of Country and connected to the life and places around it. When water changes, those changes can affect plants, animals, people and culturally important places. After everything you have learnt about Grassy Box Woodlands, how might caring for water also mean caring for Country as a whole?

Final Discussion / Yarning Circle: Think back over everything you have learnt throughout the unit. Begin with one drop of water and follow its connections through the woodland - to soil, grasses, trees, insects, animals and people. What happens to those connections when water is not cared for? Share one action that could help care for water, Country and the Grassy Box Woodland into the future.

Assessment

Students demonstrate their learning by:

- Comparing healthy and degraded landscapes
- Recording scientific observations
- Explaining the Small Water Cycle
- Designing a landscape that improves water retention
- Communicating how biodiversity, soil and water are connected

Lesson 9

Every Drop Matters – Restoring the Small Water Cycle



Teaching and Learning

Introduction

Hold up a bottle of water.

Ask students:

“Where was this water before it reached the bottle?”

Allow students to suggest ideas.

Then ask:

- Where does rain go after it falls?
- Does all rain reach rivers?
- Can plants influence where water goes?
- Can healthy landscapes actually help create rain?

Tell students:

“Today we’re going to investigate one of nature’s hidden superpowers.”

Don’t explain the Small Water Cycle yet.

Let them discover it.

DOWNLOAD 
Small Water Cycle
Observation Sheet



Activity 1 Rain on the Landscape

Teacher Resource:

Small Water Cycle Observation Sheet.
Students observe both landscape models.

Before adding water they predict:

- Which landscape will absorb more water?
- Which landscape will lose more water?
- Which landscape would stay greener during dry weather?

Students record their predictions.
Slowly apply the same amount of water to both models.

Students observe:

- runoff
- infiltration
- erosion
- puddling
- water retained in the soil.

Allow students time simply to watch.

Then discuss:

“What differences did you notice?”

NB: Remind students we drink the same water that dinosaurs once did!

Activity 2 Following Every Drop

Draw a simple water journey on the board.

Instead of teaching it immediately, build it together using student observations.

Rain

↓

Plants slow the water

↓

Healthy soil absorbs the water

↓

Roots store and use the water

↓

Plants release moisture back into the atmosphere

↓

Clouds form

↓

Rain falls again

Introduce the term:

The Small Water Cycle

Explain that healthy landscapes help keep this natural cycle working.

Discuss why landscapes with more vegetation often remain cooler and healthier during dry periods.

Activity 3 Landscape Engineers

Working in small groups, students receive a simple landscape map showing a degraded area.

Their challenge is:

How could you redesign this landscape so it captures and holds more water?

Students add features such as:

- native trees
- shrubs
- native grasses
- healthy groundcover
- leaf litter
- wetlands
- shelterbelts
- revegetated creek lines
- wildlife corridors.

For each addition students explain:

- How does this help water?
- How does this help biodiversity?
- How does this help people?

Groups present their redesigned landscapes.

Discuss how every restoration decision improves more than one part of the ecosystem.

Reflection

Students complete:

Before this lesson I thought...

Now I understand...

One action that helps keep

water in the landscape is...

Share reflections as a class.

Celebrating Our Learning

Gather students together. Display photographs from Lesson 1 alongside the completed landscape models from Lesson 9.

Ask: “What has changed?”

Allow students to recognise that the biggest change isn’t the model it’s their understanding.

Then ask one final question: “What do healthy woodlands, healthy soils and healthy water all have in common?”

Allow discussion before concluding:

They all depend on healthy relationships.

Between plants...

Animals...

Soil...

Water...

And people.

Closing Reflection

Invite students to stand in a circle.

Read the following together:

When we care for biodiversity, we care for soil.

When we care for soil, we care for water.

When we care for water, we care for life.

Every Woodland Guardian has the power to make a difference.



Source: Nell & Wayne Chaffey Landscape 1



Source: Nviro Media - Landscape 2

Assessment Overview

Assessment throughout this unit is designed to support inquiry-based learning by providing students with regular opportunities to observe, investigate, reflect and apply their understanding of Grassy Box Woodland ecosystems. Students demonstrate their learning through practical investigations, collaborative discussions, field observations and creative problem-solving activities that reflect authentic scientific and geographical inquiry.

Assessment is ongoing and embedded throughout each lesson, allowing teachers to monitor student understanding, provide timely feedback and adapt learning experiences where required.

The unit culminates in a summative assessment where students apply their knowledge by designing a healthy, resilient Grassy Box Woodland landscape that demonstrates their understanding of biodiversity, habitat, restoration and sustainable land management.

Formative Assessment

Throughout the unit, teachers monitor student understanding through:

- participation in class discussions
- questioning and scientific inquiry
- field journal observations
- ecosystem investigations
- Woodland Health Assessment activities
- completion of student worksheets
- collaborative learning tasks
- ecosystem and landscape design activities
- reflections and exit slips
- observation of practical investigations
- presentations and group discussions.

Teachers use these opportunities to provide ongoing feedback and identify areas where additional support or extension may be required.

Summative Assessment

Design a Healthy Grassy Box Woodland
Students apply their learning by designing a healthy Grassy Box Woodland landscape that demonstrates the connections between biodiversity, habitat, soil, water and people.

Students create an annotated landscape plan that includes:

- native trees
- native grasses and wildflowers
- wildlife habitat
- healthy soils
- waterways
- biodiversity
- habitat connections or wildlife corridors
- regenerative land management features
- strategies that support the Small Water Cycle.

Students present their design to the class, explaining:

- how their landscape supports biodiversity
- how habitat has been protected or restored
- how healthy soils contribute to healthy ecosystems
- how water moves through the landscape
- how people can contribute to caring for the environment.

Teachers assess students' ability to apply scientific understanding, communicate ideas and justify their design decisions using evidence gathered throughout the unit.

Skills Assessed

Throughout this unit students develop skills in:

Scientific Inquiry

- observing
- questioning
- predicting
- investigating
- collecting evidence
- recording observations
- interpreting results
- communicating findings

Geographical Inquiry

- observing environments
- interpreting photographs and maps
- identifying environmental change
- analysing landscapes
- proposing sustainable management strategies

Critical and Creative Thinking

- solving environmental problems
- evaluating evidence
- designing resilient landscapes
- applying ecological understanding to real-world situations

Collaboration and Communication

- working cooperatively
- participating in discussions
- presenting ideas
- listening respectfully to others
- sharing evidence-based conclusions

Environmental Stewardship

- recognising the importance of biodiversity
- understanding Caring for Country
- valuing sustainable land management
- identifying practical actions that support healthy ecosystems
- recognising individual and community responsibility for environmental conservation

Unit Reflection

Throughout this unit, students have explored the remarkable Grassy Box Woodland ecosystem and investigated the intricate relationships between plants, animals, soils, water and people. Through scientific inquiry, field investigations and collaborative learning, they have discovered how biodiversity supports healthy ecosystems and why these landscapes are so important for the future of Australia's environment.

Students have examined how Grassy Box Woodlands have changed over time, explored Aboriginal perspectives on Caring for Country and investigated how Landcare, landholders and communities are working together to restore biodiversity and improve ecosystem health. They have also discovered how healthy vegetation and living soils contribute to restoring the Small Water Cycle, demonstrating that every part of the landscape is connected.

By encouraging curiosity, critical thinking and environmental stewardship, this unit empowers students to recognise that caring for nature begins with understanding the relationships that sustain life. Whether planting native species, protecting wildlife habitat or caring for local waterways, every positive action contributes to healthier and more resilient landscapes.

It is hoped that students finish this unit with not only a deeper understanding of Grassy Box Woodlands, but also with the confidence to become informed environmental stewards who value, protect and care for Australia's unique natural environments both now and into the future.

