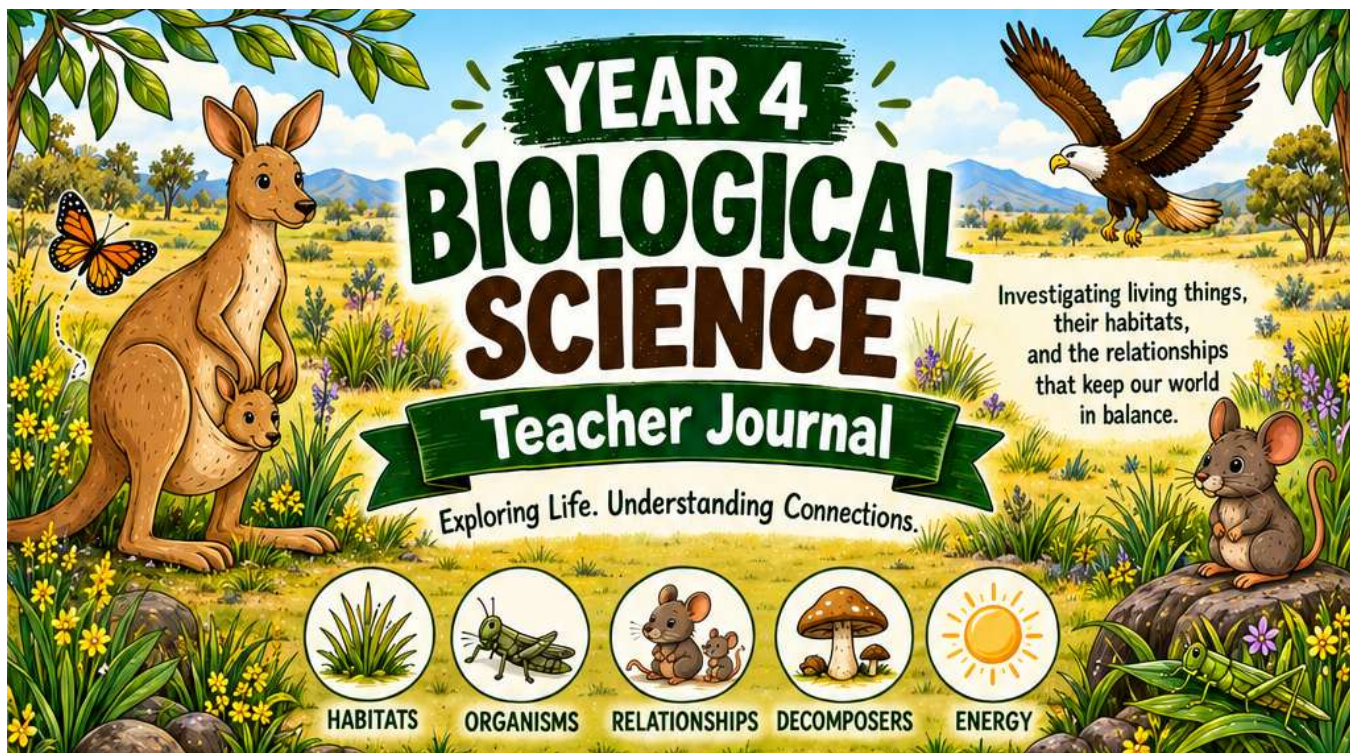




Investigating living things,
their habitats,
and the relationships
that keep our world
in balance.



HABITATS



ORGANISMS



RELATIONSHIPS



DECOMPOSERS



ENERGY



Year / Level

Year 4



Science Strand

Biological Sciences



Unit Title

Habitats & Food Chains



Duration

7 lessons –
40 minutes per lesson



Unit Overview

Students investigate organisms and habitats, then focus on Queensland grassland to explain the roles and interactions of producers, consumers and decomposers. They construct food chains, use arrows to represent energy transfer, organise population data in a column graph, identify patterns and relationships, and use evidence to predict changes to a mouse population. Students apply their learning to a grassland conservation issue and communicate an evidence-based recommendation to a Local Council audience.



Achievement Standard

Students identify the roles of organisms in a habitat and construct food chains; construct representations to organise data and information and identify patterns and relationships; and communicate ideas and findings for an identified audience and purpose, using scientific vocabulary when appropriate.



Unit Rationale

This sequence develops biological understanding from direct habitat observation to organism roles, feeding relationships, data interpretation, prediction and scientific communication. Each lesson deliberately produces concise evidence that contributes to the final Grassland Conservation Expo, allowing students to apply science understanding and inquiry skills in an authentic conservation context.



Key Concepts

- Habitats provide organisms the resources and conditions for survival.
- Producers, consumers and decomposers have different but connected roles.
- Food chains represent feeding relationships and the direction of energy transfer.
- Population data can reveal patterns that support evidence-based predictions.
- Scientific evidence can inform conservation recommendations and communication.



Australian Curriculum Science Content Descriptors

Science Understanding:

- **AC9S4U01** – explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.

Science as a Human Endeavour:

- **AC9S4H01** – investigate how scientists use data and evidence to develop explanations, and how scientists share scientific knowledge.
- **AC9S4H02** – investigate how scientific knowledge helps people to meet a need or solve a problem.

Discover. Investigate. Understand. Care for our world.

Year 4 Science
Biological Sciences

Australian Curriculum v9
Content Descriptors:
AC9S4U01
Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.
AC9S4I03
Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.

Lesson 1

HABITAT EXPLORERS

Identifying organisms in habitats and explaining what makes an area a habitat.

Lesson Focus

Identify organisms in habitats and use observations to explain what makes an area a habitat.

Learning Intention

We are learning to identify organisms in habitats and explain what they need to survive.

Success Criteria

- I can identify organisms in a habitat.
- I can record where organisms are found.
- I can suggest what organisms need to survive.
- I can explain what makes an area a habitat.

Key Vocabulary

- habitat
- organism
- living
- non-living
- survive
- environment
- observation
- needs

Duration

50 minutes

Resources

- Habitat Explorers – Living Things and Their Habitats visual
- Habitat Explorers worksheet
- Clipboards and pencils
- School habitat investigation area

Resource Purpose

The visual establishes habitat and organism vocabulary. The school investigation provides first-hand observations, and the worksheet records concise evidence about organisms, location and survival needs.

50-Minute Lesson Sequence			
Time	Lesson Stage	Teacher Actions	Student Actions
0–5 min	Engage / Hook	Display the Habitat Explorers visual. Ask: What makes somewhere a habitat? Invite observations of living and non-living features.	Observe the visual and share existing ideas.
5–8 min	Introduce the Mission	Read the Learning Intention and Success Criteria. Explain that students will become Habitat Explorers around the school.	Listen and identify what evidence they need to collect.
8–13 min	Explicit Teaching	Define habitat and organism. Model: organism + where it is found + what it needs to survive.	Use scientific vocabulary to describe an example organism.
13–18 min	Investigation Preparation	Model safe observation outdoors and how to record evidence without disturbing organisms.	Practise identifying a living organism and a non-living habitat feature.
18–30 min	Habitat Investigation	Move to the investigation area. Prompt: What organisms can you find and where are they living? What might they need here?	Observe the habitat, locate organisms and collect evidence for their worksheet.
30–40 min	Worksheet / Journal Task	Give students sufficient time to complete the Habitat Explorers worksheet. Circulate and conference with students.	Record organism, location and likely survival need. Complete: What makes this area a habitat?
40–48 min	Analyse and Discuss	Compare findings. Ask: What did the different organisms need? What living and non-living features helped them survive?	Share findings and explain why the area is a suitable habitat.
45–48 min	I Wonder...	Model: I notice organisms were found near plants and soil. I wonder what these organisms depend on for food?	Develop one relevant question about organisms in the habitat.
48–50 min	Exit Ticket	Ask: What makes this area a habitat? Use one observation as evidence.	Give one evidence-based response.

Explicit Teaching

Scientific Idea:
A habitat is a place where an organism lives and obtains the resources and conditions it needs to survive.

Board Model:
HABITAT → ORGANISMS → SURVIVAL NEEDS

Student Investigation

Investigation Prompt:
What does our evidence tell us about why organisms live in particular places?

- Observe organisms in a school habitat.
- Record where each organism is found.
- Infer what each organism may need to survive.

Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.

Teacher Questioning

- What do you notice?
- What evidence shows this is a habitat?
- What might this organism need here?
- Which features are living and non-living?

Expected Big Idea

Habitats contain living organisms and non-living features that provide the conditions and resources organisms need to survive.

Connection to the Next Lesson

Next scientific question:
If organisms share a habitat, what is different roles do they play in feeding relationships?



HABITAT EXPLORERS



LESSON 1: HABITAT INVESTIGATION

Investigate a habitat around your school.



ORGANISM I FOUND



WHERE I FOUND IT

WHAT MIGHT IT NEED TO SURVIVE?

 WATER	 SUNLIGHT	 SHELTER / OTHER

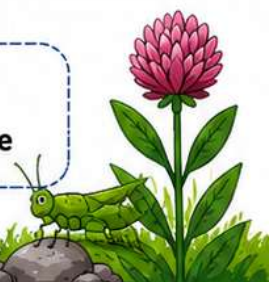
WHAT MAKES THIS AREA A HABITAT?





SCIENCE WORDS

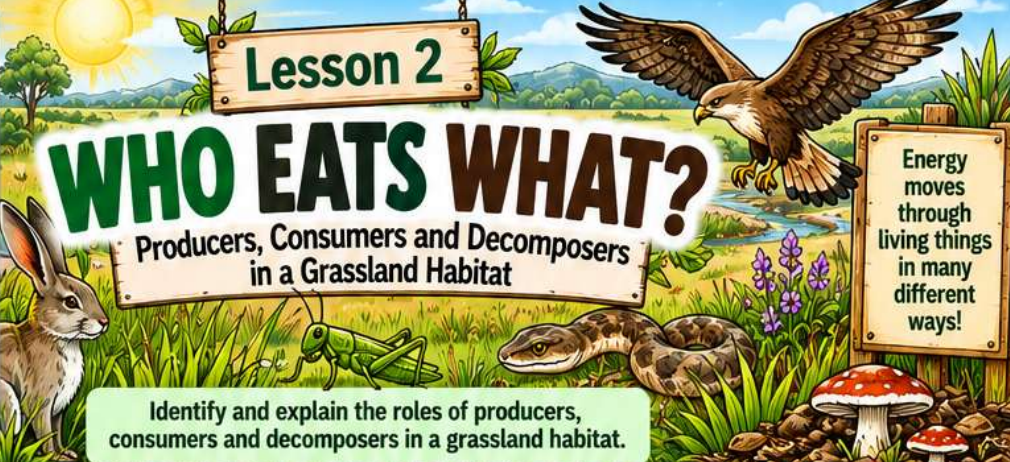
habitat • organism • living • non-living • survive





Year 4 Science
Biological Sciences

Australian Curriculum v9 Content Descriptors:
AC9S4U01
 Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.
AC9S4I03
 Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.



Lesson 2

WHO EATS WHAT?

Producers, Consumers and Decomposers in a Grassland Habitat

Identify and explain the roles of producers, consumers and decomposers in a grassland habitat.

Energy moves through living things in many different ways!

 **Lesson Focus**

Identify and explain the roles of producers, consumers and decomposers in a grassland habitat.

 **Learning Intention**

We are learning to identify and explain the roles of producers, consumers and decomposers in a grassland habitat.

 **Success Criteria**

- ✓ I can identify producers, consumers and decomposers.
- ✓ I can sort grassland organisms by their role.
- ✓ I can explain the role of a producer.
- ✓ I can explain the roles of consumers and decomposers.

 **Key Vocabulary**

- producer
- consumer
- decomposer
- organism
- habitat

- energy
- Sun
- nutrients
- grassland

 **Duration**
50 minutes

 **Resources**

- Who Eats What? visual
- Grassland organism cards/pictures
- Who Eats What? worksheet
- Pencils/highlighters

 **Resource Purpose**

The visual explicitly teaches organism roles. Sorting cards lets students classify examples, while the worksheet provides assessable evidence that students can identify and explain each role.

50-Minute Lesson Sequence			
Time	Lesson Stage	Teacher Actions	Student Actions
0–5 min	 Engage / Hook	Display Who Eats What? Ask: How do living things get the energy they need?	Predict which organisms make food, eat food or break down remains.
5–8 min	 Introduce the Mission	Unpack the Learning Intention and Success Criteria.	Listen and identify the three roles.
8–13 min	 Explicit Teaching	Teach producer, consumer and decomposer using the visual. Link each role to energy/nutrient movement.	Identify examples on the visual.
13–18 min	 Investigation 1	Model sorting grass and mouse. Ask students to justify each classification.	Classify examples and justify choices.
18–23 min	 Investigation 2	Model fungi/decomposer. Contrast decomposers with consumers.	Compare roles and explain the difference.
23–40 min	 Worksheet / Journal Task	Students sort organism cards and complete the three role explanations on the worksheet.	Classify organisms and write concise role explanations.
40–45 min	 Analyse and Discuss	Review classifications. Ask students to correct or defend choices using role definitions.	Share and justify classifications.
45–48 min	 I Wonder...	Ask: What would happen if one role disappeared from the habitat?	Record one scientific question.
48–50 min	 Exit Ticket	Name one organism and explain its role.	Give an individual role explanation.

 **Explicit Teaching**

Scientific Idea

Producers make food using energy from the Sun, consumers obtain energy by eating organisms, and decomposers break down dead material and return nutrients.

 **Board Model**

 SUN
↓
PRODUCER (makes food)
↓
CONSUMER (eats organisms)

 DEAD MATERIAL (plants and animals)
↓
DECOMPOSER (breaks down remains)
↓
NUTRIENTS (return to the soil)

 **Student Investigation / Journal Task**

Investigation Prompt

What does the evidence tell us about the different roles organisms play in a grassland habitat?

- Classify grassland organisms as producers, consumers or decomposers.
- Use role definitions as evidence.
- Explain each role in the grassland habitat.

 **Science Inquiry – Developing Questions**

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.

 **Teacher Questioning**

- What role does this organism have?
- What evidence supports your classification?
- How is a consumer different from a decomposer?
- Why are all three roles important?

 **Expected Big Idea**

Organisms have different roles in habitats: producers make food, consumers eat organisms, and decomposers break down dead material.

 **Connection to the Next Lesson**

Next scientific question:

How can we represent who eats whom and show the movement of energy?

LESSON 2

WHO EATS WHAT?



Living things have different roles in a grassland habitat.



1 IDENTIFY THE ROLES

Sort the grassland organisms into the correct groups.

Every living thing plays a part!

 PRODUCERS	 CONSUMERS	 DECOMPOSERS

2 EXPLAIN THEIR ROLES



A **producer's** role in a grassland habitat is to...



A **consumer's** role in a grassland habitat is to...



A **decomposer's** role in a grassland habitat is to...

SCIENCE WORDS

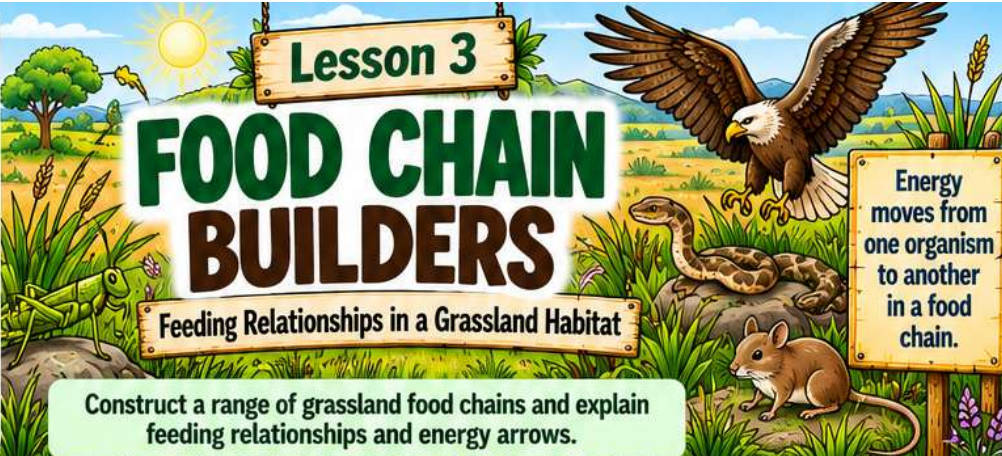
producer • consumer • decomposer • organism • energy • habitat





Year 4 Science
Biological Sciences

Australian Curriculum v9 Content Descriptors:
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AC9S4I03
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Lesson 3

FOOD CHAIN BUILDERS

Feeding Relationships in a Grassland Habitat

Construct a range of grassland food chains and explain feeding relationships and energy arrows.

Energy moves from one organism to another in a food chain.



Lesson Focus

Construct a range of grassland food chains and explain feeding relationships and energy arrows.



Learning Intention

We are learning to construct food chains and explain how arrows show feeding relationships and energy transfer.



Success Criteria

- ✓ I can construct three different grassland food chains.
- ✓ I can place organisms in a sensible feeding order.
- ✓ I can use arrows in the correct direction.
- ✓ I can explain a feeding relationship and what an arrow shows.



Key Vocabulary

- food chain
- feeding relationship
- energy
- producer
- consumer

- predator
- prey
- arrow
- transfer
- grassland



Duration
50 minutes



Resources

- Food Chain Builders visual
- Grassland organism cards
- Food Chain Builders worksheet
- Arrow cards/pencils



Resource Purpose

The visual models correct food chains and arrow direction. Organism and arrow cards support construction before students independently create three chains and explain an arrow.

50-Minute Lesson Sequence				
Time		Lesson Stage	Teacher Actions	Student Actions
0–5 min		Engage / Hook	Display Food Chain Builders. Cover the arrows and ask: Who eats whom? Which way should the arrows point?	Predict feeding order and arrow direction.
5–8 min		Introduce the Mission	Read the Learning Intention and Success Criteria.	Identify the task: build and explain food chains.
8–13 min		Explicit Teaching	Model Grass → Mouse → Snake → Eagle. Explain arrows as direction of energy transfer, not "who eats who" arrows.	Read the chain aloud using energy language.
13–18 min		Investigation 1	Model a second chain and identify producer, consumers, predator and prey.	Identify roles and feeding relationships.
18–23 min		Investigation 2	Give pairs organism cards to build a chain; challenge them to justify every arrow.	Build, check and explain a chain.
23–40 min		Worksheet / Journal Task	Students construct three different food chains and explain one arrow and feeding relationship.	Create three chains and write an explanation.
40–45 min		Analyse and Discuss	Compare chains. Check whether arrows consistently show energy transfer.	Justify and revise chains if needed.
45–48 min		I Wonder...	Ask: Why might there be fewer animals at the top of a food chain?	Record a question/prediction.
48–50 min		Exit Ticket	What does an arrow in a food chain show?	Respond independently.



Explicit Teaching

Scientific Idea

A food chain represents feeding relationships. Arrows point from the food source to the organism receiving energy.





Board Model



PRODUCER (makes food) CONSUMER (eats food) PREDATOR (eats other animals)

ENERGY TRANSFER



Student Investigation / Journal Task

Investigation Prompt

What does a food chain tell us about feeding relationships and energy transfer?

- Construct three different grassland food chains.
- Check arrow direction.
- Explain one energy transfer and feeding relationship.



Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.



Teacher Questioning

- Where does the energy begin?
- Why does this arrow point this way?
- Which organism is predator/prey here?
- Could this organism appear in more than one chain?



Expected Big Idea

Food chains show feeding relationships, and arrows show the direction energy is transferred from one organism to another.



Connection to the Next Lesson

Next scientific question:

Do population numbers show a pattern across a grassland food chain?

LESSON 3

FOOD CHAIN BUILDERS



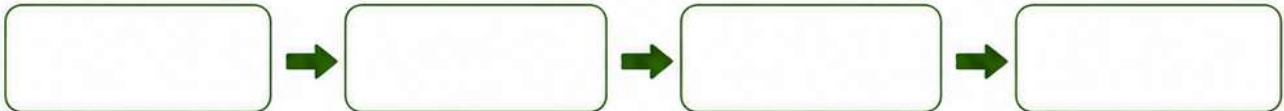
CONSTRUCT A RANGE OF GRASSLAND FOOD CHAINS

Construct three different food chains.

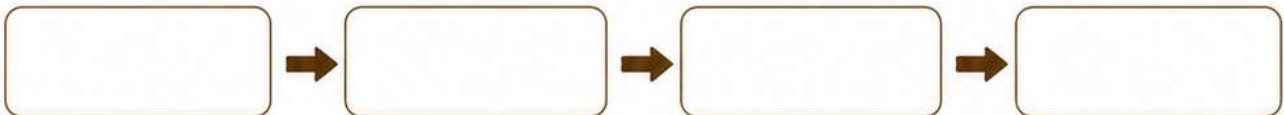


Remember:
Arrows show
the direction that
energy is transferred.

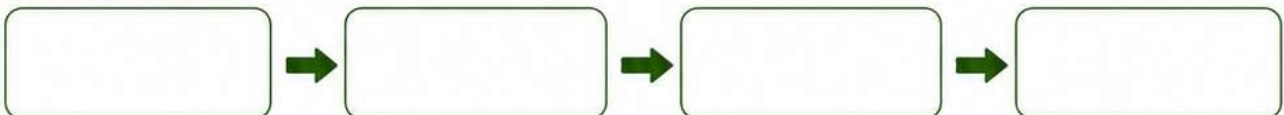
FOOD CHAIN 1



FOOD CHAIN 2

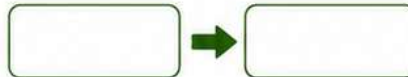


FOOD CHAIN 3



EXPLAIN THE ARROWS

Choose one arrow from one of your food chains.



What does this arrow show?

The arrow shows that energy is transferred from...



Explain the feeding relationship.

SCIENCE WORDS

producer • consumer • food chain • feeding relationship • energy • predator • prey



Year 4 Science

Biological Sciences

Australian Curriculum v9 Content Descriptors:
AC9S4U01
 Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.
AC9S4I03
 Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.

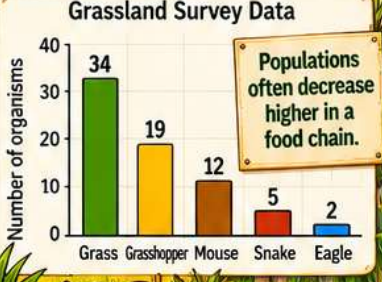
Lesson 4

GRASSLAND SCIENTIST

Graphing Population Data

Construct a column graph and identify and explain patterns in grassland population data.

Grassland Survey Data



Species	Number of organisms
Grass	34
Grasshopper	19
Mouse	12
Snake	5
Eagle	2

Lesson Focus

Construct a column graph and identify and explain patterns in grassland population data.

Learning Intention

We are learning to organise grassland population data in a graph and explain patterns in feeding relationships.

Success Criteria

- ✓ I can construct a column graph with a title, labels and even scale.
- ✓ I can plot the survey data accurately.
- ✓ I can identify a pattern in the populations.
- ✓ I can use feeding relationships to explain the pattern.

Key Vocabulary

- population
- data
- column graph
- axis
- scale
- pattern

- relationship
- feeding relationship
- evidence
- producer
- consumer
- predator
- prey
- transfer

Duration

50 minutes

Resources

- Grassland survey data: Grass 34, Grasshopper 19, Mouse 12, Snake 5, Eagle 2
- Grassland Scientist worksheet with graph space
- Food Chain Builders visual/previous food chains
- Rulers and pencils

Resource Purpose

The supplied survey data allows students to construct a representation. Previous food chains help them interpret the graph and explain a population pattern as a feeding relationship.

50-Minute Lesson Sequence			
Time	Lesson Stage	Teacher Actions	Student Actions
0–5 min	Engage / Hook	Show the five survey values without a graph. Ask: "How could scientists make this data easier to compare?"	Suggest ways to organise/represent the data.
5–8 min	Introduce the Mission	Unpack the Learning Intention and Success Criteria.	Identify graph features to include.
8–13 min	Explicit Teaching	Model title, axes, categories and an even scale. Plot the first value only.	Identify each graph feature.
13–18 min	Investigation 1	Compare two values and model a pattern statement without explaining it yet.	Describe what the numbers show.
18–23 min	Investigation 2	Connect the data to previous food chains. Model difference between "pattern" and "explanation".	Suggest why populations may decrease higher in feeding relationships.
23–40 min	Worksheet / Journal Task	Students construct the graph and answer the pattern and relationship prompts. Circulate and support.	Graph data, identify a pattern and explain it.
40–45 min	Analyse and Discuss	Compare graphs and explanations. Ask students to cite values as evidence.	Share patterns and justify explanations.
45–48 min	I Wonder...	Ask: If one population changed, what other population might change next?	Develop a prediction question.
48–50 min	Exit Ticket	State one pattern and one reason it might occur.	Give a concise evidence-based response.

Explicit Teaching

Scientific Idea
 Graphs organise data so patterns can be seen. Population patterns can be interpreted using feeding relationships.

Board Model

DATA
(survey values)

→

GRAPH
(column graph)

→

PATTERN
(what do you notice?)

→

FEEDING RELATIONSHIP
EXPLANATION (why?)

Student Investigation / Journal Task

Investigation Prompt
 What does the population data tell us about patterns in grassland feeding relationships?

- Represent survey data in a column graph.
- Identify a population pattern.
- Explain the pattern using feeding relationships.

Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.

Teacher Questioning

- What pattern can you identify?
- Which values are your evidence?
- How does the food chain help explain the pattern?
- What relationship do you see?

Expected Big Idea

A graph can reveal population patterns, and feeding relationships can help explain why those patterns occur.

Connection to the Next Lesson

Next scientific question:
 Can we use a pattern in grassland data to predict what will happen to a mouse population?

LESSON 4 PART A

GRASSLAND SCIENTIST



You are a scientist! Use the data below to construct a column graph.



GRASSLAND SURVEY DATA

Organism	Number Found
 Grass	34
 Grasshopper	19
 Mouse	12
 Snake	5
 Eagle	2

1 CONSTRUCT A COLUMN GRAPH

Use the data to construct a column graph.

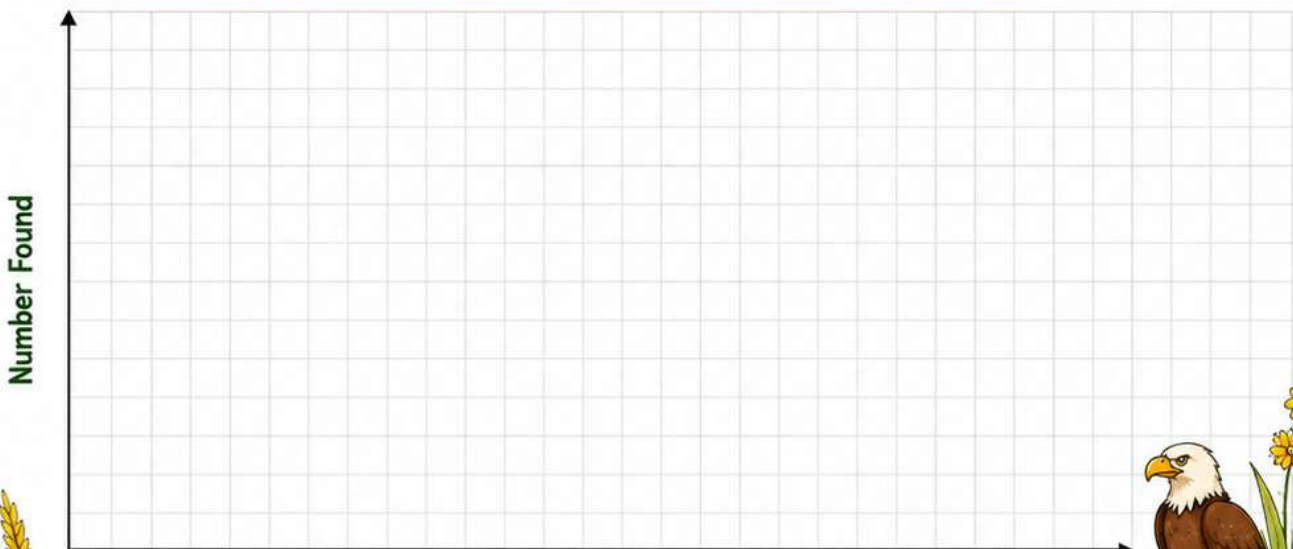
Remember to include:

- ✓ A title
- ✓ Labelled axes
- ✓ An even scale
- ✓ Accurate data

Graphs help scientists see patterns and relationships in data!

MY GRASSLAND POPULATION GRAPH

Title: _____



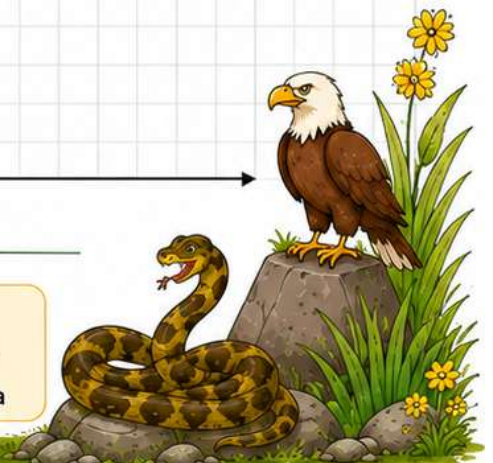
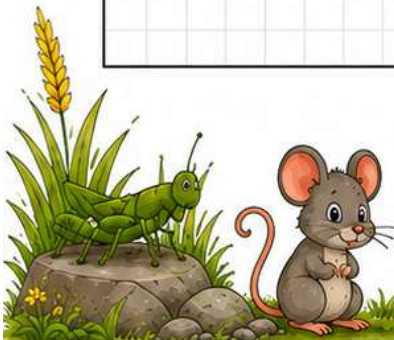
Number Found

Organisms



Make sure your graph has:

- a title
- an even scale
- labelled axes
- accurate data



LESSON 4

PART B

GRASSLAND SCIENTIST



Now that you have your graph, let's analyse the results!

2. IDENTIFY THE PATTERN



What pattern do you notice in the population data?

Look for changes, increases, decreases or differences!



3. EXPLAIN THE RELATIONSHIP



Use feeding relationships to explain why this pattern might occur.



- population • data • graph • pattern • relationship •
- feeding relationship • evidence





Year 4 Science

Biological Sciences

Australian Curriculum v9 Content Descriptors:

AC9S4U01

Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.

AC9S4I03

Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.

Lesson 5

THE MOUSE MYSTERY

Using Data and Food Chains to Make a Prediction

Use patterns in data and feeding relationships to make and justify a prediction about a mouse population.

Changes in one population can affect others.



Lesson Focus

Use patterns in data and feeding relationships to make and justify a prediction about a mouse population.



Duration
50 minutes



Learning Intention

We are learning to use patterns and feeding relationships to make evidence-based predictions about populations.



Success Criteria

- ✓ I can identify changes or patterns in the data.
- ✓ I can predict what will happen to the mouse population.
- ✓ I can use data as evidence for my prediction.
- ✓ I can explain how the feeding relationship supports my prediction.



Key Vocabulary

- population
- pattern
- prediction
- evidence
- feeding relationship
- producer
- consumer
- increase
- decrease
- data
- grassland



Resources

- Mouse Mystery data: Year 1 grass 35, mice 15, snakes 4; Year 2 grass 20, mice ?, snakes 2
- Mouse Mystery worksheet
- Previous population graph
- Food chain: Grass → Mouse → Snake
- Pencils/highlighters

	Grass	Mice	Snakes
Year 1	35	15	4
Year 2	20	?	2



Resource Purpose

The incomplete data set creates a prediction problem. Students use observed changes and a known feeding relationship as evidence to justify a mouse-population prediction.



50-Minute Lesson Sequence

Time		Lesson Stage	Teacher Actions	Student Actions
0–5 min		Engage / Hook	Reveal Year 2 with the mouse value missing. Ask: Can scientists make a reasonable prediction without knowing the missing number?	Observe changes and make initial predictions.
5–8 min		Introduce the Mission	Read the Learning Intention and Success Criteria.	Identify that predictions must be supported by evidence.
8–13 min		Explicit Teaching	Model identifying changes: grass 35 → 20; snakes 4 → 2. Revisit Grass → Mouse → Snake.	State changes using data.
13–18 min		Investigation 1	Model evidence versus guess. Ask what reduced grass could mean for mice.	Use the feeding relationship to reason about mice.
18–23 min		Investigation 2	Ask what a change in mice could mean for snakes. Emphasise linked populations.	Discuss cause-and-effect relationships.
23–40 min		Worksheet / Journal Task	Students complete pattern, prediction and evidence prompts. Circulate and support.	Make and justify a mouse-population prediction.
40–45 min		Analyse and Discuss	Compare predictions. Accept reasonable predictions only when supported by the supplied evidence.	Defend predictions using data and feeding relationships.
45–48 min		I Wonder...	Ask: What other change could alter this food chain?	Record one investigable question.
48–50 min		Exit Ticket	What is your mouse prediction and strongest evidence?	Respond independently.



Explicit Teaching

Scientific Idea

Scientists use patterns and relationships in evidence to make justified predictions about what may happen next.



Board Model



Student Investigation / Journal Task

Investigation Prompt

What does the evidence tell us about the mouse population?

- Identify changes in the two-year data.
- Use the pattern to predict the mouse population.
- Justify the prediction using data and feeding relationships.



Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.



Teacher Questioning

- What changed?
- Which data supports your idea?
- How does less grass affect mice?
- How could mice affect snakes?
- Is that a prediction or a guess? Why?



Expected Big Idea

A prediction is stronger when it is based on a pattern in data and an explained feeding relationship.



Connection to the Next Lesson

Next scientific question:
How can scientists use this kind of evidence to recommend ways to protect a grassland?



THE MOUSE MYSTERY



SOMETHING HAS CHANGED!

Scientists collected data from the same grassland over two years.

Year	 Grass	 Mice	 Snakes
Year 1	35	15	4
Year 2	20	?	2

Think about this feeding relationship:



GRASS



MOUSE



SNAKE

1 IDENTIFY THE PATTERN

What changes or patterns do you notice in the data?



2 USE THE PATTERN TO MAKE A PREDICTION

What do you predict will happen to the mouse population?

☐

Increase

☐

Decrease

☐

Stay about the same



3 USE EVIDENCE TO EXPLAIN YOUR PREDICTION

I predict this because the data shows...

The feeding relationship supports my prediction because...



population • pattern • prediction • evidence •
feeding relationship • producer • consumer



Year 4 Science

Biological Sciences

Australian Curriculum v9 Content Descriptors:

AC9S4U01
Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.

AC9S4I03
Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.

Lesson 6

SAVE OUR GRASSLAND

Using Evidence to Make a Difference

Apply scientific evidence to predict impacts of a grassland issue and recommend a solution to the Local Council.

Healthy grasslands support living things. Our actions today can protect them tomorrow.

Lesson Focus

Apply scientific evidence to predict impacts of a grassland issue and recommend a solution to the Local Council.

Learning Intention

We are learning to use scientific evidence to predict impacts on a grassland and recommend a conservation action.

Success Criteria

- I can explain how a grassland issue could affect organisms and feeding relationships.
- I can use scientific evidence to support my explanation.
- I can recommend a solution to the Local Council.
- I can use persuasive scientific language to justify my recommendation.

Key Vocabulary

- habitat
- population
- feeding relationship
- evidence
- prediction
- conservation
- biodiversity
- invasive species
- impact
- recommendation
- producer
- consumer

Resources

- Save Our Grassland visual
- Grassland issue information/cards: invasive foxes, rabbits, drought, bushfire, overgrazing, pollution
- Save Our Grassland worksheet
- Previous food chains, population graph and Mouse Mystery data
- Pencils/highlighters

Resource Purpose

The issue visual/cards provide a conservation context. Previous unit evidence lets students apply feeding relationships, population data and predictions to develop a justified recommendation for an identified audience.

50-Minute Lesson Sequence			
Time	Lesson Stage	Teacher Actions	Student Actions
0–5 min	Engage / Hook	Display Save Our Grassland. Ask: Which issue could change a grassland food chain most quickly? Why?	Choose an issue and share an initial reason.
5–8 min	Introduce the Mission	Explain that students are advising the Local Council and will need evidence, not opinions. Unpack the Learning Intention and Success Criteria.	Identify audience, purpose and evidence sources.
8–13 min	Explicit Teaching	Model one issue (e.g. rabbits → more grazing → less grass → possible effect on consumers). Distinguish evidence from persuasion.	Follow the cause-and-effect model.
13–18 min	Investigation 1	Use a previous food chain as evidence. Model how an issue could affect more than one organism in the chain.	Trace an impact through a feeding relationship.
13–28 min	Investigation 2	Model a recommendation sentence: evidence + action + reason. Introduce persuasive science stems.	Suggest evidence-based actions.
23–40 min	Worksheet / Journal Task	Students choose/receive an issue and complete impact, evidence, recommendation and persuasive prediction. Circulate and support.	Prepare a concise council recommendation.
40–45 min	Analyse and Discuss	Compare recommendations. Ask: Is there evidence? Is the action linked to the problem?	Give feedback and strengthen explanations.
45–48 min	I Wonder...	Ask: What evidence would the council want to collect after taking action?	Develop a monitoring question.
48–50 min	Exit Ticket	State your recommendation and one piece of evidence.	Give a persuasive evidence-based response.

Explicit Teaching

Scientific Idea

Scientific evidence about populations and feeding relationships can be applied to predict impacts and justify conservation recommendations.

Board Model

```

graph TD
    A["ISSUE  
(e.g. rabbits, overgrazing)"] --> B["IMPACT ON ORGANISM  
(what might happen?)"]
    B --> C["FEEDING RELATIONSHIP  
(how are they linked?)"]
    C --> D["EVIDENCE  
(data, graphs, food chains)"]
    D --> E["RECOMMENDATION  
(what should we do?)"]
        
```

Student Investigation / Journal Task

Investigation Prompt

What does our scientific evidence suggest the Local Council should do to protect the grassland?

- Investigate one grassland issue.
- Predict impacts on organisms and feeding relationships.
- Use prior evidence to justify a Local Council recommendation.

Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.

Teacher Questioning

- Which organisms could be affected?
- What evidence supports that?
- How could the effect move through a food chain?
- Why should the council choose your action?

Expected Big Idea

Conservation recommendations are stronger when they connect a problem to predicted biological impacts and scientific evidence.

Connection to the Next Lesson

Next scientific question:
How can we select and communicate our strongest evidence to persuade the Local Council?

LESSON 6 PART A

SAVE OUR GRASSLAND



You are a scientist! Use evidence to help protect our grassland.



YOUR MISSION

The Local Council needs scientific advice about protecting the grassland.

Choose one issue:

☐


Invasive foxes

☐


Rabbits

☐


Drought

☐


Bushfire

☐


Overgrazing

☐


Pollution

My issue: _____

1 PREDICT THE IMPACT

How could this issue affect organisms and feeding relationships in the grassland?

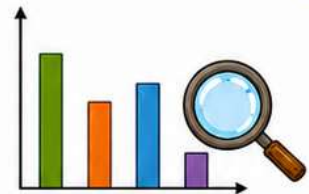


2 USE SCIENTIFIC EVIDENCE



Use evidence from your food chains, population data, graph or Mouse Mystery.

The scientific evidence shows...





SCIENCE WORDS

population • pattern • prediction • evidence •
feeding relationship • producer • consumer



SAVE OUR GRASSLAND



You are a scientist! Give the Local Council your advice.

3 RECOMMEND A SOLUTION



I recommend that the Local Council...

The council should do this because...



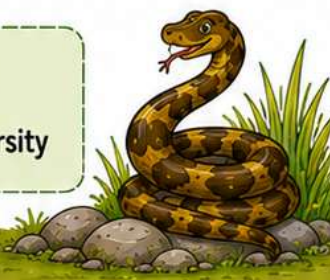
★ PERSUADE THE COUNCIL



If the council acts, I predict...



habitat • population • feeding relationship
evidence • prediction • conservation • biodiversity





Year 4 Science
Biological Sciences

Australian Curriculum v9 Content Descriptors:
AC9S4U01
 Explain the roles and interactions of consumers, producers and decomposers within a habitat and how food chains represent feeding relationships.
AC9S4I03
 Follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital technologies as appropriate.

Lesson 7

GRASSLAND CONSERVATION EXPO

Presenting Scientific Evidence to the Local Council

Communicate scientific ideas, findings, data and predictions to the Local Council using scientific vocabulary and persuasive techniques.



Save Our Grassland

Lesson Focus

Communicate scientific ideas, findings, data and predictions to the Local Council using scientific vocabulary and persuasive techniques.

Learning Intention

We are learning to communicate scientific findings and recommendations to an identified audience using evidence and scientific vocabulary.

Success Criteria

- I can communicate data and scientific findings.
- I can explain a feeding relationship using evidence.
- I can communicate a prediction supported by data.
- I can persuade the Local Council using scientific vocabulary and a justified recommendation.

Key Vocabulary

- habitat
- population
- feeding relationship
- evidence
- prediction
- conservation
- biodiversity
- invasive species
- impact
- recommendation
- producer
- consumer
- decomposer
- food chain
- graph
- pattern
- conclusion

Resources

- Grassland Conservation Expo – Assessment visual
- Grassland issue information/cards: invasive foxes, rabbits, drought, bushfire, overgrazing, pollution
- Council Evidence Brief / assessment worksheet
- Previous food chains, population graph and Mouse Mystery data
- Pencils/highlighters and presentation materials
- Marking guide/checklist



Resource Purpose

The assessment visual and cards provide a conservation context. Previous unit evidence lets students apply feeding relationships, population data and predictions to develop a justified recommendation for the Local Council.

50-Minute Lesson Sequence			
Time	Lesson Stage	Teacher Actions	Student Actions
0–5 min	 Engage / Hook	Display the Grassland Conservation Expo visual. Ask: Which issue could change a grassland food chain most quickly? Why?	Choose an issue and share an initial reason.
5–8 min	 Introduce the Mission	Explain that students are advising the Local Council and will need evidence, not opinions. Unpack the Learning Intention and Success Criteria.	Identify audience, purpose and evidence sources.
8–13 min	 Explicit Teaching	Model a concise council statement: problem → data → finding → prediction → recommendation. Highlight scientific vocabulary and persuasive language.	Identify the evidence and persuasive features in the model.
13–18 min	 Investigation 1	Model selecting a graph finding and linking it to a feeding relationship using a previous food chain.	Select one strong data finding from previous work.
18–23 min	 Investigation 2	Model integrating the Mouse Mystery prediction and a conservation recommendation. Introduce persuasive science stems.	Plan the sequence of evidence for the brief.
23–40 min	 Assessment Task	Students complete the Council Evidence Brief using prior work. Circulate and conference where required.	Communicate problem, data, finding, feeding relationship, prediction and recommendation.
40–45 min	 Present / Discuss	Students present in pairs/small council groups. Listeners ask one evidence question.	Present findings and answer using scientific evidence.
45–48 min	 Council Questions	Ask: What evidence would the council want to collect after taking action?	Respond using scientific vocabulary and evidence.
48–50 min	 Exit Ticket	State your recommendation and one piece of evidence.	Give a persuasive evidence-based response.

Explicit Teaching

Scientific Idea

Scientific evidence about populations and feeding relationships can be applied to predict impacts and justify conservation recommendations.

Board Model

```

graph TD
    A[ISSUE  
(e.g. rabbits, drought)] --> B[IMPACT ON ORGANISM  
(what might happen?)]
    B --> C[FEEDING RELATIONSHIP  
(how are they linked?)]
    C --> D[EVIDENCE  
(data, graphs, predictions)]
    D --> E[RECOMMENDATION  
(what should we do?)]
        
```

Student Investigation / Journal Task

Investigation Prompt

What does our scientific evidence suggest the Local Council should do to protect the grassland?

- Investigate one grassland issue.
- Predict impacts on organisms and feeding relationships.
- Use prior evidence to justify a recommendation.

Science Inquiry – Developing Questions

I notice: _____

I wonder: _____

Students develop one relevant scientific question arising from the lesson.

Teacher Questioning

- What does your data show?
- Which feeding relationship supports your finding?
- How could the effect move through a food chain?
- Why should the council choose your action?
- Which scientific words make your explanation precise?

Expected Big Idea

Conservation recommendations are stronger when they connect a problem to predicted biological impacts and scientific evidence.

Connection to the Next Lesson

Next scientific question:

How could the council collect new evidence to determine whether its conservation action is working?

LESSON 7 PART A

GRASSLAND CONSERVATION EXPO



COUNCIL EVIDENCE BRIEF

Environmental Scientist: _____



YOUR MISSION

Use your scientific findings from this unit to convince the Local Council to take action to protect the grassland.



1 EXPLAIN THE PROBLEM

My grassland issue is:



This is a problem because...

2 COMMUNICATE YOUR DATA AND FINDINGS

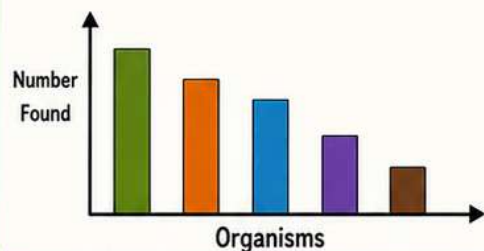


Look at your population graph or population data.

The data shows...

The pattern I identified was...

GRASSLAND POPULATION DATA



LESSON 7 PART B

GRASSLAND CONSERVATION EXPO



COUNCIL EVIDENCE BRIEF



3 USE EVIDENCE FROM FEEDING RELATIONSHIPS



Use one of your food chains.

My food-chain evidence shows...



This feeding relationship is important because...



4 COMMUNICATE YOUR PREDICTION



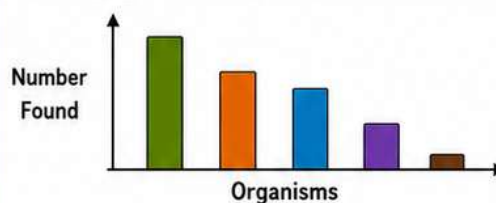
Think about your Mouse Mystery investigation.

Based on the pattern in the data, I predicted that the mouse population would...

My evidence was...

MOUSE MYSTERY DATA

Year	Grass	Mice	Snakes
Year 1	35	15	4
Year 2	20	?	2



5 MAKE YOUR RECOMMENDATION



I recommend that the Local Council...

The council should take action because...

A HEALTHY GRASSLAND
IS A HOME FOR
ALL LIVING THINGS!





PRESENT TO THE LOCAL COUNCIL

Be a Confident Science Communicator!

Use your Council Evidence Brief to present your scientific findings.

TELL THE COUNCIL:



Use scientific vocabulary and persuasive language when you speak.

PERSUASIVE SCIENCE LANGUAGE

- The evidence shows... _____
- The data suggests... _____
- This pattern shows... _____
- We predict... _____
- This could affect... _____
- We recommend... _____
- The council should... because... _____

SCIENTIFIC VOCABULARY

	habitat		energy
	organism		population
	producer		graph
	consumer		pattern
	decomposer		relationship
	food chain		prediction
	feeding relationship		evidence
			conservation

ASSESSMENT CHECK - I HAVE:

- | | |
|---|--|
| ☐ Communicated scientific ideas and findings | ☐ Used evidence |
| ☐ Used data | ☐ Made a recommendation for the Local Council |
| ☐ Explained a feeding relationship | ☐ Used scientific vocabulary |
| ☐ Communicated a prediction | ☐ Used persuasive techniques |



TOGETHER, WE CAN PROTECT OUR GRASSLANDS FOR THE FUTURE! ❤️