

What's the Story with Understorey?

The “understorey” is the layer of plants that includes small herbs, grasses, orchids, ferns, vines and climbers and small bushes.

The understorey teems with wildlife, and provides habitat for small birds, small mammals like the antechinus (a small, carnivorous marsupial), lizards and snakes, frogs, spiders and insects such as beetles, ants and butterflies.

These animals use the plants in the understorey for food and shelter. For example, small birds like the Fairy Wren and Eastern Yellow Robin eat insects and seeds, while frogs such as the Southern Brown Tree Frog shelter in the cool, shaded areas of the understorey.

Eastern Yellow Robin



Southern Brown Tree Frog



Fairy Wren



What you will need

Measuring tape (10m)

Rubber mallet

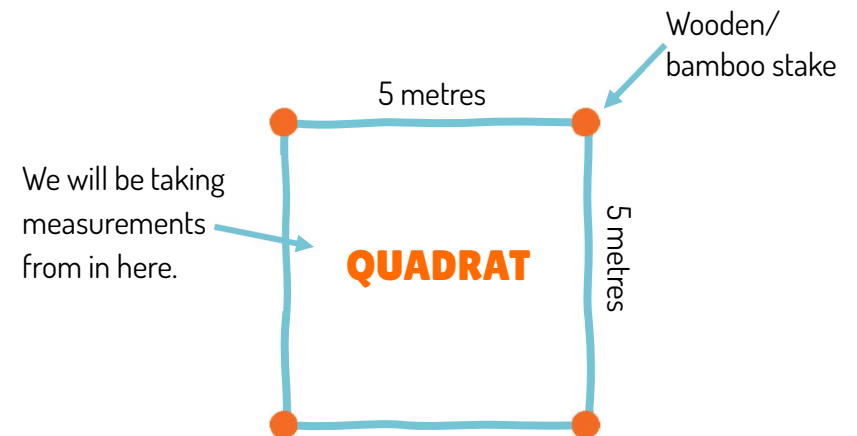
Four wooden or bamboo stakes

What to do

1. Choose an area where there are lots of native plants. Mark out a 5m x 5m quadrat. Think of a quadrat as a big picture frame that you place on the ground. Everything inside the frame is what you will study. We will use the quadrat to count how many plants and animals are inside the frame.
2. Mark out each corner of your quadrat using a stake. Use the measuring tape to measure the distance between each stake. Mark out three quadrats.
3. We will focus on plants that are less than 6 metres tall in our quadrat – the “understorey”. Use the list on the next page to see which layers of the understorey are present at your site. Place a tick in the box if you can see them in your quadrat.



Scientists use quadrats to study plants and animals. Quadrats help scientists learn about a whole area without having to look at every single part, and to understand which species are common and which are rare. They can also show changes over time. For example, scientists can find out if a certain plant is growing more or less each year by using quadrats in the same place over time.



Quadrat	Vegetation type				
	Trees (less than 6m tall)	Shrubs (less than 6m tall)	Grasses	Herbs	Climbers/creepers
1					
2					
3					

How do changes in the canopy affect the understory (eg. what happens if a tree falls over)?

What role does the understory play in our woodlands and forests?

What types of animals live in the understory? What do they eat?



What's the Story with Understorey? – Teacher Resource

Suggested Lesson time – 1 lesson, approximately 50 minutes each

This lesson will help students understand what biodiversity is and how biodiversity can vary in different habitats. It can be a standalone lesson or be combined with any other worksheet and lessons in the Habitat Warriors range, for example linking it to other understorey habitats with 'It's Log-ical', 'Lovely Leaf Litter' and 'Habitat Assessment', or to specific species with 'Insect Safari' or 'Wildlife Detective'.

At the end of this lesson students will:

- Know what Understorey is, and why is important habitat and important to biodiversity.
- Understand that the Understorey is made of different vegetation layers
- Be able to describe the different types of vegetation that make up the understorey, and name some animals that live in, or use, the understorey.

This lesson can be made suitable for all Primary levels – suggestions on how you could 'level up' the lesson are also given, and the detailed links to the Victorian Curriculum can also provide additional ideas.

Basic Lesson Outline

Introduce the concept of biodiversity, and the understorey as a type of habitat that supports plant and animal biodiversity

- Ask students to name some plants that might occur in the understorey
- Why is biodiversity important? How is biodiversity linked to the understorey habitat?
- What kind of animals might use the understorey as habitat and why?

Provide students with the 'What's the Story with Understorey' worksheet

Explain the practical task

- Explain what a 'quadrat' is and how it will be used in the task
- Organise the class into small groups to undertake the quadrat sampling
- Leave plenty of time for the students to complete the practical task

Class discussion

- What were the challenges of the task, if any?
- What did you find out about the understorey in your quadrat?
- What sort of animals do you think use the understorey? Did you see any animals?
- How could the school provide a better variety of habitats in the grounds to support biodiversity?

Lesson Level Up

There are multiple ways to extend and expand this lesson to make it more comprehensive and/or introduce more complex topics for older children/year levels. For example:

- Expand the English component: Ask students to write a short descriptive text describing the types of biodiversity – animal and/or plant – that use the understorey as habitat. This activity can be altered to suit any primary level.
- Expand the Mathematics component: Ask students to calculate the totals of each type of vegetation across all quadrats taken. Which type of vegetation was most common?
- Have students calculate the proportion or percentage of each type of vegetation, and plot a graph – for example a simple pie-chart.
- Expand the Science component: The understorey can involve some complex food webs, including pollinators, predators and prey. Expand the lesson to discuss simple food webs and ask students to draw a possible food web in the understorey – the number of species could be adjusted depending on year level.

Detailed Curriculum Links

Science			
	Foundation – Level 2	Level 3 – Level 4	Level 5 – Level 6
Science Understanding			
Science as a human endeavour	People use science in their daily lives	Science knowledge helps people to understand the effects of their actions	Scientific understandings, discoveries and inventions are used to inform personal and community decisions and to solve problems that directly affect people's lives
Biological sciences	Living things have a variety of external features and live in different places where their basic needs, including food, water and shelter, are met	Different living things have different life cycles and depend on each other and the environment to survive	The growth and survival of living things are affected by the physical conditions of their environment
Science Inquiry Skills			
Questioning and Predicting	Respond to and pose questions, and make predictions about familiar objects and events	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge	With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules
Planning and conducting	Participate in guided investigations, including making observations using the senses, to explore and answer questions	Suggest ways to plan and conduct investigations to find answers to questions including consideration of the elements of fair tests Safely use appropriate materials, tools, equipment and technologies	With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks

Science			
	Foundation – Level 2	Level 3 – Level 4	Level 5 – Level 6
Recording and processing	Use informal measurements in the collection and recording of observations	Use formal measurements in the collection and recording of observations	Construct and use a range of representations, including tables and graphs, to record, represent and describe observations, patterns or relationships in data
	Use a range of methods, including drawings and provided tables, to sort information	Use a range of methods including tables and column graphs to represent data and to identify patterns and trends	
Analysing and evaluating	Compare observations and predictions with those of others	Compare results with predictions, suggesting possible reasons for findings	Compare data with predictions and use as evidence in developing explanations
			Suggest improvements to the methods used to investigate a question or solve a problem
Communicating	Represent and communicate observations and ideas about changes in objects and events in a variety of ways	Represent and communicate observations, ideas and findings to show patterns and relationships using formal and informal scientific language	Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships

Mathematics			
	Foundation – Level 2	Level 3 – Level 4	Level 5 – Level 6
Measurement and Geometry			
Using units of measurement	<p>F: Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language</p> <p>L1: Measure and compare the lengths, masses and capacities of pairs of objects using uniform informal units</p> <p>L2 Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units</p>	<p>L3: Measure, order and compare objects using familiar metric units of length, area, mass and capacity</p> <p>L4: Use scaled instruments to measure and compare lengths, masses, capacities and temperatures</p>	<p>L5: Choose appropriate units of measurement for length, area, volume, capacity and mass</p> <p>L6: Connect decimal representations to the metric system</p>
Statistics and Probability			
Chance			<p>L6: Describe probabilities using fractions, decimals and percentages</p> <p>Compare observed frequencies across experiments with expected frequencies</p>

Statistics and Probability cont.			
	Foundation – Level 2	Level 3 – Level 4	Level 5 – Level 6
Data Representation and Interpretation		<p>L3: Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies</p> <p>Interpret and compare data displays</p>	<p>L5: Pose questions and collect categorical or numerical data by observation or survey</p> <p>Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies</p> <p>Describe and interpret different data sets in context</p>