Habitat Level Up

What's a habitat? Anywhere that plants and animals live! Habitats layers, or "strata", refer to the vertical zones within a habitat – think of them like the layers in a rainbow cake. Each habitat layer supports different types of plants and animals. We'll be using our observation skills to learn more about these different layers in your local environment.

What you will need

Measuring tape (20m)

Four wooden or bamboo stakes

Rubber mallet

What to do

1. Choose an area where there are lots of native plants. Mark out a 20m x 20m 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 determine 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.

3. Use the list on the last page to see which habitat layers are present in your quadrat.

Some definitions:

Ground Cover: This is the bottom layer, like the floor of a woodland or forest. It has small herbs and mosses, fallen leaves, twigs and branches. Imagine this is like the carpet in your house. These provide food and shelter for smaller animals like insects, spiders, small lizards and frogs.

Understorey: This layer is above the ground cover. It has small herbs, grasses and orchids, small bushes and young thin trees called saplings. Think of it as the furniture in your house, like chairs and tables. The understorey provides habitat for small birds, mammals, lizards, snakes, frogs, spiders and insects.

Mid-Storey: This layer is higher up and has medium-sized trees like wattles and banksias and larger bushes. It's like the shelves in your house. This layer is home to birds, mammals and some reptiles.

Canopy: This is the top layer made up of the tallest trees such as gum trees These trees are like the roof of your house. The canopy is home to koalas, possums, gliders, birds and insects, and also provides them with food, resting spots and shade.

Leaf litter: Dead leaves, twigs and other plant parts that have fallen to the ground and make a layer, a bit like a blanket. It provides habitat for many different animals, particularly insects. As leaf litter rots it forms soil and creates nutrients for plants, and it also stops the soil from drying out.

Different habitat layers provide homes and food for different types of wildlife. Some areas have lots of different layers and some only have a few. You may have less layers if your site is "disturbed" (eg. through clearing trees, fire, flood). Some habitats like grasslands don't have any trees or shrubs present.

HABITAT WARRIORS
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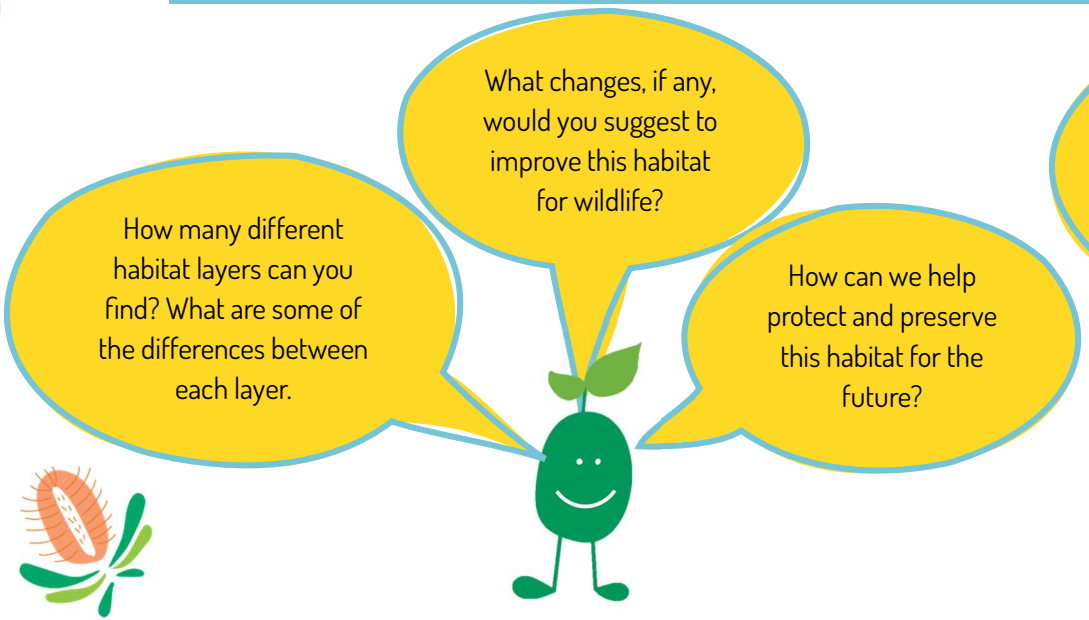
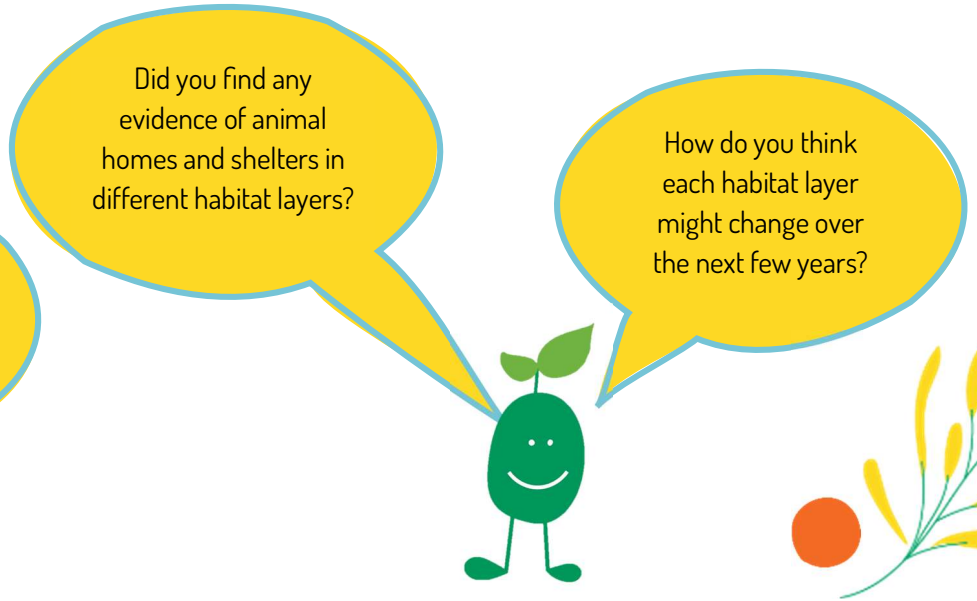
Habitat Layer	A lot	Some	None
Trees			
Ground cover (eg. herbs, grasses)			
Shrubs			
Leaf litter			
Rocks			
Bare ground			
Fallen logs			
Water source			





Habitat Level Up – Teacher Resource

Suggested Lesson time – 1 lesson, approximately 50 minutes.

This lesson will help students understand the concept of habitat layers and be able to identify the different layers in a local outdoor environment. It can be a standalone lesson or be combined with any other worksheet and lessons in the Habitat Warriors program (for example, linking it to specific habitats with 'What's the Story with Understorey', 'Lovely Leaf Litter' and 'Wildlife Detectives').

At the end of this lesson students will:

- Understand more about the various habitat layers present within an area of vegetation, and what makes each one unique.
- Understand that different habitat layers support different types of plants and animals.
- Learn about the basic needs of animals and plants in each habitat layer.
- Develop skills in observing and identifying characteristics of different habitat layers.
- Learn about the role that we can play in protecting habitats and the natural environment for the future.

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

Basic Lesson Outline

Introduce the idea of habitat layers – just like a layered birthday cake, all habitats have different levels where different plants and animals live.

- Ask students to name which habitat layers they are already familiar with.
- Ask students to find the tallest tree, and discuss which animals might use this as habitat. Look down to the ground, and encourage students to spot insects and other mini-beasts that use the ground cover as habitat.

Provide students with the 'Level Up' worksheet

Explain the practical task

- Mark out the quadrat as a class – all groups will work within this quadrat.
- Organise the class into small groups to undertake the monitoring task.
- Leave plenty of time for the students to complete the practical task.

Class discussion

- How many different habitat layers did you find? Describe some of the structural differences between each layer, and in the types of animals that you would find.
- Did you find any evidence of animal homes and shelters in different habitat layers?
- Why do animals require different habitat layers for food and shelter?
- What changes, if any, would you suggest to improve the habitat for wildlife?
- How do you think each habitat layer might change over the next few years?
- How can we help protect and preserve this habitat for the future?

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 Science component: Broaden the discussion to aske students to identify some of the main Victorian habitats (eg. grasslands, woodland, forest, wetlands, alpine and coastal areas). Ask each student to research the key characteristics of one habitat and identify which plant and animal species call this habitat home.
- Expand the Science component: Ask students to identify which of Victoria's natural habitats are under threat, and why (eg. natural temperate grasslands – human activity; alpine bogs – climate change). Students can nominate which type of habitat they would protect, and explain why and how they would protect this habitat. Ask students to discuss some of the other benefits of protecting our natural habitats.

The complexity of this section 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			
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.

Science			
	Foundation – Level 2	**Level 3 – Level 4**	**Level 5 – Level 6**
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.	With guidance, plan appropriate investigation types to answer questions or solve problems and use equipment, technologies and materials safely, identifying potential risks.
		Safely use appropriate materials, tools, equipment and technologies.	
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.