# *Animal Habitats* Teaching and learning plan

## Learning intentions

Students will be able to:

* describe the features of a habitat in the local environment that meet the needs of living things;
* understand that living things thrive and survive in habitats that meet the needs of those living things;
* pose questions and make predictions about the habitats of living things;
* participate in a guided investigation of the habitats of living things;
* follow instructions to record and sort their observations about the habitats of living things.

## Suggested time for this CLE

The time needed to complete the *Animal Habitats* CLE will depend on the depth of the prior knowledge of the students and the time taken to perform the introductory activities and three investigations—‘Walk, explore, record’, ‘Find and collect’, ‘Home away from home’—and follow up with further extension activities. Allow 3–4 hours.

[**Planning ahead and equipment list**](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/PlanningEquipmentList_yr1_AnimalHabitats.docx)

## Safety considerations

When you and your class are completing your Risk Assessment, consider the following safety points, adding any other relevant ones to the list.

* Identify students and other participants (such as accompanying parents or teachers) who might have allergic reactions to the following.
* Latex or plastic products in protective gloves. Cloth gloves may suit students better.
* Stings or bites from insects such as bees, wasps, ants and spiders. Carry a first aid kit and any Epipens® that may be required.
* Plants such as grasses or vines.
* Consider the environment being studied and organise appropriate sun-safe protective gear such as hats, umbrellas, pop-up shelters and protective clothing such as closed footwear and long sleeves.
* When undertaking the suggested activities and tasks outdoors (for example, working in the schoolyard), ensure that students are properly supervised and know the boundaries and limits of the outdoor space in which they are working. Students must be able to see the teacher at all times, and the teacher must be able to view any student working outdoors at any given time.
* Have access to communication and carry a mobile telephone at all times.
* Students must wear gloves when handling any biological material. Ensure they always wash their hands with soap and water after handling any biological material (even after wearing gloves), and in this case, after investigations that involve handling soil, slugs, snails, pond water and vegetation.
* Insist students keep their hands away from their mouths when handling slugs or snails and never eat snails or slugs.

***Handling snails and slugs***

In response to media coverage about concerns regarding the safe handling of snails and slugs, *PrimaryConnections* obtained the following clarification from Dr Dave Spratt, Honorary Fellow, Australian National Wildlife Collection, CSIRO Ecosystem Sciences, Canberra:

‘A variety of snails, slugs and planarians are suitable intermediate hosts of the **rat lungworm**, Angiostrongylus cantonensis. This nematode is capable of infecting a surprisingly broad range of birds and mammals, including humans, and may cause neurological symptoms. Human infection occurs following ingestion of raw snails, slugs or planarians, something young toddlers particularly are prone to do. Another possible source of human infection is through ingestion of improperly washed vegetables such as lettuce. Although it has not been clearly demonstrated, it is possible that infective larvae of this nematode may escape in the slime track left by the snail or slug as it moves across the vegetable. Consequently, if snails or slugs are to be handled in the schoolyard or the classroom, it is imperative that close attention be paid to student hygiene (i.e., ensuring that hands used to handle snails or slugs are not placed in or around the mouth and that hands are thoroughly washed with soap and water after handling snails or slugs). There should be no consideration whatsoever, especially for a dare, of ingesting raw snails or slugs. These same hygienic precautions should be enforced if snails or slugs are used as classroom pets.’

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## Introduction: Different habitats, different creatures

This CLE focuses on investigating one or more habitats and the organisms that live and survive in these habitats. Students will identify and describe the features of these habitats—those that make them suitable places for meeting the needs of living things. This CLE links to Year 1 of the Australian Curriculum: Science.

Schoolyards and local parks provide an ideal environment where animals and their habitats—lifecycle changes, the interrelationships between animals, the interactions of animals with their habitats, animal behaviour—can be studied closely over a period of time. These locations can prove very accessible for observation. When investigating a schoolyard, it is important to focus much of our observation on the similarities shared by all animal life. Children need to investigate the distinctive features of each animal species so that these similarities become more obvious. The discovery of a creature, for example, a snail, slater or earthworm, might lead to a range of questions and observations.

### Equipment needed

* [Mini creatures questions](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Mini_creatures_questions_yr1_Animal_habitats.docx) (on IWB or written on large cardboard sheet)
* [Mini creatures PowerPoint](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Mini_creatures_PPT_yr1_Animal_Habitats.pptx)
* Mini beasts memory cards (Downloaded and printed from *Minibeast Wildlife* website, <http://www.minibeastwildlife.com.au/resources/memory-cards/>). You may need a few sets.

### What to do

1. Ask students to comment on what they think the term ‘habitat’ means. Devise a list of habitats that could be homes to animals. Name the animals that might live in a particular habitat. List the names of some habitats in the schoolyard, for example:

* leaf litter
* long grass
* soil
* tree bark
* composting material

1. Set up the [Mini creatures PowerPoint](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Mini_creatures_PPT_yr1_Animal_Habitats.pptx) (IWB or TV monitor) and [Mini creatures questions](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Mini_creatures_questions_yr1_Animal_habitats.docx). Display the question prompts making them easily visible to students. Read them aloud to the students. Students need to discuss their understandings of what is meant by the terms ‘caption’, ‘special feature’, ‘habitat’, ‘survive’.
2. Place students in pairs.
3. Show each slide and use Share–Pair as a strategy for student responses. Select two pairs of students to report on each image. Allow time for each pair to view and respond to an image as it is shown.
4. Students can play card games (for example, Memory and Snap) with the sets of mini beasts memory cards.

**Core**

### Investigation 1: Walk, explore, record

This investigation comprises numerous experiences requiring students to **describe how different places meet the needs of living things** in a local park or schoolyard environment. **They follow instructions to record their observations and share them with others** on the mini creatures they find and the features of their habitats. Students will **respond to questions, make predictions, and participate in guided investigations**.

This investigation can be conducted as a whole-class investigation or as a task for small groups. *It is* *recommended that students work in pairs*. As a teacher interacts with a pair of students they should prompt students to describe what they observe.

### Equipment needed

Per pair:

* 2 pairs of protective gloves (See 'Safety considerations' above)
* plastic containers
* ice cream sticks (or small trowels or spoons)
* 2 handheld magnifiers
* 2 HB pencils
* [Garden creatures survey](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Garden_creatures_survey_worksheet_yr1_AnimalHabitats.docx) (per student)
* a camera (optional)

### What to do

1. Walk and explore a pre-chosen area/habitat. Invite students to identify the extent and variety of living things that they observe. Students should look for weed plants, leaves, grasses, flowers, ground cover, saplings, trees, bush litter, insects, birds and ground dwellers.
2. Ask students to predict the creatures they might find. Ask students to identify and name three mini creatures and three non-living things located in the area.
3. Place students in pairs and ensure each pair has the equipment needed.
4. One person from each pair should record the responses to the [Garden creatures survey](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Garden_creatures_survey_worksheet_yr1_AnimalHabitats.docx). (The recording task may also be shared.) Ask each pair to identify and name three creatures (they could be different to the response from the class previously) and complete the survey as shown in the following example.

|  |  |  |  |
| --- | --- | --- | --- |
| Garden creatures survey | 1 | 2 | 3 |
| What is the name of this creature? | slater |  |  |
| Draw the creature |  |  |  |
| Where did you find it? | Under bark |  |  |
| What do you think it eats? | Wood, leaves |  |  |
| How does it move? | walks |  |  |
| Draw or list things in its habitat | bark, leaves, soil |  |  |

1. Make note of the scientific and spatial terminology used by students, for example, ant, snail, slater, skink, spider, earthworm, habitat, invertebrate, near, underneath, beside, soil, rock and rotting leaves. Highlight scientific terminology used as students will use various terms during the course of their discussions and in their recording tasks.
2. On a whiteboard or chart record each pairs’ responses to the following question: **Which animals and which animal habitats did you observe? Describe each habitat.**
3. Download any images taken with a camera during this experience. Display and view.

### Expected results and explanations

The learning intention is addressed by students showing that they can observe, identify and describe living, non-living and once-living things in a habitat that meets the needs of a particular creature. Students are provided with protective gloves and small items such as trowels, spoons or ice cream sticks with which to conduct their investigations.

Students describe a habitat in which they found a given creature and comment on the non-living and once-living materials that make that habitat suitable. By undertaking the recommended tasks, students will begin to understand that each animal species has needs that are met in a particular habitat.

The following chart may help you with the classification of commonly found garden creatures.

|  |  |
| --- | --- |
| Commonly found garden creatures | |
| Insects | beetle, ant, earwig, butterfly |
| Molluscs | snail, slug |
| Crustaceans | slater, pillbug |
| Worms | earthworm |
| Arachnids | spider |
| Chilopods | centipede |

Students may describe or explain their ideas about compost and use appropriate terminology including leaf litter, soil, bark, sticks, decay, moisture, shelter, slater, snail, earthworm. It would assist student learning if the teacher introduces and uses these terms as opportunities arise.

### Investigation 2: Find and collect

This investigation comprises numerous experiences requiring students to search for, find and carefully collect mini creaturesin a local park or schoolyard environment. **They share with others their observations** on the mini creatures they find and the features of the creature's habitats.

This investigation can be conducted as a whole-class investigation or as a smaller groups task. *It is recommended that students work in groups of four*. As the teacher interacts with a pair of students, it is advisable that he/she prompts students to describe what they observe and demonstrates how mini creatures are handled with care. The equipment and materials need to be readily available to students. The teacher will need to conduct and review their Risk Assessment prior to conducting outdoor investigations.

### Equipment needed

Per class:

* 3 plastic trays or containers for collecting creatures and things that are part of the habitat of creatures
* spray water bottles and water
* buckets of water and soap

Per group:

* protective gloves (latex or cloth)
* trowels for digging for worms
* small paintbrushes for picking up slaters
* magnifiers (microscopes, magnifying glasses)
* plastic spoons and/or ice cream sticks

### What to do

1. Place students in groups of four and ensure each group has the correct equipment.
2. Demonstrate ways students may use the small trowels, paintbrushes, ice cream sticks and plastic spoons to carefully probe/dig an area of soil or bush litter to search and possibly collect mini creatures.
3. Direct students to find an area in the schoolyard (or park) to search for (and collect a few) creatures such as slaters, snails and earthworms and invite students to identify the living, non-living and the once-living things that they observe in their investigation.
4. Set up trays for the collection of any slaters, snails and earthworms.
5. Ask students to observe the habitats from which they collect their creatures. They should also collect some living and non-living materials—soil, bark, dead leaves, grass, pebbles, rocks, twigs, sticks, rotting wood, leaf mulch—from that habitat, so as to meet the needs of those creatures. Spray small amounts of water on the collected garden material and creatures.
6. On returning to the classroom with some collected creatures in the trays, discuss ways in which the creatures (slaters, snails and earthworms) will need habitats to meet their needs, namely, air, shelter, food, water, soil.
7. Ask students to assist with clean up, remove gloves and wash hands with soap and water.

### Expected results and explanations

The learning intention is addressed by students demonstrating that they can observe and safely collect living, non-living and once-living things in a habitat that meets the needs of a particular creature. Students are provided with protective gloves and small items such as trowels, spoons or sticks with which to conduct their investigations.

By undertaking the recommended tasks, students will begin to understand that each animal species has needs that are met by a particular habitat. Students share responsibility in ensuring that they properly care for living things by establishing a habitat that will provide suitable sources of air, food, shelter and water.

Students may describe or explain their ideas about habitats of mini creatures and use appropriate terminology including leaf litter, soil, bark, sticks, decay, moisture, shelter, slater, snail, earthworm. It will assist student learning if the teacher uses these terms as opportunities arise.

### Investigation 3: Home away from home

In this investigation, students engage in a number of experiences that require them to show **how different places meet the needs of living things** and **describe the features of a habitat** that meet the needs of a particular animal species. In the process of learning about a mini creature and an appropriate habitat, students set up three habitats in a classroom—habitats for earthworms, slaters and snails. Students **participate in guided investigations and follow instructions to record and sort their observations and share them with others.** This investigation into planning and making a habitat for mini creatures found in a schoolyard, garden patch or compost pile, could be conducted as a whole-class investigation or as a smaller groups task.

This investigation addresses the strand, **Science as Human Endeavour—Use and influence of science: People use science in their daily lives, including, when caring for their environment and living things.** As the teacher interacts with a group of students, it is advisable that they prompt students with questions that invite students to observe and comment on a given creature’s behaviour and dietary needs. Teachers need to conduct and review their Risk Assessment prior to conducting outdoor investigations.

### Equipment needed

Per class:

* 3 Perspex® tanks or similar clear plastic tubs or bottles (to be housed in classroom)
* mini creatures and schoolyard/garden habitat materials collected in Investigation 2
* spray water bottles and water
* 3 x A3 copies of [Habitat questions](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Habitat_questions_yr1_Animal_habitats.docx) (for display)

Per student:

* protective gloves (latex or cloth)
* a small paintbrush for picking up slaters
* a plastic spoon and/or ice cream sticks

### What to do

1. Using the garden material and mini creatures collected in Investigation 2, set up three habitats using the Perspex tanks, clear plastic tubs or individual ‘cut down’ clear plastic bottles. Each habitat may contain a mix of earthworms, slaters and snails. Ask students to identify the living, non-living and the once-living things that they observed in their investigation.
2. Invite students to observe the behaviour of the various mini creatures in the tank habitats and where they prefer to settle.
3. Next to each habitat, display an A3 copy of [Habitat questions](http://assist.asta.edu.au/sites/assist.asta.edu.au/files/Habitat_questions_yr1_Animal_habitats.docx). Use these question prompts and then insert the name of a given mini creature. Invite students to formulate their own habitat observation questions and to discuss and record their observations and responses. Acknowledge and discuss the observations of students.
4. Establish a routine for students to care for the habitats and the mini creatures. Tasks will include spraying small amounts of water on the collected garden material and ensuring there are fresh greens for the snails.

### Expected results and explanations

The learning intention is addressed by students showing that they can observe and safely collect living, non-living and once-living things in a habitat that meets the needs of a particular creature. To achieve this, each student will develop their observation skills and share their observations with others. From their observations, students will discuss, draw and write about the behaviours, the dietary habits of a given mini creature and the features of its habitat that support its survival. Invite students to offer additional questions that lead to observing the behaviour and interactions that a mini creature may exhibit in its environment.

Teachers need to involve students in the responsible care of living creatures by ensuring that there is sufficient food and water (spray water bottles) provided for each species. The chart below assists with identifying the needs of each of three common mini creatures.

|  |  |
| --- | --- |
| Mini Creature | Needs |
| earthworms | air, soil, leaf litter, vegetable matter, moisture, a dark place |
| slaters | air, leaf litter, wood material, garden mulch, moisture, a dark place |
| snails | air, green plants (grass stems, lettuce leaves), moisture |

Students use appropriate terminology including move, behaviour, habitat, diet, eat, observe, leaf litter, mulch, air, moisture, shelter, habitat, soil. It assists student learning when a teacher introduces and uses these terms as opportunities arise.

## Conclusion

Draw up a class chart of those things that the students learned through this experience of providing and maintaining a habitat for mini creatures.

At the conclusion of this CLE, carefully return all materials and creatures to the places from where they were collected.

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### Assessment opportunities

* Invite students to discuss and record by drawing and writing. Students may use words in the form of labels and captions to describe what they observe.
* Invite students to ask or raise questions about a given living thing or habitat. A teacher may prompt a student to ask a question: Do you have any questions about the investigations that you carried out or about any of your observations?
* List student questions on a class whiteboard or chart. Questions posed by students will assist you with assessing their understandings of creatures and their habitats.

|  |  |
| --- | --- |
| Questions about our habitats investigations | |
| Jasmine asked | What things does a slater eat? |
| Harrison asked | How does an earthworm move through soil? |
| Hugo asked | What type of habitat does a snail like to live in? |
| Lucas asked | What habitats do slaters like to live in? |
| Amy asked | Does a snail eat only green things? |

**Investigation 1: Walk, explore, record** provides an opportunity to assess the level of student achievement in Science Inquiry Skills, in particular those skills related to **observing, predicting and recording**. This investigation addresses skills that involve students identifying and naming living and non-living things that make up habitats that meet the needs of living things.

**Investigation 2: Find and collect** provides an opportunity to assess student understandings of the **features of a habitat in a local environment that meet the needs of living things**. In addition, a teacher could assess the level of student achievement of the Science Inquiry Skills, **questioning and predicting.** This will involve assessing the skills of students to participate in different types of guided investigations to explore and pose questions about animal habitats.

**Investigation 3: Home away from home** provides an opportunity to assess students’ understanding that **living things thrive and survive in habitats that meet the needs of those living things.** Invite students to **record and sort their observations and share them with others.** Drawing, writing and reporting about the habitat tanks and the creatures inhabiting them will reveal how well the students observe and record the behaviours of the creatures and the suitability of the habitat to meet the needs of these creatures.