





Stage 1

Minibeasts






**Updated 2018 to reflect new K-6 Science and Technology Syllabus outcomes

Riverina Environmental Education Centre
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Wagga Wagga NSW (02) 69329134

Minibeast Study – Stage 1							
BIG IDEAS:	1. Intro to Minibeasts	2. Camouflage photos	3. Plasticine Models	4. Insect Hotel	5. Bush Walk	6. Dip Netting	7. Microscopes and Identification
<ul style="list-style-type: none"> "Minibeast" or "Minibeasts" is a term for a variety of arthropods and other invertebrates, including spiders, ants, butterflies, bees, wasps, flies, woodlice, and many others. All living things have a particular habitat that is suited to their needs All living things have a life cycle. Minibeasts have specific body structures related to their function Minibeasts can be found on land (terrestrial) or in water (aquatic) 							
Cross Curricular Outcomes - ENGLISH							
EN1-1A communicates with a range of people in informal and guided activities demonstrating interaction skills and considers how own communication is adjusted in different situations <ul style="list-style-type: none"> listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions  engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions  use a comment or a question to expand on an idea in a discussion 	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
EN1-6B recognises a range of purposes and audiences for spoken language and recognises organisational patterns and features of predictable spoken texts <ul style="list-style-type: none"> identify language that can be used for appreciating texts and the qualities of people and things rephrase questions to seek clarification explain personal opinions orally using supporting reasons, simple inferences and reasonable prediction demonstrate active listening behaviours and respond appropriately to class discussions recognise and respond to instructions from teachers and peers 	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	
EN1-8B recognises that there are different kinds of texts when reading and viewing and shows an awareness of purpose, audience and subject matter <ul style="list-style-type: none"> understand how text structure contributes to the meaning of texts know some features of text organisation including page and screen layouts, alphabetical order, and different types of diagrams, for example timelines  understand simple explanations in diagrammatic form, including flowcharts, hierarchies, life cycles 	✓ ✓ ✓						
EN1-11D responds to and composes a range of texts about familiar aspects of the world and their own experiences <ul style="list-style-type: none"> respond to a range of texts, eg short films, documentaries and digital texts, that include issues about their world, including home life and the wider community  	✓						
EN1-12E identifies and discusses aspects of their own and others' learning <ul style="list-style-type: none"> discuss the roles and responsibilities when working as a member of a group 		✓				✓	

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Cross Curricular Outcomes – MATHEMATICS							
MA1-17SP gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results <ul style="list-style-type: none"> investigate a matter of interest by choosing suitable questions to obtain appropriate data gather data and track what has been counted by using concrete materials, tally marks, words or symbols determine what data to gather in order to investigate a question of interest, eg colour, mode of transport, gender, type of animal, sport (Problem Solving) collect data on familiar topics through questioning, eg 'How many students are in our class each day this week?' use tally marks to assist with data collection (Communicating) identify categories of data and use them to sort data, eg sort data collected on attendance by day of the week and into boys and girls present 							<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓
Cross-Curricular Outcomes – SCIENCE AND TECHNOLOGY							
ST1-1WS-S observes, questions and collects data to communicate and compare ideas <ul style="list-style-type: none"> explore and answer questions through participation in guided scientific investigations collect data from observations record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies compare observations with those of others develop collaboration skills to effectively conduct investigations make safe choices when using materials and equipment 		<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ 	
ST-1-4LW-S describes observable features of living things and their environments <ul style="list-style-type: none"> describe the external features of a variety of living things identify and group plants and animals using their external features, for example: <ul style="list-style-type: none"> native and introduced plants and animals worms, insects, fish, reptiles, birds and mammals identify that living things live in different places that suit their needs encourage the return of a living thing to a local habitat recognise that people use science and technology in their daily lives, including when caring for their environment and living things explore how living things grow, change and have offspring similar to themselves 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ 	<ul style="list-style-type: none"> ✓ 	<ul style="list-style-type: none"> ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ 	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ 	

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Cross Curricular Outcomes – GEOGRAPHY							
GE1-1 describes features of places and the connections people have with places GE1-2 identifies ways in which people interact with and care for places GE1-3 communicates geographical information and uses geographical tools for inquiry <ul style="list-style-type: none"> • investigate features of places and how they can be cared for, forexample:  • description of the natural and human features of places  • consideration of how a place can be cared for eg a park, farm, beach, bushland  		✓			✓ ✓ ✓		
Cross-Curricular Outcomes – PDHPE							
SLS1.13 Recognises that their safety depends on the environment and the behaviour of themselves and others <ul style="list-style-type: none"> • identifies things needed to play safely, eg helmets for riding, sun screen, taking turns onequipment V5 Willingly participates in regular physical activity <ul style="list-style-type: none"> • values the importance of physical activity to personal health • appreciates the need to participate in physical activity with safety 		✓		✓	✓ ✓ ✓	✓ ✓ ✓	
Cross Curricular Outcomes – Creative and Practical Art							
VAS1.1 Makes artworks in a particular way about experiences of real and imaginary things <ul style="list-style-type: none"> • investigates details of objects, places and spaces and other living things (eg the shapes of shadows, patterns of shells, animals kept in captivity or in the wild) • talks about significant features and relationships within their artworks, referring to such things as size, scale, proportion, colour 		✓ ✓	✓ ✓				

Study Risk Management Form: Mini Beasts

Note: Risk management for the excursion is the responsibility of the visiting teachers and the school. This form is just for the activities and site.

Description: Located at REEC. Students collect terrestrial and aquatic invertebrates and study them under microscopes. Students walk to a dam (1km return) to collect aquatic invertebrates. They also collect compost and bush samples.



Risk Assessment Matrix	How likely is it to be serious			
How serious could the injury be?	Very likely	Likely	Unlikely	Very unlikely
Death or permanent disability	1	1	2	3
Long term illness or serious injury	1	2	3	4
Medical attention and several days	2	3	4	5
First aid needed	3	4	5	6

Task/Activity	Hazard	Risk Assess.	Elimination or Control Measure
General	General		Senior First Aid qualifications are held by REEC Staff and a First Aid Kit with EpiPen, water and mobile phone is carried with REEC Staff.
Use of electrical equipment e.g. lights	Electrocution	1	All buildings fitted with earth leakage. Students not allowed to unplug/plug from power points.
Walking	Separation from group Sprains and bites	5 1	Teacher at front and back of group. Teacher/student ratio < 1:15 (guideline). Students wear enclosed footwear. Students warned of possible snake presence.
Collecting invertebrates	Falling into dam Bite/sting from invertebrate	6 6	Students closely supervised at all times. Students asked if allergic to anything before study starts.
Environment	Possible cold weather Sun Wind – tree falling	5 3 1	Students must take warm clothing. If weather judged too severe an alternative activity will be done. Students must take hat, sun screen and water bottle. Centre not available in high wind conditions
People	Allergic reactions (anaphylaxis), asthma, diabetes	1	Schools give prior advice to REEC staff of student and staff medical conditions. REEC staff to carry First Aid kit with Ventolin/spacer, EpiPen and mobile phone. Student and/or teachers carry personal medication. Students with anaphylactic reactions to bring EpiPen.

SUGGESTED ACTIVITIES TO EXPLORE PRIOR TO YOUR VISIT:

'Minibeasts'

BIG IDEAS:

- "Minibeast" or "Minibeasts" is a term for a variety of arthropods and other invertebrates, including spiders, ants, butterflies, bees, wasps, flies, woodlice, and many others.
- All living things have a particular habitat that is suited to their needs
- All living things have a life cycle.
- Minibeasts have specific body structures related to their function
- Minibeasts can be found on land (terrestrial) or in water (aquatic)

Suggested Learning Experiences – Primary Connections 'Schoolyard Safari'

Suggested Website Links for Learning

Language focus - introduce and use for class 'Word Wall' within context

Suggested Teacher Resources

Class Science Journal

Prepare a Science Journal to record what is learned throughout the unit – record predictions about what animals might be found in a school yard.

Word Wall

Use a Word Wall to introduce the spelling of theme words important to learning in this unit.

Develop a Class Code

Discuss a 'Code for Caring' for small animals that might be found in the school year. Model a Sample 'Code for Caring'. Add any other information deemed necessary from class suggestions.

Introduce a KWL Chart to gauge knowledge of minibeast facts. Use guiding questions, eg.

- What is a minibeast?
- Where do minibeasts come from?
- Which minibeasts are 'good' to us?
- What makes an insect an insect?
- What does a minibeast need to live?
- What do minibeasts eat?
- How many insects are there?

Let's Talk About Insects – A

comprehensive slideshow full of facts:

<http://extension.illinois.edu/insects/index.cfm>

Garden Detective – ABC Splash

An excellent interactive program, whereby students are able to 'collect' 24 minibeasts hidden in a garden. The 'catch' – You may only collect 4 at a time, so your collected bugs must go back to the exact habitat that it was found in. Each collection of 4 bugs can be printed, along with a statement of facts about each bug.

<http://splash.abc.net.au/res/i/L1118/index.html>

The Metamorphosis Game from the Museum of Victoria

General 'theme' words:

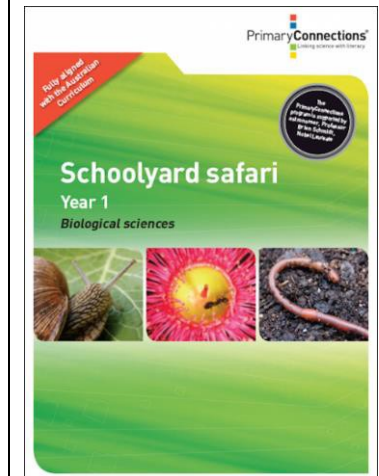
minibeast, classify, species, terrestrial, aquatic, invertebrate, vertebrate, annelids, molluscs, arthropods, head, thorax, abdomen, antennae, digestion, spiracles, predator, prey, recycler, composter, habitat, pollinators, metamorphosis, life cycle, larvae, pupa, cocoon, chrysalis, incomplete metamorphosis, egg, nymph, adult, movement, protection, defence, insect, anterior, dorsal, lateral, posterior, microscope, observation, collection, sensitive, tolerant, specimen, camouflage, differences, similarities, investigation, biologist, Aboriginal bush tucker

Species Words:

(Terrestrial examples)

ant, beetle, true bug, butterfly, moth, worm, dragonfly, mosquito, caterpillar, grub, ladybeetle, bee, wasp, millipede, centipede, snail, slug, slater, pillbug, compost beetle, earwig, cockroach,

'Schoolyard Safari' – Primary Connections Program (Teacher Reference plus 'tub' of resources (tools and consumables needed to run experiments sequenced in the unit outlines.



Plan the School-based Safari

Look at an aerial map or plan of the school. Recognise and identify specific areas of the school on the map. Develop collaborative teams that will have individual roles in their group. Introduce new vocab- 'terrestrial' (land) minibeast. This will allow students to identify differences when at the REEC searching for 'aquatic' minibeasts.

Go on the Safari!

Bring collected species back to the classroom. Use the magnifying glasses provided in the 'School Yard Safari' kit to identify whether the minibeast is an arthropod, annelid or mollusc. Identify and name specific body parts and functions. How do parts of the animal help it move, feed and protect itself?

A Bug Project

Select a 'bug project' on which to keep an animal growth diary. Record changes in shape, length and colour. Record food eaten and movement.

<https://museumvictoria.com.au/media/1809/minibeasts-activities-p-2.pdf> (page 7)

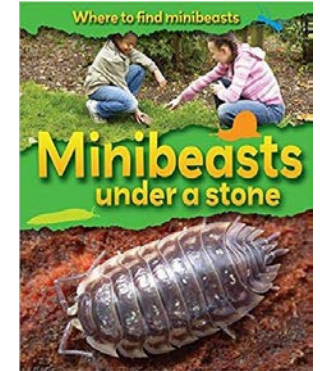
Grab a partner and use a dice to roll and colour sections of the caterpillar-to-butterfly worksheet.

spider, termite, grasshopper, mantis, housefly, blowfly, cricket, cicada, aphid

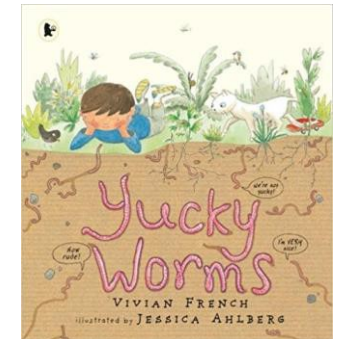
(Aquatic examples)

backswimmer, water boatman, bloodworm, water flea, water scorpion, dragonfly nymph, mayfly nymph, caddisfly nymph, pond snail, yabby, water strider, water mite,

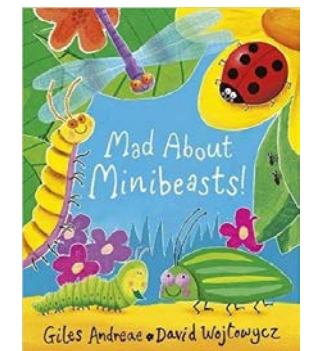
Rich Texts for the Classroom



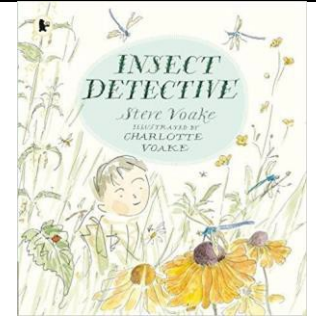
'Minibeasts Under a Stone', Sarah Ridley



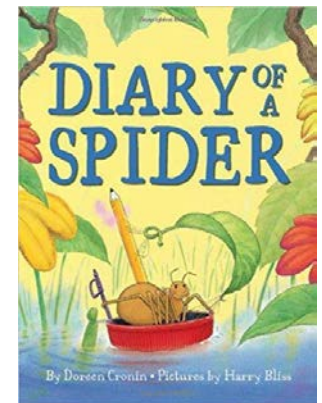
'Yucky Worms' – Vivian French



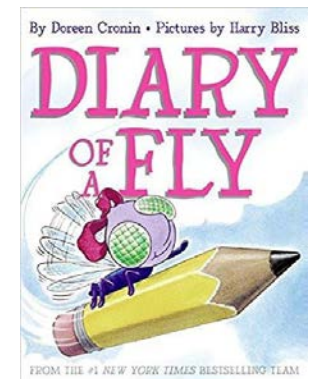
'Mad About Minibeasts' – Giles Andreae



'Insect Detective' – Steve Voake



'Diary of a Spider' – Doreen Cronin



'Diary of a Fly' – Doreen Cronin

Stage One – Minibeast Study

Riverina Environmental Education Centre

Introduction to Minibeasts



- In this first session, students will participate in an induction to the Minibeast Study. Students will gain an overview into:
 - What is a Minibeast?
 - Types of Minibeasts
 - Life Cycles – metamorphosis and incomplete metamorphosis
 - Different groups of invertebrates
 - Different habitats – terrestrial and aquatic
 - Minibeast 'records' – largest, fastest etc
- Scientific terminology to describe observable features – Invertebrate, terrestrial, aquatic, head, thorax, abdomen, antennae, segmented, cephalothorax, life cycle, stages, anterior, dorsal, lateral, posterior, appendage, insect, arachnid

Camouflage Photos using iPads



- Students will use the camera tool on an iPad to show their understanding of camouflage as a protective behaviour for animals in a specific habitat.
- Students review the needs of living things in order to maintain species numbers.
- Discuss some measures that animals use as a means to avoid detection from predators – eg not moving/ playing dead, rolling into a ball, yellow/red signs in nature meaning 'poisonous' or 'bad tasting', speed in pursuit, burrowing, defensive structures (eg spike, stings), chemical defensive (eg skunk, stink-beetle), alarm calls and CAMOUFLAGE.
- Discuss relationships between living things, eg predator-prey, competitors and mutually beneficial relationships.
- Students are given a number of large plastic 'bugs', and work in pairs to try and photograph the plastic bugs in areas around the centre where they experiment with differing habitats to colour-match the bug to the environment it is photographed in. Photos are also taken to show their understanding of a non-camouflaged bug in a contrasting coloured environment.
- Group reviews the photographs taken and decide which photos successfully show camouflage in action.
- Students evaluate their success in identifying appropriate environments to camouflage their bugs.

Plasticine Models



- *Students will use their knowledge of insect body parts to construct their own insect model using plasticine, pipe cleaners and matches.*
- *Discuss key features – mouthparts (mandible or proboscis), number of legs, where legs located on particular body segment, antennae, wings, wing cases if applicable.*

Insect Hotel



- *Observe the 'insect hotel'. Induct students on safety aspects when observing insects which might sting or bite. An **insect hotel** is a manmade structure created from natural materials intended to provide shelter for insects. They can come in a variety of shapes and sizes depending on the specific purpose or specific insect it is catered to. Most consist of several different sections that provide insects with nesting facilities – particularly during winter, offering shelter or refuge for many types of insects. Many insect hotels are used as nest sites by insects including solitary bees and solitary wasps. These insects drag prey to the nest where an egg is deposited. Other insects hotels are specifically designed to allow the insects to hibernate, notable examples include ladybirds (ladybugs) and butterflies. Insect hotels are also popular amongst gardeners and fruit and vegetable growers due to encouraging insect pollination.*

Bush Walk – Sampling Terrestrial Minibeasts

Compost Animal Chart

Adapted from artwork by Bob White

Compost Animals larger than 10 mm



Snail



Earthworm



Millipede



Centipede



Slug



Mite



Springtails



Roundworm

Compost animals between 2 mm and 10 mm



Earwig



Beetle larva



Rove beetle



Vinegar fly



Maggot



Slater



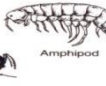
Compost beetle



Spider



Ant



Amphipod

- In this session, students will participate in a bush walk to observe and collect a range of terrestrial minibeasts (invertebrates).
- Discuss known habitats for finding terrestrial minibeasts, eg under logs, rocks, leaf litter, bark, on trees/leaves etc.
- Outline means to safely collect specimens – eg, use feet to roll logs/rocks, dig under the earth with sticks not hands, avoid collecting spiders, ants, bees, wasps.
- Communicate to students that they must avoid taking slugs and snail (rat lungworm infection possibility) and also avoiding the collection of white ants (destructive in built up areas once released).
- Model safe collection of minibeasts into specimen jars.
- Students observe the external features of a terrestrial minibeast whilst collecting specimens.

Dip Netting – Sampling Aquatic Minibeasts



- In this session, students will participate in an outdoor first-hand investigation to observe and collect a range of aquatic minibeasts (invertebrates).
- Outline rules for safe transport of dip nets to dam site – (carrying nets vertical to body, not dragging net on ground during walk etc).
- Once at dam site, safe entrance to dam via slow 'side-steps' modelled. Students also shown effective methods for using dip nets and collecting aquatic minibeasts. Students shown correct means to extract captured minibeasts from the small and large dip nets to a bucket.
- Students observe external features of the aquatic minibeasts whilst collecting specimens.

Microscopes and Identification



- In this session, students will utilise microscopes to investigate their questions through analysis of their collected specimens. They will observe features in minibeasts and identify/sequence the life cycle they are in.
- Students will be inducted into the correct use of a binocular compound microscope to be able to view their specimens. Modelling of microscope parts and means for adjustment to magnify and refocus sample imitated by students.

Terrestrial Minibeast Observation

- Students will use a compost bug identification chart to identify and name the terrestrial minibeasts that they have sampled.
- Students will identify the immature terrestrial minibeasts as nymphs/larvae/pupa of a particular species.
- Students will identify parts of the minibeast using appropriate names – eg head, thorax, abdomen, wings, legs, segments etc.
- Students will use correct terminology to describe the particular view – anterior, lateral, dorsal or posterior.
- Data will be collated as a group – students tally the number of different compost bugs named on an accompanying worksheet. The numbers of each of the compost animals will be totalled.
- Students observe one minibeast and produce a scientific drawing, complete with appropriate labelling of body parts and type of view observed.
- Students may also observe our collection of beetles and bugs in resin blocks, which allows students to observe a variety of terrestrial species and their special features.

Aquatic Minibeast Observation

- Students will use a StreamWatch Water Bug identification chart to identify and name the aquatic minibeasts that they have sampled.
- Students will identify the immature aquatic minibeasts as nymphs/larvae/pupa of a particular species.
- Students will identify parts of the minibeast using appropriate names – eg head, thorax, abdomen, wings, legs, segments etc.
- Students will use correct terminology to describe the particular view – anterior, lateral, dorsal or posterior.
- Data will be collated as a group – students tally the number of different ‘aquatic bugs’ identified and named on an accompanying worksheet. The numbers of each of the aquatic animals will be totalled. From the results, students must analyse and evaluate the general quality of the dam water, based on the number of sensitive and tolerant bugs observed in this sample. (A higher number of sensitive bugs present will correlate with more superior water quality.)
- Students observe one minibeast for a total of one minute under the microscope, meanwhile mapping a line drawing path on the worksheet provided, to represent the movements of this minibeast over this short duration.

SUGGESTED POST - VISIT ACTIVITIES and RESOURCES

To further explore hands-on experiences using the PRIMARY CONNECTIONS Program – ‘Schoolyard Safari’

Preamble from ‘Primary Connections’:

‘The ‘Schoolyard Safari’ unit is an ideal way to link science with literacy in the classroom. By observing the features and behaviour of small animals, students glimpse the diversity of animal life. Students observe the external features of small animals leading to better understanding of how their features help them survive in their habitats. Through investigations, students learn how animals move, feed and protect themselves. They explore and compare the habitats of different animals.’

Selected Syllabus Content (Knowledge)

- Living things have a variety of external features
- Living things grow, change and have offspring similar to themselves
- Living things live in different places where their needs are met

Skills

- Students conduct investigations by working cooperatively and individually when participating in different types of guided investigations to explore and answer questions, such as manipulating materials, testing ideas, and accessing information sources, surveys and fieldwork
- Students process and analyse data and information by using a range of methods to sort information, including drawings and provided tables, to match objects and events based on easily observable characteristics

Inquiry questions for further exploration of this unit

- What is a food chain?
- What behaviours/adaptations do minibeasts use for defence/survival?
- What other animals are invertebrates other than minibeasts?
- Which invertebrates did Aboriginal peoples use as a food source?
- How do minibeast habitats differ, and how do minibeasts adapt to suit their habitat?

SUGGESTED ACTIVITIES TO EXPLORE AFTER YOUR VISIT:

'Minibeasts'

BIG IDEAS:

- "Minibeast" or "Minibeasts" is a term for a variety of arthropods and other invertebrates, including spiders, ants, butterflies, bees, wasps, flies, woodlice, and many others.
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- All living things have a life cycle.
- Minibeasts have specific body structures related to their function
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Suggested Learning Experiences – Primary Connections 'Schoolyard Safari'	Suggested Website Links for Learning	Language focus - introduce and use for class 'Word Wall' within context	Suggested Teacher Resources
<p>Class Science Journal Continue additions to a Science Journal to record what is learned throughout the unit.</p> <p>Word Wall Add new terminology used at the REEC to the class Word Wall to introduce the spelling of theme words important to learning in this unit.</p> <p>Writing – Information Report Using the 'Targeting Text Interactively' Resource, introduce Scientific Information Report writing to students. Modelling of this text is efficient, as each text type section is broken into the following teaching segments:</p> <p>What is it?—outlines the purpose and uses of the text type.</p> <ul style="list-style-type: none"> • Structure—provides a general overview of a typical layout and headings. • Example text—features a model text with specific information regarding the language and structure. • Graphic organiser—a template for the text type is supplied as well as an example of how to use it. 	<p>Picture Graph – (REEC follow up concept)</p> <p>Explore the concept of picture/ bar graph representation of data by interactively placing the coloured 'fuzz bugs' into the containers and then analysing the graph data to answer comprehension questions.</p> <p>http://www.abcya.com/fuzz_bugs_graphing.htm</p> <p>Explore Food Chains – Interactive Game</p> <p>Place the animals given into a food chain sequence.</p> <p>http://www.sheppardsoftware.com/content/animals/kidscorner/games/foodchaingame.htm</p>	<p>anterior, dorsal, lateral posterior views microscope, observation, collection, sensitive, tolerant, specimen, camouflage, differences, similarities, identify, identification, investigation, biologist, Aboriginal bush tucker</p>	<p>'Schoolyard Safari' – Primary Connections Program (Teacher Reference plus 'tub' of resources (tools and consumables needed to run experiments sequenced in the unit outlines.</p> <p>'Targeting Text Interactively' – Information Texts – Lower Primary – Blake Education</p> <p>to order: http://www.blake.com.au/Targeting-Text-Interactively-Information-Text-LP-p/9781921367960.htm</p>

- **Scaffold**—an outline for teachers to use on-screen or to distribute to students.
- **Revision checklist**—created for each text type. This checklist provides a rubric for assessment as well as a useful tool for students.
- **Interactive whiteboard activity**—a fun way to reinforce elements of the lesson and interact with the whole class.

At the independent writing stage, students should be given resources (text, multimedia, other) to engage in this writing process, using one minibeast as the focus.



Invertebrate Explorer iBook for iPads

- This multitouch book explores the incredible world of Australian invertebrates.
- Students can use the book to investigate classification, features, adaptations and habitats of a variety of Australian invertebrates through narrated videos, stunning images, interactive activities and detailed text.
- This book was designed by teachers to support the NSW Syllabus for the Australian Curriculum Science & Technology K-6 and English K-6.

Camouflaged Insect Interactive Game

Can you find the camouflaged minibeast?

<http://www.sheppardsoftware.com/content/animals/hidden%20animals/Hidden%20Insects/insect.html>

Aboriginal Bush Tucker Food – insects

Find out how our indigenous people located and used minibeasts for food and medicine.

http://bushtuckerrecipes.com/bush_food/insects/

Minibeast Artworks

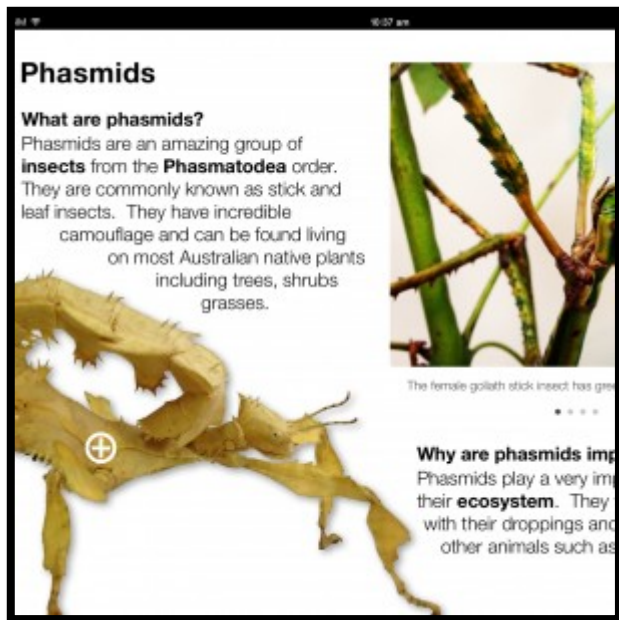
Amazing and inspiring artworks with a minibeast theme are located on this Pinterest site. Dress up your classroom with these great ideas.

<https://au.pinterest.com/stephjoey/art-bugs-insects/>

- Content supports living world, Australian animals and class studies on invertebrates.

Phasmids iBook for iPads

- This multitouch book explores the incredible features, adaptations and life cycles of Australian stick and leaf insects.
- Students learn about phasmids through detailed text, interactive activities, videos and stunning images.
- This iBook supports Australian Curriculum biological sciences, living world and class studies on invertebrates.



(See the iTunes Store to download these Apps, or browse other App and iBooks available from the Field of Mars EEC)

Questions for research

- What is the difference between a cocoon and a chrysalis?
- How are moths and butterflies different?
- What does an entomologist do?
- What is the difference between a beetle and a true bug?
- Why do some terrestrial minibeasts lay eggs in water?

Evaluation:

Pre – Visit Activities

REEC Program – Minibeasts

Post-Visit Activities