

Stage 1

Dinosaurs and More!



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

*Riverina Environmental Education Centre
7161 Olympic Highway,
Wagga Wagga NSW (02) 69329134*



Dinosaurs and More! – Stage 1

BIG IDEAS:

- Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years)
- Dinosaurs were various sizes and had various physical features
- Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails)
- There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles
- We have learned about dinosaurs from Palaeontologists
- Palaeontologists have discovered fossils and have assembled dinosaur skeletons.
- Dinosaurs are now extinct and we can only speculate why

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

- 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
- contribute appropriately to class discussions
- carry out complex instructions involving more than one step




EN1-6B recognises a range of purposes and audiences for spoken language and recognises organisational patterns and features of predictable spoken texts

- 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

- 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

- 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

- discuss the roles and responsibilities when working as a member of a group

	1. Time traveller	2. What is a Fossil? Looking at real ones	3. Trilobite Challenge	4. Palaeontologist for a day	5. Paleo Art	6. 3D Trilobite Art	7. Threatened, Endangered, Extinct
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓
	✓						✓
	✓						
		✓		✓	✓		
			✓				

Dinosaurs and More! – Stage 1

BIG IDEAS:

- Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years)
- Dinosaurs were various sizes and had various physical features
- Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails)
- There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles
- We have learned about dinosaurs from Palaeontologists
- Palaeontologists have discovered fossils and have assembled dinosaur skeletons.
- Dinosaurs are now extinct and we can only speculate why

Cross Curricular Outcomes – SCIENCE AND TECHNOLOGY

ST1-1WS-S observes, questions and collects data to communicate and compare ideas

- explore and answer questions through participation in guided scientific investigations
- 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

ST1-2DP-T uses materials, tools and equipment to develop solutions for a need or opportunity

- investigate and explain the needs of an audience in defining a problem
- effectively manage a variety of tools
- collect, sort and present data to communicate information

ST1-4LW-S describes observable features of living things and their environments

- describe the external features of a variety of living things 🐾
- identify and group plants and animals using their external features, for example:
 - native and introduced plants and animals
 - worms, insects, fish, reptiles, birds and mammals
- identify that living things live in different places to suit their needs 🌐 🏠
- 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 **SciT**

	1. Time traveller	2. What is a Fossil? Looking at real ones	3. Trilobite Challenge	4. Palaeontologist for a day	5. Paleo Art	6. 3D Trilobite Art	7. Threatened, Endangered, Extinct
	✓	✓	✓	✓	✓	✓	
		✓	✓	✓	✓		✓
		✓		✓			
			✓	✓	✓		✓
				✓	✓		✓

Dinosaurs and More! – Stage 1

BIG IDEAS:



- Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years)
- Dinosaurs were various sizes and had various physical features
- Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails)
- There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles
- We have learned about dinosaurs from Palaeontologists
- Palaeontologists have discovered fossils and have assembled dinosaur skeletons.
- Dinosaurs are now extinct and we can only speculate why

1. Time traveller	2. What is a Fossil? Looking at real ones	3. Trilobite Challenge	4. Palaeontologist for a day	5. Paleo Art	6. 3D Trilobite Art	7. Threatened, Endangered, Extinct
			✓ ✓			
						✓ ✓

Cross-Curricular Outcomes – MATHEMATICS

- MA1-9MG measures, records, compares and estimates lengths and distances using uniform informal units, metres and centimetres**
- use uniform informal units to measure lengths and distances by placing the units end-to-end without gaps or overlaps
 - compare the lengths of two or more objects using appropriate uniform informal units and check by placing the objects side-by-side and aligning the ends

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
- investigate features of places and how they can be cared for, for example:
 - description of the natural and human features of places **STVR** 
 - consideration of how a place can be cared for eg a park, farm, beach, bushland 

Cross-Curricular Outcomes – PDHPE							
BIG IDEAS: <ul style="list-style-type: none"> Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years) Dinosaurs were various sizes and had various physical features Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails) There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles We have learned about dinosaurs from Palaeontologists Palaeontologists have discovered fossils and have assembled dinosaur skeletons. Dinosaurs are now extinct and we can only speculate why 	1. Time traveller	2. What is a Fossil? Looking at real ones	3. Trilobite Challenge	4. Palaeontologist for a day	5. Paleo Art	6. 3D Trilobite Art	7. Threatened, Endangered, Extinct
ALS1.6 Participates in physical activity, recognising that it can be enjoyable and important for health <ul style="list-style-type: none"> describes their feelings and emotions when trying something new, eg riding a bicycle, entering water, balancing 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 on equipment 	✓			✓	✓		
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: Dinosaurs and More!

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.



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

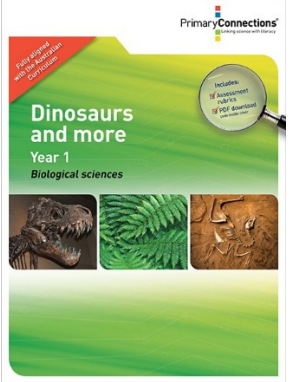
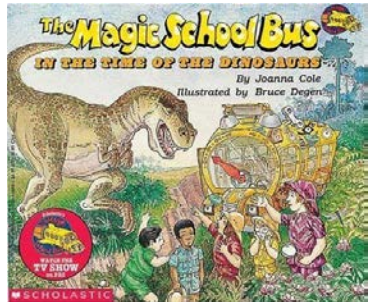
Task/Activity	Hazard	Risk Assess.	Elimination or Control Measure
General	General		Senior First Aid qualifications are held by REEC Staff and a First Aid Kit with EpiPen, water and mobile phone is carried with REEC Staff.
Use of electrical equipment e.g. lights	Electrocution	1	All buildings fitted with earth leakage. Students not allowed to unplug/plug from power points.
Walking	Separation from group Sprains and bites	5	Teacher at front and back of group. Teacher/student ratio < 1:15 (guideline). Students wear enclosed footwear. Students warned of possible snake presence.
Digging in sand pit	Bite/sting from invertebrate	6 6	Students closely supervised at all times. Students asked if allergic to anything before study starts.
Working with Plaster of Paris	Ingestion Skin irritation Eye irritation	3	Avoid contact with eyes and skin with wet and dry Plaster of Paris. Wear suitable protective clothing and eye protection. Do not breathe in dust. If dust gets into eyes, wash immediately with eye wash or clean water.
Environment	Possible cold weather Sun	5 3	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.
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:

'Dinosaurs and More!'

BIG IDEAS:

- Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years)
- Dinosaurs were various sizes and had various physical features
- Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails)
- There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles
- We have learned about dinosaurs from Palaeontologists
- Palaeontologists have discovered fossils and have assembled dinosaur skeletons.
- Dinosaurs are now extinct and we can only speculate why

Suggested Learning Experiences – Primary Connections 'Dinosaurs and More!'	Suggested Website Links for Learning	Language focus - introduce and use for class 'Word Wall' within context	Suggested Teacher Resources
<p>Class Science Journal Prepare a Science Journal to record what is learned throughout the unit.</p> <p>KWL Chart – Ask students what they believe or know about dinosaurs before at the beginning of the unit. Note all known facts on a KWL chart – under the 'K' heading – 'know' (also include student's approximations of knowledge). Explain to students that they will revisit the chart over the course of the unit and adjust their ideas if necessary. Following this, ask students what they would like to learn about dinosaurs. Rephrase this as a question when recording and write in the 'W' column – 'want to know'. As the unit progresses, revise what is already on the K and W columns – did we find out more about something on here? Record new learning on 'L' column – 'What we Learned'. This chart should be reviewed after each new lesson.</p> <p>Word Wall Use a Word Wall to introduce the spelling of theme words important to learning in this unit. Encourage students to refer to the word wall when completing dinosaur themed writing tasks.</p> <p>Dinosaurs – An intro for Kids The following video link to this documentary is found below.</p>	<p>Zoom School Dinosaurs - http://www.zoomschool.com/subjects/dinosaurs/</p> <p>This resource is a great 'general' classroom resource. It contains many activities and worksheets that are 'ready-made' for teachers.</p> <p>BBC Nature – Prehistoric Life http://www.bbc.co.uk/nature/prehistoric (includes a clear timeline of the history of life on earth – when different species of life evolved over time.)</p> <p>Magic School Bus Episode – 'Busasaurus' – YouTube (in 2 parts) Part 1 - https://www.youtube.com/watch?v=H</p>	<p>General theme words Archaeology, asteroid, carnivore, Cretaceous Period, dinosaur, excavate, extinct, fossil, geology, geologist, Gondwana, herbivore, Jurassic Period, mammal, omnivore, ornithischian (<i>bird-hipped dinosaurs</i>), paleo artist, palaeontologist, Pangaea, pelvis, predator, reptile, reptilian, saurischian (<i>lizard-hipped dinosaur</i>), scavenger, sedimentary rocks, skeleton, specimen, Triassic Period, vertebrate, volcano, weathering,</p> <p>Species focus words: Brachiosaurus (<i>brakky-oh-saw-rus</i>), Ceratosaurus (<i>seratto-saw-rus</i>), Iguanodon (<i>ig-wan-oh-don</i>), Pachycephalosaurus (<i>pakky-seph-ah-low-saw-rus</i>), Parasaurolophus (<i>para-saw-rol-oh-fus</i>), Plesiosaurus (<i>ples-ee-oh-saw-rus</i>), Pterandon (<i>terran-don</i>), Stegosaurus (<i>stegg-oh-saw-rus</i>), Styacosaurus (<i>sty-rack-oh-saw-rus</i>),</p>	 <p>Dinosaurs and More! - Primary Connections Unit</p>  <p>The Magic School Bus in the Time of the Dinosaurs – Joanna Cole</p>

This short film (7 min approximately) is a good overview for some of the content areas that will be covered in the unit.

<https://www.youtube.com/watch?v=1tuzo8L55WE>

What's in a name?

Some of the more well-known dinosaur species have names that originated from Greek or Latin roots. Using the **chart (reproduced for A4 size copying – attached to the end of this program)** have students find the reasons for the naming of the following dinosaurs: Stegosaurus, triceratops, tyrannosaurus, brachiosaurus, velociraptor, diplodocus, allosaurus. Just from the root word 'description', allow students to attempt to draw what they believe the dinosaurs might look like. Do a google image search later, to check their comprehension.

(Note - *Zoom School Dinosaurs website gives a more in depth version of the chart provided (thumb below), however this chart might be better suited for students in stage 1 beginning to develop dictionary skills).*

What does my name mean?



	Part of a DINOSAUR's name	What does it mean?
A	allo	strange or different
	ankylo	hook
	archaeo	ancient, old
	avi	bird
B	brachio	arm
	bronto	thunder
	cephalo	head
C	cerat	horn
	cerat	horn
D	dactyl	finger
	derm	skin
	diplo	two
	docus	bar
	don	tooth
	don	spiny
EF	eschio	spiny
GH	giga	savage giant
IJKL	ichtyvo	fish
	iguano	iguana (lizard)
M	macro	long or large
	meal	great
	micro	small
	minus	mimic
N	nodul	knotted or lumpy
	nodul	knotted or lumpy
O	onyx	claw
	ops	eye or face
	ornitho	bird
PQ	pachy	thick
	pedi	foot
	pedi	foot
	pliosa	near
	pod	foot
	pteron	feather
R	pteron	feather
	pteron	feather
S	raptor	thief
	saur, sauro, sauros or saurus	lizard
	spine	thorn or backbone
T	stego	roof
	trio	three
	tyrann	tyrant
U	urus	tail
VWXYZ	veloci	speedy
	venator	hunter



92S1IGpDvo&index=53&list=PLJMOeEyqyll2Uk3B-CV2kNWi8-aYwpLJo

Part 2 -

[https://www.youtube.com/watch?v=U PK1B4Q-](https://www.youtube.com/watch?v=U PK1B4Q-09M&list=PLJMOeEyqyll2Uk3B-CV2kNWi8-aYwpLJo&index=50)

09M&list=PLJMOeEyqyll2Uk3B-CV2kNWi8-aYwpLJo&index=50

Dinosaur species blacklines/colouring pages

http://www.first-school.ws/theme/animals/cp_dinosaur.s.htm

Australian Dinosaur – Minmi

<http://splash.abc.net.au/home#!/media/661782/minmi-australia-s-ankylosaur-dinosaur>

Australian Dinosaur – Muttaburrasaurus

<http://splash.abc.net.au/home#!/media/661716/meet-muttaburrasaurus-a-plant-eating-australian-dinosaur>

Australian Dinosaur – Matilda, Diamantinasaurus

<http://splash.abc.net.au/home#!/media/661716/meet-muttaburrasaurus-a-plant-eating-australian-dinosaur>

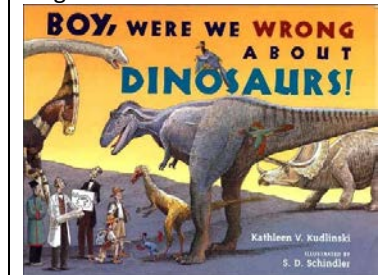
Triceratops (*try-ser-rah-tops*),
Tyrannosaurus rex (*tie-ran-oh-saw-rus recks*),
Velociraptor (*vell-oss-oh-rap-tor*)

Australian focus species

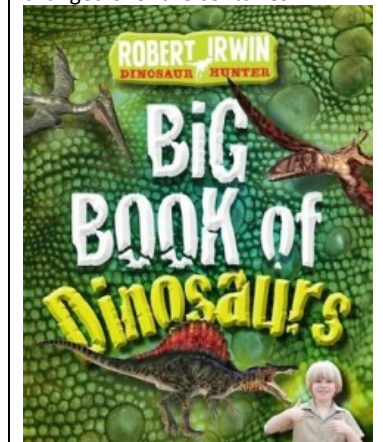
- Australovenator
- Austrosaurus
- Diamantinasaurus
- Kunbarrasaurus
- Minmi
- Muttaburrasaurus
- Ozraptor
- Qantassaurus
- Wintonotitan



Little Kids First Big Book of Dinosaurs – National Geographic Kids – Catherine D. Hughes



Boy, Were We Wrong About Dinosaurs – Kathleen V. Kudlinski
Kudlinski's book shows how our understanding of dinosaurs has changed over the centuries.



Big Book of Dinosaurs – Robert Irwin

A good story to read...

Read 'The Little Dinosaur', by Catriona Hoy. This is a narrative, however it is based on factual information and covers aspects of fossil formation, plate tectonics, fossil discovery and preparation and Australian polar dinosaurs.

-List the dinosaurs referenced to in the book.

-Find out more about these dinosaurs, where in Australia fossil remains were found.

-List any new questions to explore on the class KWL chart. Be sure to factor in time later to find the answers.

-Explore the Melbourne Museum website, where you can find a great interactive timeline, a link to 'fossil fun' (includes fossil exploration using hotspot labels to identify body features; a fossil 'match' game and a 360° view of the fossil gallery).

Build your own dinosaur

A great activity for 'computer lab time' or small group computer sessions. Dinosaur body parts are available for students to choose, then link together to create their own digital image of a dinosaur. When done, right click the image and choose 'print'. Your new dinosaur can be glued into a writing book as a springboard for a new writing activity. A basic information report about the fictional dinosaur may be started using subheadings such as – name, where it lived, how long ago it lived, what it looked like (size, colour and body structures could be described in separate paragraphs), diet and behaviours.

NB - Other options for writing could include narrative or factual description tasks.

Listen and learn from a palaeontologist

NB - this video is accessible through the Scootle portal and your DEC login will be required in order to view it.

Paul Willis is a palaeontologist and describes in detail in this video, how fossils are retrieved from the earth; the clues to life, diet and behaviours that are observable from the fossils and adaptations that some dinosaurs evolved to survive in their environment.

Students in this video are asked questions and respond with their knowledge or hypotheses. A text transcript can also be downloaded from the same site, so that teachers may pause to ask their own class the same questions to test knowledge and comprehension. The link to this video is to the right.

Melbourne Museum

<https://museumvictoria.com.au/melbournemuseum/discoverycentre/600-million-years/>

Are Birds Really Relatives of Dinosaurs?

<http://splash.abc.net.au/home#!/media/661584/are-birds-really-relatives-of-dinosaurs->

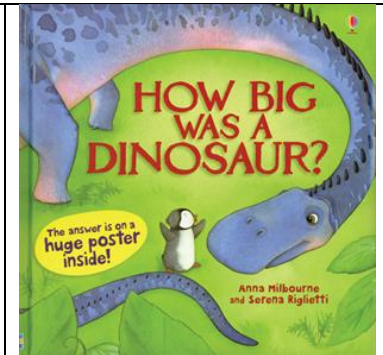
(Scootle login) Paul Willis, Palaeontologist, speaks with a Year 2 class – video link with teacher notes

https://schoolsequella.det.nsw.edu.au/file/e6bf62a1-b5b6-4ffc-ab36-29f093301bd9/1/paul_willis.zip/paul_willis/6673_00.htm

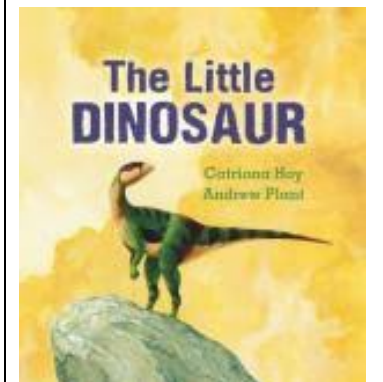
Walking with Dinosaurs ABC

There are lots of links to different fact files etc, however please note videos selected should be viewed before playing in the classroom.

<http://www.abc.net.au/dinosaurs/default.htm>



How Big Was a Dinosaur? – Anna Milbourne



The Little Dinosaur – Catriona Hoy

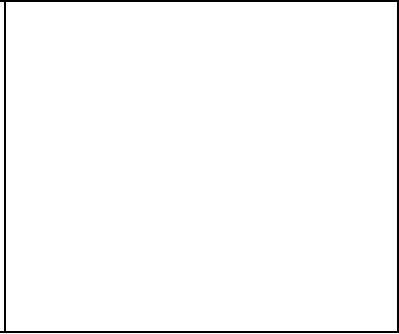
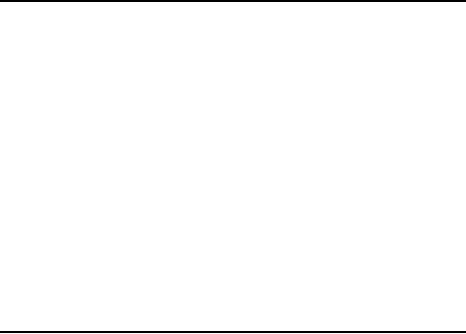
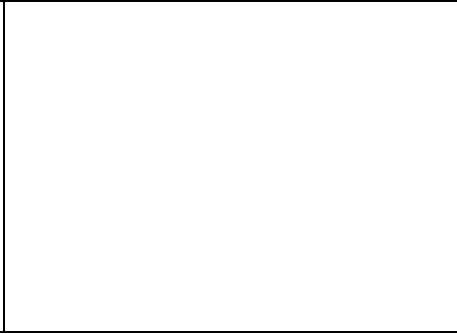


The Ultimate Dinopedia – National Geographic

Primary Connections – Dinosaurs and More!

Lesson 2 – ‘Legs, fins and wings’ (p5)

Session 1 and 2: These lessons focus on observation skills. Students will compare external features of modern and prehistoric animals in an attempt to identify where prehistoric animals lived according to their features. They will then observe pictures of modern animals and skeletons and attempt to match the skeletons to the correct animal based on these internal features. Reproducible worksheets for both sessions are included on pp11-14.



Time traveller's Guide to Pangaea



PALEOGENE PERIOD (65.5-23.03 MA)

Geological TimeWalk

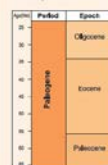
Australia finally separated from Antarctica and continued its northward drift. Rapid diversification of mammals followed the Cretaceous-Paleogene mass extinction. Globally, **mammals soon dominated the land**, and entered the oceans and evolved into whales. However, in Australia marsupials soon filled many habitats previously occupied by the dinosaurs. In the sky, birds diversified into different colours, shapes and sizes. Some flightless birds reached up to two metres tall.

The Cretaceous-Paleogene mass extinction also decimated the forests. Ferns quickly colonised these devastated areas. As the flora recovered, deciduous and conifer forests covered much of the planet, including Antarctica. The **first wattle trees** appeared in Australia.

Cretaceous Era rocks and resources in Australia



Paleogene Timescale



Amstrafonycteris clarkae, the oldest bat from the Southern Hemisphere, found at a single fossil site in southeastern Queensland.



The Glass House Mountains in south-eastern Queensland are remnants of extinct volcanoes that were active around 27 million years ago.



Stage One – Dinosaurs and More! Riverina Environmental Education Centre

- Students will observe many small backpacks along a path. They are advised that they will be going on a journey through time and the bags represent the length of the Earth's life from its beginnings to now.
- Each backpack is filled with some clues about this journey will be given to a student. They may include the following items: a small white ball, a trilobite pack, an oxygen mask, a plastic fish, a plastic dinosaur, a rock and an animal soft toy. Each of these items will be matched to a period of time that is visited during this journey. At each 'stop' in the journey, once the era/ period is described, students take turns to find something in the bag which might represent that time.
 - The Hadean Eon – the beginnings of Earth (black ball, 'Earth' ball, oxygen mask)
 - The Cambrian Period (– the beginnings of basic animal species, eg the trilobites (meaning – '3 lobes'). See trilobite challenge below
 - The Silurian Period (Paleozoic Era) – oxygen building, ozone layer beginnings.
 - The Devonian Period (Paleozoic Era) – 'The Age of Fishes'- (plastic fish)
 - The Mesozoic Era – 'The Age of the Dinosaurs'. Students will view some of the dinosaur fossils unearthed in Australia. (plastic dinosaur)
 - The Cretaceous Period – Mass Extinction. 75% of all species wiped out. A large meteorite hits Mexico and there are huge volcanic eruptions in India - (rock)
 - The Paleogene Period- 'Age of Mammals and Birds'. Diversification of mammal and bird species – (soft toys).

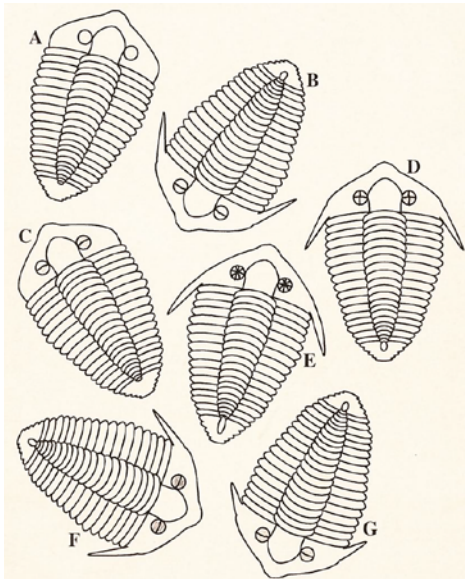
NB – The posters for the 'Geological Time Walk' as used in the study are available for download at <https://ecat.ga.gov.au/geonetwork/srv/eng/search#!a05f7892-efd5-7506-e044-00144fdd4fa6>

What is a Fossil?



- Students watch a short documentary explaining the processes to create animal and plant fossils. Discuss the process to ensure that the concepts explained are clear.
- Observe the fossils that are held on site. These are varied and extremely interesting for students to be able to touch them and know they are ancient. The collection includes trilobites, coral, shell, leaf, mollusc and fish.

Trilobite Challenge



- Observe the different trilobite fossils available. Trilobites are hard-shelled, segmented creatures that existed over 300 mya in ancient seas. They are a key index fossil of the Paleozoic Era. Simple trilobites adapted more complex structures over millions of years.
- Some trilobite fossils are smaller or larger than others. Some have many tendril-like structures attached to their bodies. One student is chosen to represent the 'oldest' trilobite. Teacher describes this 'trilobite' in simplest form – small, no eyes, no antennae or tendrils. Choosing random students to highlight examples, teacher adds more 'bodily structures' and size to each example 'trilobite'. This helps to illustrate the evolution of this species in order to more readily accommodate life in oceans where predators are eventually introduced and food must be sourced.
- Students will be given a challenge kit, where 7 slightly different trilobites can be sequenced from the simplest to the most complex organism.
- Observe the subtle changes between each one and take on the challenge of sequencing them from oldest (simplest) to youngest (adapting more complex structures)
- Discuss the reasons for the correct sequence at the end of the activity.

Palaeontologist for a Day!



- Students watch a short video presentation from palaeontologists illustrating the type of work they do at a dig site, and the type of equipment that they need to unearth the fossils.
- Animal bones are unearthed from a sand dig on site. Students are inducted to the correct ways to expose a bone from one of the quadrats without removing it from the sand.
- Students are given tools to minimise impact on bones.
- Can they identify the type of animal the bones may have come from? What physical features of the bone give clues to the type of bone it is?
- At the end of the time allotted, students walk around the dig site and view other's exposed bones. Discuss the challenges they had to work through – What strategies did they need to find the patience to keep digging? How did they find the bones buried in their quadrat? What different bones were uncovered?

Paleo Art



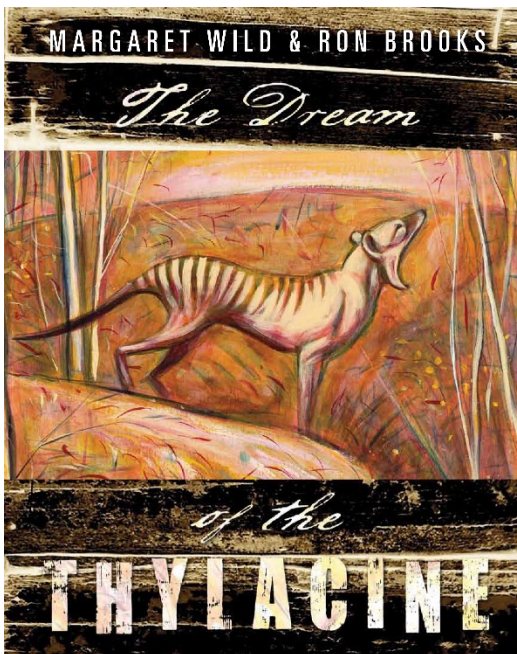
- Students will view a short video that introduces a paleo artist and his role in producing dinosaur pictures for an online encyclopaedia.
- Teacher will take one of the many scaled dinosaur skulls and begin a modelled drawing on the smartboard, which shows how the basic shapes seen in the skull could be represented. Students observe how the skull drawing is then detailed to show possible 'soft' or 'fleshy' features – eg skin covering, eyes, feathers, scales etc.
- Using the skulls, students must then attempt to place themselves in the shoes of a paleo artist, and bring back that dinosaur according to the fossil evidence and scientific knowledge of palaeontologists, in an artistic way. They must consider the main features of the head as suggested by the skull shapes and the possible skin textures and tones. The complete pencil sketch can be taken back to school for display.

3D Trilobites



- Students are shown a large fossil representation of a trilobite. They then witness the rubberised mould that was created in order to make plaster replicas.
- Each student is given a plaster trilobite of their own. They must then paint their trilobite, (as a paleo artist would have), using their own imagination to design their trilobite.
- These trilobites are placed on a drying rack before going back to school.

Threatened, Endangered, Extinct



- Students will be aware of the term 'extinct' at this time. Whilst we cannot be sure about the causes of dinosaur extinction, there are other animals facing extinction in the world now, due to human and environmental impacts. Do they know of any other species that have been made extinct over time? There are 3 descriptors that students need to be aware of when comparing the life of dinosaurs to those living now. Introduce terms 'threatened', 'endangered' and 'extinct' and explain the links between these.
- Introduce students to some of the REEC animal custom seizures that adorn the room – eg leopard and zebra skins, dried seahorses etc. Discuss reasons for possible extinction of animals in the future and the responsibility people play in the protection of these species.
- Read 'The Dream of the Thylacine', by Margaret Wild and Ron Brooks. This story outlines the story of 'Benjamin' the last Tasmanian tiger (correctly named Thylacine) who died in captivity. Review the reasons for its extinction and the need to protect Australian native animals as they are the most diverse species on planet Earth.

SUGGESTED POST - VISIT ACTIVITIES and RESOURCES

To further explore hands-on experiences using the PRIMARY CONNECTIONS Program – ‘Dinosaurs and More!’

Preamble from ‘Primary Connections’:

Students use their senses to observe and describe the features of modern and prehistoric living things. They make comparisons and claims about where animals might live, what they might eat and how they might move. Students’ questions and ideas about prehistoric animals are explored and tested.

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
- Students communicate by representing and communicating observations and ideas using oral and written language, drawing and role play

Inquiry questions for further exploration of this unit


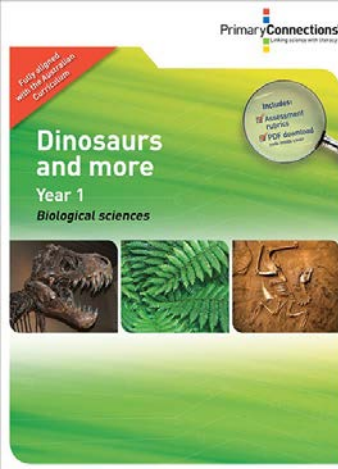
- *Where in the world are most dinosaurs found?*
- *How did the dinosaurs become extinct?*
- *What do palaeontologists and archaeologists do?*
- *What do geologists do?*
- *Why are there different ‘periods’ of time and why are they named?*
- *Which of our contemporary animals existed back in the days of the dinosaurs?*
- *Are all fossil animals dinosaurs?*

SUGGESTED ACTIVITIES TO EXPLORE AFTER YOUR VISIT:

'Dinosaurs and More!'

BIG IDEAS:

- Dinosaurs lived long ago (65 million years) and that they existed for a very long time (160 million years)
- Dinosaurs were various sizes and had various physical features
- Dinosaurs were plant eaters and meat eaters. This distinction determined habitat (land or water), and accounts for various physical features (long necks, teeth, and tails)
- There were no humans living during the time of the dinosaurs. The only other creatures that shared the earth (that live today) were crocodiles, fish, and turtles
- We have learned about dinosaurs from Palaeontologists
- Palaeontologists have discovered fossils and have assembled dinosaur skeletons.
- Dinosaurs are now extinct and we can only speculate why

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. 	<p>Dirt Detective, Junior Archaeologist Interactive Game</p> <p>http://www.history.org/kids/games/dirtDetective.cfm</p> <p>Primary Connections – Dinosaurs and More Interactive Resource</p>  <p>This program is available to purchase through the Primary Connections site. Once the licence fee is processed, you will be sent a licence key to download</p>	<p>General theme words Archaeology, asteroid, carnivore, crest, Cretaceous Period, dinosaur, excavate, extinct, fossil, geology, geologist, Gondwana, herbivore, Jurassic Period, mammal, ornithopods, ornithischian (<i>bird-hipped dinosaurs</i>), paleo artist, palaeontologist, Pangaea, pelvis, predator, reptile, reptilian, saurischian (<i>lizard-hipped dinosaur</i>), scavenger, sedimentary rocks, skeleton, specimen, Triassic Period, vertebrate, volcano, weathering,</p> <p>Species focus words: Brachiosaurus (<i>brakky-oh-saw-rus</i>), Ceratosaurus (<i>seratto-saw-rus</i>), Iguanodon (<i>ig-wan-oh-don</i>), Pachycephalosaurus (<i>pakky-seph-ah-low-saw-rus</i>), Parasaurolophus (<i>para-saw-rol-oh-fus</i>), Plesiosaurus (<i>ples-ee-oh-saw-rus</i>), Pterandon (<i>terran-don</i>),</p>	<p>'Dinosaurs and More!' – Primary Connections unit available from AbacusEd https://www.abacused.com.au/dinosaurs-and-more-unit</p> 

- **Graphic organiser**—a template for the text type is supplied as well as an example of how to use it.
- **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 chosen dinosaur as the focus.

Interactive Timeline – Ancient Map

The ‘Ancient Map’ - <http://dinosaurpictures.org/ancient-earth#240> is a great interactive resource to further investigate the Earth’s changes over time, from the first multicellular life form to the extinction of the dinosaurs. Students are able to view their own city/town’s position in relation to the movement of the tectonic plates by entering the name into a search engine. Teachers should point out the main features of the site:

- descriptions of the planet at each time frame (from the dropdown menu – centre top),
- visual representation of Australia’s position – using questions to engage critical thinking skills, eg ‘Why is Australia covered in water at this point in time?’, ‘Why is the Earth covered in ice?’, ‘What has changed with each jump in time?’

the program to your device. This acts like a digital science journal and teachers and students can write in their ideas and save pictures as needed. Also allows teachers to create their own words for a digital word wall.

Stegosaurus (*stegg-oh-saw-rus*),
 Styracosaurus (*sty-rack-oh-saw-rus*),
 Triceratops (*try-ser-rah-tops*),
 Tyrannosaurus rex (*tie-ran-oh-saw-rus recks*),
 Velociraptor (*vell-oss-oh-rap-tor*)

Australian focus species

Australovenator
 Austrosaurus
 Diamantinasaurus
 Kunbarrasaurus
 Minmi
 Muttaburrasaurus
 Ozraptor
 Qantassaurus
 Wintonotitan

‘Targeting Text Interactively’
 – Information Texts – Lower
 Primary – Blake Education

to order:
<http://www.blake.com.au/Targeting-Text-Interactively-Information-Text-LP-p/9781921367960.htm>

Attachments for use in Pre/Post visit activities are attached below.

1. Dinosaur name roots
2. Words for classroom word wall – additional file

Evaluation:

Pre-Visit Activities

REEC Program – Dinosaurs and More!

Post-Visit Activities

What does my name mean?



	Part of a DINOSAUR's name	What does it mean?
A	allo	strange or different
	ankylo	hook
	archo	ancient, old
	avi	bird
B	brachio	arm
	bronto	thunder
C	cephalo	head
	cera	horn
D	dactyl	finger
	derm	skin
	diplo	two
	docus	bar
	don	tooth
EF	echino	spiny
GH	giga	savage giant
IJKL	ichthyo	fish
	iguano	iguana (lizard)
M	macro	long or large
	megal	great
	micro	small
	mimus	mimic
N	nodo	knotted or lumpy
O	onyx	claw
	ops	eye or face
	ornitho	bird
PQ	pachy	thick
	pedi	foot
	plesio	near
	pod	foot
	pteron	feather
	pteryx	wing or fin
R	raptor	thief
S	saur, sauro, sauros or saurus	lizard
	spino	thorn or backbone
	stego	roof
T	tops	face
	tri	three
	tyranno	tyrant
U	urus	tail
VWXYZ	veloci	speedy
	venator	hunter