



Primary Education Package

Teacher Resource

Table of Contents

1.	Introduction	2
2.	About this booklet	2
3.	Museum on site Education Packages	3
4.	Australian Curriculum	4
5.	Educational Tour	5
6.	Junior Palaeontologist Experience activities	6
6.1	Activity 1: Prep-A-Dino	6
6.2	Activity 2: Dig-A-Dino	7
6.3	Activity 3: Mould-A-Dino	8
7.	Pre-visit classroom lesson ideas	9
	Pre-visit objectives	9
	Suggested activities	9
7.1	Think Like a Palaeontologist!	9
7.2	What is a dinosaur?	10
7.3	What is a fossil?	12
7.4	How do we find fossils?	13
7.5	Preparing fossils	15
7.6	How are dinosaurs different from one another?	16
7.7	Extra activity ideas	19
8.	Post-visit classroom activities	21
	Post-visit objectives	21
	Suggested activities	21

1. Introduction

The Australian Age of Dinosaurs Museum of Natural History (the Museum) is a not-for-profit science and education initiative to benefit all Australians. Our mission is:

“To encourage, promote and facilitate the discovery, preservation and display of fossil material from the age of dinosaurs within Australia.”

Australian dinosaurs are unique and brand new to science. When you visit the Museum, students will experience how amazing the discovery of dinosaur fossils is, touch real dinosaur bones and experience a day in the life of a field palaeontologist.

The Museum is located on a spectacular elevated site called The Jump-Up. Our staff members will look forward to welcoming your group to unique science-based attraction and showing you our important work on Australian dinosaurs. We will do everything possible to ensure that everyone in the group gets involved and has a memorable time on location at the Museum.

2. About this booklet

This Primary Education Package – Teacher Resource booklet, based on Australian dinosaurs, is designed to complement the three Primary Level Activities booklets, which are also on the Museum website (Schools/Teacher resources). It is for teachers to use as pre- and post-visit lesson plans for primary-aged students from Foundation (F) to Year 7 who are participating in any on site Education Packages offered by the Museum.

In this booklet we provide information on:

- the Museum's on site Education Packages
- Australian Curriculum links
- pre-visit lesson ideas
- post-visit lesson ideas.

The three associated **Primary Level Activities** booklets, available on the Museum website (Schools/Teachers' Resources) are listed below. Each booklet is intended to support the most important concepts we want students to understand before their on site visit. You are welcome to use any of the activities from any of the booklets to suit your particular group.

- Primary Level Activities – Foundation to Year 3
- Primary Level Activities – Years 4 and 5
- Primary Level Activities – Years 6 and 7

Also, these are additional resources may assist you with your planning:

- Australian Age of Dinosaurs website
- AAOD Journals (available for purchase on the Museum website: Shop/Books)
- Scope and Sequence Charts (on the Museum website: School/Teacher Resources)
- Diamantina Garden Dormitory Flyer (on the Museum website: School/Planning Documents)

If you have any questions regarding anything in this Primary Education Package – Teacher Resource booklet, please email the Museum at education@aaod.com.au

3. Museum on site Education Packages

Overview

When school groups visit the Museum and take part in an Education Package, students will be able to see and work in the largest and most productive fossil preparation Laboratory in the Southern Hemisphere. They will also receive insights into the unique Australian dinosaur fossils in the Museum's Collection Room. Students will gain hands-on experience and learn about all the different techniques in digging, preparation and the preservation of fossils.

Education Packages offered by the Museum

- Educational Tour
- Half-Day Junior Palaeontologist Experience (min 10, max 35)
- Full-Day Junior Palaeontologist Experience (min 10, max 35)

Questions about this education booklet

Education Co-ordinator
07 4657 0079
education@aaod.com.au

Make an Education Program booking

07 4657 0078
bookings@aaod.com.au

Accommodation in Winton at the Diamantina Garden Dormitory

Winton Visitor Information Centre
07 4657 1466
vic@matildacentre.com.au



Diamantina Garden Dormitory, Winton

Your feedback

We would love **feedback** from teachers and students about our Education Packages so please, after your visit, fill out the **Education Package Evaluation Form** (on the Museum Website (School/Teacher Resources) and email it to the Education Co-ordinator at education@aaod.com.au

4. Australian Curriculum

Suggested links for classroom activities and on site Education Packages Primary Curriculum Foundation to year 7

The Museum's main subject is science and there are many avenues you could look into to plan your lessons. We suggest the following Australian Curriculum links based on what is in this booklet and if you take part in an on site Education Program.

You can find the Scope and Sequence Charts on the Museum website (Schools/Teacher Resources).

The key science areas science:

- Science Understanding (Biological Science, Earth and Space Science)
- Science as a Human Endeavour
- Science Inquiry Skills.

These are the suggested links to the Australian Curriculum:

Year	Subject	Australian Curriculum Link
Foundation	Science	ACSSU003, ACSSU004, ACSSU005, ACSHE013, ACSIS233, ACSIS012
1	Science	ACSSU017, ACSSU211, ACSSU019, ACSHE021, ACSIS026
2	Science	ACSSU031, ACSSU032, ACSSU033, ACSIS038, ACSIS039
3	Science	ACSSU044, ACSSU048, ACHE050, ACSIS054, ACSIS060
4	Science	ACSSU073
5	Science	ACSSU043, ACSHE081, ACSIS231, ACSIS086, ACSIS218
6	Science	ACSSU094, ACSU095, ACSSU096,
7	Science	ACSHE119, ACSIS126

Other learning areas

The study of palaeontology can be used in several learning areas. You could use this booklet to create specific classes for subjects such as:

- Geography (suited for secondary year levels eg stratigraphy: layers of rocks)
- Maths (eg measuring fossils)
- English (eg pronunciation, creative writing)
- Arts (eg dinosaur skin types, build a dinosaur)



5. Educational Tour

The Museum's Educational Tour is a great way to learn about unique Australian dinosaurs.

Age suitability

This tour is suitable for students of all ages and is tailored to suit the level of each particular group.

Work Health and Safety

Groups with over 30 students are broken into smaller groups and each sub-group is hosted by a Museum Tour Guide. A teacher/supervisor must be present in each sub-group to assist as required. The tour is conducted in designated areas for the safety of the students and fossils.

Description

In the first part of the tour students will be guided through our working Laboratory, which is the largest and most productive fossil preparation Laboratory in the Southern Hemisphere. They will also be taken to our Reception Centre which houses the only holotype Collection Room in the world that is open in the public. Students will also learn how we discover, prepare and display our dinosaurs.

Between tours, students will be guided along a flat walking track between the two buildings (~500m).

Programs objectives

1. Students will learn how dinosaur fossils are discovered.
2. Students will learn how we prepare and preserve dinosaur fossils.
3. Students will have a greater understanding of the Museum's work.

Tour optional add-on

Students can role-play as detectives to see "Who killed Matilda?". Students can be given a booklet (at an additional cost of \$3.00 each) with fun activities requiring them to search for answers to clues while on the tour. It's a great way to get students more involved on tour.



6. Junior Palaeontologist Experience activities

For the Half-Day Junior Palaeontologist Experience you can choose two activities out of the three listed below.

For the Full-Day Junior Palaeontologist option, students will experience the three activities.

6.1 Activity 1: Prep-A-Dino

Age suitability

This activity is suitable for year 4 upwards.

Work Health and Safety

Students and accompanying teachers/supervisors are required to wear closed-in shoes. All personal protective equipment will be provided by the Museum for this activity. This activity requires concentration and students will need to do a 10-minute verbal work health and safety induction prior to commencing. A Museum staff member will be present at all times, and we require at least one teacher/supervisor in the Laboratory to assist.

Description

Students will have the chance to work on real 95-million-year-old fossils in the Laboratory. We refer to this type of work as fossil preparation and students will learn several techniques used to prepare fossils.

Most of the fossil preparation is done using pneumatic (air-driven) tools. We may also set up a sieving and sorting area for students to search for micro-fossils such as teeth, turtle bone and other bone fragments.

Programs objectives

1. Students will work on real dinosaur bones
2. Students will participate in hands-on scientific research.
3. Students will have a greater understanding of fossils.



6.2 Activity 2: Dig-A-Dino

Age suitability

This program is suitable for all primary school levels.

Work Health and Safety

This activity is conducted outside in a 'secret' location on The Jump-Up. Students will need sunscreen, hats, closed-in shoes and water bottles to do this activity. All personal protective equipment will be provided by the Museum for this activity. A Museum staff member will be present at all times and we require at least one teacher/supervisor at the dig site to assist as required.

Description

With their bucket full of digging tools, students will leave the Laboratory and be guided to our simulated dinosaur dig site. The Museum guide will explain how we dig for fossils and then students will get to experience the thrill of the dinosaur dig for themselves.

Program objectives

1. Students will learn about fossilisation.
2. Students will learn how to excavate fossils.
3. Students will have a greater understanding of fossils deposits.



6.3 Activity 3: Mould-A-Dino

Age Suitability

This program is suitable for all primary school levels.

Work Health and Safety

This activity may require students to have sunscreen and hats depending on where the activity is done. Students will be required to wear closed-in shoes and have water bottles on hand to do this activity. All personal protective equipment will be supplied by the Museum. A Museum staff member will be present at all times and we require at least one teacher/supervisor at the moulding site to assist as required.

Description

Students will be shown how to make a replica of Banjo's largest claw. (Banjo's scientific name is *Australovenator wintonensis*.) To start, students will learn how to prepare and pour plaster into the moulds. Then, a Museums guide will teach them the best techniques for painting the replica claw so that it looks realistic, just like a palaeo-artist would do. This activity will also explain to students why museums make replicas for display.

Program objectives

1. Students will make their own replica fossil.
2. Students will understand why replicas are made by museums.
3. Students will have a greater understanding of fossils.



7. Pre-visit classroom lesson ideas

The following lesson ideas are for teachers to create fun and innovative classroom sessions about Australian Dinosaurs. You'll need a **Primary Education Activities** booklet to assist with your lesson planning. We recommend completing at least one, but preferably more or all, of the activities relevant to your students' level.

The Primary Education Activity booklets cover three different levels:

1. Foundation to Year 3
2. Years 4 and 5
3. Years 6 and 7.

Where a suggested activity is covered in a Primary Education Activity booklet, this is highlighted below with a green-shaded information box headed up "Overview of activities specific to age" and indicating:

- the relevant years it applies to
- the name of the activity and any related information sheet
- the expected outcome/s of the activity.

Where relevant, the information box is followed by the answer to the activity.

Please note

Some activities require students to wear eye protection, have adult supervision at all time and, in one case, have an adult do a particular part of the activity for safety reasons.

Pre-visit objectives

1. Students will know how a fossil forms and what is, and is not, a fossil.
2. Students will know what is, and is not, a dinosaur.
3. Students will understand what a palaeontologist does.

Suggested activities

7.1 Think Like a Palaeontologist!

A fun research activity for students to start thinking about Australian dinosaurs. Here are some suggestions to get you started.

- A. When were they alive?

*Search for a stratigraphic chart (timeline) online and see if students can find the ages of some of our fossils. **Hint:** the fossils around Winton are dated or aged in the Cretaceous Period. Try this with other Australian fossils eg megafauna found in the Holocene epoch.*

- B. Compare the different sizes of Australian dinosaur fossils with modern-day animals.

*Go to the Museum website (Discover/Australian Dinosaurs)
Compare these dinosaurs, using the statistics provided, with another animal of each student's choice.*

- C. How many Australian dinosaurs can you find?

Use books or the internet to find all the Australian dinosaurs discovered and published so far.

- D. What did they eat?

*Make a list of dinosaurs and, by looking at their teeth and decide what they used to eat.
eg*

Dinosaur name	Carnivore	Herbivore	Both	Observations
Banjo	✓			Sharp and pointy teeth like a crocodile

- E. What is your favourite dinosaur?

Ask each student to choose their favourite dinosaur and write a report on why that dinosaur is of so much interest to them.

- F. Can you name an Australian dinosaur?

Have fun with the class by pronouncing the scientific names of these Australian dinosaurs.

Dinosaur Name	Pronunciation
<i>Rhoetosaurus brownei</i>	Ree-toe-sore-us + Brown-ii
<i>Fulgurotherium australe</i>	Full-gurr-o-theer-ee-um + aust-ra-lee
<i>Rapator ornitholestoides</i>	Rap-ar-tore + Orr-nith-ole-stoi-dees
<i>Walgettosuchus woodwardi</i>	Wall-get-oh-sook-us + wood-ward-ii
<i>Austrosaurus mckillopi</i>	Aust-ro-sore-us + mc-kill-op-ii
<i>Kakuru kujani</i>	Ka-koo-roo + koo-yan-iiv
<i>Minmi paravertebra</i>	min-mee+ para-vert-ee-bra
<i>Muttaburrasaurus langdoni</i>	Mutt-ah-burra-sore-us + lang-don-ii
<i>Leaellynasaura amicagraphica</i>	ley-ell-in-a-sore-ah + am-ica-graf-hika
<i>Atlascopcosaurus loadsi</i>	Atlas-cop-co-sore-us + load-sii
<i>Timimus hermani</i>	tih-mime-us + her-man-ii
<i>Ozraptor subotaii</i>	Oz-rap-tor + sub-oh-ta-ii
<i>Qantassaurus intrepidus</i>	Kwan-tass-sore-us + int-rep-id-us
<i>Serendipaceratops arthurcclarkei</i>	Seren-dip-a-sara-topsv + ar-ther-see-klar-k-ii
<i>Diamantinasaurus matildae</i>	Di-man-tina-sore-us + mah-til-day
<i>Australovenator wintonensis</i>	Oss-tra-low-ven-a-tor + win-ton-ensis
<i>Wintonotitan watti</i>	Win-ton-o-tie-ton + whats-i
<i>Kunbarrasaurus ieversi</i>	kun-barra-sore-us eye-ver-sigh

7.2 What is a dinosaur?

Many people get confused about dinosaurs and other reptiles. Not all reptiles are dinosaurs, but dinosaurs are classified as reptiles. Like all animals, dinosaurs have many characteristics that belong to them and not to other animals.

Whether a dinosaur is as **big** as a house or as **small** as a chicken, every dinosaur has four things in common. They are:

- A. Dinosaurs are a specific type of reptile.
- B. Dinosaurs lived on land.

It is very likely that dinosaurs would have gone for a swim, but they would have spent the majority of their life on dry land. If a reptile lived in exclusively in water it is classified as a marine reptile. If it flew through the skies with leathery wings it was classified as a flying reptile.

- C. Dinosaur legs were always directly below their body and walk on their toes.

One of the biggest differences between dinosaurs and other reptiles is that their legs were located directly underneath their bodies, not out to the sides. This is one of several elements studied in reptile skeletons that is only found in dinosaurs.

- D. Dinosaurs lived during the Mesozoic Era.

The Mesozoic Era spans from 230 to 64 million years ago and is also known as the Age of Reptiles. This is subdivided into three major periods: the Triassic, Jurassic and Cretaceous.

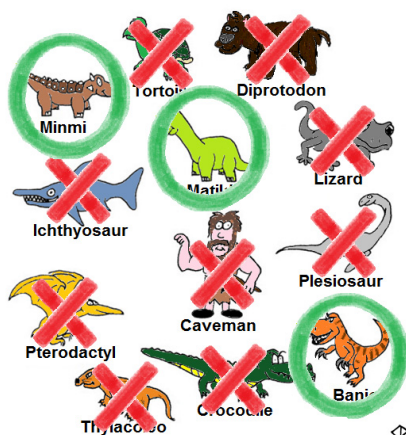
There were lots of animals alive before, during, and after the time of the dinosaurs, but they have to meet all the common identification measures to be called a true dinosaur. They evolved, ruled the earth and went extinct over the period of time we call the Mesozoic.

Overview of activities specific to age

Year	Suggested activity	Outcome of the activity
Foundation to Year 7	Information Sheet 1: Think Dinosaur! Activity 1: Think Dinosaur!	Students will understand what is a dinosaur and what is not a dinosaur.

Activity answers

Activity 1: Think Dinosaur!



7.3 What is a fossil?

All we find of dinosaurs today are the fossilised bones in the ground. The big question is, how do fossils form? It's quite a complex process, but essentially fossilisation is the same no matter what is being fossilised.

Basically, organic material, ie plant or animal material, is buried. If the conditions are perfect, the organic material will be replaced slowly by rock minerals brought in through ground water. Anything can fossilise, even the most delicate thing but that is very rare. The conditions of the soil, the moisture, the pressure in the soil and the timing have to be perfect for fossilisation to occur.

Fossilisation process explained

1. The dinosaur dies.
2. The body starts to rot away. Whatever is left gets covered by sand and mud.
3. The buried bones slowly turn into rock through fossilisation.
4. Millions of years later someone might find them again.

Fossils come in two broad groups. They are:

Body fossils

Body fossils are effectively any remains of the dead body and anything attached to it, eg bones, skin, feathers or leaves.

Trace fossils

Trace fossils are any fossils formed by any living behaviours, eg footprints or nest building. The Dinosaur Stampede National Monument at Lark Quarry Conservation Park is a great example of a trace fossil. There, some 3,300 individual footprints of four different types of dinosaurs can be seen.

For more information on the Dinosaur Stampede go to www.dinosaurstampede.com.au. There are some great teacher resources on that website as well.

Overview of activities specific to age

Year	Suggested activities	Outcome of the Activity
Foundation to Year 7	Information Sheet 2: Fossilised Fun	Students will learn how dinosaur bones become fossilised.
Foundation to Year 7	Activity 2: Fossil Imprint Fun	Students will make their own fossil. This activity is hands-on and allows students to see patterns and shapes.
Years 6 and 7	Activity 2a: Fossil Fun – fine-tuning the fossils	Students will learn the difference between a body fossil and a trace fossil.

Activity answers**Years 6 and 7**

Activity 2a: Fossil Fun - fine-tuning the fossils

Body fossil

Petrified wood, teeth, bone, insect wing, leaf, feather, branch, shell, pine cone

Trace fossil

Footprint, egg, burrow, nest, tooth marks, coprolites

7.4 How do we find fossils?

Dinosaur fossils can only be found sedimentary rock and that rock must be from the Mesozoic Era. In Australia, some of the most exciting discoveries have been made in Winton, Queensland, but it wasn't until 1999 when local grazier David Elliott found a big dinosaur bone on his property, that major dinosaur-related activity began to occur.

In the Winton area Museum digs have resulted in more dinosaur bones being found than anywhere else in Australia. The Museum relies on property owners to find a few bone fragments on their properties. Then, once a site has been located, they allow the Museum to start digging.

How does the bone get the surface? Well it's a long, but simple process that relates to how the local black soil behaves.

Suggested audio visual

Go to the Museum website (School/Teachers' Resources) and download the following video:

▼ **VIDEO - Black soil sequence**

As you can see in the video, the rotation of the black soil breaks up the bones. So, if we can find fossilised bone fragments on the surface then we use this as our "X marks the spot" to start digging. We always hope there are lots of bones still trapped safely in the layer of rock, which we commonly call a deposit or bone bed. It takes anywhere from 50 to 1,000 years for the bones to travel one metre towards the surface!

From Winton, go south to the New South Wales border, a little into South Australia and the Northern Territory and that's how big the area is where dinosaurs can be found. It's a big area that could hold lots of fossils. It's the most fossiliferous area Australia!

Overview of activities specific to age

Year	Suggested activities	Outcome of the activity
Foundation to Year 7	Activity 3: Beautiful Black Soil	Students will learn how fossils move in sediment.

Activity answers

Activity 3: Beautiful Black Soil

Digging up bones

1 = image 5, 2 = image 1, 3 = image 2, 4 = image 4, 5 = image 3

To get to the fossilised dinosaurs bones we have to dig, dig, dig! To do this we use all sorts of equipment to get the fossils out of the ground safely.

The steps for digging up dinosaur fossils are:

- all the bone fragments pushed up by the black soil are collected and the site range established, ie what is the size and shape of the site to be dug
- Museum staff and volunteers dig about 30cm into the black soil to make sure we have done a thorough search for any surface dinosaur bones
- a front-end loader is used to remove the black soil, a few inches at a time until we get to the deposit or bone bed
- once the right layer of rock is reached, crowbars, picks, shovels, rock hammers, screwdrivers, brushes, dental picks, and other tools are used to dig around the bones to isolate them and get them ready to be take out of the ground
- the fossils are wrapped up in plaster castings to preserve them and keep them safe for transportation and storage until we are ready to prep them in the Laboratory.

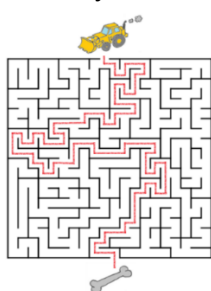
The plastering is a simple but messy process. We use materials such as aluminium foil, newspaper, hessian and plaster. This method preserves the fossils from moisture and temperature. It's also a great way to keep broken fossil pieces together in the same positions that they were trapped in ground.

Overview of activities specific to age

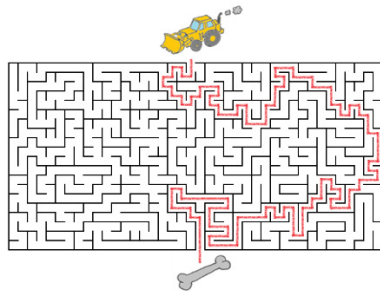
Year	Suggested activities	Outcome of the activity
Foundation to Year 7	Activity 4: Dinosaur Dig	Students will learn about layers; this activity is also useful for maths eg measuring ingredients.
Foundation to Year 7	Activity 5: Searching for Bone	Students will use their problem-solving skills to find a clear path through the maze.

Activity answers

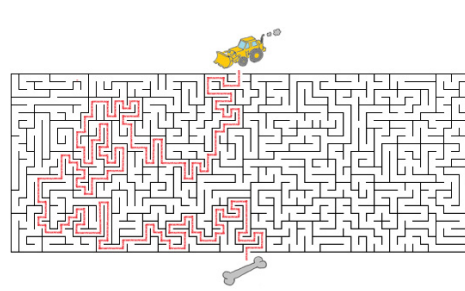
Activity 5: Searching for Bone



Foundation to Year 3



Years 4 and 5



Years 6 and 7

7.5 Preparing fossils

In the Laboratory technicians can start the very gentle work of cleaning up a fossil. We commonly call this fossil preparation, and we use mainly small air-driven tools.

The biggest preparation tool in the Laboratory is the air chisel. This tool is used to remove the bulky rock from around the fossil quickly.

The most common preparation tool is the air scribe. It acts like a mini jackhammer and, with careful techniques, dinosaur bones are detailed ready for research and display.

The smallest preparation tool in the Laboratory is the micro-jack. This is used for very fragile or very small fossils. It only removes one to two grains of rock at a time so it's a very slow process. This tool is great for super-fine detailed preparation.

Suggested audio visual

Go to the Museum website (Schools/Teachers' Resources) and download the following video:

▼ VIDEO- Fossil Preparation Tools

The preparation process in the Laboratory can take hours, months or even years to complete just one dinosaur bone depending on its size and how broken it is. The dinosaurs bones themselves determine how we go about tackling each preparation project.

Overview of activities specific to age

Year	Suggested activities	Outcome of the activity
Foundation to Year 7	Activity 6: Laboratory Fun	Students can develop skills by finding Laboratory-specific words (additional learning could be a group discussion on what the words mean).
Foundation to Year 7	Activity 7: Laboratory Fun 2	Students will learn identification of letters and test their mathematics skills.

Activity answers

Activity 6: Laboratory Fun

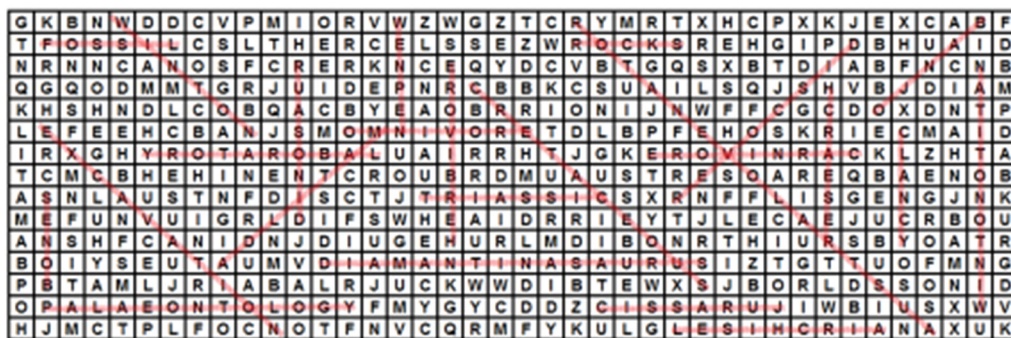
A	Q	C	E	S	N	U	S	D	D	B	G	O	P	L
V	F	N	I	B	T	P	Y	C	N	A	L	C	I	A
P	O	D	J	P	K	C	Z	I	V	I	O	G	D	B
S	H	G	F	O	S	S	I	L	Y	R	D	L	U	R
N	M	C	I	Q	M	O	D	E	C	A	R	X	H	
X	V	I	D	E	T	P	B	S	R	T	N	A	L	L
L	F	R	C	U	Y	R	O	T	A	R	O	B	A	L
E	X	C	U	R	P	G	J	M	B	N	S	P	Z	S
S	Q	H	L	B	O	J	D	C	F	M	A	Y	C	W
I	B	A	L	R	M	J	U	O	O	T	U	D	N	E
H	M	E	I	H	A	M	A	I	R	J	R	C	D	N
C	J	Z	C	L	L	V	B	C	T	Q	N	U	Q	P
R	T	I	A	I	P	K	N	L	K	N	B	A	E	E
I	O	S	O	P	B	D	N	E	Y	V	F	O	B	N
A	Y	C	M	B	O	N	E	S	R	K	Y	A	R	J

Foundation to Year 3

E	T	H	U	D	F	G	F	Y	L	A	H	L	F	Y	W	I	N	T	O	N	V	O	U	E	R	G	V	R	H
M	S	B	A	D	P	V	O	B	D	W	D	C	J	K	J	P	M	F	B	V	G	M	J	S	O	B	K	Q	J
P	Z	O	D	I	M	J	R	A	I	O	J	S	R	B	Q	T	E	W	R	S	Q	R	Y	C	N	A	L	C	O
A	T	B	F	I	R	L	K	N	D	I	E	P	B	A	K	G	O	I	U	S	H	C	P	E	D	I	S	B	E
D	Y	H	W	E	V	C	S	O	C	E	M	S	S	N	E	N	G	C	T	E	Z	P	S	T	D	R	F	A	W
Y	D	Q	Y	G	L	F	H	L	M	P	K	R	O	C	K	S	V	D	I	N	O	B	O	I	M	C	O	N	Z
W	V	I	F	O	J	C	A	I	R	N	B	A	E	F	M	E	E	Q	F	O	S	S	N	W	D	L	C	E	B
W	L	C	S	L	U	H	C	C	S	G	I	U	B	Y	G	U	H	R	V	B	R	M	T	I	J	A	E	Z	D
A	I	V	O	C	F	R	O	L	E	E	H	O	A	I	N	S	T	K	J	E	D	N	W	T	N	L	R	P	M
Y	S	S	G	E	O	B	B	A	N	C	L	A	N	Q	W	N	Z	V	Y	R	O	T	A	R	O	B	A	L	H
N	S	E	H	J	S	V	O	I	H	O	C	H	J	T	L	E	P	I	A	I	F	M	N	H	S	P	O	C	U
B	O	R	A	I	R	C	E	R	E	M	W	B	O	R	J	P	W	R	D	A	B	G	U	W	A	M	C	L	K
D	F	C	E	D	J	K	J	R	V	J	B	C	F	U	R	N	Z	T	C	M	I	U	T	K	U	Y	A	I	A
S	K	R	G	S	E	Q	E	Z	Y	G	O	L	O	T	N	S	A	L	A	P	R	F	B	M	R	O	R	L	N
P	D	L	O	N	D	K	G	K	G	O	F	V	B	Z	Y	W	P	C	Y	M	L	T	U	I	T	S	S	O	F

Years 4 and 5

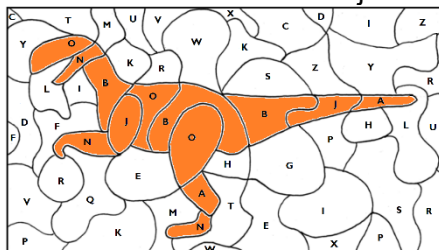
Activity 6: Laboratory Fun



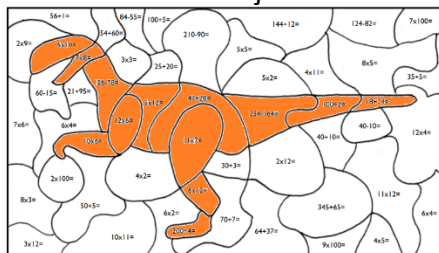
Years 6 and 7

Activity 7: Laboratory Fun 2

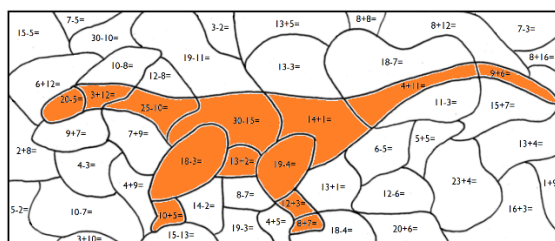
Foundation to Year 3 Banjo



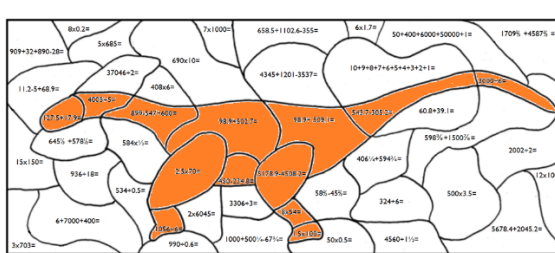
Years 4 and 5 Banjo



Foundation to Year 3 Matilda



Years 6 and 7 Matilda



7.6 How are dinosaurs different from one another?

When all the preparation work is finished on the fossils, a palaeontologist (pay-lee-on-toll-o-gest) visits the Museum and does research on all the fossils. They compare our fossils with all the other dinosaur fossils found from this area and around the world. This is done to see if our dinosaurs are different from, or similar to, what has been found already.

In the fossil deposits surrounding Winton, it is very rare to find the whole dinosaur, but palaeontologists can figure out what is missing by looking at similar species found around the world. The more fossils we find in our dig sites the easier it is to work out all the puzzling questions that arise.

If we find a dinosaur and it is shown to be different from every other dinosaur in the world it means it is a brand new species and we can give the dinosaur a scientific name.

The Museum is really lucky to have found some pretty amazing dinosaurs. Check out below five of the newest dinosaur species found right here in the Winton area. There is much more information about these dinosaurs on the Museum website (Discover/Australian Dinosaurs)

Matilda

Nickname: Matilda
Scientific name: *Diamantinasaurus matildae*
Pronunciation: Di-man-tina-sore-us mah-til-day
Meaning: Matilda's Diamantina [river]
 Lizard
Location: Winton Qld
Type: Sauropod
Diet: Herbivore
Size: 15–18m long, 2.5–3m high, 15–20 tonnes



©. Australian Age of Dinosaurs Museum TRischler 2019

Clancy

Nickname: Clancy
Scientific name: *Wintonotitan wattsi*
Pronunciation: Win-ton-o-tie-ton wots-i
Meaning: Watt's Winton Titan
Location: Winton Qld
Type: Sauropod
Diet: Herbivore
Size: 15–16m long, 3m high, 15–20 tonnes



©. Australian Age of Dinosaurs Museum TRischler 2019

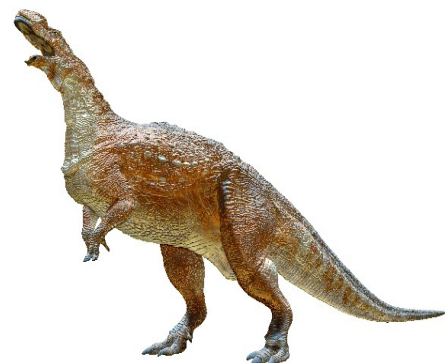
Banjo

Nickname: Banjo
Scientific name: *Australovenator wintonensis*
Pronunciation: Oss-tra-low-ven-a-tor win-ton-ensis
Meaning: Winton's Southern Hunter
Location: Winton Qld
Type: Theropod
Diet: Carnivore
Size: 5m long, 1.6m high, ½ tonne



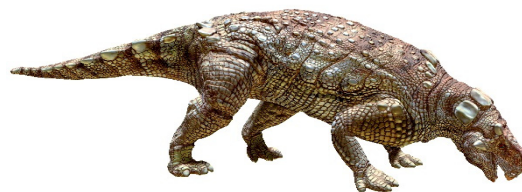
Molly

Nickname: Molly
Scientific name: *Muttaburrasaurus langdoni*
Pronunciation: Mutt-ah-burra-sore-us + lang-don-ii
Meaning: Langdon's Muttaburra Lizard
Location: Muttaburra Qld
Type: Ornithomimid
Diet: Herbivore
Size: 7–8m long, 2.5m high, 4 tonnes



Buster

Nickname: Buster
Scientific name: *Minmi paravertebra*
Pronunciation: min-mee+ para-vert-ee-bra
Meaning: Having paravertebrae, from Minmi Crossing (where it was found)
Location: Roma Qld
Type: Thyreophoran (primitive ankylosaur)
Diet: Herbivore
Size: 2–3m long, 1m tall, 500kg

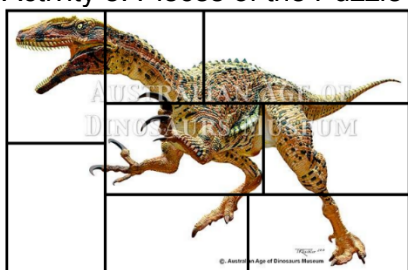


Overview of activities specific to age

Year	Suggested activities	Outcome of the activity
Foundation to Year 7	Activity 8: Pieces of the Puzzle	Students will learn to see patterns and shapes.
Foundation to Year 3	Activity 9: Spot the Differences (1, 2 and 3)	Students will use their problem-solving skills to work out what is different.
Years 4 to 7	Activity 9: Researching the Bones	Students will use their problem-solving skills to work out what is different.

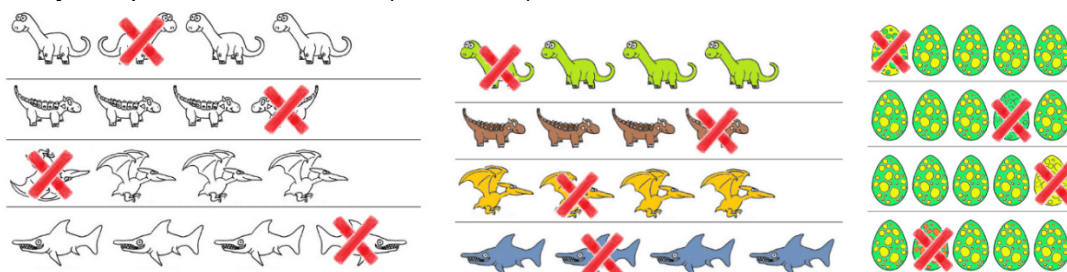
Activity answers

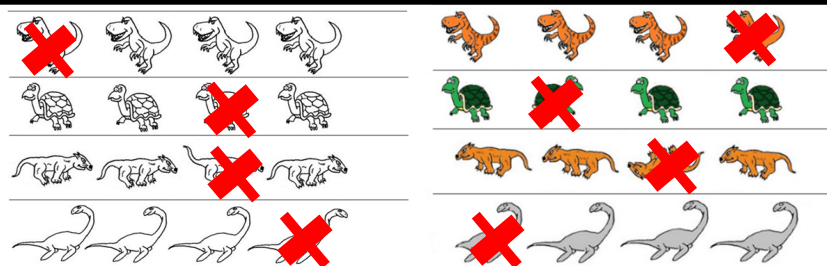
Activity 8: Pieces of the Puzzle



Foundation to Year 3

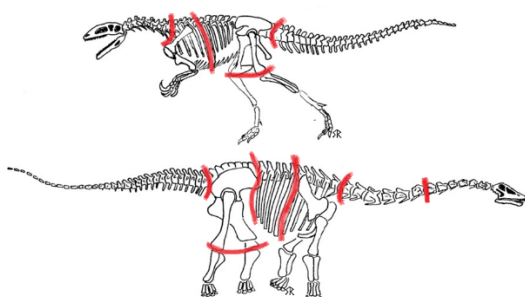
Activity 9: Spot the Differences (1, 2 and 3)





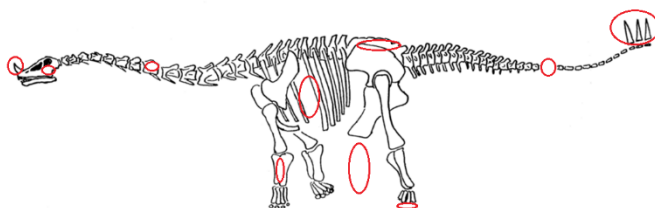
Foundation to Year 3

Activity 8: Pieces of the Puzzle



Years 4 to 7

Activity 9: Researching the Bones



Years 4 to 7

7.7 Extra activity ideas

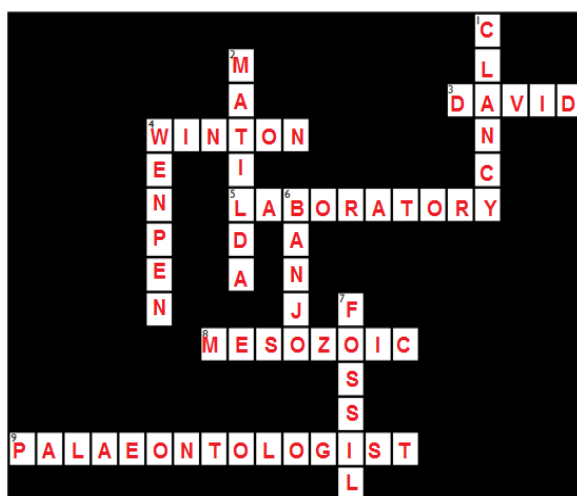
In addition, there are more ideas in the Primary Education Activities booklets.

Year	Suggested Activities	Outcome of the Activity
Foundation to Year 7	Information Sheet: How are Dinosaurs Different?	Students will see the physical differences between some of the Australian Dinosaurs.
Foundation to Year 7	Extra Activity A: Dinosaur Skin	Students will use their knowledge and imagination to think about what dinosaurs looked like. Students can try some creative writing and use their problem-solving skills.
Foundation to Year 7	Extra Activity B: Design a Dinosaur	Students will use their imaginations to decide what colour dinosaurs were, and whether they had scales or feathers.
Years 4 to 7	Extra Activity C: Dinosaur Story	Students will learn creative writing skills.

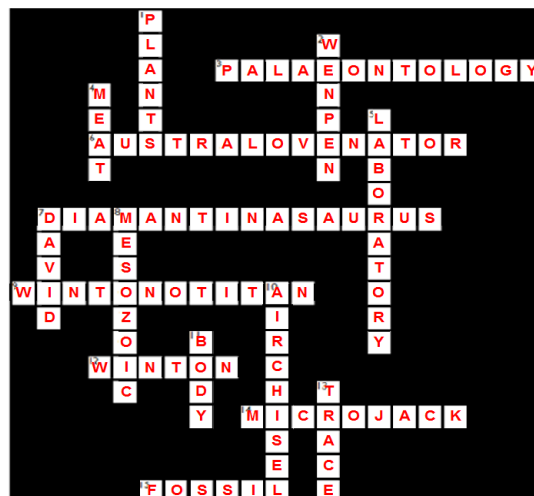
Years 4 to 7	Extra Activity D: Dino-crossword	Students will use their researching skills to find the answers.
Year 6 and 7	Extra Activity E: Scrambled Dinosaurs	Students will use their researching skills to find the answers.
Year 6 and 7	Extra Activity F: Dinosaur Research	Students will practise creative writing skills.

Activity answers

Extra Activity D: Dino-crossword



Years 4 and 5



Years 6 and 7

Activity answers

Extra Activity E: Scrambled Dinosaurs

Years 6 and 7

DINOSAURS	FOSSIL
BANJO	WINTON
BLACK SOIL	CLANCY
MATILDA	PALAEONTOLOGIST
SKELETON	MESOZOIC

- ▼ Australia's most complete carnivorous dinosaur is BANJO.
- ▼ Three of the most important dinosaurs in Australia were found in WINTON.
- ▼ Dinosaurs are all lived during the MESOZOIC Era.
- ▼ There are two sauropods found in Winton, named MATILDA and CLANCY.
- ▼ DINOSAURS were are specific type of reptile.
- ▼ The topsoil around Winton is called BLACK SOIL.
- ▼ The SKELETON of the dinosaur has turned into a FOSSIL, and these are studied by a scientist called a PALAEONTOLOGIST.

8. Post-visit classroom activities

Post-visit objectives

1. Students will reflect on what they have learnt
2. Students will do some independent work
3. Students will research more Australian palaeontology.

Suggested activities

- ✎ Write a journal entry or a short report about what students learnt at Australian Age of Dinosaurs, plus what they are interested to learn more about.
- ✎ Make a flip book of their favourite dinosaur, eg growing, eating or running.
- ✎ Make a presentation, poster, booklet or diorama about Australian palaeontology.
- ✎ Create a play: groups of five students put their heads together to create and act out a short play or skit about palaeontology, eg a TV news interview about a brand new dinosaur discovered in Outback Queensland.
- ✎ Make a fact card about the students' favourite Australian dinosaur, each card including facts like the scientific name, type of dinosaur, food, size details, where it was found etc. For example:

