

Summer December 2013 to March 2014



# xplorer

experiment discover create

## liftout for young scientists



### ACTIVITIES

make your own dinosaur  
meet the neighbours



### INTERVIEW

animator matt drummond



### COLLECTOR'S CARD

guanlong, the crown  
dragon



### INFO

carla's blog  
meet the family



# TYRANNOSAUR TIME!





## ZOOM IN TO THE MUSEUM

to see our latest dinosaurs exhibition, *Tyrannosaurs: meet the family*. And don't forget to see our regular *Dinosaurs* exhibit while you're here!

### FUN FACTS

*Tyrannosaurus rex* (*T. rex*) was known as the king of the dinosaurs. Its name translates to Tyrant Lizard King.

*T. rex* was over 12 metres long, 3.5 metres tall at the hips, towering to 7 metres, and weighed up to 8 tonnes. That means it was longer than a bus, tall enough to look into an upstairs window and heavier than an African bull elephant.



### FUN FACT

The first Australian dinosaur bones ever found were collected from Cape York by the crew of HMS *Fly* in 1844 and taken back to England. It was 50 years later that they were named *Agrosaurus* and placed with the prosauropods.

## CARLA'S BLOG

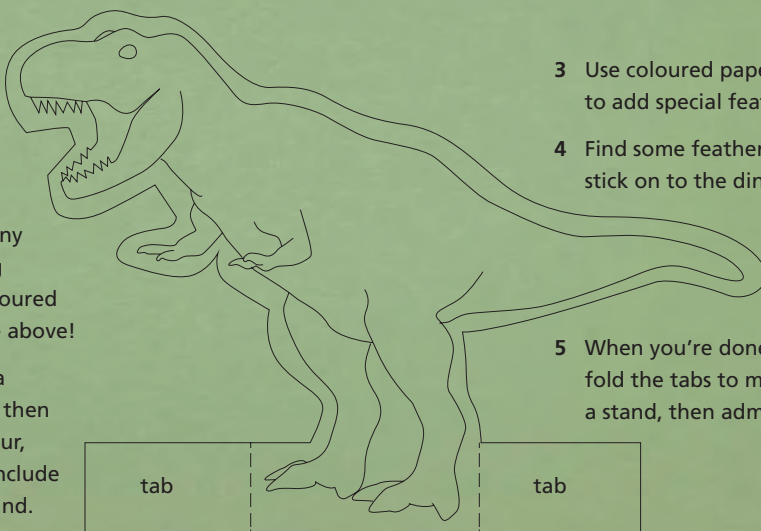
Hi, I'm Carla and I work at the Australian Museum.

I love nature and science and I'm here to tell you stories and share interesting facts.

Just this morning, I was digging a burrow in the bush and came across a big dinosaur bone. So I brought it into the Museum and asked one of the scientists what it belonged to. After a close look they said it was from a *Muttaburrasaurus* – a large plant-eating dinosaur that lived in Australia more than 100 million years ago. Cool!

Did you know that the king of dinosaurs, *T. rex*, was born with feathers, just like a cuddly bird? Maybe they aren't so scary after all.

## MAKE YOUR OWN DINOSAUR MODEL



- 1 Draw and colour in your dinosaur any way you like using crayons, paint, coloured pencil or all of the above!
- 2 Glue the page to a piece of stiff card, then cut out the dinosaur, remembering to include tabs to act as a stand.

- 3 Use coloured paper to add special features.
- 4 Find some feathers to stick on to the dinosaur
- 5 When you're done, fold the tabs to make a stand, then admire!

On the cover *Tyrannosaurs* have arrived at the Australian Museum! Styling by Jeremy Austen. Photo by Stuart Humphreys.

## MEET THE FAMILY



*Tyrannosaurs: meet the family* is the Museum's latest exhibition to feature real dinosaur fossils as well as casts used by scientists to make copies of fossils for further study. The most spectacular is *Dilong*, a recently discovered tyrannosaur from China that became fossilised in volcanic ash. Others on display include:

*Tyrannosaurus* – a real tooth, bone, claw and coprolite (fossil poo!)

*Yangchuanosaurus* – a real articulated skeleton

*Gorgosaurus* – a real half-skeleton fossil in matrix

*Albertosaurus* – a real partial jaw fossil

plus skull casts of *Teratophoneus*, *Alioramus*, *Tarbosaurus*, *Appalachiosaurus*, fossil eggs and more.



## MEET THE NEIGHBOURS



This map shows where people have found dinosaurs in Australia. So far, there are no *confirmed* sightings of a tyrannosaur fossil in Australia.

Check the map above to find the following Australian dinosaurs, then find their names in the word puzzle, below.

LEPTOCERATOPS MUTTABURRASAUROS FULGUROTHERIUM  
RHOETOSAURUS STEGOSAUR MINMI ALLOSAURUS

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

## SCIENTIST FOR A DAY

15 & 16 January Tyrannosaurs: rise and fall of the tyrant kings

22 & 23 January DNA detectives

Have you ever wanted to unearth the secrets of the Tyrannosaurs? Or maybe you're a DNA detective in the making? Find out in these fun, one-day workshops.

Ages 8–12 years

Time 9 am – 3 pm

Cost Members \$110, non-Members \$135

Bookings

t 02 9320 6389

e [scicom@austmus.gov.au](mailto:scicom@austmus.gov.au)

For the complete school holiday program, visit [australianmuseum.net.au/whatson](http://australianmuseum.net.au/whatson)

## DREAMING OF DINOSAURS



Describe what your dream dinosaur would look like, what it would eat and how big it would be. Is it small and fast, or big and slow? Does it run, swim or fly? Email your entry to [scicom@austmus.gov.au](mailto:scicom@austmus.gov.au) or post it online at [australianmuseum.net.au/blog/dream-dinosaur](http://australianmuseum.net.au/blog/dream-dinosaur).



Each issue of *Xplorer* includes a collector's card for you to cut out and keep!

xplorer  
collector's card

28



Guanlong wucaii







## LIVING THE DREAM

Helping to bring science to life is all part of a day's work for animator Matt Drummond. He took time out to chat with the Museum's Bliss Jensen, exhibition project manager for *Tyrannosaurs*.

**BLISS: So Matt, you're a director, animator and visual FX artist – what did you work on before *Tyrannosaurs*?**

MATT: I wrote and directed a feature film called *Dinosaur Island*, which is due for worldwide release in early 2014. It involved re-creating many dinosaurs and other prehistoric creatures. It's a lot of fun.

**BLISS: What has been the most exciting part of working on the *Tyrannosaurs* exhibition?**

MATT: Visually bridging the gap between birds and dinosaurs! *Guanlong* and *Dilong* are small, feathered tyrannosaurs and it was great to be able to give them very bird-like qualities in their motion and behaviour.

**BLISS: So how do you create an animation of dinosaurs?**

MATT: I usually start with pencil and paper and roughly sketch the animal based on the scientific research at hand. I then build a rough form in the computer. Once the dimensions of the animal are correct, I sculpt and paint the animal's details until I have a final creature. I then create a skeleton and rigging in the computer to be able to move the animal around.

THIS EDITION OF XPLORER COMPILED BY TIM MALL

### *Guanlong wucaii*

*Guanlong wucaii* was a small/medium-sized early tyrannosaur, about 4 metres long. Its name means 'crowned dragon', so called because of its large but fragile head crest along the midline of the skull – one of the most elaborate crests of any non-avian dinosaur. It could raise the crest much like a peacock raises its tail, and possibly for the same reason – to attract a mate. It ate meat, capturing prey in its long, three-fingered forelimbs.

At around 160 million years old, *Guanlong* is 95 million years older than *T. rex*. It's not an ancestor but a specialised lineage with no known descendants.

Scientists in China discovered two skeletons of *Guanlong*, one lying on top of the other. They were entombed in the fossilised giant footprint of a massive sauropod, *Mamenchisaurus*.



Illustration by Matt Drummond.

**BLISS: And finally, and most importantly, if you were stranded in Jurassic Park, which dinosaur would you be most nervous about meeting?**

MATT: *Velociraptor* – though actually the animals in the Jurassic Park movie weren't Velociraptors. They were based upon *Deinonychus* but given the size of a 7-metre long *Utahraptor*. Velociraptor was actually the size of a turkey – not a 6-foot turkey as the kid in the movie states, but a tiny half-metre feathered theropod!

#### WEBLINK >

Check out one of Matt's videos at [youtu.be/VX8pB7H9dyw](http://youtu.be/VX8pB7H9dyw)

Film director, animator and visual FX artist Matt Drummond. Photo courtesy Matt Drummond.



#### FUN FACT

The earliest animated film to feature a dinosaur was *Gertie the Dinosaur*, made in 1914 by American cartoonist and animator Winsor McCay. This silent film in black and white ran for just 12 minutes!

