

Want to know more about the megafauna?

You've come to the right place! In this booklet, we walk you through each of the animals in the game, and tell you all about the clade nicknames and their meaning. If you're mega into megafauna, you can read this booklet cover to cover - or use it to read up a little on just your favourite beastsies.



About us

Vera Weisbecker: Vera has been mega into animals since she was a kid. She's now an Associate Professor of Evolutionary Biology at Flinders University and a Chief Investigator at the Centre of Excellence for Australian Biodiversity and Heritage (CABAH), which funded this game. When she's not doing science on Australia's mega mammals and their relatives, she likes to play Go Extinct! with her three kids or go for bushwalks for - you guessed it - mammal spotting.



Ariel Marcy: For over six years, Ariel researched Australian mammals through visits to museum collections across the country. She has also designed science-inspired games for over eight years! Go Extinct! in particular won international awards for game design and for outstanding outreach achievements. Ariel was thrilled to partner with Nellie and Vera to create this unique Aussie megafauna edition. When

Ariel isn't designing science games, you'll find her playing board games or building nature-themed Lego.



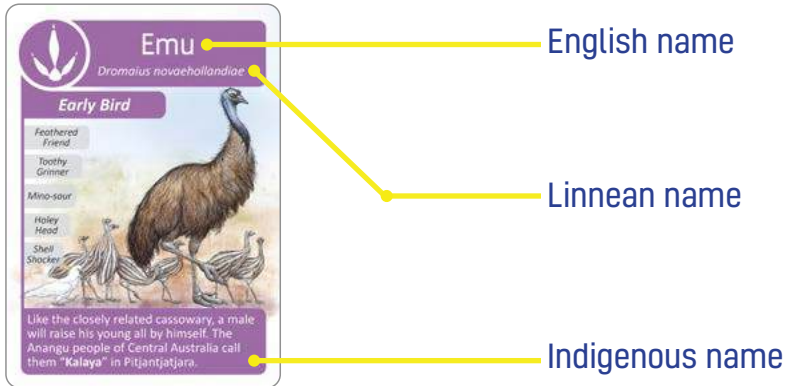
Nellie Pease: Eleanor (who goes by Nellie) was the artist for this game. When she's not drawing, she's studying palaeontology at the University of Queensland in Brisbane and is currently working on a big project to figure out what *Palorchestes* ate! She loves to bring art and science together, and Go Extinct! was her biggest and coolest project so far. She hopes to keep studying palaeontology & drawing Australia's extinct species for a long time yet!

Ben Duffy: Ben did the layout and board design for this game. After working with Ariel on another special edition of Go Extinct! last year, he couldn't resist the chance to learn about some more awesome critters while helping create another beautiful (and fun!) game. When he isn't writing, copy editing or doing graphic design, Ben writes music, reads books and spends time with his family - usually including a specimen or two of *Canis familiaris* or dogs - in Texas.



Original names aren't in English or Latin!

The scientific names for the animals, which you can see in italics on each card and in this booklet, are Latin or Greek-based names for the genus (first name, capitalised) and species (second name, no capitals). This naming convention, called Linnean nomenclature, is used by scientists for all organisms on Earth and makes it easy to communicate.



But scientific names are very new – the first of them were invented just under 300 years ago. In contrast, each Australian animal has been known in many different Indigenous languages for hundreds, if not thousands, of years! We are using some of these original names on the cards with the help of Indigenous consultants. A reminder that the words we use in English, Latin or Greek are by no means the first or the most meaningful!

What are megafauna and how do we even know about them?

Megafauna literally means big (**mega-**) animals (**-fauna**).

When we talk about Australian megafauna, we generally mean the rather plus-sized Shell Shockers (see below) that lived up until around 10,000 years ago. Many scientists call other large animals, such as elephants, megafauna also just because of how large they are.



Many of the megafauna in this game, like *Diprotodon*, went extinct thousands of years ago. This means that sadly, no one alive has ever seen one – although the first Aboriginal people of Australia did! All we have left now are

fossils, which are usually just the hardest parts of the body, like bones and teeth. Fossils can give us lots of clues about what extinct animals looked like and how they lived. For example, *Diprotodon* had big, square teeth, which are a good shape for grinding up leaves and grass – meaning it would have been a herbivore (a plant-eater). We often find lots of *Diprotodon* bones together, which means they probably roamed around in big herds, like kangaroos do now. Sometimes, the clues from fossils can be tiny – like if we examine the minerals inside a *Diprotodon*'s teeth, we can tell they moved around a lot and maybe even migrated every year. Scientists are always developing new technologies that let us look at fossils in new and different ways, so we're finding out more and more about our extinct megafauna all the time!

All the mega species in this game

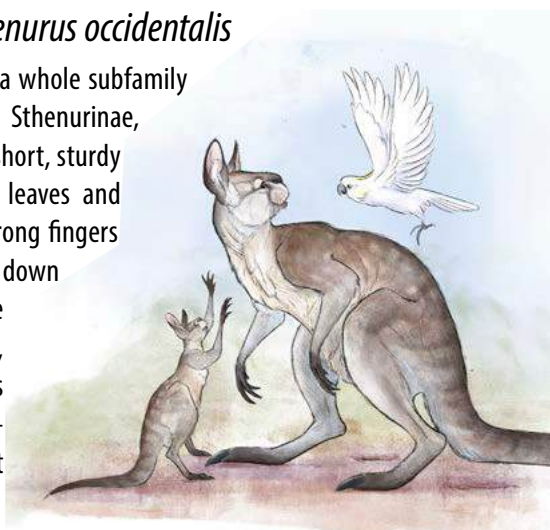


Red Kangaroo aka *Osphranter rufus*

Red kangaroos are living proof not all animals that are mega have gone extinct. With males weighing up to 92 kilograms, this species is a true whopper! You could call them “hopper whoppers” as well because they are the largest hopping mammal that ever lived. Scientists think that it might not be possible to be any larger and still hop simply because the toe bones that bear the weight would probably break.

Short-Faced ‘Roo aka *Simosthenurus occidentalis*

This chubby-cheeked cutie belongs to a whole subfamily of short-faced kangaroos called the Sthenurinae, which are sadly now all extinct! Their short, sturdy faces were probably adapted to eat leaves and crunchy shrubs, and they had long, strong fingers that allowed them to pull tall branches down to their mouth. We are not sure if the large short-faced ‘roos, such as this one, could hop. But what they could do was walk, doing a slow step-by-step pace – very unlike modern kangaroos, but just like you!



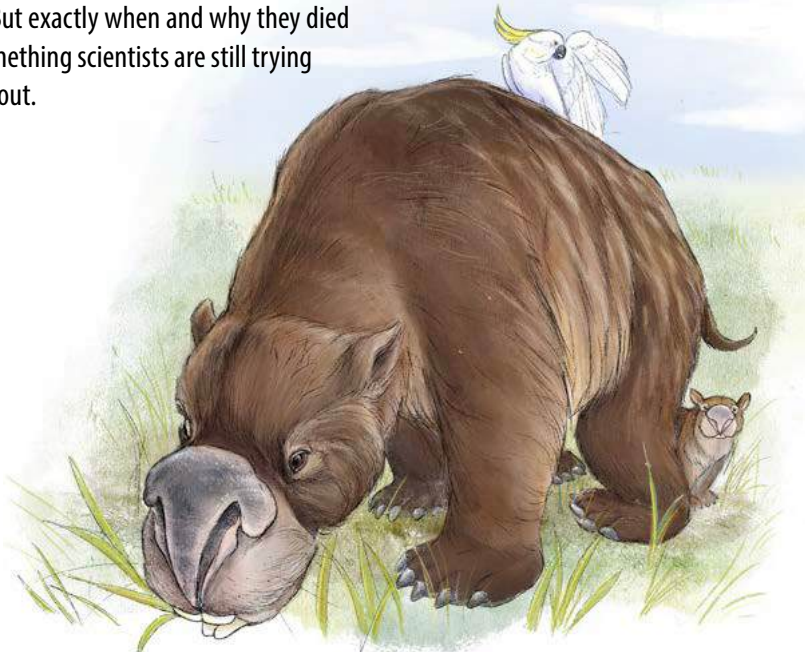
Giant Tree 'Roo aka *Bohra paulae*



If it was anything like today's tree kangaroos, *Bohra* would have hopped around in the Australian trees in the not-too-distant past. Its Yuwaalaraay name is nowadays spelled "Bawurra", which means "red kangaroo". However, scientific names can't be changed once they're given, so the Latin name remains spelled "Bohra". The Yuwaalaraay and Gamilaraay people are generously sharing their stories and language with the world. You can learn more about them at yuwaalaraay.com. You can also find out what Bawurra and many other creatures were up to in a book titled *More Australian Legendary Tales*, which is available at yuwaalaraay.com/old-sources-3/ (Bawurra's story is on page 13).

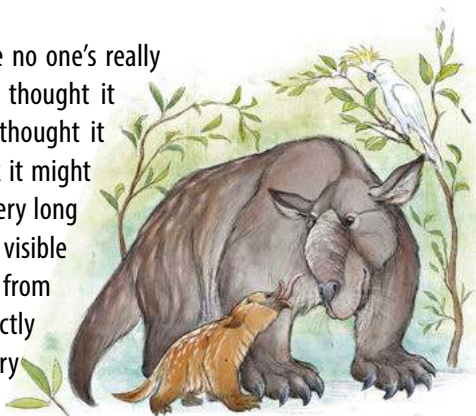
Diprotodon aka *Diprotodon optatum*

Of all the megafauna in this game, this one was the most mega! We think *Diprotodon* grew to almost three tons – bigger than a rhinoceros. That makes it not only the biggest land animal in Australia, but the biggest marsupial that has ever lived on Earth. It probably moved around the landscape in big herds, and was one of the last of the megafauna to go extinct. But exactly when and why they died out is something scientists are still trying to figure out.



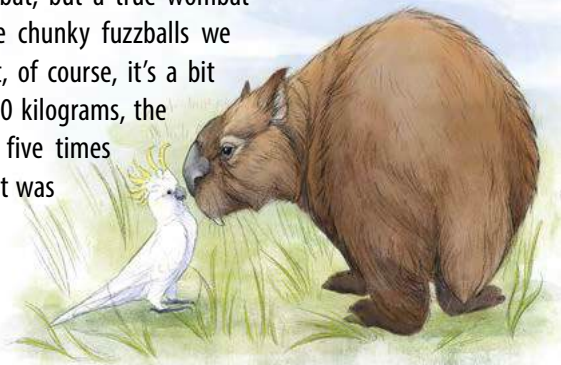
“Pal” aka *Palorchestes azael*

Palorchestes is a bit of a mystery because no one’s really sure what it looked like! Scientists first thought it was a type of kangaroo and then they thought it had a short flexible trunk. Now, we think it might have had a weird big-nosed face with a very long tongue. These soft parts of the face are not visible in fossils, so we have to guess all this just from its bones! It probably ate plants, but exactly why it needed those big claws is a mystery that scientists are still trying to unravel.



Giant Wombat aka *Phascolonus gigas*

Phascolonus isn’t just a WHOMPbat, but a true wombat too – it’s a close cousin of the chunky fuzzballs we all know and love today! Except, of course, it’s a bit more mega. It grew to about 200 kilograms, the weight of a Shetland pony (or five times the size of a common wombat). It was so big it probably couldn’t even dig burrows, although it did probably still eat grass and roots, just like its modern relatives.



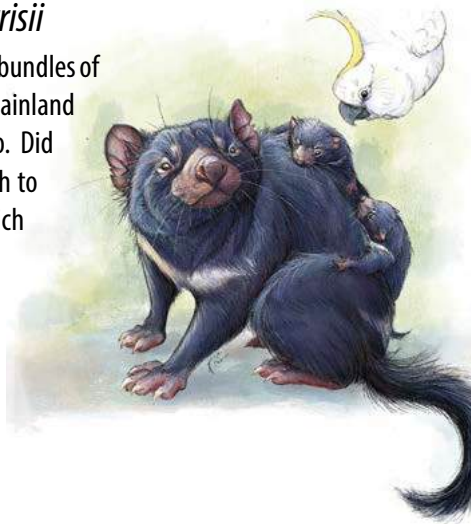
“Were-Wombat” aka *Thylacoleo carnifex*



Thylacoleo is often called a marsupial lion because it looks similar to a big cat. But don’t be fooled – *Thylacoleo*’s closest living relatives are actually the wombats! Unlike cats, which evolved from an agile insect-eating ancestor, its ancestors were all herbivores (plant-eaters), with big square plant-munching teeth. When *Thylacoleo*’s family first evolved, these plant-munchers turned into bone-crunchers, giving it a truly fearsome set of blade-like cheek teeth and jaw strength greater than any mammal we know of today.

Tassie Devil aka *Sarcophilus harrisii*

We call them Tasmanian devils, but these bundles of deadly energy lived on the Australian mainland until relatively recently, 3500 years ago. Did you know that Tassie devils can give birth to up to 39 rice-grain sized babies, of which only four will survive?



Thylacine aka *Thylacinus cynocephalus*



Thylacines are also known as Tasmanian tigers. They were literally framed for murder! You can still find a famous photo of one “eating” a dead chicken, suggesting they were ruthless livestock-munchers but this photo was actually staged! The early European settlers of Tasmania feared Tassie tigers so much that they hunted them to extinction, and the last living one died in captivity in 1936. Sadly, Australia holds the record for the highest number of recent mammal extinctions!

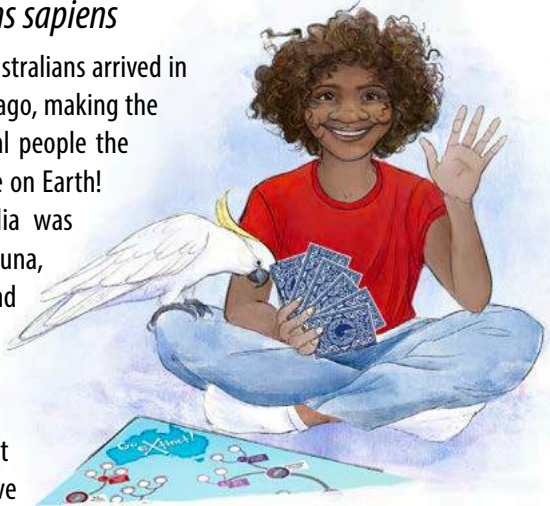


The Indigenous names for Tasmanian devil (*purinina*) and Tasmanian tiger (*kaparunina*) are from *palawa kani*, which means ‘Tasmanian Aborigines speak’. It is the only Aboriginal language in lutruwita/Tasmania today. Some *palawa kani* words are already available in the public domain at 50words.online and you could use some of these in your school! For more information about *palawa kani*, go to tacinc.com.au/programs/palawa-kani/. We thank the Tasmanian Aboriginal Centre for sharing this information and the words!

Human aka *Homo sapiens sapiens*

The ancestors of Indigenous Australians arrived in Australia at least 60,000 years ago, making the culture of Australian Aboriginal people the oldest continuing living culture on Earth!

When people arrived, Australia was home to many types of megafauna, but these went extinct around 42,000 years ago. Is this just a coincidence, or did humans send the megafauna to extinction? The truth is, we don't know. Many scientists believe that the climate cooled around that time, which may have changed the environment so much that it expedited the megafauna's demise.



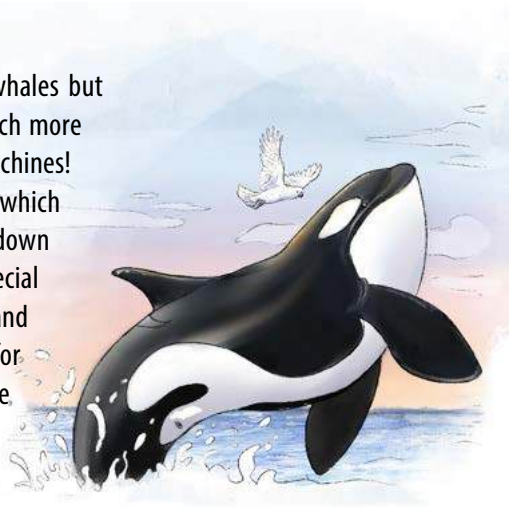
Dingo aka *Canis lupus dingo*



Are dingoes native mammals or not? It depends on who you ask! Dingoes only arrived in Australia around 3500 years ago from Southeast Asia. Some argue that this is long enough to call it a native mammal but others disagree. Regardless, the dingo's arrival is suspiciously close to the extinction of the Tasmanian devil and tiger on the Australian mainland. However, scientists still aren't sure if the dingo was responsible for their demise!

Orca aka *Orcinus orca*

Some people might call them killer whales but orcas are intelligent creatures and much more than just formidable hunting machines! Orcas live in tight-knit family groups which work together like wolves to hunt down prey. Each group often has its own special hunting strategies, favourite prey, and maybe even languages and names for each other – although we can't translate those (yet!).



Platypus aka *Ornithorhynchus anatinus*

When European scientists first saw the stuffed skin of the platypus (also known as a pelt), they thought someone was playing a trick on them! They were sure that the duck-like beak was sewed on and looked for the stitches. Platypus are every bit as amazing as they look: male platypus are among the very few mammals that are venomous (through a spur in their back leg), platypus are the only mammals that can detect electric currents (which they do through their beak), and together with the echidnas, they are also the only mammals to lay eggs!



Giant Echidna aka *Zaglossus hacketti*

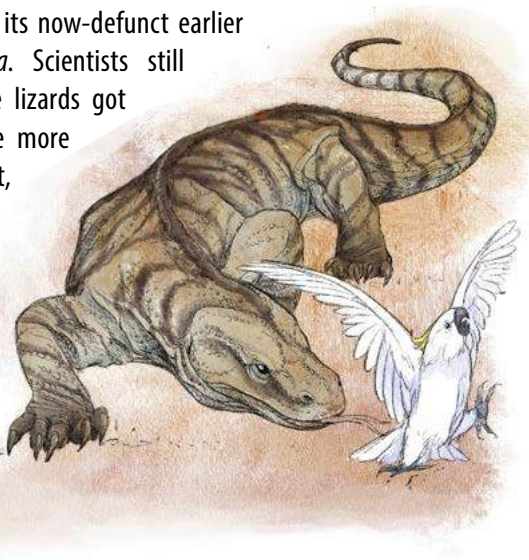
Echidnas are close relatives of the platypus but far spikier! Today's Australian short-beaked echidnas are small compared to the long-beaked echidnas, which still live in

New Guinea. Rock paintings show giant echidnas in Australia, but they were assumed to be long-extinct. However, researchers recently found an old echidna skin that seems to have been collected in the Kimberley region in North Australia. This would mean that giant echidnas lived there until as late as 1912!



Megalania aka *Varanus priscus*

This giant lizard is best known by its now-defunct earlier scientific name, *Megalania prisca*. Scientists still aren't sure exactly how big these lizards got but some may have grown to be more than five metres long. But wait, there's more - as a close relative of monitor lizards, this massive ancient mega-roamer wasn't just huge, it was also venomous. It may have bitten huge prey, like *Palorchestes* and *Diprotodon*, and then followed it until the venom took effect. At least that is what its slightly smaller relatives, Komodo dragons, still do today.



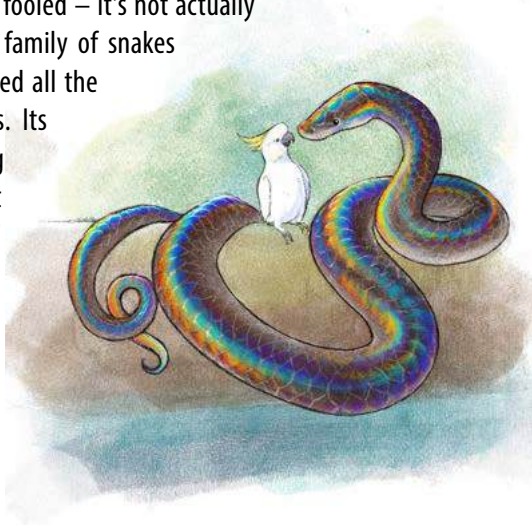
Scrub Python aka *Simalia amethystina*



This absolute whopper is Australia's largest living snake, sometimes reaching over five metres in length! Like all pythons, it has no venom, instead using its enormous muscular body to constrict its prey to death. It then dislocates its jaw to swallow its meal whole, even when its meal is bigger than its own body! Some people call this beautiful snake the amethystine python after the purple amethyst gemstone because its shiny scales give it a pretty purple sheen in the right light.

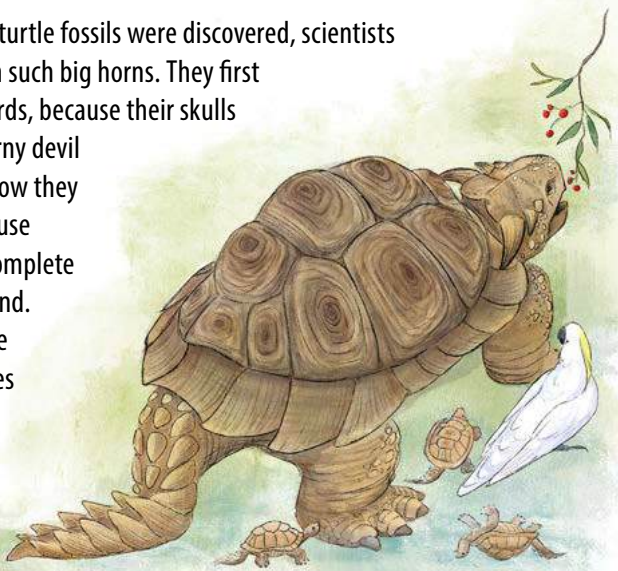
"Cave Snake" aka *Wonambi naracoortensis*

Just like the scrub python, this giant snake strangled its prey to death with killer hugs. But don't be fooled – it's not actually a python! It belongs to a very old family of snakes called the Madtsoiidae, which evolved all the way back in the time of dinosaurs. Its ancestors were probably strangling Cretaceous prey long before the first pythons appeared and *Wonambi* was the last of them to go extinct! We don't know whether it really had rainbow scales, but some living snakes do, like the sunbeam snake from Southeast Asia. Who's to say this one didn't too?



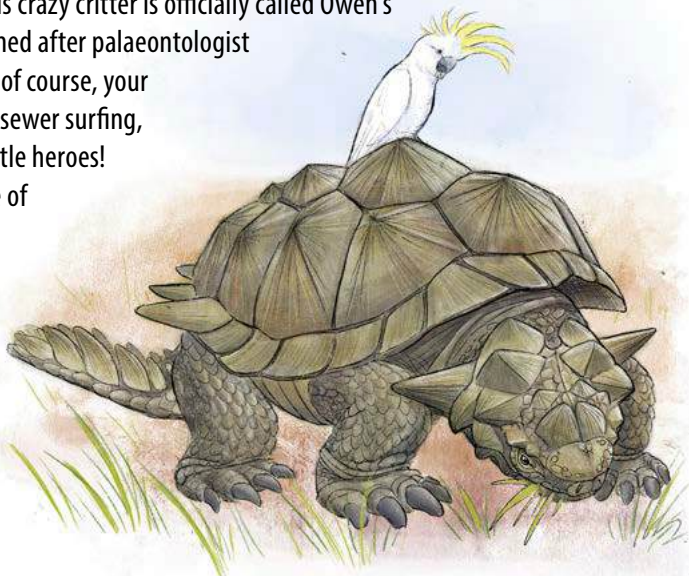
“Land Roamer” aka *Meiolania brevicollis*

When Australia’s first giant turtle fossils were discovered, scientists had never seen a turtle with such big horns. They first classified them as giant lizards, because their skulls looked so similar to the thorny devil lizards of today! We now know they were definitely turtles because we’ve since found several complete skeletons on Lord Howe Island. They probably lived a lot like the giant Galápagos tortoises of today, eating plants and avoiding predators with those huge shells, except they grew even bigger – up to 2.5 metres long.



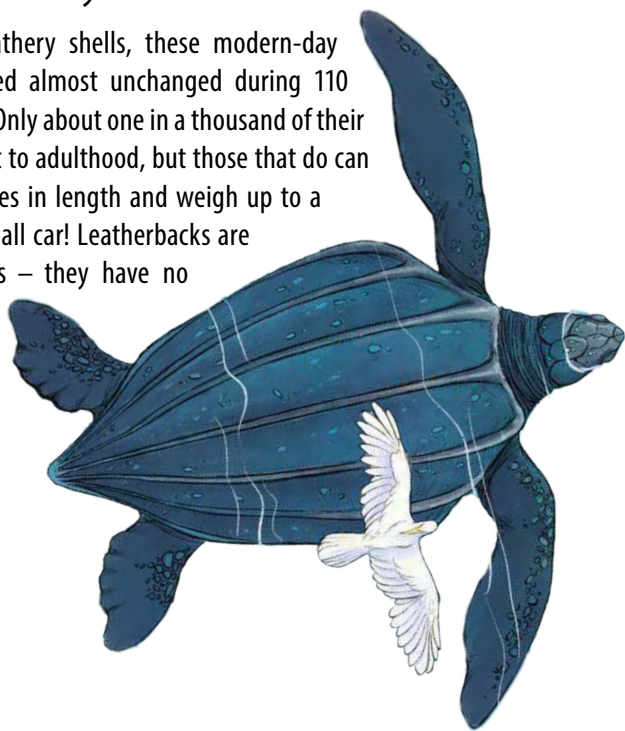
“Ninja Turtle” aka *Ninjemys oweni*

Cowabunga, dudes! This crazy critter is officially called Owen’s Ninja Turtle. It was named after palaeontologist Sir Richard Owen, and, of course, your favourite pizza-loving, sewer surfing, totally tubular teen turtle heroes! It’s a very close relative of *Meiolania*, except with straighter horns and a pointier nose. We have to guess about the shell, because so far we only have fossils of the skull and tail, but there’s no doubt that it was one radical dude!



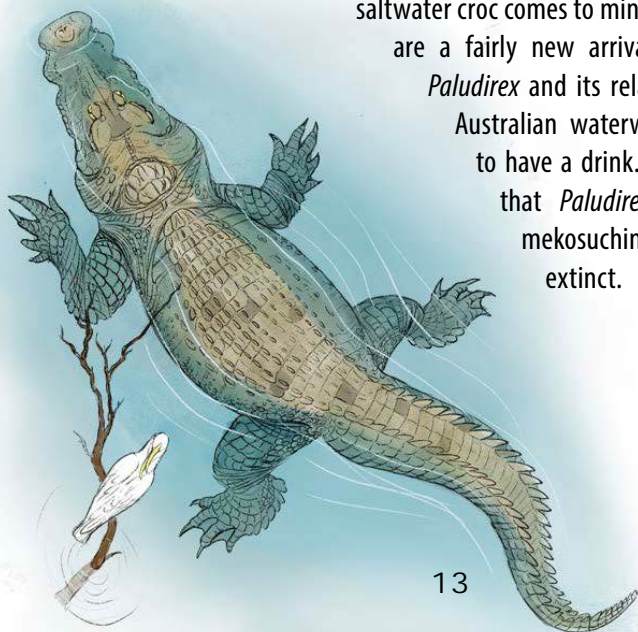
Leatherback aka *Dermochelys coriacea*

Named for their soft, leathery shells, these modern-day ocean giants have survived almost unchanged during 110 million years of evolution. Only about one in a thousand of their tiny hatchlings will make it to adulthood, but those that do can grow to nearly three metres in length and weigh up to a ton. That's the size of a small car! Leatherbacks are the ultimate gentle giants – they have no teeth, just a spiky tongue and gums, perfect for spearing jellyfish.



"Swamp King" aka *Paludirex gracilis*

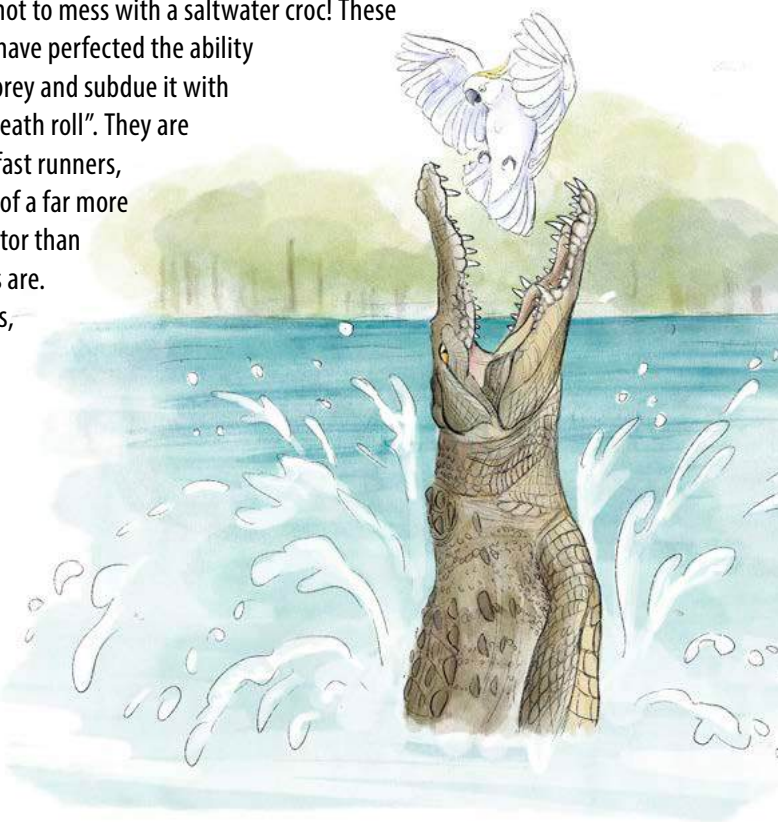
When we think of scary crocodiles in Australia, the fearsome saltwater croc comes to mind. But our famous salties are a fairly new arrival. Until quite recently, *Paludirex* and its relatives made the ancient Australian waterways a dangerous place to have a drink. Sadly, the whole group that *Paludirex* belonged to – the mekosuchine crocodiles – is now extinct.



Saltie aka *Crocodylus porosus*

Everyone knows not to mess with a saltwater croc! These massive animals have perfected the ability to ambush their prey and subdue it with their infamous “death roll”. They are also surprisingly fast runners, possibly a legacy of a far more land-based ancestor than today’s crocodiles are.

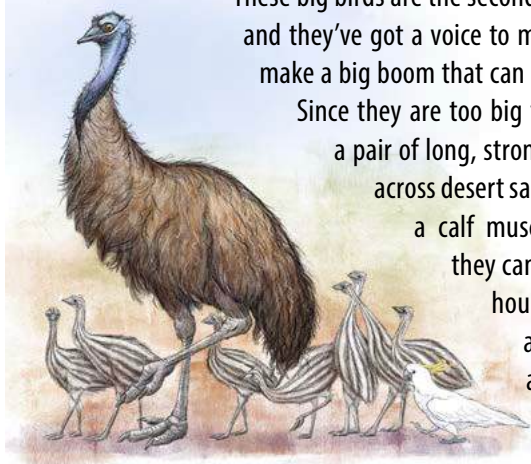
Like many reptiles, crocodiles have what’s known as temperature-dependent sex determination – if the nest is cool, the babies in the eggs turn into girls. If it’s cooler, they grow to be boys!



Emu aka *Dromaius novaehollandiae*

These big birds are the second-tallest in the world after the ostrich and they’ve got a voice to match. They can inflate their necks to make a big boom that can be heard up to two kilometres away!

Since they are too big to fly, they’ve traded their wings for a pair of long, strong runner’s legs, perfect for speeding across desert sands. In fact, they’re the only bird with a calf muscle (called the gastrocnemius), and they can use it to run up to 50 kilometres per hour. So I wouldn’t try to beat an emu in a race – they’re faster than any human alive!



Cassowary aka *Casuarius casuarius*

Cassowaries' favourite food are the fruits of rainforest trees, and by eating these big fruits they carry their seeds to other parts of the forest, making sure the trees can spread far and wide. Some of these seeds can't even sprout until they've passed through a cassowary's stomach! Just like emus, a cassowary father has the job of hatching the whole nest of eggs and looking after all their stripey little chicks until they're old enough to fend for themselves. We thank Djabugay Tribal Aboriginal Corporation for their support of our use of their name for the cassowary - Bunda:rra. Visit djabugay.org.au to learn more!



Cockatoo aka *Cacatua galerita*

This cheeky face should be very familiar! Not only can you find a sulphur-crested cockatoo on every card in this game, but you can see them almost everywhere you go in Australia. These chatty rascals are one of our most widespread birds and our most intelligent too – they can talk, play, and form friendships that last a lifetime (which is a long time, because they can live for more than 100 years!) These days, they're teaching each other how to open wheelie bins so they might be getting too smart for their own good!

There are two reasons we've put a cockatoo on each of these cards. First, you can still see cockatoos in your backyard today all over Australia, so you know roughly how big they are. That means you can compare them to the size of the extinct megafauna and get an idea of how big those animals were, even when you've never seen one!

For example, a big female cockatoo is about 50 centimetres long and a *Diprotodon* is about eight cockatoos long, which means a *Diprotodon* is four metres long, nose to tail!



Secondly, Australian megafauna lived alongside those cockatoos, just like we do now. That gives you an idea of how recently these prehistoric giants lived. It might seem like they've been extinct forever, but 42,000-ish years is nothing to evolution. Australia looked a little different back then, but not as much as you might think!

“Jawbird” aka *Genyornis newtoni*

Despite its size and formidable-looking beak (or jaw, Geny-), this giant bird (-ornis) was almost definitely a herbivore! We can tell this because *Genyornis* fossils often contain gastroliths, which are stones used for grinding up tough plants in the stomach. Some people think *Genyornis*’s favourite food may have been the fruits of cycads, like it is eating in this picture. If so, it would have been an important seed-spreader for these plants, just like cassowaries in the rainforests today. But now that *Genyornis* is extinct, the poor cycads are all on their own and have to spread their big seeds all by themselves!



Tall Turkey aka *Progunia gallinacea*



You’ve heard of brush turkeys, but have you heard of mega brush turkeys? These giant extinct relatives of our modern turkeys were tearing up the dirt way back in the Pleistocene, along with our other megafauna. Their delicious eggs – which they buried in sand dunes – are thought to have made a great food source for the first Australians. When palaeontologists first found these fossil eggshells, they thought they belonged to *Genyornis* but now we know they were turkeys all along!

Megabat aka *Pteropus alecto*

Bats are pretty special animals, and in fact, they're your closest relatives of all the animals in this game! Just like us, bats are highly social and intelligent, make friends and communicate with each other. They can live for decades and put a lot of energy into caring for one big baby at a time. They also have the important job of cross-pollinating many of the bigger plants in our ecosystem. On their nightly flights, they travel huge distances, spreading seeds and pollen further than any other pollinator.



Nicknames!

Scientists love a good nickname - but mostly in Latin. That's right, mega mouthfuls like *Diprotodontia* or *Archosauromorpha* usually have two mega purposes:

1. An “address” for where the clade belongs on the tree of life and
2. A description of a cool feature shared by the animals in that clade!

We really ran with #2 to make up the silly nicknames in this game.

So the next time you see an intimidating Latin name, just know there's always some nerdy biologist who coined it in Latin or Greek to make it sound fancy. You can just google them to find out the *real* meaning in English or whichever language you're most comfortable with.

But what's the story with *these* nicknames?

We're so glad you asked. Knowing what these mega mouthfuls mean will unlock a powerful tale of evolution and survival! Let's start from the bottom and work up both the mammal and reptile sides of the tree. You might like to trace the branches on the board as you uncover just how former lizards evolved to be birds or mammals!

Shell Shockers aka Amniotes in fancy scientific Latin

This clade is far older than the dinosaurs! The ancestor of every single animal in this game evolved around 340 million years ago. That's closer to the time when fish first made it onto land. The first amniotes evolved a game-changing adaptation – a water-proof egg. Inside its **shell**, an amniotic sac protects young embryos from all kinds of conditions! Suddenly, these Shell Shockers did not have to return to water to raise their young and this led to **shocking** amounts of diversity!



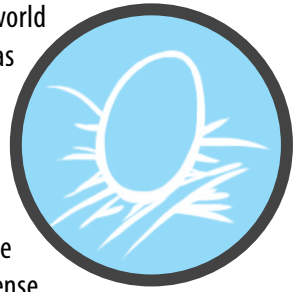
Fuzzy Mamas aka Mammals

You know this one! All that **fuzzy** fur and hair helps keep us warm so we can stay active no matter the outside temperature. This active lifestyle also allows mammal **mamas** to make energy-rich milk to help their babies grow bigger and stronger. That's another ability that led to everything from echidnas to elephants! But mammals are still shell-shocking amniotes, as proven by the egg-laying Yolky Folks (next page)!



Yolky Folks aka Monotremes

Australia and Papua New Guinea hold a special place in the world because they still have living Monotremes – the echidnas and platypuses who lay **yolky** eggs and then raise their shell-cracking babies on milk! These egg-laying mammals remind us of our shell shocker amniote beginnings while also showing off their own unique adaptations from a branch that's at least 180 million years long! In that time, these species, aka **folks**, evolved venom and even the ability to sense electricity!



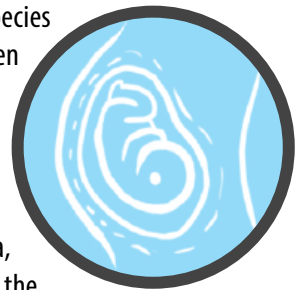
Birth Givers aka Therians

These mammals took the amniote adaptation to the extreme! We therians adapted the shell-shocking amniotic sac to support pregnancy inside a **birth-giving** mama. Biologists are pretty sure that this new adaptation held the key for Pouch Kid marsupials and Big Baby placentals to evolve so many new forms! These new body shapes could suit even more of Earth's environments, which is why when we think of mammals, we often think of the very successful Birth Givers.



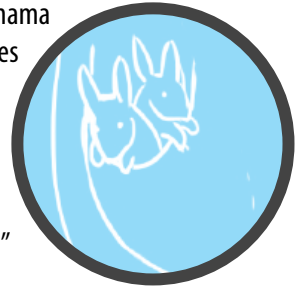
Big Babies aka Placentals

Whatchu call me? Humans are one of more than 4000 species whose ancestor took that pregnancy adaptation to an even further extreme! We earn this nickname for our super long pregnancies that often end with uncomfortably **big babies**. Found on every continent and currently the most mega of the megafauna. The pregnancy giving us this "head start" also relies on a looooong connection of the baby to a placenta, which allows mum's blood to deliver all the food and oxygen the baby needs. But the fancy scientific nickname is actually a bit outdated because Pouch Kids are connected to a placenta too... just not for very long.



Pouch Kids aka Marsupials

Unlike egg-laying, pregnancy is all-in. Once it begins, a mama must devote enormous energy to keep it going or risk the lives of her babies *and* herself. That's a tall order. Introducing the **pouch!** This classic marsupial adaptation goes hand-in-hand with very short pregnancies to give newborn **kids** a protected place to keep growing with more safety for mama. Marsupials take milk to the extreme with "recipes" that change dramatically as the pouch kids grow up.



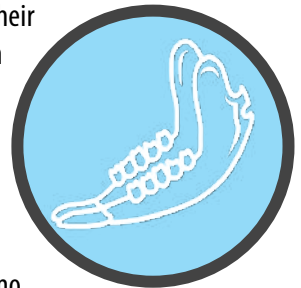
Meat Munchers aka Dasyuromorphs

All the species in this group will eat other animals: small, mouse-sized dunnarts eat insects while the large Tassie devils can rip apart kangaroo carcasses for their **meat!** One of their carnivorous features is a large jaw with a huge gape (check out the thylacine card). All the better to yawn with... or to **munch!**



Big Teeth aka Diprotodonts

The lower jaw of kangaroos, possums, wombats, and their extinct relatives has a weird common feature: all of them have two big lower front teeth (incisors) that are pointing forward, rather than upwards (**Di - proto - dontian** means Two - forward - teeth). But that's not all – diprotodontians also have a so-called syndactylous foot in which the second and third toe are tightly joined by skin and can only move together. Why? We wish we could tell you but the truth is, no one knows.



Thunder Thighs aka Macropods

This kangaroo clade contains probably the most commonly known Australian native mammal, and it is also the one people are most used to. But don't be fooled - kangaroos are among the strangest mammals in the world! The large kangaroos are by far the biggest mammal to hop on their two hind legs, powered by their massive thighs, big (**macro**) feet (**-pod**) and tendons that act like propulsion springs. The larger species also have a peculiar slow walk in which they use their tail as a fifth leg. Sadly, whole groups of kangaroos are now extinct, although many of these would have still been encountered by the first Australians when they arrived about 60,000 years ago.



WHOMPbats aka Vombatiforms

We share Australia with just four comparatively small vombatiforms – the koala, northern and southern hairy-nosed wombats, and common wombat. But that's nothing compared to the diversity and size of vombatiforms encountered by the first humans who entered Australia! Scientists continue to discover new species of these enigmatic giants, which include the biggest marsupials that ever lived (check out the *Diprotodon* card!)



INTERMISSION

We just scaled the tree of life from the bottom, up, and across all of the mammal clades. Their names and their cool features often highlighted reproduction (the process of having babies) as a central adaptation to living on land. Pregnancy features prominently in the mammal evolution story but sometimes we scientists forget to mention that reptiles evolved the same ability at least 121 separate times!



The names for reptiles don't really focus on reproduction. These features don't seem to drive their important evolutionary moments past the shell-shocking start. Since reptiles are siblings to mammals, their story gives us a different perspective on how evolution can go in different ways. Both groups experienced the same challenges, yet the differences in their adaptations keeps the science fascinating!

So trace your finger back to Shell Shockers, and let the reptiles tell you their side of the story. Often, their names remind us of the difficulties of moving on land, and the cool features that made a massive difference (and yes, we'll conclude this story with giant living dinosaurs!).

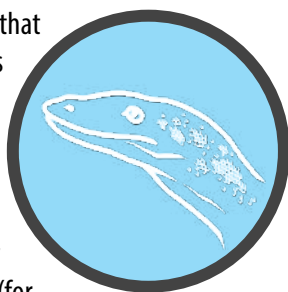
Holey Heads aka Diapsids

All the animals we know as reptiles, as well as the birds, have an ancestor with a pretty random yet distinctive trait – they have two (**di-**) holes or arches (**-apsid**) in their skull roof through which their jaw muscles can attach to the top of the skull (you can see them in the icon). Not all living diapsids have both holes though. Lizard, snake and bird skulls are completely open whereas turtle skulls are completely closed.



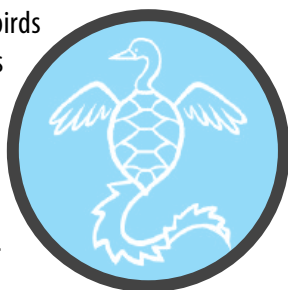
Skin Shedders aka Squamates

Most squamates are lizards and snakes and the first thing that comes to mind for most people is that they are scaly. That's why scientists named them **Squamata**, literally meaning "scaled ones". And while you might think that all lizards and snakes look the same, they display some crazy internal differences, particularly in their head. For example, many species have joints right in the middle of the skull so that they are able to flex and twist their entire head while feeding (for example when a snake swallows an egg that's much bigger than its head!).



Mino-Saurs aka Archosauromorphs

While we've known for a while that crocodiles, dinosaurs and birds all share the same ancestor, it was only recently that turtles were added to this beautiful clade. The name of the group is a bit strange: **Archo-** means ancient, **-sauro-** means reptile but is also often translated as lizard, and **morphs** means **-like**. Ancient-lizard-likes! Given that this group has nothing to do with your average lizard (the Skin Shedders or squamates above) it's an odd name for an odd group!



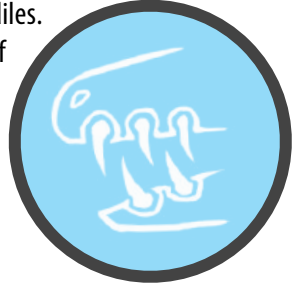
Homebodies aka Chelonians

Turtles (whose Greek name is **Chelonia**) are ancient, amazing survivors from the Triassic period, well before dinosaurs ruled the earth. We called them homebodies because, like snails, they kind of take their house with them in the form of a shell. Crazy fact: The shoulder blade of turtles is inside the ribcage! This makes it possible for all the ribs to fuse into the shell that we know so well while still allowing them to walk their slow turtle walk.



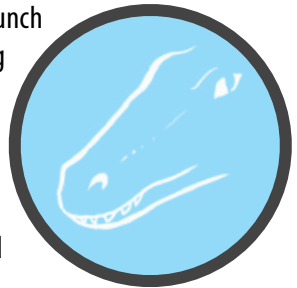
Toothy Grinners aka Archosaurs

The only archosaurs alive today are the birds and the crocodiles. However, the dinosaurs, birds, and a huge number of crocodile-looking species were also archosaurs. Even the extinct but very cool pterosaurs, which were flying reptiles, were archosaurs! This ancestor had teeth firmly rooted in sockets, which made them stronger and all the more successful in catching prey.



Super Chompers aka Pseudosuchians

Pseudosuchians include living crocodiles and a whole bunch of other now-extinct species. They are the ultimate killing machines and use a type of breathing that allows them to run and breathe at the same time, making it easier to out-run their prey. Today's crocodiles all live near or in the water. However, in the 200 million years of their existence, there were all sorts of pseudosuchians, from *T.rex*-like two-legged hunters to peaceful pug-nosed and toothless plant eaters!



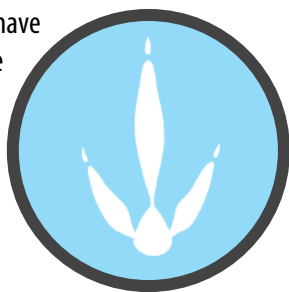
Feathered Friends aka Aves

The scientific name for birds isn't very original – it literally means birds in Latin. Many of you will know that birds are actually a type of dinosaur. Scientists think that the biggest group of birds, the songbirds (with more than 6000 species!) originated on the Australian landmass!



Early Birds aka Ratites

If you've ever had a whole chicken for dinner, you might have noticed that the breast meat is on either side of a large piece of bone that looks like a boat's keel. Among living birds, only ratites don't have this keel, which is why they were aptly named after the Latin word for a keel-less flat raft (*rat*is).



Cheeky Beakies aka Neognaths

The neognaths are a huge group of modern birds, which includes almost all the birds you know today (except the ratites, of course!). They're named after their "new" (*neos*) "jaws" (*gnathos*), because this group evolved a cheeky new beak structure that gave them more flexible jaws. They also took the flying adaptations of their dinosaur ancestors even further, shortening their spine to save weight and fusing together their hand-bones to make a light and strong wing.



