



# Sea Monsters

Prehistoric Ocean Predators

20 November 2020 – 3 May 2021

**EARLY YEARS**

Teacher Resource and EYLF outcomes

Exhibition Producer and Tour Manager

Queensland Museum Network  
Exhibition Partner

Exhibition Development Partner

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# Introducing the Exhibition

*Sea Monsters: Prehistoric Ocean Predators* was developed by the Australian National Maritime Museum in partnership with Queensland Museum.

The exhibition showcases the mighty ancient marine reptiles that hunted the oceans at the same time dinosaurs walked the land: these were the plesiosaurs, ichthyosaurs and mosasaurs.

Through a range of interpretative panels, life size models, fossils, and engaging interactive experiences you and your students will have a terrifyingly great time!

## Key themes:

- **Palaeontology** – history, study of fossils, impact of technologies
- **Adaptations to life in the ocean** – movement, sensory information, reproduction, diet and salt excretion, camouflage
- **Ocean predators today** – extinct and extant (living) animal groups, convergent evolution, human impacts, conservation

## Complementary messages:

- Our knowledge and understanding of ancient animals can change! Human eyes have never seen a living plesiosaur or dinosaur, so we interpret fossils for evidence of how they looked and behaved. New fossils and or new technologies may reveal additional information.
- The largest known animal to have ever lived is the Blue Whale.
- Marine reptile groups which are alive today are the sea turtles, sea snakes, marine iguanas and crocodiles.
- It is scientifically incorrect to call ancient marine reptiles and flying reptiles “dinosaurs”. Dinosaurs are their own taxonomic group, evolving from separate common ancestors. You could think of dinosaurs as ‘ancient land reptiles’, occurring at the same time as other flying and swimming reptile groups.
- Megalodon is an extinct shark (fish) species, the largest that we know of so far. It lived approximately 23 to 3.6 million years ago, a long time after the ancient marine reptiles went extinct and before humans had evolved.

## Stimulus Questions for students visiting the exhibition:

How did you feel in the exhibition? Excited, scared, amazed?

What was your favourite ocean animal in the exhibition and why?

Can you imagine being a palaeontologist? What kind of things do they do?

What are fossils?

What did the exhibition make you wonder? Is there something you saw that made you curious to learn more? What did you see, do or hear that helped you understand something?



## Meet the Curator: Q & A with Dr Espen Knutsen

Dr Espen Knutsen is Senior Curator Palaeontology at the Queensland Museum Network, based at the Museum of Tropical Queensland campus in Townsville. His position is co-appointed with the College of Science and Engineering at James Cook University.

Espen is a vertebrate palaeontologist, who over the past 12 years has conducted pioneering fieldwork and excavations in Australia, the Arctic, The Netherlands and USA. He has described five new species of Jurassic marine reptiles, and was part of an international multidisciplinary research team studying a newly discovered Jurassic marine ecosystem from the High Arctic archipelago of Svalbard, Norway.

He has a special interest in the diversity, evolution and ecology of Mesozoic reptiles, such as ichthyosaurs, plesiosaurs and dinosaurs. Current projects, involving fieldwork throughout Australia for the Australian Mesozoic Tetrapod Project, aim to fill significant gaps in our knowledge and understanding of the Triassic, Jurassic and Cretaceous vertebrate fauna of the southern hemisphere.

Find out more about Espen's research including links and short videos, here.

<https://www.qm.qld.gov.au/Research/People/People/Profile/K/Espen+Knutsen>

### **What is a palaeontologist and did you always want to be one?**

*A palaeontologist is someone who finds and collects fossils to learn about what the Earth looked like millions of years ago.*

*I didn't always want to be a palaeontologist, but I have always been interested in nature and animals.*

### **What are some of things you need to like doing to be a palaeontologist?**

*To be a palaeontologist you must like making discoveries and solving mysteries. You should also enjoy spending time outdoors, as this is where we go looking for new fossils.*

**If no one has ever seen animals like plesiosaurs, ichthyosaurs and mosasaurs how do we know they were real?**

*We know that these animals were once alive, because we have found thousands of fossilised bones and skeletons of them across the world. We know how old the fossils are by studying the rocks they are found in.*

**Could animals like mermaids, unicorns and dragons be real too?**

*Unfortunately, we have found no traces of any of these, neither as fossils or living things. The closest we come to a mermaid is a scuba diver, to a unicorn is a narwhal, and to a dragon is... well...a dragon (a type of lizard that doesn't fly or breathe fire).*

**Why shouldn't we call ancient marine reptiles dinosaurs?**

*Even though they may look like dinosaurs and were alive at the same time as dinosaurs, marine reptiles are a different type of animal. Dinosaurs are ancient reptiles that only lived on land.*

**What is your favourite ancient marine reptile and why?**

*My favourite marine reptile would have to be the long-necked elasmosaur, because of its amazingly long neck with up to 76 vertebrae (neck bones)!*

**Would it make a good pet?**

*I doubt elasmosaurs or any other marine reptile would make a good pet. Many of them were very large for a start, and would need a lot of space and food. I don't think they would be very cuddly either.*

**What is your favourite thing about working at the museum?**

*My favourite thing about working at the museum is that I get to spend my time doing what I love, which is solving mysteries, making discoveries, and telling people about what we have discovered.*

## Early Years Learning Framework - supported Learning Outcomes with examples

The Museum hopes that a visit from an early learner at any time will:

Foster a sense of *belonging* from feelings of connection to family, care and education providers and the community by sharing in a safe, enjoyable and memorable experience

Encourage *being* by providing opportunities for children to play, touch, feel, think, question, imagine and create, and practice problem solving, resilience and social interactions

Inspire children in *becoming* lifelong learners who are knowledgeable about their world and involved and active citizens of society

<b>Outcome 1 – Children have a strong sense of identity</b>	
Children feel safe, secure, and supported	Example: Children know who their lead carer/ educator is and look to them for guidance
Children develop their emerging autonomy, inter-dependence, resilience and sense of agency	Example: Children are given the opportunity to experiment with different ways of doing things, observing the outcome and trying again
Children develop knowledgeable and confident self-identities	Example: Role playing being a scientist, encouraging a dinosaur fascination
Children learn to interact in relation to others with care, empathy and respect	Example: Sharing equipment, waiting turns
<b>Outcome 2 – Children are connected with and contribute to their world</b>	
Children develop a sense of belonging to groups and communities and an understanding of the reciprocal rights and responsibilities necessary for active community participation	Example: Following Museum rules like no running or eating and listening to staff directions
Children respond to diversity with respect	Example: Creating a clear space for a person in a wheelchair or pram to pass the group
Children become aware of fairness	Example: Sharing equipment, waiting turns
Children become socially responsible and show respect for the environment	Example: Placing rubbish in the bin, returning objects to where they belong
<b>Outcome 3 – Children have a strong sense of wellbeing</b>	
Children become strong in their social and emotional wellbeing	Example: Sometimes children may be scared of the large models, reassure them that they cannot get hurt as they aren't real and that we are lucky that we can take a close look in places like Museums
Children take increasing responsibility for their own health and physical wellbeing	Example: Letting a carer/educator know they need to go to the toilet

<b>Outcome 4 – Children are confident and involved learners</b>	
Children develop dispositions for learning such as curiosity, cooperation, confidence, creativity, commitment, enthusiasm, persistence, imagination and reflexivity	Example: Expressing wonder and awe at the specimens on display, asking questions about the content and experiences provided, discovering and laughing with the whimsical miniature dioramas
Children develop a range of skills and processes such as problem solving, inquiry, experimentation, hypothesising, researching and investigating	Example: Using a range of hands-on materials and equipment, solving puzzles and participating in commentary, responding to prompting questions from carers/educators and museum staff
Children transfer and adapt what they have learned from one context to another	Example: Demonstrating their learnings back at the centre and/or home environments
Children resource their own learning through connecting with people, place, technologies and natural and processed materials	Example: Asking a Museum volunteer a question, identifying the Museum as a place for learning about animals found today and from the past, recognising what they saw at the Museum on TV, etc.
<b>Outcome 5 – Children are effective communicators</b>	
Children interact verbally and non-verbally with others for a range of purposes	Example: Learning and using scientific vocabulary such as carnivore, fossil, plesiosaur, palaeontologist
Children engage with a range of texts and gain meaning from these texts	Example: The exhibition contains a mix of text, pictures, models, specimens, simple interactives and large kinaesthetic interactives
Children express ideas and make meaning using a range of media	Example: Synthesising information through play and extended learning e.g. role-playing in the sand pit back at the centre.
Children begin to understand how symbols and pattern systems work	Example: Matching fossils to models or pictures of the animal. Comparing size by measurement
Children use information and communication technologies to access information, investigate ideas and represent their thinking	Example: Using the “Draw Alive” animation interactive to design their own ancient marine reptile then to watch it swim across the big screen in front of them.

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