



# PERMIAN MONSTERS

*Life Before the Dinosaurs*

## Visitor Adventure Guide

Palaeontologists study fossils of plants and animals that lived long ago. These fossils are clues to the past.

**Be a prehistoric detective!**

Use this adventure guide to explore Permian Monsters. Search for your answers within the exhibition and become a palaeontologist.

# Life in the Permian

How long before the dinosaurs did Permian Monsters live?

**Hundreds of years**  
**Thousands of years**  
**Millions of years**

How were insects able to grow to enormous sizes during the Permian?

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Cross the animal groups that didn't exist during the Permian

**Fish**  
**Birds**  
**Amphibians**  
**Insects**  
**Mammals**  
**Reptiles**

Circle the group of reptiles that gave rise to mammals

**Anapsids**  
**Synapsids**  
**Diapsids**

Circle the group of reptiles that gave rise to dinosaurs and birds

**Anapsids**  
**Synapsids**  
**Diapsids**

# The Permian Sea

During the Permian the Earth had just one super continent and one large ocean. What were their names?

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Find the shark Helicoprion and draw its teeth. How do you think they worked?

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Draw the following sea creatures:

**Ammonite**

**Trilobite**

**Crinoid**

These were all invertebrate life forms that lived in the sea during the Permian. Do you know what invertebrates are?

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Which out of the 3 died with the extinction?

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# Permian Amphibians

Find the skeleton and the illustration of Sclerocephalus.  
How big did Sclerocephalus grow?

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How did large amphibians adapt to life on land?

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Can you tell which of the following facts about amphibians are true or false?

Amphibians are warm blooded **True False**

Amphibians change from water-breathing juveniles to air-breathing adults **True False**

Amphibians buried their eggs on land **True False**

Permian amphibians were a lot bigger than today's and achieved monstrous sizes **True False**

Can you name the animal in the exhibition that has a boomerang shaped head?

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Why do you think it had this strange shaped head?

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## Permian reptiles

Now that you have visited the exhibition, here is a way to test your new knowledge on Permian reptiles

Match with a line the Permian reptile names with the illustrations

**Dinocephalia**



**Dicynodont**



**Pelycosaur**



**Pareiasaur**



**Cynodont**



**Gorgonopsid**



Animals that eat meat are called **carnivores**.

Animals that eat plants are called **herbivores**.

Animals that eat plants and meat are called **omnivores**.

Circle the illustrations above the reptiles that were **carnivores**, put a square around the **herbivores** and a triangle around the **omnivores**.

# The Extinction

The Permian ended with the largest extinction in the history of Earth. Do you know what percentage of species were wiped out?

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Can you draw a line to link the sequence of events that led to the extinction?



Volcanic eruption



temperature increase  
+5 degrees



methane gas release  
from ocean



2nd temperature  
increase +5 degrees



extinction of over  
90% species

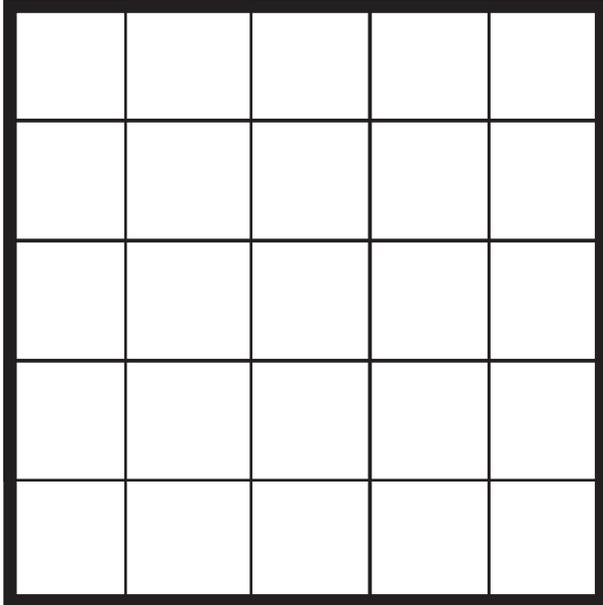
Circle the animals that survived the extinction



# Dipping Up fossils

Go to a dig pit where you can brush away the sand to uncover some fossils

Draw a picture of the fossils you uncover in the grid below



Identify the fossils you found by finding them on display in the exhibition.



**Congratulations!**

This certificate states that

\_\_\_\_\_ became a self-taught palaeontologist at Permian Monsters: Life before the Dinosaurs

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

