



PERMIAN MONSTERS

Life Before the Dinosaurs

Scavenger Hunt

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

(1) How long before the dinosaurs did Permian Monsters live?

Hundreds of years
Thousands of years
Millions of years

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

(3) Cross out the animal groups that didn't exist during the Permian:

Fish
Birds
Amphibians
Insects
Mammals
Reptiles

(4) Circle the group of reptiles that gave rise to mammals:

Anapsids
Synapsids
Diapsids

(5) Circle the group of reptiles that gave rise to dinosaurs and birds:

Anapsids
Synapsids
Diapsids

The Permian Sea

(6) During the Permian, the Earth had just one super-continent and one large ocean. What were their names?

(7) Find the shark *Helicoprion* and draw its teeth. How do you think they worked? That is, how did the teeth function?

(8) Draw the following sea creatures:

Ammonite

Trilobite

Crinoid

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

(10) Which out of the 3 died out during the extinction event?

Permian Amphibians

(11) Find the skeleton and the illustration of *Sclerocephalus*. How big did *Sclerocephalus* grow?

(12) How did large amphibians adapt to life on land?

(13) 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

(14) Can you name the animal in the exhibition that has a boomerang-shaped head?

(15) Why do you think it had this strange shaped head?

Permian reptiles

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

(16) 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**.

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

The Extinction

(18) The Permian ended with the largest extinction in the history of Earth. What percentage of species were wiped out? (There are variations on how to report the answer.)

(19) Can you correctly number the sequence of events that led to the extinction?



Volcanic eruption



temperature increase
+5°C (9°F)



methane gas release
from ocean



2nd temperature
increase +5°C (9°F)



extinction of over
90% species

(20) Circle the animals that survived the extinction:



Dicynodonts



Gorgonopsians



Pelycosaur



Dinocephalians



Cynodonts

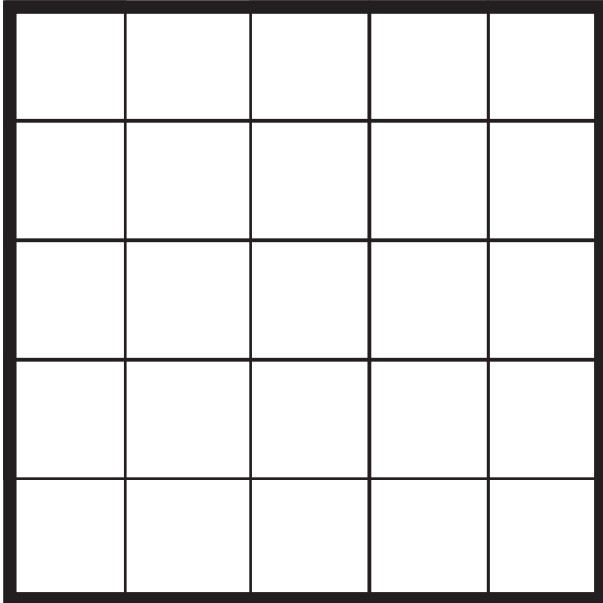


Parareptiles

Dipping Up fossils

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

(21) Draw a picture of the fossils you uncover in the grid below:



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

(23) Which came first--the chicken or the egg? Explain.

Congratulations!

This certificate states that

_____ became a self-taught palaeontologist at

Permian Monsters: Life before the Dinosaurs

Signed: _____

Date: _____

