

WONDERY  
KIDS

# DINO DIG & DIORAMA

WOW-TO  
GUIDE



THAMES & KOSMOS



# SAFETY INFORMATION



## WARNING: CHOKING HAZARD — Small parts. Not for children under 3 yrs.

Warning! Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled.

Keep the packaging and instructions as they contain important information.

WARNING! Not suitable for children under 4 years. For use under adult supervision. Read the instructions before use, follow them and keep them for reference.

Do not inhale plaster dust or bring it into contact with mouth or eyes. Wash hands after use!

**Have any questions? Missing any parts? Want to send us a birthday card?** Our tech support team will be glad to help you!

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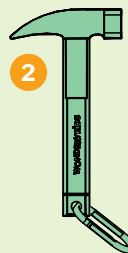
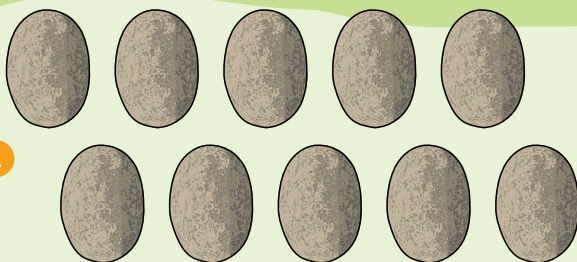


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# KIT CONTENTS



Part No.	Description	Quantity
1	Dino egg with dinosaur figure inside	10
2	Rock hammer with clip	1
3	Chisel	1
4	Cardboard for diorama	1
5	Sticker sheet for diorama	1

YOU WILL ALSO NEED: CUP (OR SMALL BOWL) OF WATER, NEWSPAPER OR PAPER TOWELS

# INTRODUCTION

WELCOME TO YOUR DINO DIG & DIORAMA WOW-TO GUIDE!



GUY RAZ  
(WOW IN THE WORLD HOST)



MINDY THOMAS  
(WOW IN THE WORLD HOST)

THIS GUIDE HAS ALL THE INFO YOU NEED TO BEGIN DIGGING OUT YOUR OWN TINY DINOS!

IT'S ALSO FULL OF WOW-WORTHY DINOSAUR FACTS FROM US! JUST USE THE QR CODE BELOW TO LISTEN.



SO LET'S GET STARTED! TIME TO DIG OUT SOME DINOS AND BUILD A PREHISTORIC DIORAMA!



Wow in the World is the #1 kids science podcast, hosted by Guy Raz and Mindy Thomas!



Start here!



- 1 Grown-ups! Scan this QR code to start your **audio journey**.
- 2 Listen to **Track 1**, a *Wow in the World* Bonus Episode!
- 3 Unlock exclusive **Wow Facts** from Guy & Mindy when you see this symbol in the guide!

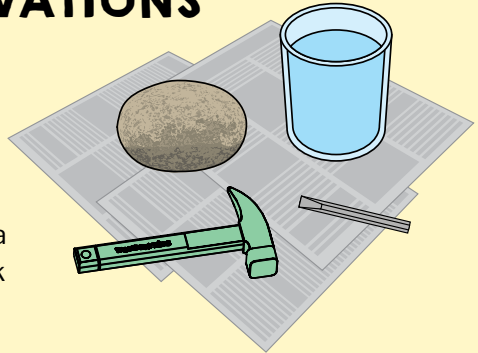


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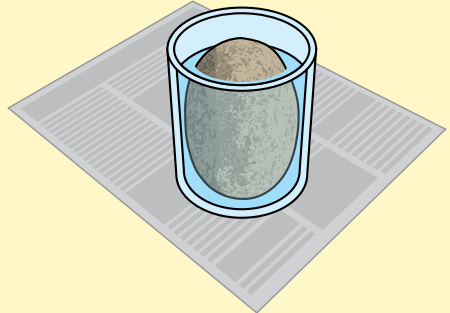
(Terms and conditions apply. See back of front cover for more details.)

# DINOSAUR EXCAVATIONS

**1** Each plaster **dino egg** contains a different **dinosaur figure**. Start with one plaster egg. Get your **rock hammer** and **chisel** tools ready, as well as a **cup filled with water**. Before starting your excavation, cover your work area in **newspaper or paper towels**. Choose a work area that can get a little messy.



**2** Place the egg into the cup of water. This will **soften the plaster**. The longer the egg is in the water, the softer it will become and the easier the excavation will be. But you can also just soften the outermost layer and then work your way through the harder layers on the interior later on.



**3** Now **dig** the dinosaur figure out of the egg by scraping away the plaster with your chisel or rock hammer. As soon as you come to the dinosaur, work **carefully** as you uncover the entire figure bit by bit. Finally, **rinse** any remaining plaster off the dinosaur under running water. Then rinse out the sink.



To find out **which dinosaur** you found, take a look at pages 7–9. Repeat to dig up all **10 dinosaurs**.

**WOW  
FACT**

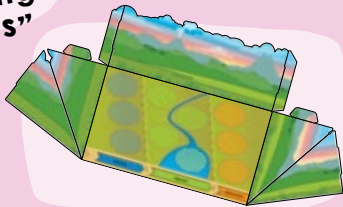


**“Finding  
pieces  
of fossil  
puzzles”**

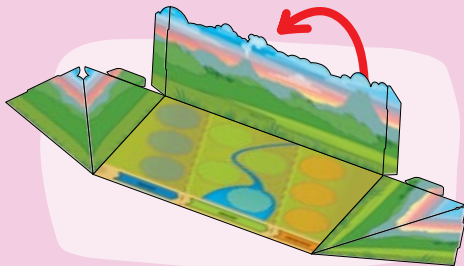


"Imagining the dinos"

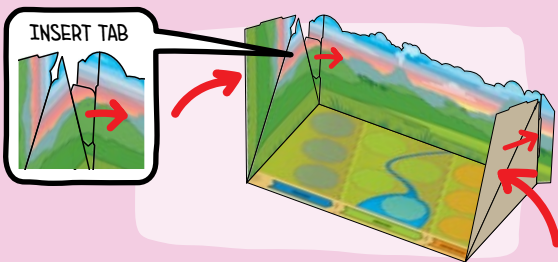
## DIORAMA ASSEMBLY



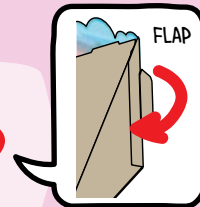
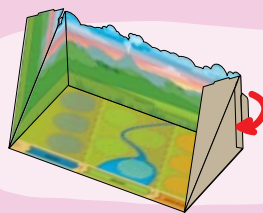
- 1 Lay the **diorama cardboard** flat on the table.



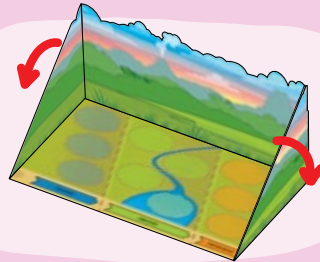
- 2 Fold the **back panel** upward and crease.



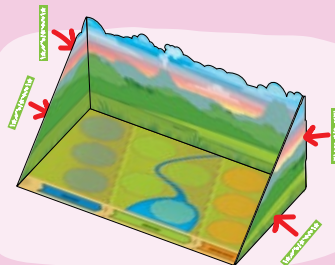
- 3 Fold **both side panels** inward and crease, locking the **tabs** into the **slots** in the back panel.



- 4 Fold the **small flaps** on the back panel inward, along the sides.

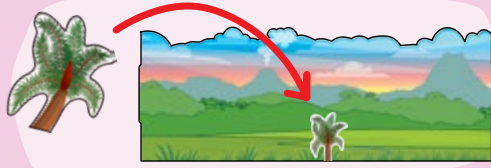


- 5 Fold the **outer-side panels** downward.

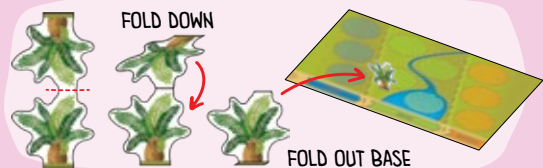


- 6 Use the **four stickers** from the sticker sheet to keep the outer-side panels held down in place.

# PLACING THE PREHISTORIC PLANTS



- 1** The plant stickers that have **only a front side** can be stuck along the **back and side panels** of the diorama.



- 2** The plant stickers that have **both front and back sides** can be placed **sticking up from the base** of the diorama, as shown here.

- 3** Place the plant stickers in the corresponding **prehistoric periods** by following the **color coding** on the sticker sheet and diorama:

## TRIASSIC



Place the plants with **blue lines** at their bases in the **Triassic** section of the diorama.

## JURASSIC



Place the plants with **green lines** at their bases in the **Jurassic** section of the diorama.

## CRETACEOUS



Place the plants with **orange lines** at their bases in the **Cretaceous** section of the diorama.

**WOW FACT** #4  
"The oldest fossil ever!"



# PLACING THE DINOSAURS











The dinosaurs didn't all live during the same time period! They evolved over millions of years. Place the dinosaurs in the **colored ovals** on the diorama, matching the **geologic periods** below.

- 
- 
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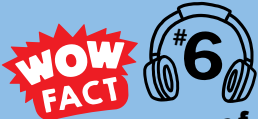
YOU CAN STICK THE GOOGLY-EYE STICKERS TO THE DINOSAURS TOO!

**WOW FACT** #5  
 "Dinos through the ages"

	Dinosaur name	Lived this many million years ago	During this geologic period
	Herrerasaurus	231 - 229	TRIASSIC
	Riojasaurus	227 - 213	TRIASSIC
	Ornithosuchus*	225	TRIASSIC
	Plesiosaurus*	200 - 176	JURASSIC
	Dilophosaurus	184	JURASSIC
	Stegosaurus	155 - 145	JURASSIC
	Brachiosaurus	154 - 150	JURASSIC
	Pteranodon*	86 - 85	CRETACEOUS
	Tyrannosaurus rex	68 - 66	CRETACEOUS
	Triceratops	68 - 66	CRETACEOUS

\*Note: Ornithosuchus, plesiosaurus, and pteranodon are technically not dinosaurs, as they have separate genetic ancestors from dinosaurs. However, they are often referred to as dinosaurs.





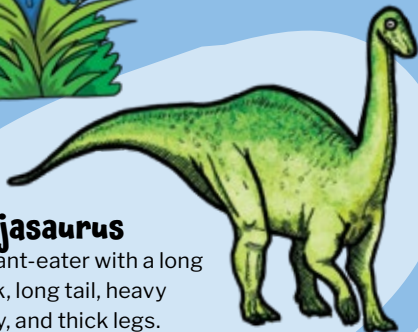
“The dawn of the dinosaur!”



# TRIASSIC PERIOD LIFE

252 TO 201 MILLION YEARS AGO

Dinosaurs first appeared in the late Triassic, around 230 million years ago.



## Riojasaurus

A plant-eater with a long neck, long tail, heavy body, and thick legs. Reached 10 meters (33 ft) in length and over three metric tons.



## Herrerasaurus

A sleek meat-eater with a long tail that walked on two hind legs. Grew up to six meters (20 ft) long and 350 kilograms (770 lb).

## Ornithosuchus

Not technically a dinosaur, this thick-necked creature is a distant relative of modern crocodiles. It could walk on its hind legs but probably walked on all fours more often. About four meters (13 ft) and 200 kilograms (440 lb).

## Plants of the Triassic

Seed-producing plants called **GYMNOSPERMS** took over during this period, joining the more primitive plants that reproduced with spores. Gymnosperm means “naked seed” and refers to plants that have seeds on the outside of special structures, like cones, rather than on the inside like fruits. Gymnosperms of this period include **ASTEROXYLON (1)**, **MEDULLOSA (2)**, and **BENNETTITALES (3)**. Examples of the earlier, spore-producing plants include **FERNS (4)**, **HORSETAILS (5)**, and **LYCOPOD TREES (6)**.



5



6



4



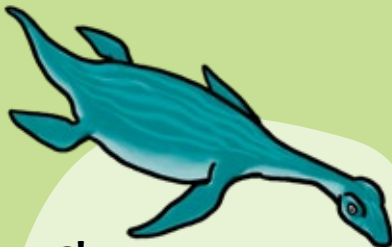
3



1



2



## Plesiosaurus

The **ICHTHYOSAURS** (“fish lizards”) and **PLESIOSAURS** were also not true dinosaurs. Plesiosaurus lived in the ancient seas, where it hunted fish and other prey. Distinctive features were the long neck and paddle-shaped limbs. Up to 3.5 meters (11 ft) and 500 kilograms (1,100 lb).

# JURASSIC PERIOD LIFE

**201 TO 145 MILLION YEARS AGO**

The rise of the dinosaurs! A diverse array of dinosaurs evolved to dominate the planet.

**WOW FACT** #7  
“Pangea: dino playground”



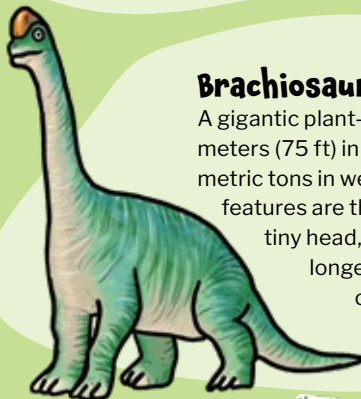
## Dilophosaurus

A fast meat-eater with a pair of bony crests on the top of its head. Up to 7 meters (23 ft) long and 400 kilograms (880 lb).



## Stegosaurus

It had a tiny head, gigantic plates sticking up from its back, and a clubbed tail with bony spikes. This plant-eater grew up to nine meters (30 ft) long and weighed up to four metric tons.



## Brachiosaurus

A gigantic plant-eater, up to 23 meters (75 ft) in length and 35 metric tons in weight. Distinctive features are the long neck, tiny head, and front legs longer than the rear ones.

## Plants of the Jurassic

Gymnosperms, including **CYCADS (1)**, **CONIFERS (2)**, and **GINKGOS (3)**, continued to thrive and diversify. There were still plenty of spore-producing plants like **FERNS (4)** and towering **FERN TREES (5)**. The first **ANGIOSPERMS**, flowering plants that reproduce with seeds enclosed in fruits, started to appear.



# CRETACEOUS PERIOD LIFE

**145 TO 66 MILLION YEARS AGO**

The dinosaurs reached their peak diversity and population. This period ended with a huge event that caused the dinosaurs to go extinct.

**WOW FACT** #8

“Going out with a bang”



## Pteranodon

Not actually true dinosaurs, the **PTEROSAURS** (“winged lizards”) were closely related to dinosaurs. Pteranodon hunted at sea, mostly for fish, and had a wingspan of up to seven meters. Up to 50 kilograms (110 lb).



## Tyrannosaurus rex

The most famous dinosaur of all! A ferocious meat-eater with powerful teeth. Grew to over 13 meters (43 ft) in length and eight metric tons in weight.



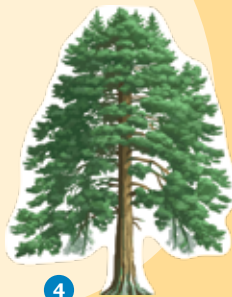
## Triceratops

The largest dinosaur from the group of horn-bearing plant-eaters, up to nine meters (30 ft) long and 12 metric tons in weight. It carried three horns on its skull and had a broad bony frill to protect its neck.



## Plants of the Cretaceous

The **ANGIOSPERMS**, which means “enclosed seed,” became the dominant group of plants. This includes **MAGNOLIAS (1)**, **PINDO PALMS (2)**, **GUNNERA (“DINOSAUR FOOD”)** (3), **WATER LILIES**, and **EARLY GRASSES**. **REDWOOD TREES (4)**, huge conifers, appeared at the very end of the Cretaceous period.



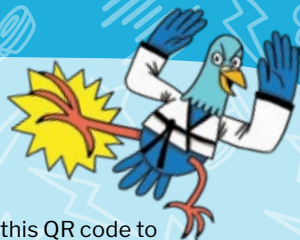
# NEXT-LEVEL CHALLENGES

Try these experiments on your own!

1. Look up other living things that lived in each geologic period and add them to the diorama.
2. Create your own fossil model by pressing shells and leaves into clay.
3. Make your own excavation activity by casting small objects in plaster and digging them out.



Scan this QR code to **KEEP THE WOW ROLLING** with additional **educational resources** related to this item.



**This kit was completed by:**

Write your name(s) in the spaces below.

X \_\_\_\_\_

X \_\_\_\_\_

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