RANDOM HOUSE AUSTRALIA

TEACHERS' RESOURCES

RECOMMENDED FOR
Primary (ages 6–9)

CONTENTS

KEY CURRICULUM AREAS
- English
- Science

REASONS FOR STUDYING THIS BOOK
- Building vocabulary
- Learning about prehistoric Australia, fossils and dinosaurs
- Values: friendship, courage, positive thinking

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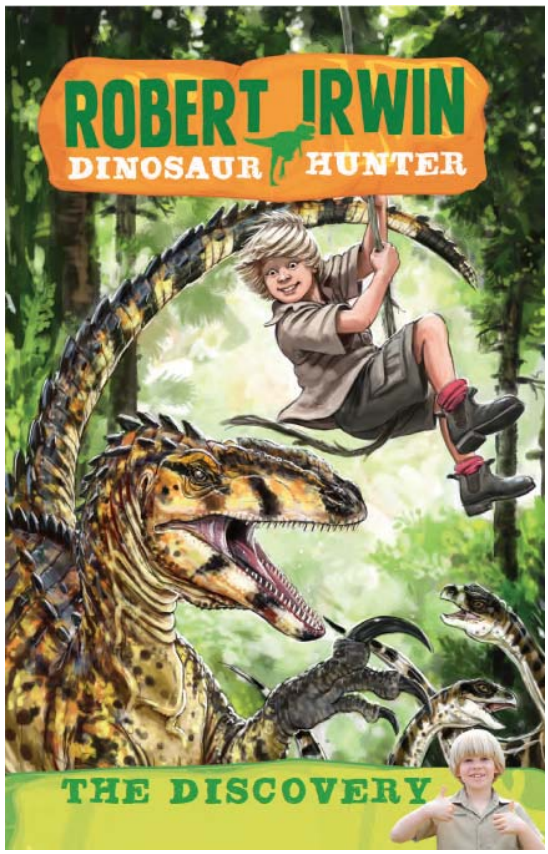


Robert Irwin, Dinosaur Hunter: The Discovery

Robert Irwin & Jack Wells

PLOT SUMMARY

After discovering a dinosaur fossil in outback Queensland, Robert stumbles upon a way to travel back to the Australian age of dinosaurs, 95 million years ago! But dodging a dinosaur stampede isn't Robert's biggest problem. If he can survive the day, how will Robert find his way home?

ABOUT THE AUTHOR

Robert Irwin was born on 1 December 2003 and his abundance of energy at Australia Zoo is contagious. He is the son of Terri Irwin and the late Steve Irwin, Australia's Crocodile Hunter.

At only nine years old, Robert is a chip off the old block, and with his cheeky grin and natural curiosity, he loves nothing more than catching lizards and skinks, learning about wildlife and the Australian bush, and hanging out with his much-adored sister, Bindi.

AUTHOR Q & A

Robert was inspired by his sister, Bindi, to create his own series of books, and he could think of nothing better than writing about his favourite passion – dinosaurs!

What would you tell other kids to get them to read your books?

My series of books are really fun, exciting, action-packed adventures, where kids can learn about more unusual dinosaurs as they travel back in time with me and my friend Riley to discover incredible prehistoric creatures. I think reading opens up a whole new world where you can discover and learn new things.

What is the best thing about looking for dinosaurs?

Looking for dinosaurs and other prehistoric creatures is incredibly exciting because you never know what you are going to find. You could even discover a new species! When you do find something, even if it's something really small, it is amazing to hold what was once a living, breathing animal that hasn't seen the light of day for over 65 million years.

Activities

1. Robert was inspired to create a series of books on one of his favourite subjects – dinosaurs. Choose a subject or animal that you are passionate about and write a short story featuring it.
2. Pick a dinosaur that most interests you. Research that dinosaur – its appearance, habitat and the era in which it existed – and write about it in an adventure story that also stars you and your best friend!

PRE-READING QUESTIONS

1. What do you know about dinosaurs? Present your answers in a mindmap.
2. Do you know where our information about dinosaurs comes from?
3. What does a palaeontologist do?

ILLUSTRATIONS

Each book in the Robert Irwin, Dinosaur Hunter series contains four black-and-white illustrations by Lachlan Creagh.

Activity

1. Choose a passage in the book that you particularly like and have a go at illustrating it. Try to fit in as much information as you can!

Questions

1. Why do you think there are illustrations?
2. What does each illustration tell you?
3. Do the illustrations work well with the text?

LANGUAGE

Words that are used in a book are carefully chosen to convey certain types of information. For example, the word 'Crikey' can hint to the reader that the speaker is Australian, or the word 'Awesome!' can show that a character is excited about something.

Activity

1. Try to find as many words as you can in the book that indicate the story is set in Australia.

CASE STUDIES

Prehistoric Australia

When dinosaurs roamed the earth, Australia was part of the supercontinent, Gondwana. It was made up of most of the landmasses in today's Southern Hemisphere, including Australia, Antarctica, Africa, South America and India.

Most of the dinosaur fossils found in Australia belong to the Cretaceous period (146–65 million years ago). During this time the Australian part of Gondwana was close to the South Pole. Australia had a temperate and humid climate, and for several weeks of each year, southern parts of Australia, such as Victoria, may have had an icy polar winter that included semi-darkness.

Towering conifer forests covered much of Australia during the Cretaceous period, and there were also smaller plants such as ferns, gingkoes, cycads, clubmosses and horsetails. This period of Australia's history also saw the appearance of the first flowering plants.

Most Australian dinosaurs have been found in the eastern half of Australia (Queensland, New South Wales and Victoria), though isolated dinosaur bones have also been unearthed in Western Australia and South Australia. Queensland, in particular, is a dinosaur hotspot, with two-thirds of the state being covered by Cretaceous rock.

Activities

1. Using your library and online resources, research what prehistoric Australia would have been like e.g. in terms of temperature, climate, landscapes, plants and animals. Using this information, draw a scene of prehistoric Australia.

2. Compare a Cretaceous world map with a map of the world as it is now. ***Questions:*** What differences do you notice? What do you think happened to create these changes?

Australovenator Wintonensis

Discovered: June 2006 in the Winton Formation, central western Queensland

Etymology: Winton's Southern Hunter

Period: Mid-Cretaceous, 100–98 million years ago

Length: Approximately 5 metres long

Height: Approximately 1.5 metres tall at the hip

Weight: Approximately 500 kilograms

Nicknamed 'Banjo' after the Australian poet Banjo Paterson, *australovenator* is Australia's most complete skeleton of a carnivorous (meat-eating) dinosaur. Among the fossils discovered are nine teeth, some ribs and bones belonging to the dinosaur's feet, shins, thigh, forearms and pelvis.

Judging from its dimensions, *australovenator* was built for speed. Palaeontologists also found finger and wrist bones along with a middle claw that revealed hands close to 50 centimetres long that could spread to a whopping 30 centimetres wide at the tips of its claws! This means that Banjo would have had a massive grasping capability.

By scanning the fossils and then creating a mirror image of them through the use of 3D-imaging technology, experts were able to create an image of two complete forearms, which can be used to work out exactly how *australovenator* attacked its prey. It is believed that *australovenator* would have dug its mighty claws into its prey, holding it in an iron grip, before going in for the kill.

Activities

1. Write your own story featuring *australovenator*.

2. Create your own field guide on a dinosaur of your own choosing. See Worksheet: Field guide (p.10).

DISCUSSION QUESTIONS

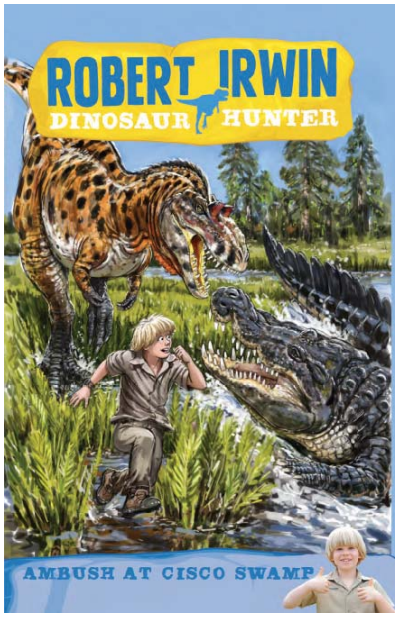
Dino Fever!

Divide the class into groups and allocate a question to each group. After they are given 20 minutes to research the question, each group will present their findings and lead the class in a discussion.

- Were all dinosaurs meat-eaters?
- What is the largest dinosaur that has been found so far?
- Did dinosaurs have feathers?
- Could dinosaurs make sounds?
- Were all dinosaurs large?
- How are dinosaurs discovered?
- Which types of dinosaur have been discovered in Australia?

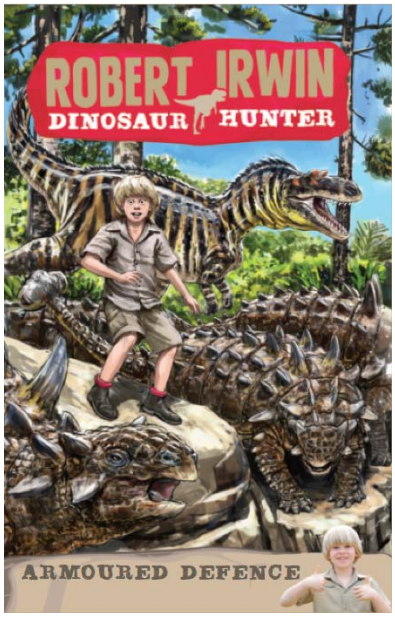
- What was Australia like when dinosaurs still roamed the earth?
- Are there animals that exist today that are related to dinosaurs?
- As there is no photographic evidence of dinosaurs, do you think it is certain what dinosaurs looked like? Explain the reasons for your answer.
- Why did dinosaurs become extinct?
- Why do you think we are so fascinated with dinosaurs? And why do you think they have their own genre in popular entertainment (e.g. books and film)?

FURTHER READING



Robert Irwin, Dinosaur Hunter: Ambush at Cisco Swamp
by Robert Irwin & Jack Wells

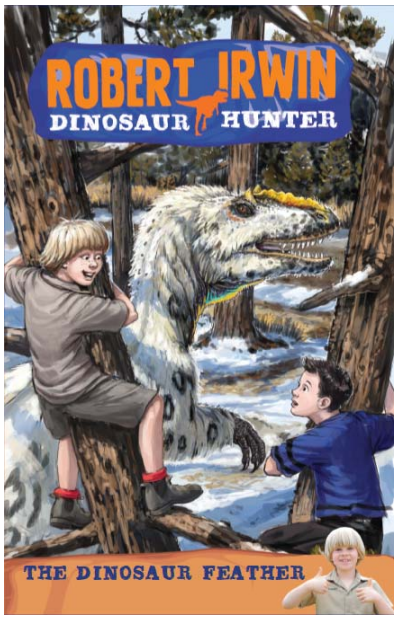
The Irwins are in Texas, doing some research on the American alligator. Robert knows that the ancient *deinosuchus* roamed around these parts. When his magic fossil transports him back in time, he gets to see the prehistoric predator take on an *albertosaurus*, and win!



Robert Irwin, Dinosaur Hunter: Armoured Defence
by Robert Irwin & Jack Wells

Robert and his best friend, Riley, are visiting the Canadian Badlands with Riley's Uncle Nate. The boys get pulled back in time to Alberta, Canada during the late Cretaceous period, to find a heavily armoured *euoplocephalus* trapped in vines.

But the rescue doesn't go according to plan when a ferocious *gorgosaurus* arrives, looking for a snack!



Robert Irwin, Dinosaur Hunter: The Dinosaur Feather
by Robert Irwin & Jack Wells

While spending time with the cassowaries at Australia Zoo, Robert mentions to Riley that many dinosaurs were also feathered. Riley thinks he's joking until the two friends zip back to prehistoric Asia, where feathered dinosaurs such as *oviraptor* and *yutyrannus huali* roam the land.

When they find an abandoned egg, the hunt is on to return it to its rightful owner before it hatches!

WORKSHEET: Vocabulary

Use the following table to first see if you can guess the meaning from the context in the book, then look up these words in the dictionary, and find a synonym in the thesaurus, if there is one.

WORD	EXAMPLE	DICTIONARY MEANING	SYNONYM
fossil	p.5		
palaeontologist	p.5		
roamed	p.6		
prehistoric	p.6		
herbivore	p.6		
convinced	p.6		
hesitate	p.11		
dedicated	p.13		
armoured	p.15		
adventurous	p.15		
exacting	p.17		
inflict	p.18		
fossick	p.19		
determination	p.21		
frustrating	p.31		
intuition	p.39		

WORKSHEET: Comprehension

After completing each chapter, have a go at answering the corresponding questions below.

Chapter Questions	**Answer**
1 Why do you think the story begins the way it does?	
Though they are best friends, Robert and Riley have different interests. What are they?	
Who conveys the information about dinosaurs and palaeontology?	
2 How old is Robert turning?	
Where is the dig site located?	
What tools do they take to the dig site?	
What is another difference between Robert and Riley in this scene?	
Who gives Robert the nickname 'Dinosaur Hunter'?	
What is Robert's moment of triumph?	
3 What is the simile Robert uses to describe the process of working out which creature a fossil belongs to?	
4 What does the large dust cloud remind Robert of?	
5 What is creating the dust cloud?	
How does Robert travel back in time?	
Are the climate and landscape different to that of present-day Winton?	
6 Why is there a stampede?	
What is another name for *Australovenator*?	
7 How does Robert feel during this scene?	

8	What happens when Robert is about to time travel?	
	Where does Robert reappear?	
9	Where do the Irwin family and Riley visit?	
	How does Robert explain his wet clothes?	
	Why does the tour guide's description of the prehistoric event sound familiar to Robert?	

Illustrated by Lachlan Creagh

WORKSHEET: Describe-a-'saur

Write a word or sentence that begins with the letters in the word 'dinosaur' to describe something about dinosaurs.

D .....

I .....

N .....

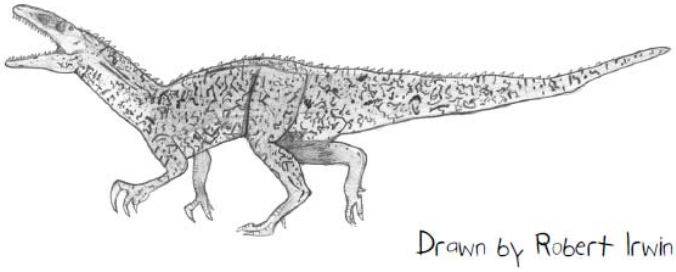
O .....

S .....

A .....

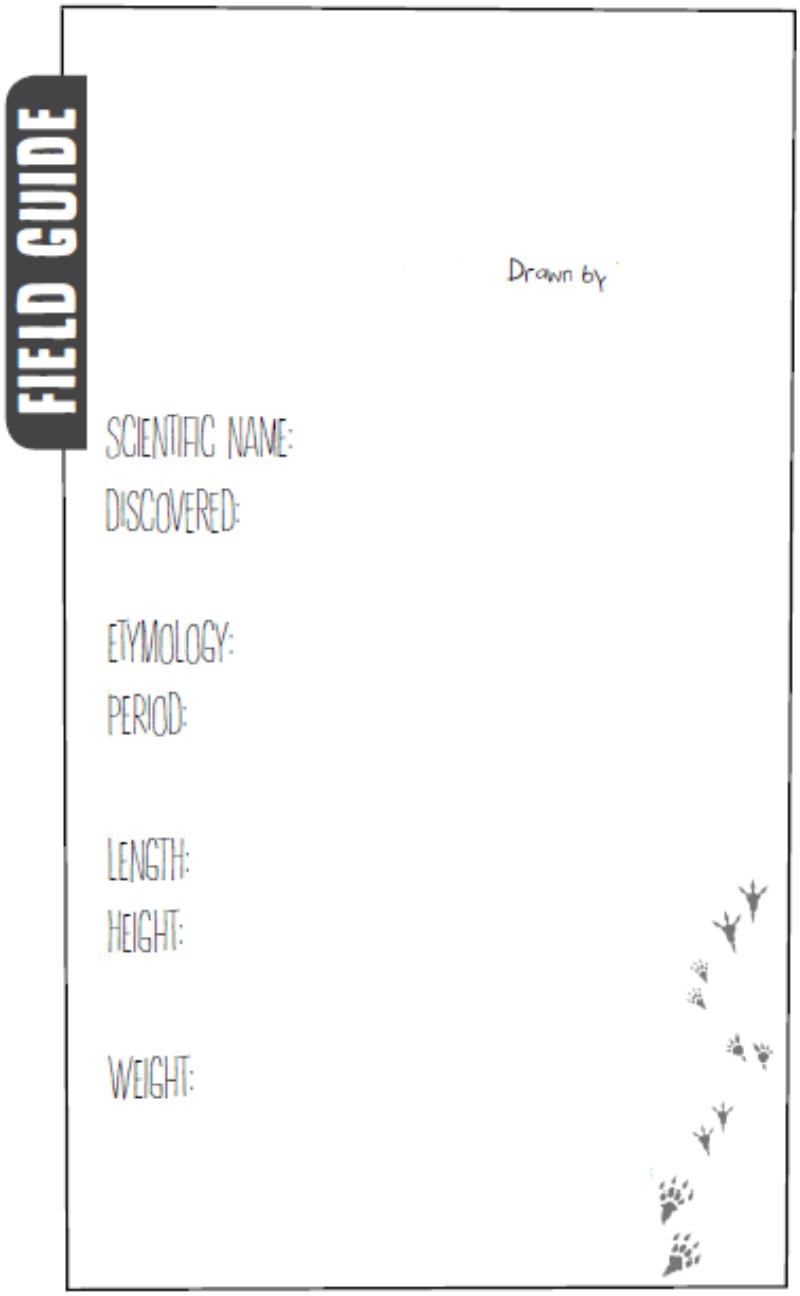
U .....

R .....



WORKSHEET: Field guide

Create your very own field guide on a dinosaur of your choosing!



EXTENSION EXERCISE

Lark Quarry Dinosaur Trackways

The Lark Quarry Dinosaur Trackways are located in Lark Quarry Conservation Park in Queensland's central west. The tracks were first discovered in the 1960s by station manager Glen Seymour, who at the time believed them to be fossilised bird tracks. It wasn't until 1976 that a team of volunteers, led by the Queensland Museum and palaeontologists from the University of Queensland, worked at excavating the tracks.

The team spent 18 months at the site, removing 60 tonnes of rock from an area of 210 square metres. The Lark Quarry Dinosaur Trackways were found to contain around 3,300 dino footprints!

Until recently, palaeontologists believed that the tracks were a result of a stampede in the area that occurred about 95 million years ago. They worked out that Lark Quarry had been a great river plain at the time, with swamps and lakes. They interpreted the area where the trackways were found to be the site of a lake, where herds of dinosaurs would come to drink.

After studying the tracks more closely, palaeontologists believed that a huge meat-eating theropod had approached the lake, causing around 150 smaller dinosaurs (a mix of *coelurosaurs* and *ornithopods*) to stampede in an effort to escape the predator.

However, a new theory behind the trackways was proposed in early 2013 by PhD candidate Anthony Romilio. After a two-year study of the site, Romilio believes that the trackways are not evidence of a stampede but of a dinosaur river crossing.

Activities

1. Compare the content of the recent newspaper articles with the information on the Lark Quarry Dinosaur Trackways website (listed below), then answer the following questions:
   (a) What was the original theory behind the dinosaur tracks at Lark Quarry?
   (b) What is the new theory?
   (c) What are the reasons given to prove this new theory?
   (d) Which version do you find more believable? Give reasons to support your answer.
   (e) What does the existence of more than one theory tell us about the nature of palaeontology?
2. Several theories also exist concerning the extinction of dinosaurs. Divide the class into groups and allocate each group with a theory that they must research and present to the rest of the class.

Further reading

'Fact Sheet 1' *Lark Quarry Dinosaur Trackways*: http://www.dinosaurtrackways.com.au/c/document_library/get_file?uuid=33aec716-a278-45f4-b10d-3d01611b4f74&groupId=12688

'"Stampeding" dinosaurs were swimming.' *Brisbane Times* 9 January 2013.

'Stampede site may be dinosaur river crossing.' *ABC News* 10 January 2013.