



LONDON, NEW YORK, MELBOURNE,  
MUNICH, AND DELHI

#### DORLING KINDERSLEY

Senior Editor Angeles Gavira Guerrero

Senior Art Editor Ina Stradins

Project Editors Gill Pitts, David Summers,  
Miezan van Zyl

Designers Dave Ball, Paul Drislane,  
Duncan Turner, Steve Woosnam-Savage

Editor Steve Setford

Assistant Designers Riccie Janus,  
Fiona Macdonald

Junior Design Assistant Jonny Burrows

Jacket Designer Mark Cavanagh

Production Editor Ben Marcus

Production Controller Erika Pepe

Picture Researcher Liz Moore

Photographer Gary Ombler

Scenic illustrations Robert Nicholls

Managing Editor Sarah Larter

Managing Art Editor Michelle Baxter

Art Director Phil Ormerod

Associate Publisher Liz Wheeler

Publisher Jonathan Metcalf

3D model reconstructions by  
Kennis & Kennis

Call No. ....

วัน เดือน ปี .....

เลขทะเบียน B5602748 .....

First published in Great Britain in 2011  
by Dorling Kindersley Limited, 80 Strand, London WC2R 0RL  
A Penguin Company

Copyright © 2011 Dorling Kindersley Limited

4 6 8 10 9 7 5 3  
003 – 177860 – Sept/2011

All rights reserved. No part of this publication may be reproduced, stored  
in a retrieval system, or transmitted in any form or by any means,  
electronic, mechanical, photocopying, recording, or otherwise, without  
prior permission of the copyright owner.

A CIP catalogue record for this book is available from the British Library

ISBN 978 1 4053 6165 1

Printed and bound in China by Leo Paper Products Ltd

Discover more at  
[www.dk.com](http://www.dk.com)

# CONTENTS

## 08 UNDERSTANDING OUR PAST

- 10 Back in time
- 14 The geological record
- 16 What are fossils?
- 22 Finding our ancestors
- 24 Archaeological science
- 26 Piecing it together
- 28 Bringing bones to life
- 30 Reconstruction
- 32 Interpreting behaviour

## 34 PRIMATES

- 36 Evolution
- 38 Classification
- 40 The first primates
- 44 New World monkeys
- 46 Early apes and Old World monkeys
- 50 Modern apes
- 54 Apes and humans

## 56 HOMININS

- 58 Human evolution
- 60 Family tree
- 62 *Sahelanthropus tchadensis*
- 68 *Orrorin tugenensis*,  
*Ardipithecus kadabba*
- 70 *Ardipithecus ramidus*
- 74 *Australopithecus anamensis*
- 75 *Australopithecus bahrelghazali*,  
*Kenyanthropus platyops*
- 76 *Australopithecus afarensis*
- 86 *Australopithecus africanus*
- 92 *Australopithecus garhi*,  
*Paranthropus aethiopicus*
- 93 *Paranthropus robustus*,  
*Australopithecus sediba*



94	<i>Paranthropus boisei</i>
98	<i>Homo habilis</i>
108	<i>Homo georgicus</i>
114	<i>Homo ergaster</i>
122	<i>Homo erectus</i>
128	<i>Homo antecessor</i>
134	<i>Homo heidelbergensis</i>
142	<i>Homo floresiensis</i>
150	<i>Homo neanderthalensis</i>
160	<i>Homo sapiens</i>
172	Comparing heads

## 174 OUT OF AFRICA

176	Human migrations
178	Genetics of past migrations
180	First hominin migration
182	Last of the ancients
184	A new species appears
186	East along the coast
188	The colonization of Europe
190	Neanderthals and modern humans in Europe
192	North and East Asia
194	The New World
196	Oceania

## 198 FROM HUNTERS TO FARMERS

200	After the ice
202	Hunter-gatherers
204	Rock art
206	From foraging to food production
208	Farmers in West and South Asia
210	Göbekli Tepe
212	Farmers in Africa
214	Farmers in East Asia
216	Farmers in Europe

218	Farmers in the Americas
220	Getting more from animals
222	Craft development
224	Metalworking
226	Trade
228	Religion
230	Newgrange
232	The first states
234	Mesopotamia and the Indus
236	Standard of Ur
238	Dynastic Egypt
240	Shang China
242	American civilizations
244	Glossary
248	Index
255	Acknowledgments

## AUTHORS AND CONSULTANTS

### Understanding our Past

Author: **Professor Michael J. Benton**, Professor of Vertebrate Palaeontology, University of Bristol, UK.  
Consultants: **Dr Fiona Coward** (see Hominins); **Professor Paul O'Higgins**, Professor of Anatomy, Centre for Anatomical and Human Sciences, Hull York Medical School, UK.

### Primates

Author: **Professor Colin Groves**, School of Archaeology and Anthropology, Australian National University, Canberra, Australia.  
Consultant: **Professor Eric J. Sargis**, Department of Anthropology, Yale University / Curator of Vertebrate Palaeontology, Peabody Museum of Natural History, USA.

### Hominins

Author: **Dr Kate Robson-Brown**, Senior Lecturer in Biological Anthropology, Department of Archaeology and Anthropology, University of Bristol, UK, with contributions by **Dr Fiona Coward**, Research Fellow, Department of Geography, Royal Holloway University of London / Visiting lecturer, Institute of Archaeology, University College London, UK.

Consultant: **Professor Katerina Harvati**, Head of Palaeoanthropology, Institute of Early Prehistory and Medieval Archaeology and Senckenberg Centre for Human Evolution and Palaeoecology, Eberhard Karls Universität Tübingen, Germany.

### Out of Africa

Author: **Dr Alice Roberts**, Director of Anatomy for the NHS Severn Deanery School of Surgery / Research Fellow, Hull York Medical School / Honorary Fellow in Archaeology and Anthropology, University of Bristol, UK.  
Consultant: **Dr Stephen Oppenheimer**, School of Anthropology, University of Oxford, UK.

### From Hunters to Farmers

Author: **Dr Jane McIntosh**, Senior Research Associate, Faculty of Asian and Middle Eastern Studies, University of Cambridge, UK.  
Consultant: **Dr Peter Bogucki**, Associate Dean for Undergraduate Affairs, School of Engineering and Applied Science, Princeton University, USA.