

# NEW CENTURY SENIOR PHYSICS

Concepts in context

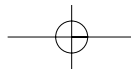
SECOND EDITION

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OXFORD



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UNIVERSITY PRESS

253 Normanby Road, South Melbourne, Australia

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide in Oxford New York

Auckland Bangkok Buenos Aires Cape Town Chennai  
Dar es Salaam Delhi Hong Kong Istanbul Karachi Kolkata  
Kuala Lumpur Madrid Melbourne Mexico City Mumbai Nairobi  
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First edition published 1999

This edition published 2004

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The National Library of Australia Cataloguing-in-Publication entry for your forthcoming publication is as follows:

Walding, Richard.

New century senior physics: concepts in context.

2nd ed.

Includes index.

For year 11 and 12 students.

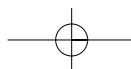
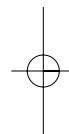
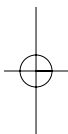
ISBN 0 19 551777 6.

1. Physics—Textbooks. I Rapkins, Greg. II. Rossiter, Glen. III. Title.

530

Typeset by Currency Communications Australia

Printed through Bookpac Production Services, Singapore



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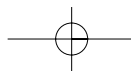
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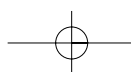
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This text has been written to support a variety of popular contexts. The following table shows the link between these contexts and the chapters that support them.

CONTEXT	CHAPTER
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# PREFACE

This is a fully revised edition of *New Century Senior Physics* and is designed to complement the 2004 Queensland Senior Physics Syllabus. The new syllabus is about learning in context. This book continues to provide a rich source of contextual detail as the key concepts are developed. The research literature suggests that concepts are best understood when they are presented in more than one context, and we have done this over and over again. We have also tried to maintain the arrangement of material so that teachers and students have little difficulty in finding what they want. This text will be a great resource for students and teachers alike as they seek to understand the world from a physics perspective.

## — Students

- Don't be alarmed at the amount of work in this book. There's more than enough for a two-year course. Your teacher will often be saying 'we're not doing this for assessment in our course'. The rest of the text you may well treat as extra background material or read just for your own interest.
- You might think that some questions are too easy or repetitive. We intended this. Expert problem solvers practise the easy work until it becomes automatic. Become that sort of person.
- You might also think that our worked examples are laborious. As you learn physics, you'll develop your own shortcuts. Remember — there is no one right way to solve a problem. Developing these techniques is what physics is about.
- If you get stuck, have a look at our web page on the Internet. You'll find worked solutions to selected questions. Find us at:  
*<http://www.mbc.qld.edu.au/oxford/physics.html>*

## — Teachers

- Choosing a text is the easy part; knowing what to put in your course is harder. This text should support most of the contexts you would want, as it is based on the most popular contexts chosen by teachers for their school work programs.
- Any suggestions are welcome from you or your students. Please e-mail us at school. The e-mail addresses are on the web page at [www.mbc.qld.edu.au/oxford/physics.html](http://www.mbc.qld.edu.au/oxford/physics.html)
- Examples of a wide range of contexts, work programs, sample assessment tasks, discussion papers and networking opportunities can be found on the 2004 Senior Physics Syllabus web page at [www.mbc.qld.edu.au/physics/sp.html](http://www.mbc.qld.edu.au/physics/sp.html)
- We have included a huge range of questions and stimulus material, providing both practice and assessment opportunities for students. They include open and/or closed tasks inviting open or closed responses. Questions and tasks presented are suitable as practice and exemplars of **written tests**, **extended response tasks (assignments and stimulus-response items)** and **extended experimental investigations**.
- Please make your students aware of both web addresses. Students have found them very useful in the past.

*Richard Walding, Greg Rapkins and Glenn Rossiter*

# ACKNOWLEDGMENTS

The authors would like to thank:

- their families for their help and perseverance during the production of this book
- students from dozens and dozens of schools who contacted us with comments about improvements to the text, queries about questions and alternative solutions
- colleagues on the QSA Science Subject Advisory Committee, the Physics Syllabus Sub-committee and the Physics State and District Panels for their thoughts on what a textbook should be like if it is to support their school's work program
- the physics teachers in the Trial Pilot schools whose discussions about choices of learning experiences and the development of interesting and useful contexts gave us great ideas for inclusion in this text.

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## KEY



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Investigations



Stimulus  
Response



Non-experimental  
Investigations