OCR Gateway GCSE Sciences

Fully integrated assessment and differentiated support from OCR’s Publishing Partner for Science
Course Structure

<table>
<thead>
<tr>
<th>Subject</th>
<th>GCSE Subject</th>
<th>Student Book</th>
<th>Teacher Handbook</th>
<th>Revision Guide</th>
<th>Workbook</th>
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<tr>
<td>Biology</td>
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<td>978 019 835981 4</td>
<td>978 019 835987 6</td>
<td>978 019 835984 5</td>
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<td>Biology for GCSE Combined Science</td>
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<td>978 019 835960 7</td>
<td>978 019 839770 0</td>
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Covers all specifications
- A bank of practicals to build the knowledge and skills needed for the new practical exam questions, covering all of the new required practicals plus more
- Supports the increased maths demand with maths calculation worksheets, interactive maths activities with step-by-step worked solutions and exclusive links to resources from MyMaths
- Assessment materials matched to the new 9-1 grades, and based on a five-year assessment model so you can measure progress from KS3 to GCSE
- Includes auto-marked tests, end-of-chapter tests with formative feedback and Checkpoint quizzes with differentiated follow-up activities
- Includes student and teacher access to digital versions of the OCR Gateway GCSE Sciences Student Books

OCR Gateway GCSE Sciences

These new resources have been created specifically for the new OCR Gateway GCSE (9–1) specifications for certification in 2018. As OCR’s Publishing Partner for Science, we worked with OCR throughout the development of the qualifications to deliver high-quality resources, and all Student Books have been endorsed by OCR.

The resources support your students with the new content and increased maths requirements, as well as suggested investigations for each Practical Activity Group, while the built-in assessment framework helps to support progress tracking and differentiated teaching against the new specifications.

- **Newly created for the new specifications**
  These resources have been created specifically for the new OCR Gateway GCSE 9–1 specifications. Student Books are available to cover the new Biology, Chemistry, Physics, and Combined Science specifications. All Student Books have been endorsed by OCR.

- **Prepare for the new practicals**
  Development of practical skills is embedded throughout the Student Books, with specific practice for the new practical questions. Practical resources on Kerboodle cover all new required practicals plus more.

- **Plenty of practice questions**
  Multiple-choice, maths, practical, and synoptic questions are included throughout.

- **Making assessment, differentiation, and progress tracking for the new specifications easy**
  OCR Gateway GCSE Sciences has built-in assessment and progress tracking based on the widely-adopted structure used in Activate for KS3, to support five-year effective assessment and differentiated teaching right the way from KS3 to GCSE.

- **Supporting students of all abilities**
  Students of all abilities are supported through the new, more demanding GCSEs, with ramped questions and differentiated objectives for every topic in the Student Books that recreate the familiar banding of the previous OCR Gateway specifications. Further support and extension material are available on Kerboodle.

- **Building maths skills**
  Worked examples and practice questions are incorporated throughout the Student Books and on Kerboodle to support your students with the new increased maths requirement. Kerboodle also has direct links to MyMaths.co.uk, the most popular Maths learning platform in the UK.

See page 10 to find out more.

How to evaluate
Order your OCR Gateway GCSE Sciences Evaluation Pack (978 019 837525 8) by emailing schools.orders.uk@oup.com and quoting K43686
What’s changed?

What’s different about the new Gateway 9–1 specifications?

- New grades 9–1
  - New GCSEs will be graded 1–9, with 9 being the top grade, to allow greater differentiation between students
  - Follows on from the widely-adopted assessment model used in Activate for KS3
  - Differentiated content throughout, with Foundation and Higher content clearly flagged

- New content
  - New topics include monoclonal antibodies in biology, life cycle of materials in chemistry, and electric fields in physics
  - Lots of new content written specifically for the new topic requirements and Student Books endorsed by OCR
  - Full support for teacher and technicians on Kerboodle and in the easy-to-use Teacher Handbooks

- Increased maths requirement
  - The new GCSEs will have increased and more challenging mathematical content
  - The maths will be up to the level required by the DfE for the corresponding tier
  - Maths links and worked examples throughout
  - Maths skills interactives and support sheets on Kerboodle
  - Kerboodle is the only digital resource for OCR Gateway GCSE with direct links to MyMaths

Practicals

- Practical skills will now be assessed by exam only, and the exams will contain questions to draw on students’ understanding and experience of practical experiments
  - Each separate science GCSE requires a minimum of eight practical activities, and Combined Science a minimum of sixteen
  - At least 15% of the total marks available for each GCSE will be dedicated to scientific experimentation questions
  - Full support for teachers and technicians for all core required practicals
  - Practical skills developed throughout the Student Books
  - Bank of practicals on Kerboodle to support the specifications and link theory and practice

Exam-only assessment

- The new GCSEs will be assessed by exam only, with no controlled assessment components
  - Plenty of practice questions and auto-marked quizzes to monitor progress
  - Checkpoint assessment system to help monitor progress and provide specially-targeted follow-up by ability
  - Revision guides, quizzes and podcasts

How does OCR Gateway GCSE Sciences deliver?

Reliable assessment across five years

OCR Gateway GCSE Sciences provides a five-year progress tracking and assessment solution, devised by Dr Andrew Chandler-Grewatt. It builds on the assessment principles behind Oxford’s Key Stage 3 course, Activate. However, the five-year assessment framework is based on the Programme of Study and new 9–1 grades for Key Stage 4, so it can also be used to dovetail any Key Stage 3 course you’re currently using. Schools using Activate will recognise underpinning principles such as the popular progression and assessment model and the Checkpoint assessments with follow-up lessons.

Five-year assessment model

<table>
<thead>
<tr>
<th>Key stage 3</th>
<th>Band</th>
<th>Developing</th>
<th>Secure</th>
<th>Extending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
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<td>5</td>
<td>6</td>
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<tr>
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<tr>
<td>Demand</td>
<td>Low</td>
<td>Standard</td>
<td>High</td>
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</tbody>
</table>

Outcomes inform all learning activities

1. Sort the following characteristics into those affected by genetic variation, environmental variation or both: (3 marks)
   - stem mass
   - number of fruit produced
   - blood group
   - skin colour
   - eye colour
   - leaf size
   - presence of a scar

2. Explain the advantage of using identical twins for the NASA study into the effects of living in space. (2 marks)

3. Using named examples, state and explain the difference between continuous and discontinuous variation. (6 marks)

All learning outcomes are differentiated and linked to lesson activities and questions to help track progress throughout the course.

Assessment for Learning with our Checkpoint system

The Checkpoint assessment system assesses students at the end of every chapter, helping to ensure that all students achieve their full potential. Follow-up lessons are provided, with support and extension tasks designed to allow everyone to perform at their best. Use the Checkpoint system for GCSE or right through from Year 7 to Year 11 to ensure all your students make progress and are ready for the challenges of GCSE assessment.
New Student Books help build students' maths, literacy, and working scientifically skills, with differentiated practice questions matched to the innovative assessment model designed for the new GCSE 9–1 grading. Available for Biology, Chemistry, Physics, and Combined Science.

Go further boxes show interesting ways that students can explore a topic further, going beyond the specification content.

Dedicated Maths for Science chapters explain the required maths concepts and take students through worked examples to embed learning.

Literacy boxes help students to develop literacy skills so that they are able to demonstrate knowledge clearly in written answers.

Along with the dedicated Practical skills chapter, practical skills boxes help students think about the practical applications of their learning, and develop practical skills.

Working Scientifically links provide further context to develop students' understanding and build Working Scientifically skills.

Synoptic links are highlighted throughout to give a rounded understanding and help students make links between topics.

Learning outcomes are laid out at the start of each lesson.
Figure 2

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Higher Tier and separate sciences only content is clearly flagged throughout the Teacher Guide.

Dedicated Working Scientifically chapter lessons help develop students’ understanding of key concepts in science and build Working Scientifically skills.

Chekpoint lessons follow on from Checkpoint assessments on Kerboodle. Use these spreads to support and extend your students at the end of each chapter.

Maths support is available for every lesson, including links to helpful resources on MyMaths.co.uk.

Also available

Revision Guides and Student Workbooks will be available from Spring 2017. Find out more at www.oxfordsecondary.co.uk/ocrgatewayqgcscience.
The online learning, resources and assessment package

OCR Gateway GCSE Sciences Kerboodle provides excellent digital support for the new OCR Gateway GCSE Science (9–1) specifications, with a bank of resources, activities, and an online assessment package.

**Building practical skills**

Kerboodle practicals build all the knowledge and skills needed for the new practical exam questions. Kerboodle covers all of the new required practicals and more, with full teacher and technician support.

**Maths and literacy skills support**

MyMaths interactive Maths skills activities include step-by-step worked solutions and practice questions with feedback, as well as exclusive links to resources on AgileMaths.co.uk.

To request a free in-school Kerboodle demo, contact your local Educational Consultant using www.oxfordsecondary.co.uk/repfinder.

**Prepare for the linear exams and track progress**

On Your Marks and Bump Up Your Grades resources help students succeed.

Revision podcasts with higher and Foundation content highlighted.

Practicals are fully differentiated, with separate resources for students working at different grades.

On Further worksheets for high ability students bridge the gap between GCSE and A level.

**Support and extension**

Extension worksheets stretch higher-ability students and increase depth of knowledge.

Webquest research tasks encourage independent learning and study.

Includes access to digital editions of the Student Books.

**Engage your students**

Explore key concepts with animations and interactive activities.

Interactive activities for use as starters or plenaries.

Each lesson is accompanied by teacher notes to support your lesson delivery.

Animators clearly linked to learning objectives to help consolidate learning.

Resources are built into each lesson presentation, including practical activity sheets, interactive activities and progress quizzes.

**Evaluate – free for 30 days**

Tick to receive your copy of the OCR Gateway GCSE Sciences Evaluation Pack. Fill in your details below and return this tear-off form to us free of charge.

Yes, please send me a copy of the OCR Gateway GCSE Sciences Evaluation Pack (978 0 19 837525 8)

**Name**

**Job title**

**School/College**

**Address**

**Postcode**

**Email address**

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*PAK1006*
About the authors

Philippa Gardom Hulme (Series Editor) has 15 years’ experience teaching secondary science and is now a science tutor on the PGCE course at the University of Oxford. Philippa is an experienced science textbook author for KS3, GCSE, and IGCSE, and is one of the authors of the popular KS3 science series Activate. Philippa has an honours degree in Chemistry, Resources and the Environment from York University, an MEd degree from Bristol University, and a PGCE from the University of Oxford.

Jo Locke has many years’ experience teaching secondary science, working on KS3 through to A Level and with experience as a Head of Science. She is an experienced examiner, and currently examines for International Baccalaureate and A Levels. Jo is an experienced author and has written material for KS3, GCSE, BTEC, Entry Level Certificate, and A Levels. Jo has a first-class honours degree in Biology and a Science PGCE from the University of Bath.

Helen Reynolds is an Institute of Physics Teaching and Learning Coach, and a former Head of Science. She is an experienced secondary science teacher, and has an MA in Physics and a PGCE from the University of Oxford. Helen’s authoring experience includes recent student and teacher materials for the Cambridge International KS3 equivalent.

Dr Nigel Saunders is a former Head of Science who taught secondary science for over twenty years. Nigel is an experienced science author for KS3, GCSE and A Level, including textbooks, revision guides, workbooks, teaching notes, and worksheets. He has also written online teaching and learning activities, and more than twenty children’s chemistry library books.

Dr Andrew Chandler-Grevatt (Assessment Consultant)

Dr Andrew Chandler-Grevatt has a PhD in school assessment, and a real passion for science teaching and learning. Having worked as a science teacher for ten years, of which five were spent as an AST, Andy has a real understanding of the pressures and joys of teaching in the classroom. Alongside his national and international research in school assessment, Andrew is a teaching fellow on the PGCE course at the University of Sussex, and is a successful published assessment author. He is the Assessment Editor for Activate and Assessment Consultant for AQA GCSE Sciences Third Edition and OCR Gateway GCSE Science. Find out more about Andrew’s five-year assessment model at www.oxfordsecondary.co.uk/ocrgatewaygcsescience.