Collins

SCIENCE
2015

www.collins.co.uk

Connect with Collins

Sign up for e-newsletters – *www.collins.co.uk*
Follow us on Twitter – *@freedomtoteach*
Read our blog – *freedomtoteach.collins.co.uk*

Collins

Welcome to the 2015 Science Catalogue

Inside you'll find lots of useful information on resources for KS3, GCSE and A-level from Collins, including revision guides and information on free teaching support. See below for details of some of the exciting new publishing and features available from Collins.

Want to take a closer look? If you would like more information on any of our series, please don't hesitate to contact one of our sales consultants – they'll be happy to answer your questions or visit your school. Find your local representative's details on the back page.

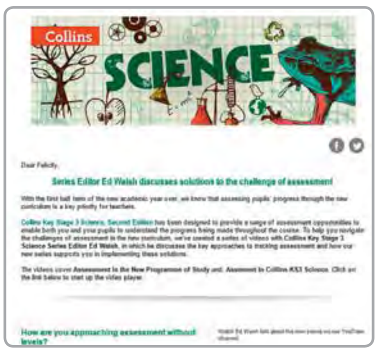
What's new?

Find out how we can support you in delivering the 2015 A-level AQA specifications for science.

Turn to page 18 for more information.

Bring learning to life with Collins Connect

Our online platform provides course content and assessment all in one place and offers a suite of digital resources to engage your students and make testing and reporting easy.



Sign up for our e-newsletter

Get the latest news and offers from Collins, delivered straight to your inbox!

Sign up for Collins Science emails at **www.collins.co.uk/register**

Find out more

Visit **www.collins.co.uk** for information on all our series, curriculum change support and free content to support your teaching.

Contents

Key icons used in the catalogue

- NEW — New titles
- Age 11–14 — Age range
- KS3 — For Key Stage 3
- GCSE — For GCSE
- AS/A — For AS and A-level

Current Specification

For the current A-level specification. Use for 2015 & 2016 examinations.

Available on the new online learning platform Collins Connect:

Collins Connect

Exam board specific:

OCR AQA Edexcel Cambridge

®IGCSE is the registered trademark of Cambridge International Examinations.

Keep up to date!

Find out about new books and teacher support, offers, education news, competitions and free resources.

Tweet **@FreedomToTeach**

Find **Collins Secondary** on Facebook

Subscribe to the **Collins Ed** YouTube channel

For free teaching ideas and resources, visit our blog: **freedomtoteach.collins.co.uk**

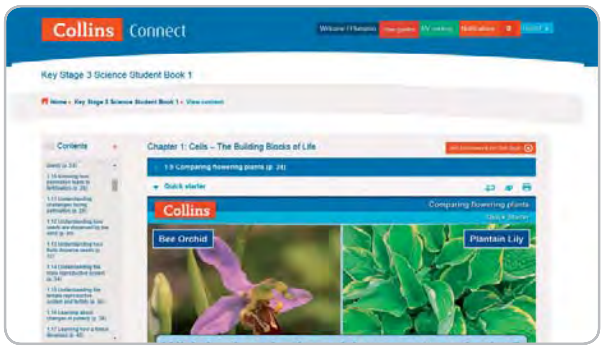
www.collins.co.uk **education@harpercollins.co.uk**

Collins Connect

Teach science flexibly with Collins Connect, an innovative online teaching and learning platform that brings science to life.

Designed to support teachers to manage homework setting and assessments while providing a wealth of content and interactive activities, Collins Connect is ideal as a front-of-class learning tool and to support independent learning outside lessons.

- Teach science flexibly with online access to resources on whiteboards, computers, tablets and smart phones
- Assign work to individuals or the whole class via your VLE or by email in just a few clicks, and receive feedback from students to help identify strengths and weaknesses
- Get Collins Connect up and running quickly with no complicated installations or difficult passwords to remember
- Make testing and reporting easy – Collins Connect syncs directly to Capita's SIMS so accounts are generated automatically for teachers and students, and changes are updated daily



Sample from **Collins Key Stage 3 Science, Student Book 1**

Sample from **Collins Connect Teacher Homepage**

Collins Key Stage 3 Science on Collins Connect

Engaging lessons:

- **Deliver exciting lessons with video and interactive activities** that explain difficult concepts and bring science to life
- **Naked Scientist animations answer real science questions** and videos show science in the real world
- **Engaging starter questions** help get students thinking at the start of every lesson

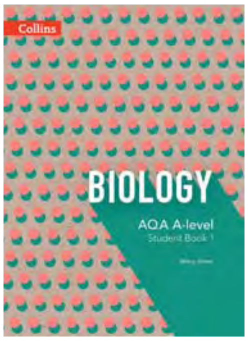
Homework:

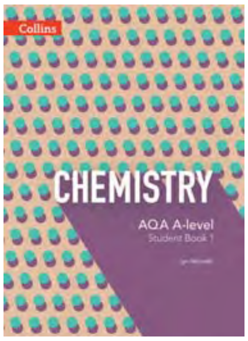
- **Help students consolidate and extend what they have learned in class** with interesting and varied online homework tasks that allow them to work at their own pace
- Homework activities available for every lesson

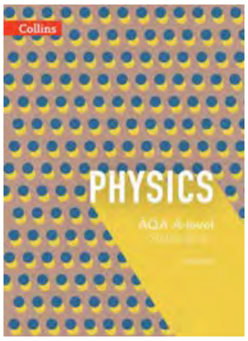
Assessment:

- **Flexible assessment** is provided by differentiated tests
- **Save time with an auto-mark option** on quick tests
- **Gain a deeper understanding of student progress with end of topic assessments,** which enable students to practice GCSE-style questions
- **Set tasks for the whole class or individuals** and personalise learning based on strengths and weaknesses captured by the Collins Connect feedback tools
- **Generate reports** quickly and easily

Samples from **Collins Key Stage 3 Science.**







A-level Science for AQA on Collins Connect

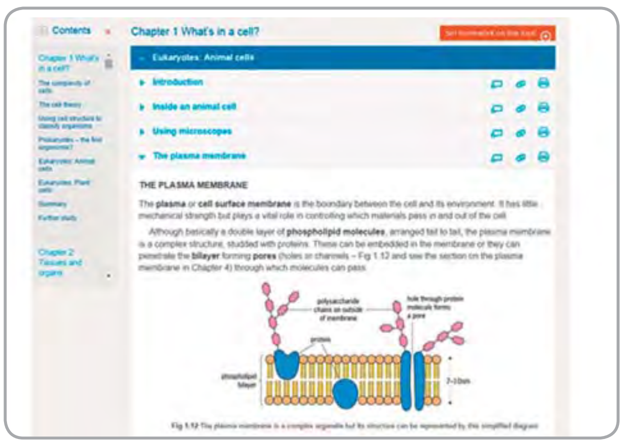
We're developing new digital resources to support the 2015 AQA A-level specification.

To find out more visit **www.collins.co.uk/AQAAlevelresources**

Collins Advanced Science on Collins Connect

Collins Connect supports you and your students by providing further opportunities for assessment and home learning:

- **Provide total fluidity between online and offline learning** with online content that mirrors that of the Student Book
- **Encourage self-study** with a further study option available for each topic
- **Quickly create and assign homework based on the lesson content** in just a few clicks



Samples from **CAS Biology on Collins Connect.**

Collins KS3 Science

Age 11–14 KS3

Collins Connect

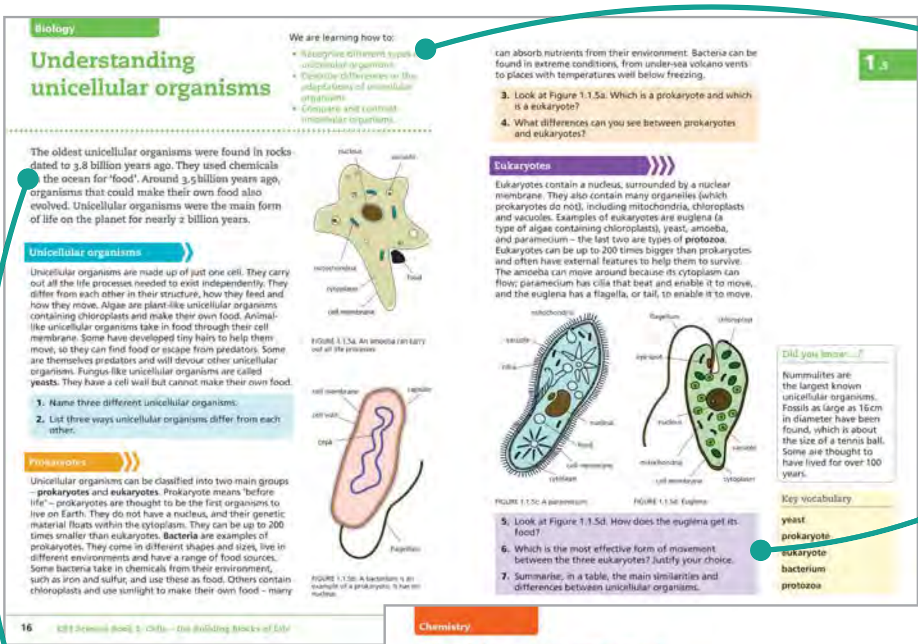
Second Edition

Series Editor: **Ed Walsh**
Authors: **Sarah Askey, Tracey Baxter, Sunetra Berry, Pat Dower, Anne Pilling and Pete Robinson**

Collins Key Stage 3 Science, Second Edition has been fully revised to match the 2014 curriculum and designed to help students secure the key skills, knowledge and interest in science to succeed at KS3 and beyond.

- **Ensure progression throughout the key stage** with an in-depth scheme of work that supports you in delivering inspiring lessons
- **Provide flexibility with a 2 and 3 year route through the course**, whether you need more time to cover the new content or prefer to cover KS3 in 2 years before moving on to GCSE preparation
- **Monitor your students' progress** with assessment embedded throughout the course, which helps you check students' understanding of key concepts at the end of each unit and each topic
- **Support students to develop the skills required for GCSE success** with thinking scientifically, working scientifically and learner development integrated into the learning activities, objectives and outcomes of each lesson
- **Develop skills for further study** with questions designed to build students' ability to write longer answers, a key factor in GCSE success
- **Engage student of all levels** with clearly differentiated material, meaning the books are suitable for use with mixed ability classes
- **Save time and cover the 2014 curriculum with confidence** with ready-made editable lesson plans, differentiated written worksheets and practical science worksheets with accompanying technician's notes, all of which can be easily adapted to suit your needs and make planning easier
- **Embed progression** with links to prior learning to help students build on what they already know
- **Consolidate learning** with interesting and varied homework activities that are designed to help students reinforce and extend what they've learned in class
- **Bring science to life** with interactive activities, videos and quizzes on Collins Connect
- **Save time** with auto-marked online science homework available for every lesson through Collins Connect

Want to hear more? Visit **www.collins.co.uk/KS3Science** and see what series editor Ed Walsh has to say about assessment and the new programme of study in our video series.


Biology

Understanding unicellular organisms

We are learning how to:

Unicellular organisms

Prokaryotes

Eukaryotes

Did you know...?

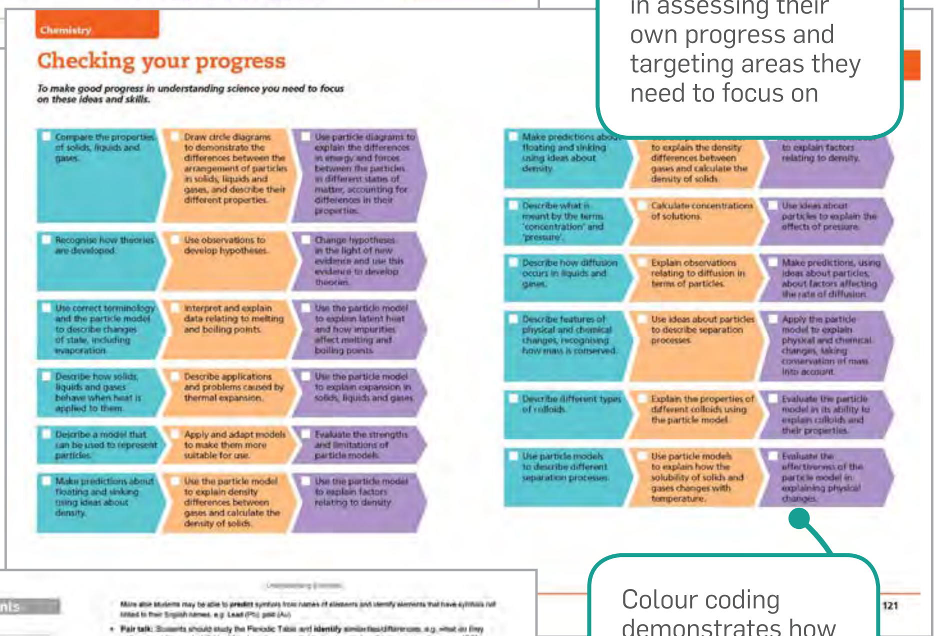
Key vocabulary

Objectives for every lesson

Questions at the end of every topic test understanding before moving on

Engaging introduction puts the science in context

Sample from **Key Stage 3 Science, Second Edition Pupil Book 1**


Chemistry

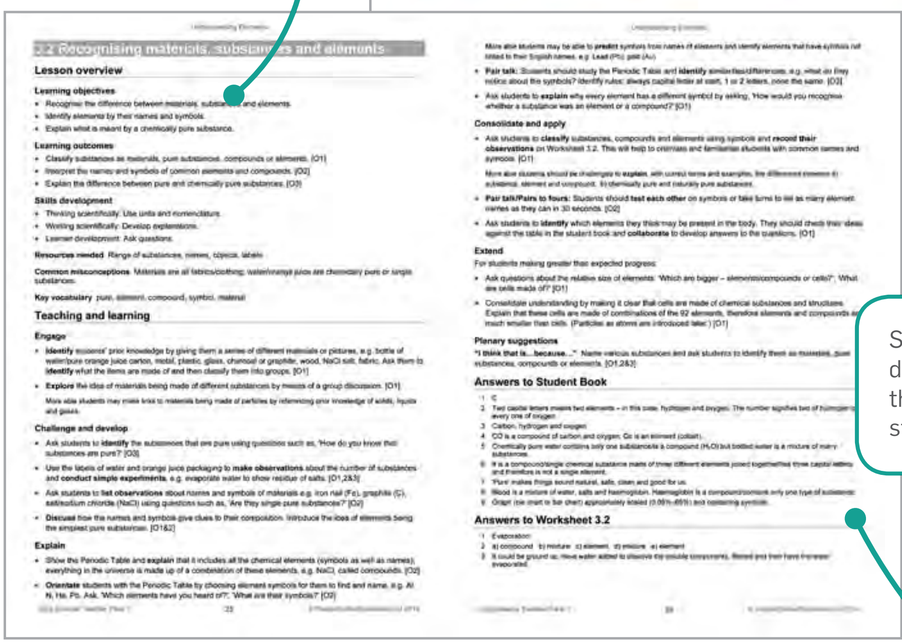
Checking your progress

To make good progress in understanding science you need to focus on these ideas and skills.

Support students in assessing their own progress and targeting areas they need to focus on

Colour coding demonstrates how key ideas develop

Lesson plans use the sequence of engage, challenge and develop, explain, consolidate and apply and plenary


Lesson overview

Learning objectives

Learning outcomes

Skills development

Teaching and learning

Engage

Challenge and develop

Explain

Consolidate and apply

Extend

Plenary suggestions

Answers to Student Book

Answers to Worksheet 3.2

Suggestions for differentiation throughout to support students of all abilities

Make planning easy with full lesson information clearly laid out, including objectives, outcomes, skills covered, misconceptions, resources and vocabulary

Sample from **Key Stage 3 Science, Second Edition Pupil Book 2**

Available on Collins Connect

Turn to pages 2–3 for more information.

www.collins.co.uk **education@harpercollins.co.uk**

	Year 7	Year 8	Year 9
Pupil Books	 978-0-00-750581-4 £14.99	 978-0-00-754021-1 £14.99	 978-0-00-754023-5 £14.99
Pupil Book and Online Access*	Pupil Book 1 • 978-0-00-750581-4 + 1 year subscription 978-0-00-756493-4 • £16.99 Pupil Book 1 • 978-0-00-750581-4 + 3 year subscription 978-0-00-756496-5 • £19.99 	Pupil Book 2 • 978-0-00-754021-1 + 1 year subscription 978-0-00-756494-1 • £16.99 Pupil Book 2 • 978-0-00-754021-1 + 3 year subscription 978-0-00-756497-2 • £19.99 	Pupil Book 3 • 978-0-00-754023-5 + 1 year subscription 978-0-00-756495-8 • £16.99 Pupil Book 3 • 978-0-00-754023-5 + 3 year subscription 978-0-00-756498-8 • £19.99 
Pupil Books (Online Access Only)*	1 year subscription 978-0-00-756494-1 • £5.00 3 year subscription 978-0-00-756496-5 • £14.99 	1 year subscription 978-0-00-756494-1 • £5.00 3 year subscription 978-0-00-756497-2 • £14.99 	1 year subscription 978-0-00-756495-8 • £5.00 3 year subscription 978-0-00-756498-8 • £14.99 
Teacher Packs	 978-0-00-754020-4 £150.00	 978-0-00-754022-8 £150.00	 978-0-00-754024-2 £150.00
Online Teacher Resource** Powered by Collins Connect – including Interactive Book – whole-class assessment – homework	 **3 year subscription** 978-0-00-756487-3 £700.00 **1 year subscription** 978-0-00-756490-3 £250.00	 **3 year subscription** 978-0-00-756487-3 £700.00 **1 year subscription** 978-0-00-756491-0 £250.00	 **3 year subscription** 978-0-00-756489-7 £700.00 **1 year subscription** 978-0-00-756492-7 £250.00

* Subscriptions to the online Student Books are not available without a subscription to the Online Teacher Resource on Collins Connect.

** The Online Teacher Resource allows unlimited access for teachers and students to the online content in school and enables the resources to be used for front of class teaching, including whiteboard use. It does not allow access to the full reporting functionality or allow pupils to have individual log-ins. Individual pupil access must be purchased to access this.

Full terms and conditions can be found online at www.connect.collins.co.uk

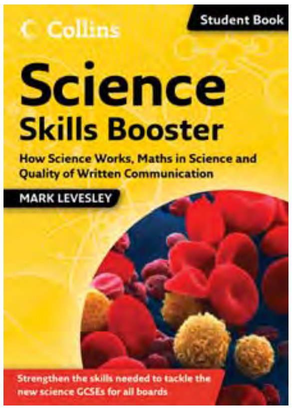
Prices are correct at the time of going to press. Collins reserve the right to change prices without notice. Prices are listed here without VAT. VAT is applicable to software and digital subscriptions and is applied at the current rate.

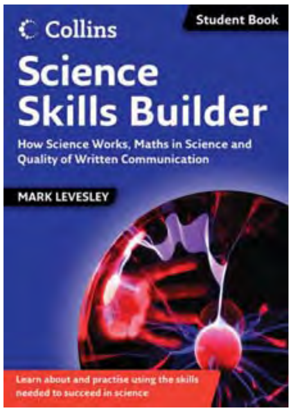
Skills for Science

KS3 GCSE

Author: **Mark Levesley**

Build the skills needed to succeed in GCSE Science throughout KS3 and KS4 with these books focusing on How Science Works, Maths in Science and Quality of Written Communication.

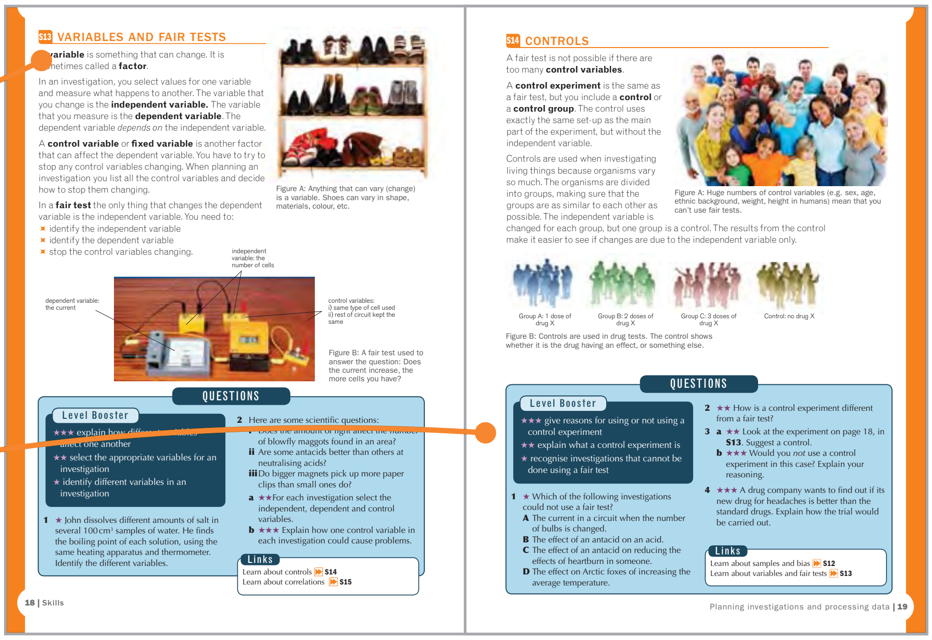




- **Use the Skills Booster to develop 50 core skills** taken from the 2011 GCSE specifications with clear, fully illustrated explanations so students can really get to grips with the areas they find difficult
- **Develop key skills at KS3 using the Skills Builder** with a clear explanation of each skill, examples, illustrations and dedicated practice questions to test understanding. The KS3 Builder is also ideal for your KS4 students that need support to develop the basic skills required at GCSE
- **Support independent study at KS4** with easy cross references so that students can look up the skills needed to answer questions they are struggling with, or can find questions to practice their weaker skills
- **Prepare students for writing longer answers** with dedicated questions for each activity, booster boxes giving hints and detailed worked examples of good and bad responses
- **Encourage self and peer assessment** with detailed answers provided in the back of the book
- **Set activities** in class, as homework or for lesson cover to suit individual students or classes with clear, comprehensive matching charts

Key information is summarised clearly

Questions help students practice the essential skills needed for success in science



Sample from **Skills for Science Booster Book**

KS3 Science – Skills Builder	978-0-00-745725-0	£5.99
GCSE Science – Skills Booster	978-0-00-745730-4	£5.99

www.collins.co.uk **education@harpercollins.co.uk**

Collins Secondary Science 2015_1.indd 7 22/12/2014 16:59

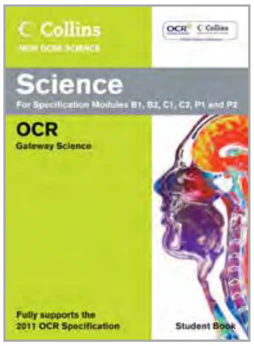
Collins New GCSE Science

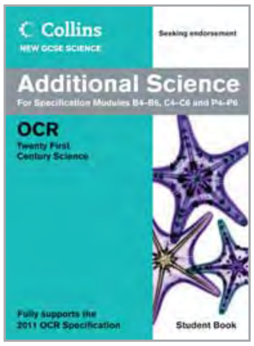
Series Editors: **Gurinder Chadha, Ken Gadd, Chris Sherry, Ed Walsh**

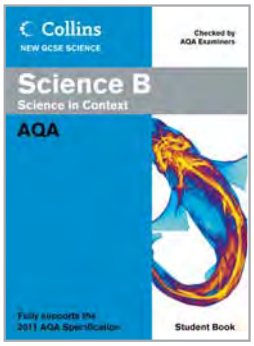
OCR AQA Edexcel

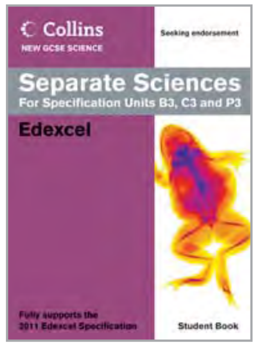
Age 14–16 GCSE

Deliver the 2011 specifications with confidence using our flexible one-book-per-year solution that supports you and your students to get the best results.



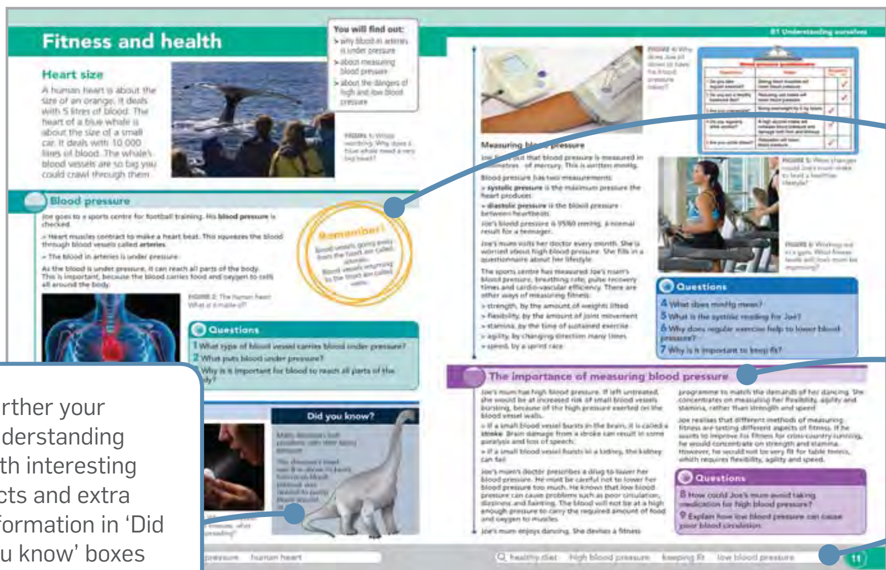






- **Deliver the 2011 specifications with ease** – the Science, Additional Science and Separate Science components build on each other so your department can buy as needed and use them with all students taking different GCSE science routes
- **Reduce planning time** – our student books, teacher packs, homework activities, interactive books and assessment package are fully integrated and matched to our scheme of work so you can get started straight away
- **Ensure achievement for every student** – differentiated student book content, lesson plans and worksheets enable you to plan for and teach students of different abilities, with engaging, accessible student books and extension activities on every topic
- **Improve exam performance and results** – Controlled Assessment practice and advice and graded exam-style questions and worked examples requiring Quality of Written Communication build these key skills to help your students get better grades
- **Engage students in learning** – interesting facts and photos, exciting interactive resources, activities based on Ben Goldacre's **Bad Science**, How Science Works, Maths, ICT and practical work are embedded throughout the scheme
- **Teach with confidence** – with comprehensive resources matched to our Scheme of Work and supported by detailed lesson plans, worksheets, ideas for practicals with full technician's notes and admin support

Sample from **OCR Gateway Science**



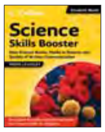
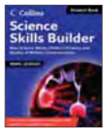
Avoid common misconceptions with 'Remember!' boxes

Explore science while fully covering your specification, with clearly differentiated content

Further your understanding with interesting facts and extra information in 'Did you know' boxes

Find out more information easily using specific internet search terms provided on every page

Collins New GCSE Science Components

	OCR Gateway	OCR Twenty First Century	AQA	Edexcel
Student Books	 Science 978-0-00-741537-3 £14.99  Additional Science 978-0-00-741531-1 £14.99  Separate Sciences 978-0-00-741534-2 £14.99	 Science 978-0-00-741528-1 £14.99  Additional Science 978-0-00-741522-9 £14.99  Separate Sciences 978-0-00-741525-0 £14.99	 Science A 978-0-00-741462-8 £14.99 Science B 978-0-00- 741466-6 £14.99 Additional Science 978-0-00-741456-7 £14.99 Separate Sciences 978-0-00-741459-8 £14.99	 Science 978-0-00-741514-4 £14.99  Additional Science 978-0-00-741508-3 £14.99  Separate Sciences 978-0-00-741511-3 £14.99
Skills Booster Books	 Skills Booster Book	978-0-00-745730-4	 Skills Builder Book	978-0-00-745725-0
Teacher's Pack	 Science 978-0-00-741538-0 £150 + VAT  Additional Science 978-0-00-741532-8 £150 + VAT  Separate Sciences 978-0-00-741535-9 £150 + VAT	 Science 978-0-00-741529-8 £150 + VAT  Additional Science 978-0-00-741523-6 £150 + VAT  Separate Sciences 978-0-00-741526-7 £150 + VAT	 Science A 978-0-00-741463-5 £150 + VAT Science B 978-0-00-741467-3 £150 + VAT Additional Science 978-0-00-741457-4 £150 + VAT Separate Sciences 978-0-00-741460-4 £150 + VAT	 Science 978-0-00-741515-1 £150 + VAT  Additional Science 978-0-00-741509-0 £150 + VAT  Separate Sciences 978-0-00-741512-0 £150 + VAT

Interactive Book CD-Rom

Science (OCR Gateway and OCR Twenty First Century)
978-0-00-743953-9 £525.00 + VAT

Science (AQA and Edexcel)
978-0-00-743952-2 £525.00 + VAT

Additional Science
978-0-00-741540-3 £525.00 + VAT

Separate Sciences
978-0-00-741542-7 £525.00 + VAT

Homework

Science
978-0-00-741536-6 £260 + VAT

Additional Science
978-0-00-741530-4 £260 + VAT

Separate Sciences
978-0-00-741533-5 £260 + VAT

Assesssment

For OCR Gateway, OCR Twenty First Century, AQA and Edexcel

Science
978-0-00-741543-4 £225 + VAT

Additional Science
978-0-00-741539-7 £225 + VAT

Separate Sciences
978-0-00-741541-0 £225 + VAT

Free online at www.collins.co.uk/SecondaryScience

- Sample pages
- Schemes of Work
- Free resources to support your lessons, including activities on elements from the Periodic Table and ideas to get the most from your iPad.
- Free Bad Science lessons

endorsed by edexcel

Collins BTEC First Applied Science

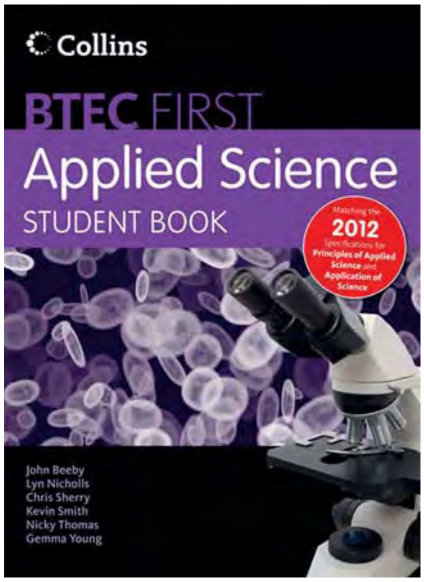
Age 14–16

Authors: **John Beeby, Nicky Thomas, Lyn Nicholls, Chris Sherry, Kevin Smith and Gemma Young**

Collins BTEC First Applied Science is fully updated to meet the 2012 specification and provides support to students and teachers studying for the BTEC First qualification.

Student Book:

- **Enable your students to have access to the information they need** with content for both BTEC qualifications: Principles of Applied Science Award and the Application of Science Award covered in the book
- **Help your students find their way through the qualification** with the contents and assessment references fully updated to match the 2012 specification
- **Support students through the external assessment** with clearly laid out content broken down into manageable chunks and practice exam questions
- **Provide clear step-by-step direction and guidance** with Pass, Merit and Distinction content clearly differentiated and signposted on each page



Teacher Pack:

Comprehensive support for teachers is provided in Teacher Pack 1: Principles of Applied Science (Units 1-4) and Teacher Pack 2: Application of Science (Units 5-8):

- **A cost-effective solution** as units 1–4 are available in a printed pack, and units 5–8 are in a downloadable pack from our website
- **Help your students build their portfolios of evidence** with worksheets and templates they can complete and submit for their assignments
- **Support your teaching** with an easy to use and adaptable Scheme of Work and detailed lesson plans to cover all units

Units covered:

Collins BTEC First Applied Science contains all units for the 2012 qualifications

Unit 1: Principles of Science
Unit 2: Chemistry and Our Earth
Unit 3: Energy and Our Universe
Unit 4: Biology and Our Environment
Unit 5: Application of Chemical Substances
Unit 6: Application of Physical Science
Unit 7: Health Application of Life Science
Unit 8: Scientific Skills

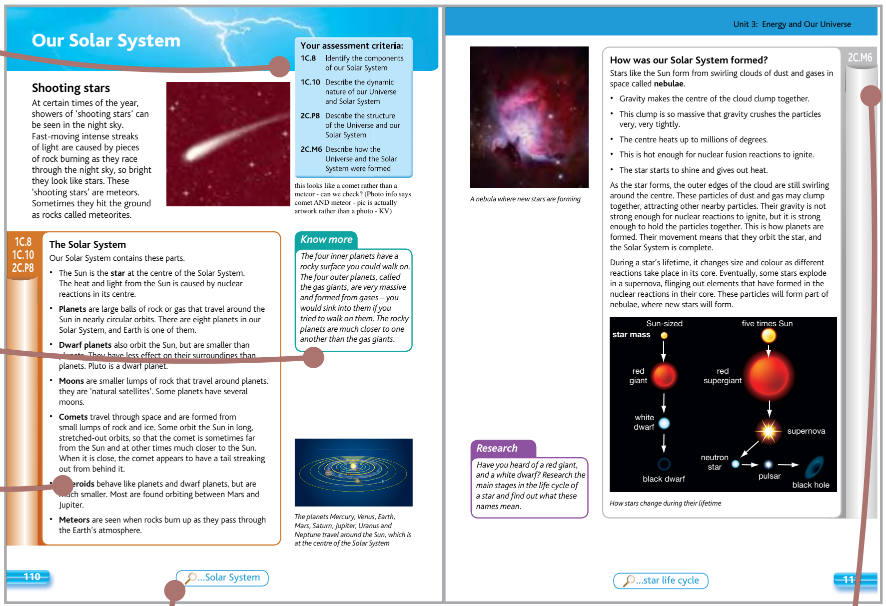
Praise for the 2010 edition:

"Can I congratulate you on the BTEC book, it's great. The whole department were in agreement that it was the best we have seen and is going to be really useful... and save us time and energy." **Science Department, Medina High School, Isle of Wight**

Assessment criteria on the page help your students understand what is required of them in their portfolios

Know more boxes provide interesting facts to engage students

Accessible text with diagrams to help visual learners


Our Solar System

Your assessment criteria:
1C.8 Identify the components of our Solar System
1C.10 Describe the dynamic nature of our Universe and Solar System
2C.P8 Describe the structure of the Universe and our Solar System
2C.M6 Describe how the Universe and the Solar System were formed

this looks like a comet rather than a meteor - can we check? (Photo info says comet AND meteor - pic is actually artwork rather than a photo - KV)

Shooting stars
At certain times of the year, showers of 'shooting stars' can be seen in the night sky. Fast-moving intense streaks of light are caused by pieces of rock burning as they race through the night sky, so bright they look like stars. These 'shooting stars' are meteors. Sometimes they hit the ground as rocks called meteorites.

1C.8 1C.10 2C.P8
The Solar System
Our Solar System contains these parts.
• The Sun is the **star** at the centre of the Solar System. The heat and light from the Sun is caused by nuclear reactions in its centre.
• **Planets** are large balls of rock or gas that travel around the Sun in nearly circular orbits. There are eight planets in our Solar System, and Earth is one of them.
• **Dwarf planets** also orbit the Sun, but are smaller than planets. They have less effect on their surroundings than planets. Pluto is a dwarf planet.
• **Moons** are smaller lumps of rock that travel around planets. they are 'natural satellites'. Some planets have several moons.
• **Comets** travel through space and are formed from small lumps of rock and ice. Some orbit the Sun in long, stretched-out orbits, so that the comet is sometimes far from the Sun and at other times much closer to the Sun. When it is close, the comet appears to have a tail streaking out from behind it.
• **Asteroids** behave like planets and dwarf planets, but are much smaller. Most are found orbiting between Mars and Jupiter.
• **Meteors** are seen when rocks burn up as they pass through the Earth's atmosphere.

Know more
The four inner planets have a rocky surface you could walk on. The four outer planets, called the gas giants, are very massive and formed from gases – you would sink into them if you tried to walk on them. The rocky planets are much closer to one another than the gas giants.

The planets Mercury, Venus, Earth, Mars, Saturn, Jupiter, Uranus and Neptune travel around the Sun, which is at the centre of the Solar System

110 ...Solar System

Unit 3: Energy and Our Universe

A nebula where new stars are forming

2C.M6
How was our Solar System formed?
Stars like the Sun form from swirling clouds of dust and gases in space called **nebulae**.
• Gravity makes the centre of the cloud clump together.
• This clump is so massive that gravity crushes the particles very, very tightly.
• The centre heats up to millions of degrees.
• This is hot enough for nuclear fusion reactions to ignite.
• The star starts to shine and gives out heat.

As the star forms, the outer edges of the cloud are still swirling around the centre. These particles of dust and gas may clump together, attracting other nearby particles. Their gravity is not strong enough for nuclear reactions to ignite, but it is strong enough to hold the particles together. This is how planets are formed. Their movement means that they orbit the star, and the Solar System is complete.

During a star's lifetime, it changes size and colour as different reactions take place in its core. Eventually, some stars explode in a supernova, flinging out elements that have formed in the nuclear reactions in their core. These particles will form part of nebulae, where new stars will form.

How stars change during their lifetime

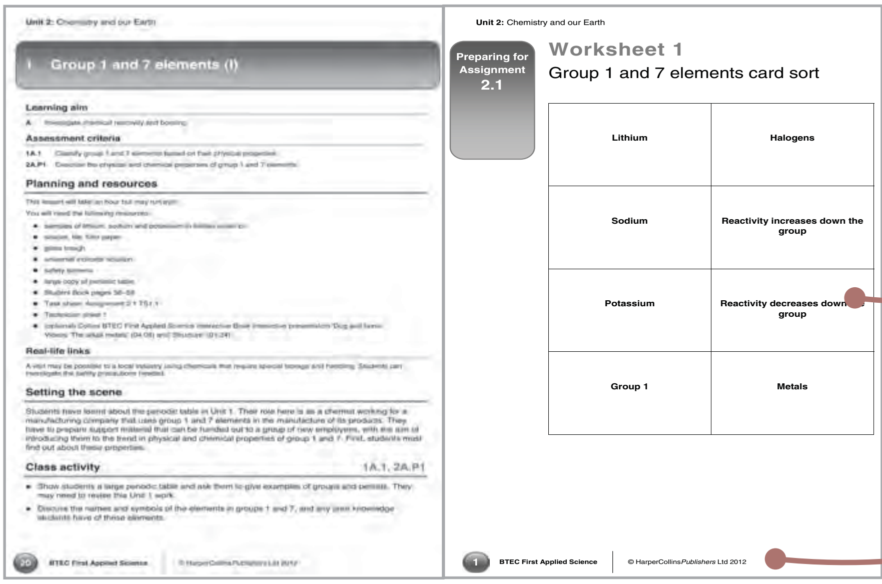
Research
Have you heard of a red giant, and a white dwarf? Research the main stages in the life cycle of a star and find out what these names mean.

...star life cycle

Sample from **BTEC First Applied Science Student Book**

Search terms highlighted so students can carry out their own research on topics that interest them

Content is clearly labelled as relevant for Pass, Merit or Distinction level



Unit 2: Chemistry and our Earth

Preparing for Assignment 2.1

Worksheet 1

Group 1 and 7 elements card sort

Lithium	Halogens
Sodium	Reactivity increases down the group
Potassium	Reactivity decreases down the group
Group 1	Metals

1 BTEC First Applied Science | © HarperCollinsPublishers Ltd 2012

Create exciting lessons that involve students in the learning process with original and inventive activities

See at a glance which learning outcomes and assessment criteria you are covering in a lesson

Sample from **BTEC First Applied Science Teacher Pack 1**

Collins BTEC First Applied Science (2012 Edition) Student Book	978-0-00-748842-1	£19.99
Collins BTEC First Applied Science (2012 Edition) Teacher Pack Units 1-4	978-0-00-748870-4	£150.00
*Collins BTEC First Applied Science (2012 Edition) Teacher Pack Units 5-8	978-0-00-748972-5 Download from www.collins.co.uk.	£99.00

***Important information!**

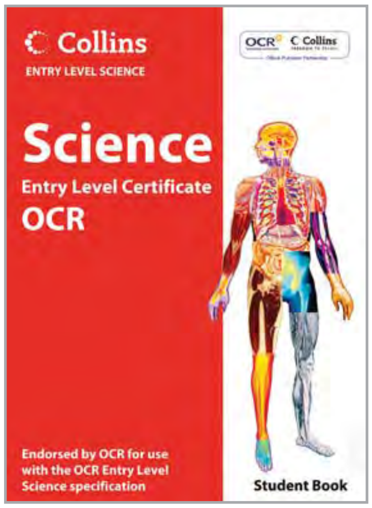
Teacher Pack Downloads are only available from the Collins website and can only be paid for by credit card or by invoice to your school account. Visit www.collins.co.uk to buy or find out more.

OCR Entry Level Science

OCR

Age 14–16 GCSE

Authors: **Chris Sherry, Brian Cowie, Louise Smiles**



OCR RECOGNISING ACHIEVEMENT Collins Official Publisher Partnership

Endorsed by OCR for use with the OCR Entry Level Science specification, the Collins Entry Level Science resources will help you to motivate your students and encourage progression by making science accessible.

The Student Book:

- **Support entry level students** with content pitched at the right level; short manageable sentences, bullet points and explanatory images to help visual learners
- **Practice and test understanding** with questions on every page, including a stretching final 'Challenge' question
- **Encourage students to think for themselves** with engaging prompt questions
- **Help students overcome common misconceptions** with Remember boxes
- **Build practical and mathematics skills** with activities at the end of each item
- **Prepare for end-of-item tests** with student-friendly checklists
- **Simplify planning** with flexible, comprehensive lesson support, including practicals and technician guidance
- **Manage a range of different abilities** with differentiated worksheets and activity suggestions

The Teacher Guide:

- **Simplify planning** with comprehensive lesson support, including technician guidance
- **Build practical skills** with clear guidance for students

Student Pack
978-0-00-741516-8 £16.99

Teacher Pack
978-0-00-741518-2 £150.00


C5 FIBRES AND FABRICS

Fibres and fabrics

I am a safety clothing designer

My job is to design safety clothes. I make clothing for firefighters, ambulance crews and for the Army, Navy and Air Force. Clothes for rescue workers need to be brightly coloured, tough and waterproof. Clothes for the Army often need to be camouflaged so they cannot be seen easily.

In my job, I need to decide which fibres and fabrics to use to give the properties that are needed. I also need to make the clothes comfortable to wear, while still giving protection.

Fabrics

Clothes are made of fabrics. Fabrics are made by weaving or joining fibres together. Many different fabrics are used to make clothes. The fabrics used to make a garment are shown on its care label.

Natural fibres come from living things. Cotton comes from a plant, wool from sheep or goats and silk from an insect called a silk worm. Natural wool contains lanolin oil making it waterproof, but this is washed out when it is cleaned and made into fabrics.

Synthetic fibres are made by chemical reactions. This means they are man-made. Some man-made materials have replaced natural fabrics. Nylon is a lightweight and tough material. It has replaced cotton for making tents, sails and outdoor clothes. Polyester and polythene are also man-made.

Remember, synthetic fibres are made by chemical reactions.

How is raw cotton from plants made into cotton fibres?

QUESTIONS
1 How is a fabric made?
2 Name a natural fibre from a plant.
3 Why is nylon a better material than cotton for making a tent?
CHALLENGE QUESTION
4 Suggest some properties that a sail for a windsurfer should have.

112 key words: fabrics fibres natural synthetic

Stretching fibres

T-shirts need to be made from fibres that stretch a bit so you can get them over your head. If fabrics stretch too much they lose their shape. Fibres also need to be strong and flexible so when clothing is folded, crunched up or washed, the fibres do not snap.

Fibres can be tested to find how strong or stretchy they are. One way to do this is to add weights to threads. When threads are made, they are not always exactly the same, so different bits of thread might give different strength results.

clamp stand, 50cm, nylon fishing line, weights

Apparatus to measure how stretchy and strong fibres are.

Waterproof fabrics

Many people who work outdoors need waterproof clothing.

Firefighters and mountaineers need to keep dry to stay warm and comfortable.

Scuba divers can keep warm and dry by wearing a dry suit. Dry suits have a tough waterproof outer shell with waterproof neck and wrist seals. The suit is filled with air to insulate the diver from the cold seawater.

How does this dry suit keep the diver warm?

Breathable fabrics

Waterproof fabrics keep water out, but also keep sweat in. Waterproof clothing can be improved by adding a breathable layer like Gore-Tex®.

Breathable waterproof fabrics have very small holes that let sweat vapour out, but the holes are too small to let rainwater droplets in.

CAN-DO TASK
Level 3 2 1
I can make measurements to test a property of a fibre or fabric.

QUESTIONS
5 Why do fabrics need to be stretchy?
6 How could you test the strength of a thread?
7 Give **one** disadvantage of a waterproof fabric.
8 How do breathable waterproof fabrics work?
CHALLENGE QUESTION
9 How do dry suits keep a diver dry and warm?

key words: breathable flexible stretchy strong waterproof 113

Collins KS3 Revision

KS3

Excellent revision and consolidation of key content and skills at the end of the key stage, to ensure the best possible results in tests and assessments.

- Ideal used alongside Collins Key Stage 3 Science, Second Edition to reinforce key concepts and help students consolidate understanding as they progress through the key stage
- Revision guide provides five distributed practice opportunities for each topic, so that students can test, revisit and review their understanding throughout their revision
- All-in-one Revision Guide and Workbook includes even more topic based and mixed practice questions to guarantee the best results
- Year-by-year workbooks are packed with practice questions to reinforce and test understanding of all concepts and skills

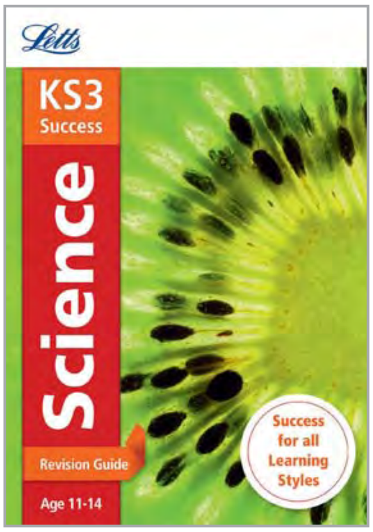
Collins KS3 Revision		
Science Revision Guide	978-0-00-756282-4	£7.99/£3.99*
Science All-in-One Revision and Practice	978-0-00-756283-1	£10.99/£3.99*
Science Y7 Practice	978-0-00-756273-2	£4.99/£3.99*
Science Y8 Practice	978-0-00-756274-9	£4.99/£3.99*
Science Y9 Practice	978-0-00-756275-6	£4.99/£3.99*

*Schools' price, just £3.99

Letts KS3 Revision

NEW KS3

This unique and innovative revision guide is matched to the new programme of study for Key Stage 3 Science.



- Specially designed to support all learning styles so that every student can achieve the best results.
- Original magazine-style layout communicates all the essential information effectively for visual learners.
- Hands-on activities for every topic provide revision opportunities for Kinaesthetic learners.
- Free audio tracks talk auditory learners through all they key points.
- Three-pronged approach for different types of learners ensures all students get the most out of their revision.

Letts KS3 Revision		
NEW Science Revision Guide	978-1-84-419763-7	£5.99
NEW Science Workbook	978-1-84-419764-4	£5.99
NEW Science Complete Coursebook	978-1-84-419765-1	£12.99
NEW Science Practice Test Papers	978-1-84-419766-8	£5.99

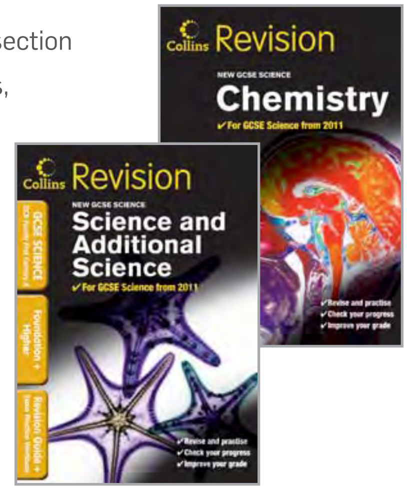
Collins Revision

OCR AQA Edexcel

Age 14–16 GCSE

Improve grades with Collins Revision

- **Give your students the flexibility to revise in a way that suits them**, with combined Revision Guide, write-in Workbook and answers in a detachable section
- **Build your students' confidence** with graded questions to test themselves, check their progress and improve
- **Equip students with the skills they need to revise effectively** and do their best on the day, with practical guidance, exam technique tips and clear advice on how to move answers up a grade
- **Students embarking on their GCSE course** can be sure they are practising the skills and content they need
- **Help KS3 pupils review what they've learned,** practise and improve their level with Collins Revision for KS3 Science, also available as a combined Revision Guide and write-in Workbook, with detachable answers



Collins GCSE Science Revision Guides cover Science and Additional Science. There are revision guides for AQA and OCR Gateway Separate Sciences. Please see the order form for the full range of Collins GCSE Revision titles.

Schools' price, just £3.99

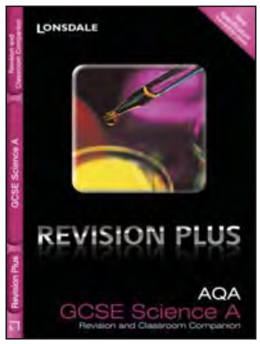
Revision Plus

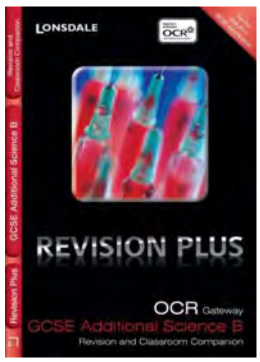
OCR AQA Edexcel

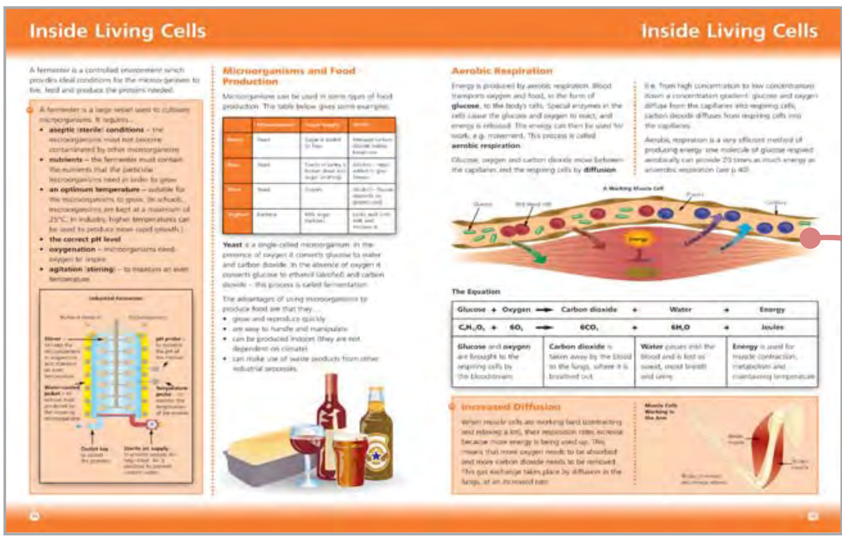
Age 14–16 GCSE

Revision Plus revision guides and workbooks provide in-depth and comprehensive coverage of the GCSE Science content and thorough support throughout the course.

- Ideal for the classroom, homework setting and independent study and revision
- Detailed explanations and worked examples
- Direct references to the exam board specification
- Diagrams and illustrations are used to clarify key points
- Higher tier material is differentiated throughout
- Exam Practice workbooks are matched to the guides to consolidate understanding







Sample from **Revision Plus Edexcel GCSE Biology**

Diagrams and images to boost memory and support visual learners

Schools' price, just £3.00

See the order form for full details and price information – including fantastic special offers for schools.

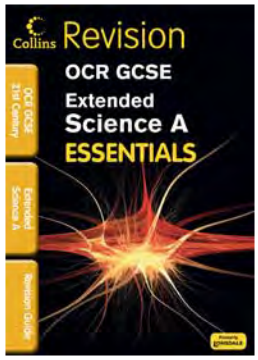
Collins GCSE Essentials

OCR AQA Edexcel

Age 11–16 GCSE

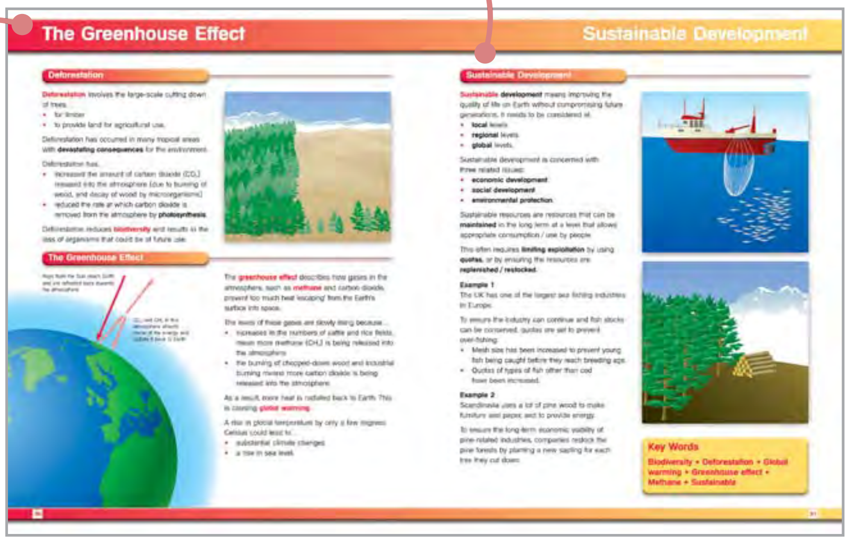
GCSE Essentials Revision Guides and Workbooks provide concise coverage of all the GCSE Science course content and represent fantastic value for money.

- Succinct notes concentrating on the essential content
- User-friendly language and clear accessible explanations
- Extensive practice material to test learning
- Exam Practice workbooks are packed with additional practice material, including exam-style questions.



Simple and engaging explanations

Examiner's tips and advice throughout



Sample from **Essentials AQA GCSE Biology**

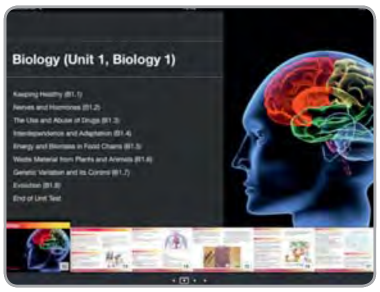
Schools' price, just £2.50

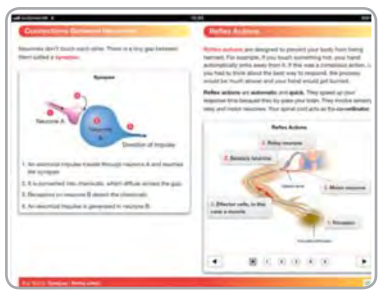
See the order form for full details and pricing information for Essentials Revision Guides for GCSE Science.

iBooks Textbooks – Collins Essentials Revision Guides for AQA

Download on the iBookstore

Clear and concise coverage of all the exam-assessed content on the AQA GCSE Science specifications. Information is broken down into manageable chunks, key words and phrases are highlighted for last minute recaps and there are lots of interactive quizzes, videos and diagrams to aid understanding.





Samples from **AQA GCSE Science A Collins Essentials**

Available titles:

- AQA GCSE Science A Revision Guide
- AQA GCSE Additional Science Revision Guide
- AQA GCSE Chemistry Revision Guide
- AQA GCSE Biology Revision Guide
- AQA GCSE Physics Revision Guide

Go straight to the iBookstore and find out more about iBooks Textbooks! Or visit **http://itunes.com/uk/collinseducation**

If you'd like more information on iBooks textbooks from Collins, please contact **education.marketing@harpercollins.co.uk**

You can also take a closer look by downloading a free sample chapter from the iBookstore. Download on the iBookstore

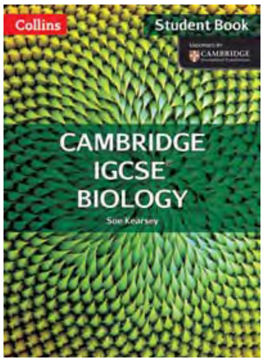
See the order form for full details and pricing of revision titles.

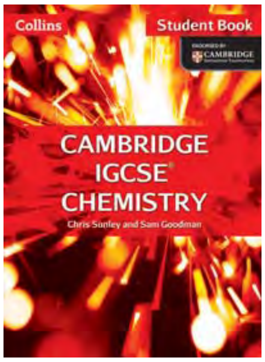
Cambridge Edexcel

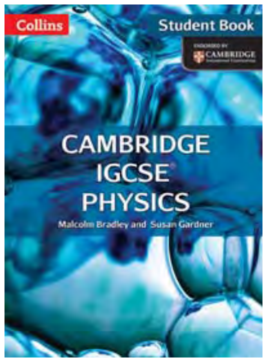
NEW Age 14–16

Collins Cambridge IGCSE® Science and Edexcel International GCSE Science

Brand new resources for Cambridge IGCSE® and Edexcel International GCSE designed to help your students achieve success.

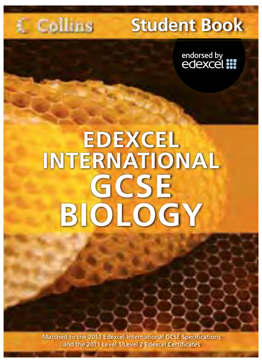


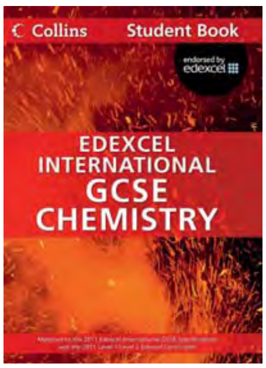


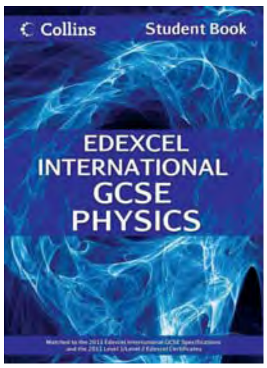


Endorsed by Cambridge International Examinations

Revised and updated Second Editions for the Cambridge IGCSE® Science syllabus







endorsed by edexcel

Student Books:

- **Engage students** with international case studies and examples of how science is used in the real world
- **Push your brightest students** and help them prepare for post-16 study with extended material
- **Help students to consolidate knowledge** with clear diagrams, learning objectives and checklists for each topic
- **Check understanding and help to prepare for assessment** with lots of practice exam-style questions at the end of each section
- **Help prepare for practical assessment** with a dedicated chapter
- **Support students with English as a Second Language** with a detailed glossary

Teacher Packs:

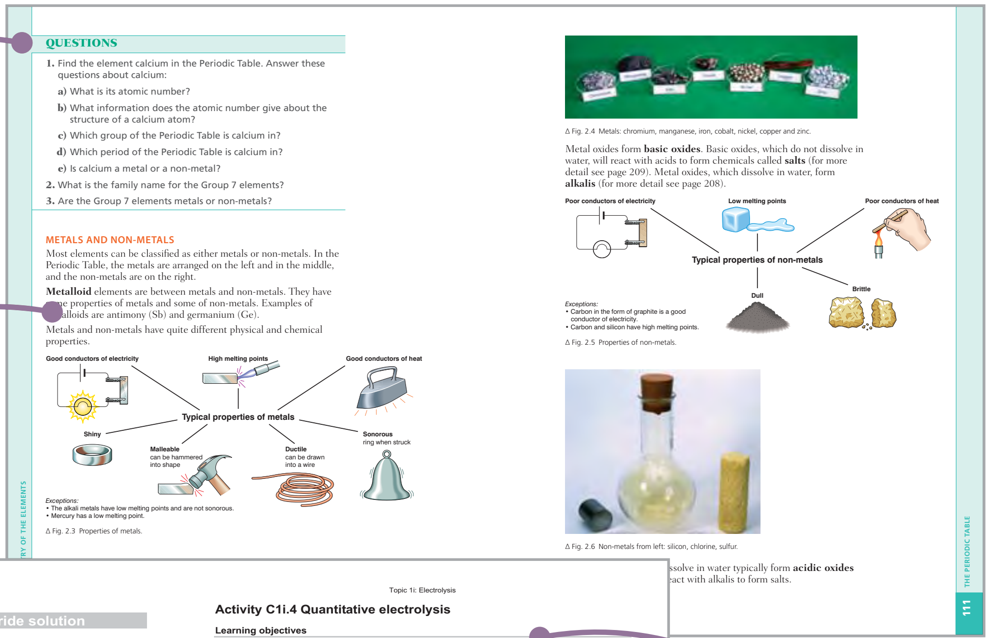
- **Deliver the syllabus with confidence** with comprehensive support including flexible topic-based teaching and learning strategies
- **Save time** with lots of ideas for practicals, activities and worksheets
- **Be prepared** with lists of resources, clear objectives and outcomes and notes on common misconceptions to help you get the most out of every lesson
- **Support learning** with a range of activity sheets
- **Make practicals easy** with clear instructions for students and technicians fully checked for safety by CLEAPSS
- **Help medium- and long-term planning** with a clear overview of each topic and links to other topics highlighted

®IGCSE is the registered trademark of Cambridge International Examinations.

Lots of questions to test understanding of every topic

Diagrams help explain concepts and support visual learners

Pages from **Edexcel International GCSE Chemistry Student Book**


QUESTIONS

1. Find the element calcium in the Periodic Table. Answer these questions about calcium:
   a) What is its atomic number?
   b) What information does the atomic number give about the structure of a calcium atom?
   c) Which group of the Periodic Table is calcium in?
   d) Which period of the Periodic Table is calcium in?
   e) Is calcium a metal or a non-metal?
2. What is the family name for the Group 7 elements?
3. Are the Group 7 elements metals or non-metals?

METALS AND NON-METALS

Most elements can be classified as either metals or non-metals. In the Periodic Table, the metals are arranged on the left and in the middle, and the non-metals are on the right.

Metalloid elements are between metals and non-metals. They have ...e properties of metals and some of non-metals. Examples of ...alloids are antimony (Sb) and germanium (Ge).

Metals and non-metals have quite different physical and chemical properties.

Δ Fig. 2.3 Properties of metals.

Δ Fig. 2.4 Metals: chromium, manganese, iron, cobalt, nickel, copper and zinc.

Metal oxides form **basic oxides**. Basic oxides, which do not dissolve in water, will react with acids to form chemicals called **salts** (for more detail see page 209). Metal oxides, which dissolve in water, form **alkalis** (for more detail see page 208).

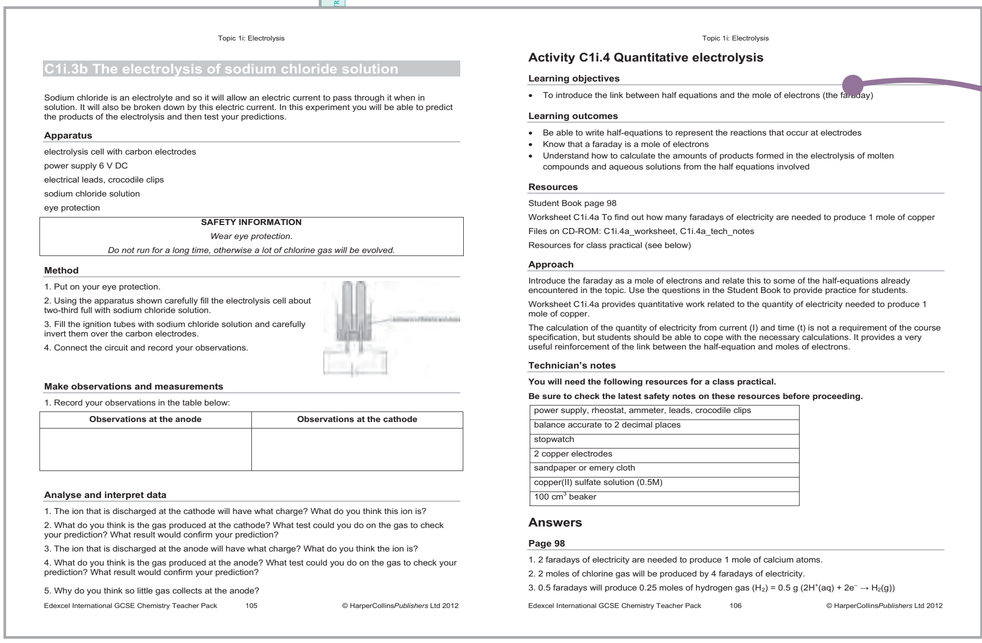
Δ Fig. 2.5 Properties of non-metals.

Δ Fig. 2.6 Non-metals from left: silicon, chlorine, sulfur.

...solve in water typically form **acidic oxides** ...act with alkalis to form salts.

...RY OF THE ELEMENTS

THE PERIODIC TABLE 111


Topic 1i: Electrolysis

C1i.3b The electrolysis of sodium chloride solution

Sodium chloride is an electrolyte and so it will allow an electric current to pass through it when in solution. It will also be broken down by this electric current. In this experiment you will be able to predict the products of the electrolysis and then test your predictions.

Apparatus

electrolysis cell with carbon electrodes
power supply 6 V DC
electrical leads, crocodile clips
sodium chloride solution
eye protection

SAFETY INFORMATION
Wear eye protection.
Do not run for a long time, otherwise a lot of chlorine gas will be evolved.

Method

1. Put on your eye protection.
2. Using the apparatus shown carefully fill the electrolysis cell about two-third full with sodium chloride solution.
3. Fill the ignition tubes with sodium chloride solution and carefully invert them over the carbon electrodes.
4. Connect the circuit and record your observations.

Make observations and measurements

1. Record your observations in the table below:

Observations at the anode	Observations at the cathode

Analyse and interpret data

1. The ion that is discharged at the cathode will have what charge? What do you think this ion is?
2. What do you think is the gas produced at the cathode? What test could you do on the gas to check your prediction? What result would confirm your prediction?
3. The ion that is discharged at the anode will have what charge? What do you think the ion is?
4. What do you think is the gas produced at the anode? What test could you do on the gas to check your prediction? What result would confirm your prediction?
5. Why do you think so little gas collects at the anode?

Edexcel International GCSE Chemistry Teacher Pack 105 © HarperCollinsPublishers Ltd 2012

Topic 1i: Electrolysis

Activity C1i.4 Quantitative electrolysis

Learning objectives

- To introduce the link between half equations and the mole of electrons (the faraday)

Learning outcomes

- Be able to write half-equations to represent the reactions that occur at electrodes
- Know that a faraday is a mole of electrons
- Understand how to calculate the amounts of products formed in the electrolysis of molten compounds and aqueous solutions from the half equations involved

Resources

Student Book page 98
Worksheet C1i.4a To find out how many faradays of electricity are needed to produce 1 mole of copper
Files on CD-ROM: C1i.4a_worksheet, C1i.4a_tech_notes
Resources for class practical (see below)

Approach

Introduce the faraday as a mole of electrons and relate this to some of the half-equations already encountered in the topic. Use the questions in the Student Book to provide practice for students.

Worksheet C1i.4a provides quantitative work related to the quantity of electricity needed to produce 1 mole of copper.

The calculation of the quantity of electricity from current (I) and time (t) is not a requirement of the course specification, but students should be able to cope with the necessary calculations. It provides a very useful reinforcement of the link between the half-equation and moles of electrons.

Technician's notes

You will need the following resources for a class practical.
Be sure to check the latest safety notes on these resources before proceeding.

power supply, rheostat, ammeter, leads, crocodile clips
balance accurate to 2 decimal places
stopwatch
2 copper electrodes
sandpaper or emery cloth
copper(II) sulfate solution (0.5M)
100 cm³ beaker

Answers

Page 98

1. 2 faradays of electricity are needed to produce 1 mole of calcium atoms.
2. 2 moles of chlorine gas will be produced by 4 faradays of electricity.
3. 0.5 faradays will produce 0.25 moles of hydrogen gas (H_2) = 0.5 g ($2H^+(aq) + 2e^- \rightarrow H_2(g)$)

Edexcel International GCSE Chemistry Teacher Pack 106 © HarperCollinsPublishers Ltd 2012

Practical instructions, teaching ideas and answers supplied

Pages from **Edexcel International GCSE Chemistry Teacher Pack**

Edexcel		
Edexcel International GCSE Biology Student Book	978-0-00-745000-8	£22.99
Edexcel International GCSE Biology Teacher Pack	978-0-00-745003-9	£100.00
Edexcel International GCSE Chemistry Student Book	978-0-00-745001-5	£22.99
Edexcel International GCSE Chemistry Teacher Pack	978-0-00-745004-6	£100.00
Edexcel International GCSE Physics Student Book	978-0-00-745002-2	£22.99
Edexcel International GCSE Physics Teacher Pack	978-0-00-745005-3	£100.00
Edexcel Revision		
Edexcel IGCSE Biology Revision Guide	978-1-84-419739-2	£5.99/£2.50*
Edexcel IGCSE Chemistry Revision Guide	978-1-84-419740-8	£5.99/£2.50*
Edexcel IGCSE Physics Revision Guide	978-1-84-419741-5	£5.99/£2.50*
Cambridge IGCSE®		
NEW Cambridge IGCSE Biology Student Book	978-0-00-759252-4	£21.99
NEW Cambridge IGCSE Biology Teacher Pack	978-0-00-759264-7	£100.00
NEW Cambridge IGCSE Chemistry Student Book	978-0-00-759265-4	£21.99
NEW Cambridge IGCSE Chemistry Teacher Pack	978-0-00-759266-1	£100.00
NEW Cambridge IGCSE Physics Student Book	978-0-00-759267-8	£21.99
NEW Cambridge IGCSE Physics Teacher Pack	978-0-00-759268-5	£100.00

*Denotes schools' price.

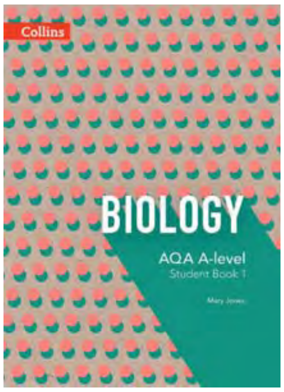
Collins A-level Science for AQA

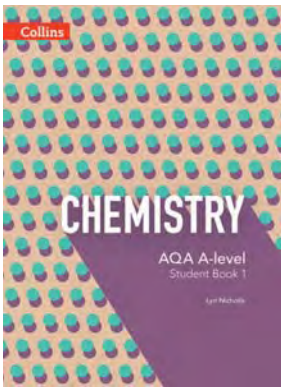
Collins Connect

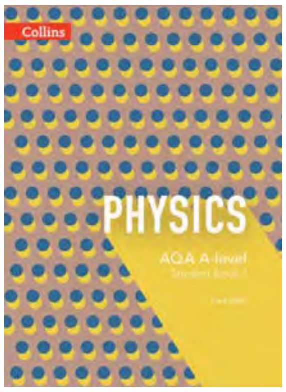
NEW | Age 16–18 | AS/A

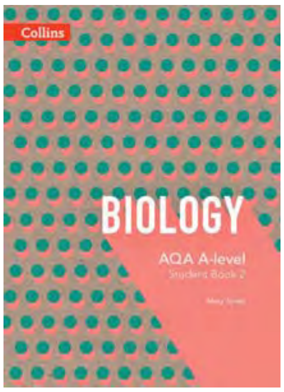
Biology: **Mary Jones and Lesley Higginbottom**
Chemistry: **Lyn Nicholls and Ken Gadd**
Physics: **Dave Kelly**

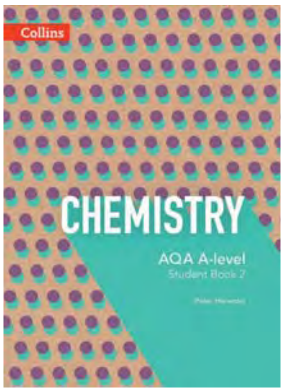
Our new resources have been developed to match the content and requirements of the new AQA specification and designed to help students secure the essential knowledge, skills and understanding to succeed at AS and A-level.

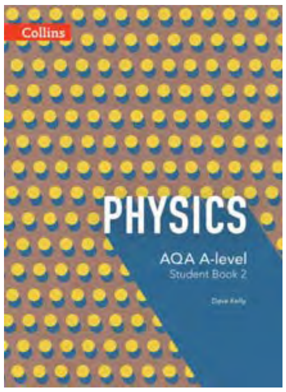












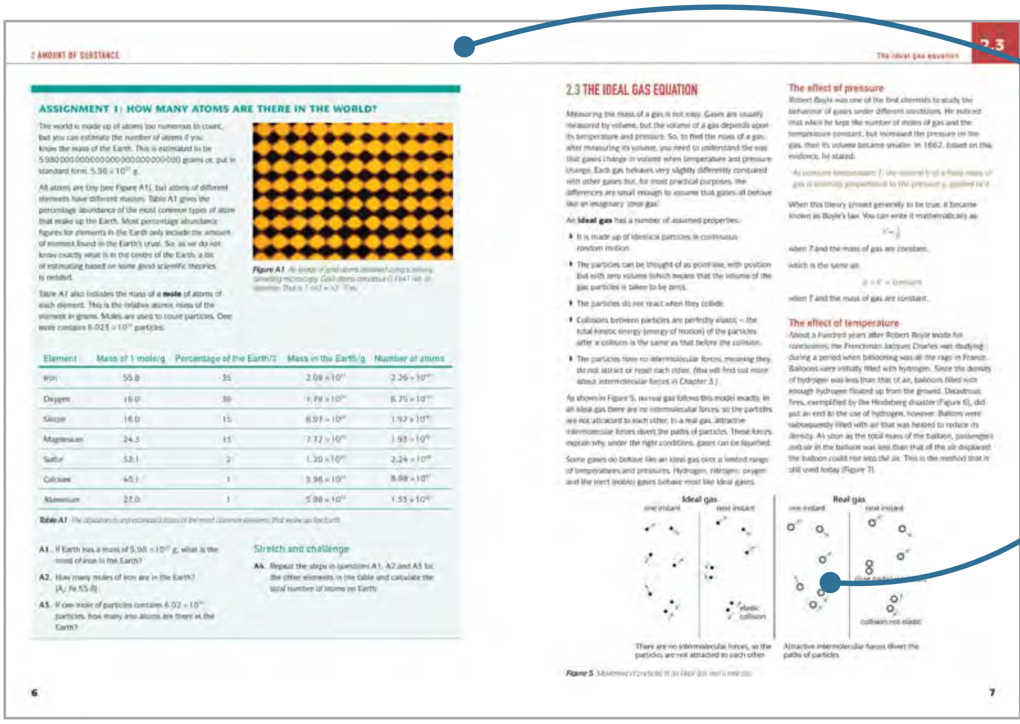
Our Student Books have been entered onto the AQA approval process.

Student Book 1 covers the content required for the first year of A-level and for the AS qualification.

Student Book 2 has the additional content required for A-level.

Student Books

- **Teach with confidence** with content matched to the 2015 AQA specification and material that is fully co-teachable for AS and Year 1 of A-level
- **Embed good practice in practical work** with comprehensive Required Practical sections that advise students on apparatus, experimental techniques and how best to avoid common errors
- **Help students prepare for the linear assessment** with extensive practice questions including those that material to build synoptic understanding
- **Build students' confidence** in the key areas of Mathematical Skills, Practical Skills, communication of science, and evaluation of the applications and implications of science, in numerous Assignments throughout
- **Engage students in the content** with exciting up-to-date contexts
- **Help students achieve the highest grades** with Stretch and Challenge activities
- **Help students monitor their progress** and revise effectively with key fact summaries and questions



Assignments test understanding and help students practice key skills

Stretch and challenge activities provide extension for more able students

Sample from
Collins A-level Chemistry for AQA, Student Book 1

Teacher Support

- **Comprehensive support for teaching or co-teaching the new specification** with editable Schemes of Work and lesson plans in Word, featuring learning outcomes
- **Cover the specification with confidence**, each chapter has a planning grid showing how lesson plans link to the specification
- **Embed progression** with Prior knowledge and Where it leads sections for each chapter
- **Provides invaluable and detailed guidance for preparation of and carrying out of required practicals**, with additional support including technicians' notes, practical sheets and activity sheets.

Collins Connect

A-level Science for AQA on Collins Connect

Support your teaching with high-quality online content and up-to-date resources on Collins Connect that enhance learning inside and outside the classroom. Interactive student books bring key concepts, theory and practicals to life, and online test questions and essay writing practice help students apply their knowledge and hone examination techniques.

AQA A-level Biology Student Book 1	978-0-00-7590162	Summer 2015	£24.99
AQA A-level Biology Student Book 2	978-0-00-7590216	TBC	£24.99
AQA A-level Biology Teacher Guide 1	978-0-00-8114220	Autumn 2015	£150.00
AQA A-level Biology Teacher Guide 2	978-0-00-8114237	TBC	£150.00
AQA A-level Chemistry Student Book 1	978-0-00-7590216	Summer 2015	£24.99
AQA A-level Chemistry Student Book 2	978-0-00-7597635	TBC	£24.99
AQA A-level Chemistry Teacher Guide 1	978-0-00-8114220	Autumn 2015	£150.00
AQA A-level Chemistry Teacher Guide 2	978-0-00-8114251	TBC	£150.00
AQA A-level Physics Student Book 1	978-0-00-7590223	Summer 2015	£24.99
AQA A-level Physics Student Book 2	978-0-00-7597642	TBC	£24.99
AQA A-level Physics Teacher Guide 1	978-0-00-8114268	Autumn 2015	£150.00
AQA A-level Physics Teacher Guide 2	978-0-00-8114275	TBC	£150.00

Previous editions for the 2008 specification are available while stocks last. See the order form for full details.

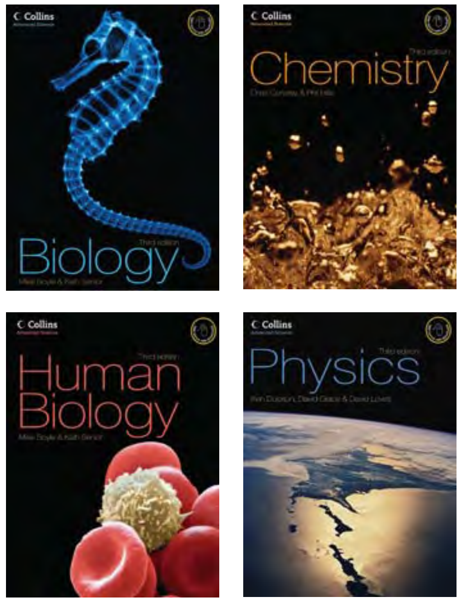
www.collins.co.uk **education@harpercollins.co.uk**

Collins Advanced Science

Collins Advanced Science

Current Specification | Collins Connect | Age 16–18 | AS/A

Authors: **Mike Boyle, Kathryn Senior, Chris Conoley, Phil Hills, Ken Dobson, David Grace and David Lovett**



- **Cover the 2008 specifications with confidence** – the books provide full support for the key focuses of the new specifications with How Science Works, Science in Context and Stretch and Challenge feature boxes
- **Inspire students with these popular titles**, from authors with many years experience of teaching, examining and writing
- **Enrich teaching and learning** with extra resources from our free accompanying website that offers exam practice and How Science Works assignments

Which specifications are covered?

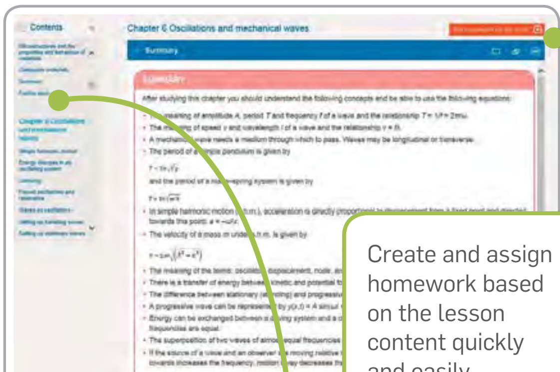
Biology: AQA, Edexcel, OCR, WJEC, IB and Cambridge
Human Biology: AQA, OCR, WJEC
Chemistry: AQA, Edexcel, OCR, WJEC, IB and Cambridge
Physics: AQA A and B, Edexcel, OCR A and B, WJEC, IB and Cambridge

Collins Connect NEW

Access Collins Advanced Science anytime, anywhere with Collins Connect

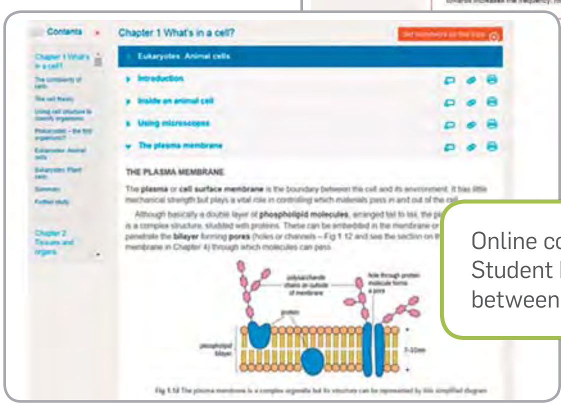
In addition to online versions of the textbooks, Collins Connect supports you and your students by providing further opportunities for assessment and home learning:

- **Practice questions and answers** allow students to test their understanding of the material just covered.
- **How Science Works** assignments allow students to prepare for the How Science Works element of the AS and A2 exams
- **Easily create and assign homework for each topic.** Tasks can be assigned at an individual or group level, providing an opportunity for extension activities for more able students and support for those who need it



Create and assign homework based on the lesson content quickly and easily

Further study option available for each topic



Online content mirrors that of the Student Book, providing total fluidity between online and offline learning

Sample from **CAS Biology on Collins Connect**

CAS Biology	978-0-00-726745-3	£42.00
CAS Chemistry	978-0-00-726747-7	£42.00
CAS Physics	978-0-00-726749-1	£42.00
CAS Human Biology	978-0-00-726751-4	£42.00
CAS Chemistry Collins Connect 1 Year Subscription	978-0-00-753707-5	£200.00
CAS Biology Collins Connect 1 Year Subscription	978-0-00-753705-1	£200.00
CAS Physics Collins Connect 1 Year Subscription	978-0-00-753711-2	£200.00

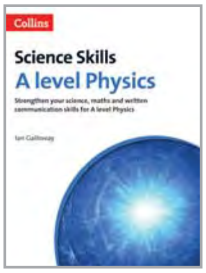
For more information on Collins Connect, turn to pages 2–3.

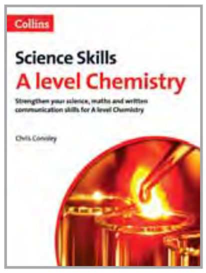
Science Skills

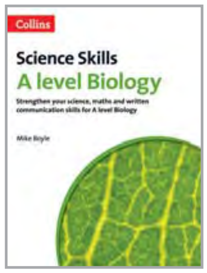
Current Specification | Age 16–18 | AS/A

Authors: **Mike Boyle, Chris Conoley** and **Ian Galloway**

Suitable for all main exam boards, these A Level Science Skills books explain the essential science, maths and Quality of Written Communication skills to enable success in post-16 qualifications.







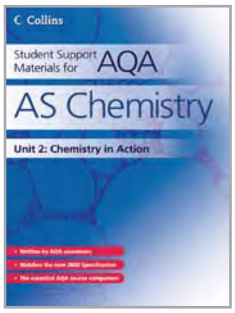
- Activities and questions support learners to apply their knowledge in new contexts
- Assessing Investigative Skills activities that practise the skills needed in practical assessments such as the ISA or EMPA
- QWC Worked Examples that explain how to improve the quality of written communication
- Answers with helpful hints and tips, as well as fully worked out approaches help students check their understanding and progress

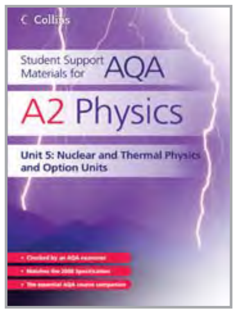
A-level editions		
Science Skills – A Level Biology	978-0-00-755462-1	£9.99
Science Skills – A Level Chemistry	978-0-00-755464-5	£9.99
Science Skills – A Level Physics	978-0-00-755466-9	£9.99
IB Diploma editions		
IB Science Skills – Biology	978-0-00-755467-6	£9.99
IB Science Skills – Chemistry	978-0-00-755468-3	£9.99
IB Science Skills – Physics	978-0-00-755469-0	£9.99

Collins Student Support Materials for AQA

Current Specification | Age 16–18 | AS/A

Series Editors:
Biology: **Keith Hurst, Mike Boyle**
Chemistry: **John Bentham, Graham Curtis, Andrew Maczek, Colin Chambers, David Nicholls** and **Geoff Hallas**
Physics: **Dave Kelly**





- **Improve performance** with separate books for each unit, written and developed by examiners into manageable sections and exactly matched to the AQA specifications
- **Get the best exam results** with extra exam-style questions and How Science Works guidance to help students prepare fully
- **Help students to excel with examiner's notes** to give them advice on exam technique and common misconceptions
- **Memorise essential terminology** with a comprehensive glossary and key definitions highlighted throughout

Chemistry Unit 1 – Foundation Chemistry	978-0-00-726825-2	£9.75
Chemistry Unit 2 – Chemistry in Action	978-0-00-726826-9	£9.75
Chemistry Unit 4 – Kinetics, Equilibria & Organic Chemistry	978-0-00-726827-6	£9.75
Chemistry Unit 5 – Energetics, Redox & Inorganic Chemistry	978-0-00-726828-3	£9.75
Biology Unit 1 – Biology & Disease	978-0-00-726817-7	£9.75
Biology Unit 2 – The Variety of Living Organisms	978-0-00-726818-4	£9.75
Biology Unit 4 – Populations & Environment	978-0-00-726819-1	£9.75
Biology Unit 5 – Control in Cells and in Organisms	978-0-00-726820-7	£9.75
Physics Unit 1 – Particles, Quantum Phenomena & Electricity	978-0-00-734383-6	£9.75
Physics Unit 2 – Mechanics, Materials and Waves	978-0-00-734384-3	£9.75
Physics Unit 4 – Fields & Further Mechanics	978-0-00-734385-0	£9.75
Physics Unit 5 – Nuclear & Thermal Physics & Option Units	978-0-00-734386-7	£9.75

We're here to help

For UK sales, more information or order queries contact:

Collins
FREEPOST RTKB-SGZT-ZYJL
Honley
HD9 6QZ

Phone: 0844 576 8126
Fax: 01484 665 736
Email: education@harpercollins.co.uk

Or contact your local representative – details below

For international sales, more information or order queries contact:

Collins
HarperCollins Publishers
Westerhill Road
Bishopbriggs
Glasgow
G64 2QT

Phone: +44 141 306 3484
Email: collins.international@harpercollins.co.uk

Contact your local representative - find their details online at www.collins.co.uk/findarepinternational

Clare Petre
Sales Manager
07920 040 201

Chris Barnes
Blackburn/Darwen Council, Bradford, Bury, Calderdale, Kirklees, Leeds, Oldham, Rochdale, Tameside, Wakefield.
07990 887 251

Debbie Livermore
Barking & Dagenham, Essex, Havering, Newham, Redbridge, Southend-on-Sea, Thurrock, Waltham Forest.
07990 887 299

Donna Griffiths
Cheshire East, Cheshire West and Chester, Manchester, Salford, Stockport, Stoke-on-Trent, Trafford, Warrington, Wirral.
07557 188 094

Customer Services
Bracknell Forest, Reading, Slough, Surrey, Swindon, West Berkshire, Wiltshire, Windsor & Maidenhead, Wokingham.
07990 887 228

Gary Reynolds
Bexley, Bromley, Croydon, Greenwich, Lambeth, Lewisham, Merton, Southwark, Sutton.
07557 188 202

Hayley Newman
Buckinghamshire, Harrow, Hertfordshire.
07990 887 232

Jane Massey
Birmingham, Coventry, Rutland, Solihull, Warwickshire.
07818 529 763

Jill Patterson
Dudley, Sandwell, Shropshire, Staffordshire, Telford & Wrekin, Walsall, Wolverhampton.
07990 887 248

Karen Dalton
City of York, Darlington, Durham, Gateshead, Hartlepool, Middlesbrough, North Yorkshire, Redcar and Cleveland, South Tyneside, Stockton, Sunderland.
07717 800 999

Liz Rowntree
Bath & N.E. Somerset, Bristol, Gloucester, Herefordshire, North Somerset, Oxfordshire, South Gloucestershire, Worcestershire Council.
07990 887 298

Customer Services
Barnsley, Derby City Council, Derbyshire, Doncaster, Nottingham City Council, Nottinghamshire, Rotherham, Sheffield.
07557 188 075

Masoom Noor
Brent, Corporation of London, Ealing, Hammersmith/Fulham Borough, Harrow, Hillingdon, Hounslow, Kensington/Chelsea Borough, Kingston upon Thames, Richmond, Wandsworth, Westminster.
07557 188 079

Nicola Lawrence
Bedford Borough, Cambridge, Central Bedfordshire, Leicester, Leicestershire, Luton, Milton Keynes, Northamptonshire, Peterborough.
07825 116 309

Customer Services
Barnet, Camden, Enfield, Hackney, Haringey, Islington, Tower Hamlets.
07557 188 145

Candis Thurston
Hants, Isle of Wight, Portsmouth, Southampton City Council, West Sussex.
07557 188 175

Jo Greenwood
Belfast, North Eastern, South Eastern, Southern.
07990 887 225

Kerry Rough
East Riding of Yorkshire, Kingston upon Hull, Lincolnshire, North East Lincolnshire, North Lincolnshire.
07990 887 236

Sandie May
Brighton & Hove, East Sussex, Kent, Medway Council.
07881 615 493

Shanthie Moxon
Bournemouth, Devon, Dorset, Poole, Somerset, Guernsey, Jersey.
07990 887 230

Caroline Beardsmore
Blaenau Gwent, Bridgend, Caerphilly, Cardiff, Carmarthenshire, Ceredigion, Conwy, Denbighshire, Flintshire, Gwynedd, Isle of Anglesey, Merthyr Tydfil, Monmouthshire, Neath Port Talbot, Newport, Norfolk, Pembrokeshire, Powys, Rhondda, Cynon, Taff, Swansea, Torfaen, Vale of Glamorgan, Wrexham
01484 668 117

Rachel Jebson
Cornwall, Cumbria, Isle of Man, Isles of Scilly, Newcastle upon Tyne, North Tyneside, Northumberland, Plymouth, Suffolk,Torbay
01484 668 132

Yvonne Brown
Herefordshire, Hertfordshire, Isle of Man, Isles of Scilly, North Somerset
01484 668 124

Or contact us by email -
firstname.lastname@harpercollins.co.uk.
For example, clare.petre@harpercollins.co.uk

ISBN 978-0-00-794729-4
9 780007 947294 >