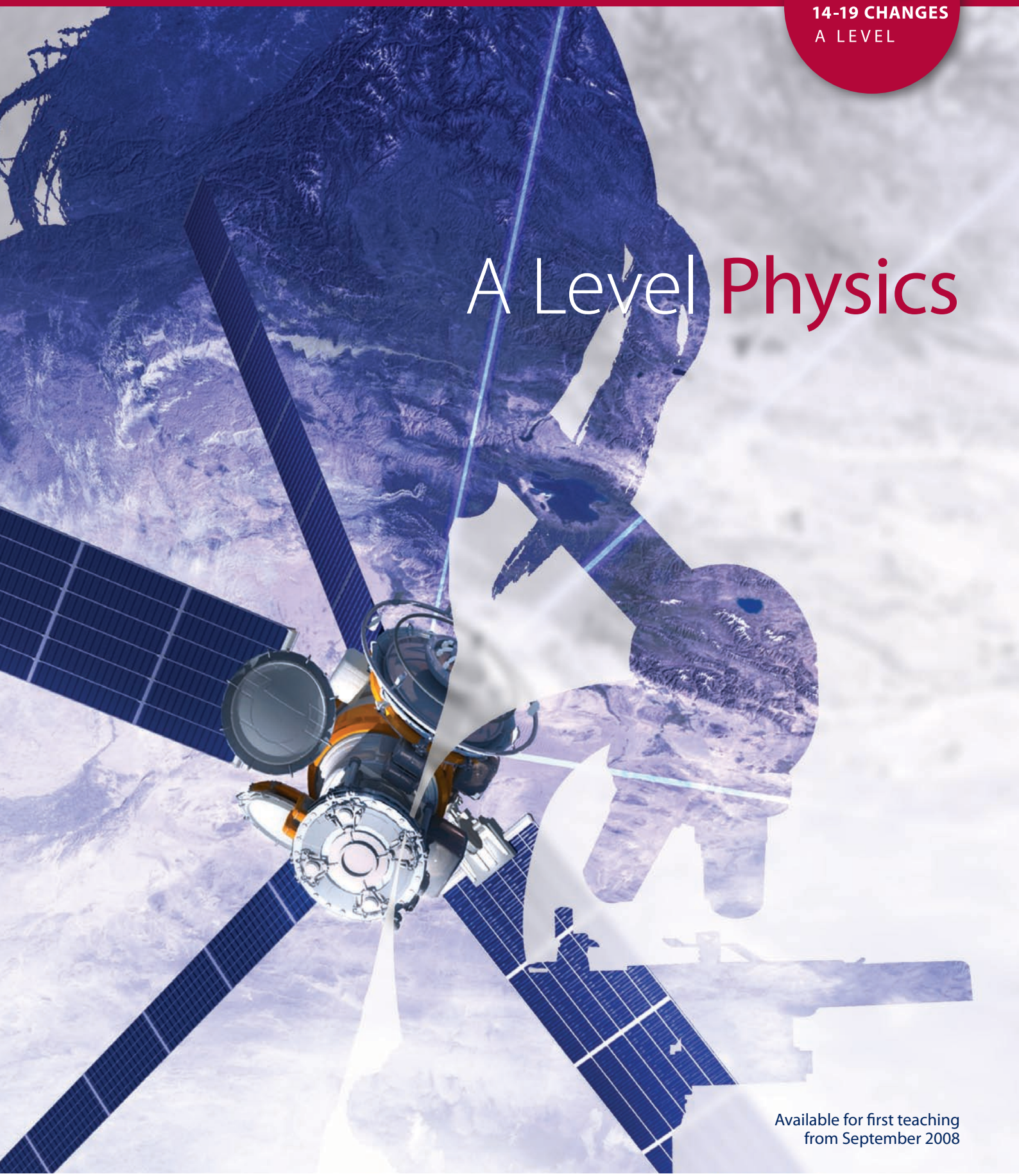
OCR
RECOGNISING ACHIEVEMENT

14-19 CHANGES
A LEVEL



A Level Physics

Available for first teaching
from September 2008

www.ocr.org.uk

Contents

OCR A Level Physics
The first choice for science

A level Physics retains its two key specifications:

Physics A
A modern and relevant Physics course, clearly structured for flexible delivery, with an integrated and concise practical assessment model, to aid teachers and learners.

Physics B (Advancing Physics)
Provides a distinctive structure within which learners learn about fundamental physical concepts and about Physics in everyday and technological settings.

Both specifications build on their past successes and retain their most popular features. They have both been updated and slightly restructured in response to feedback. A number of enhanced benefits have been added.

This brochure includes information on both specifications.

A Level Physics A

The revamped specification is faithful to its established structure and strengths, but incorporates some important improvements. There's a smoother transition from GCSE, and Units 1 and 4 are deliberately short, enabling learners to be entered for January exams. The practical exam has been replaced by task-based internal assessment to conform to new QCA requirements.

Features of the new specification:

- The new, streamlined progression through units is appropriate for learners of varying aptitude. It appeals to less experienced teachers and those looking to broaden their repertoire.
- Accessible, logically grouped learning outcomes help teachers and learners to understand exactly what will be examined.
- Learners can build on their GCSE knowledge.
- Practical tasks tested before first teaching, have comprehensive worksheets and mark schemes, reducing teachers' workload.
- Support includes a broad range of resources from our publishing partner, Heinemann.
- Redesigned question papers are clear, explicit and accessible.
- 'How Science Works' is integrated throughout, along with up-to-date topics.

"Clearly, a lot of time and thought have been put into the preparation of the document [draft specification]. I never expected to be satisfied to the degree I am."

A Level Physics A **course details**

For AS

Teaching units	Assessment Method and Weighting
G481: Mechanics • Motion • Forces in Action • Work and Energy.	**Mandatory unit** 1hr exam AS – 30% A Level – 15%
G482: Electrons, Waves and Photons • Electric Current • Resistance • DC Circuits • Waves • Quantum Physics.	**Mandatory unit** 1hr 45 mins exam AS – 50% A Level – 25%
G483: Practical Skills in Physics 1 • This AS (practical skills) unit is teacher assessed and externally moderated by OCR. • Learners are assessed on one task from each of the following categories: qualitative, quantitative and evaluative tasks.	**Mandatory unit** Internal assessment AS – 20% A Level – 10%

For A2

Teaching units	Assessment Method and Weighting
G484: The Newtonian World • Newton's Laws and Momentum • Circular Motion and Oscillations • Thermal Physics.	**Mandatory unit** 1hr exam A Level – 15%
G485: Fields, Particles and Frontiers of Physics • Electric and Magnetic Fields • Capacitors and Exponential Decay • Nuclear Physics • Medical Imaging • Modelling the Universe.	**Mandatory unit** 1hr 45 mins exam A Level – 25%
G486: Practical Skills in Physics 2 • This A2 (practical skills) unit is teacher assessed and externally moderated by OCR. • Learners are assessed on one task from each of the following categories: qualitative, quantitative and evaluative tasks.	**Mandatory unit** Internal assessment A Level – 10%

What stays the same, and what changes?

If you're already working with the current OCR A Level Physics A specification, you'll want to know which parts of this remain in the new specification – and what the main changes are.

The table below outlines the key points.

Main aspects that stay the same	Most important changes
The new, improved specification has a sound and logical continuity for current OCR Physics A centres.	Units 1 and 4 have reduced content, allowing the maximum opportunity to enter learners in January.
	QCA rules now require that practical skills are internally assessed, under controlled conditions. Practical exams will no longer be available in the revised specifications.
	Modern and interesting topics previously offered as options are retained in compulsory content, while other options have been removed.

"I'm delighted by the thoroughness and extra detail that have been put into the writing of the new specifications. This will be welcomed by teachers, both new and experienced."

"As an experienced teacher of physics I can see very clearly and with no ambiguity what is required of all the units."

‘Stretch and Challenge’

A new Qualifications and Curriculum Authority (QCA) initiative for A Levels, ‘Stretch and Challenge’ is designed to give learners the opportunity to demonstrate their potential, and to help universities differentiate between applicants. It will be part of the A2 units, so it won’t involve additional questions or exam papers.

We have always included ‘Stretch and Challenge’ style questions at A Level for all sciences so this won’t have a noticeable effect on assessment other than that learners will have the opportunity to achieve an A* grade.

‘Stretch and Challenge’ is achieved through a new approach to exam questions:

- The questions invite a greater variety of thinking and type of answer. For example, the introduction could ask the learner to ‘analyse’, ‘evaluate’ or ‘discuss’.
- The questions are structured to show more connections between different sections of the specification.
- Extended writing is encouraged in all subjects (except in areas such as Maths, where it is clearly inappropriate).
- There’s a wider range of question types – such as case studies and open-ended questions – rather than just short-answer questions.
- There are more synoptic assessments – exploring connections between different areas and levels of a subject – over and above the superficial links within question types.

You’ll find examples of ‘Stretch and Challenge’ style questions in your specimen assessment materials.

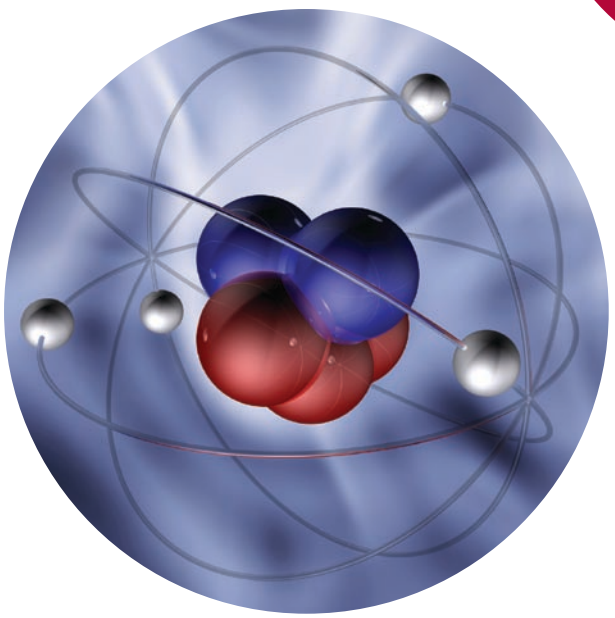
A Level Physics B (Advancing Physics)

This innovative course reflects Physics as it is practised and used today. The established specification has been further improved to enhance teachers' and learners' enjoyment, while complying with revised QCA requirements.

Features of the new specification:

- Strong similarity with the approach taken in the first year of many undergraduate Physics and Physics-related courses.
- A new, streamlined progression through units, which appeals to less experienced teachers and those looking to broaden their repertoire.
- Attractive and accessible to a wide variety of learners.
- Accessible, logically grouped learning outcomes help teachers and learners to understand exactly what will be examined.
- Learners can build on their GCSE knowledge without repetition.
- Practical tasks for AS Level, trialled with centres.
- Units 1 and 4 are shorter to allow learner entries for January exams.
- Full support available from the Institute of Physics Publishing.
- Redesigned question papers are clearer, more explicit and more accessible.
- 'How Science Works' is integrated throughout.

"All units are relevant to students taking this as an end point, but also to those wishing to study beyond AS/A2."



A Level Physics B (Advancing Physics) **course details**

For AS

Teaching units	Assessment Method and Weighting
G491: Physics in Action • Communication • Designer Materials.	**Mandatory unit** 1hr exam AS – 30% A Level – 15%
G492: Understanding Processes, Experimentation and Data Handling • Waves and Quantum Behaviour • Space, Time and Motion.	**Mandatory unit** 1hr 45 mins exam AS – 50% A Level – 25%
G493: Physics in Practice • Quality of Measurement • Physics in Use.	**Mandatory unit** Internal assessment AS – 20% A Level – 10%

For A2

Teaching units	Assessment Method and Weighting
G494: Rise and Fall of the Clockwork Universe • Models and Rules • Matter in Extremes.	**Mandatory unit** 1hr 15 mins exam A Level – 15%
G495: Field and Particle Pictures • Fields • Fundamental Particles.	**Mandatory unit** 2hr exam A Level – 25%
G496: Researching Physics • Practical Investigation • Research Briefing.	**Mandatory unit** Internal assessment A Level – 10%

What stays the same, and what changes?

If you're already working with the current OCR A Level Physics B specification, you'll want to know which parts of this remain in the new specification – and what the main changes are.

The table below outlines the key points.

Main aspects that stay the same	Most important changes
The new, improved specification has a sound and logical continuity for current Physics B centres.	Units 1 and 4 have reduced content, allowing the maximum opportunity to enter learners in January.

"Controlled assessment conditions for coursework should make the whole difficult exercise much easier."

"The material covered in these units is appropriate, applicable and encourages the students to develop their understanding of Physics in an everyday context."

‘Stretch and Challenge’

A new Qualifications and Curriculum Authority (QCA) initiative for A Levels, ‘Stretch and Challenge’ is designed to give learners the opportunity to demonstrate their potential, and to help universities differentiate between applicants. It will be part of the A2 units, so it won’t involve additional questions or exam papers.

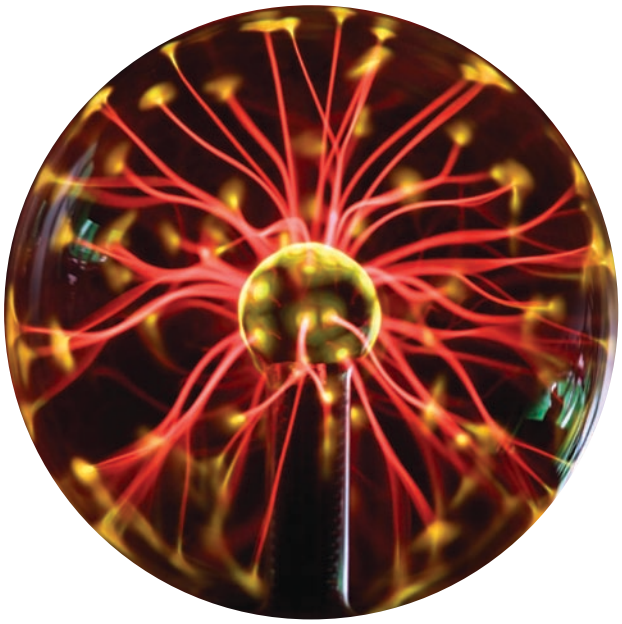
We have always included ‘Stretch and Challenge’ style questions at A Level for all sciences so this won’t have a noticeable effect on assessment other than that learners will have the opportunity to achieve an A* grade.

‘Stretch and Challenge’ is achieved through a new approach to exam questions:

- The questions invite a greater variety of thinking and type of answer. For example, the introduction could ask the learner to ‘analyse’, ‘evaluate’ or ‘discuss’.
- The questions are structured to show more connections between different sections of the specification.
- Extended writing is encouraged in all subjects (except in areas such as Maths, where it is clearly inappropriate).
- There’s a wider range of question types – such as case studies and open-ended questions – rather than just short-answer questions.
- There are more synoptic assessments – exploring connections between different areas and levels of a subject – over and above the superficial links within question types.

“The overall ethos of the syllabus is excellent.”

You’ll find examples of ‘Stretch and Challenge’ style questions in your specimen assessment materials.



Support for A Level Physics teachers

To help you get started with the new A Levels in Physics specification, OCR will run a number of training courses. We will also provide a range of detailed support materials and resources – some produced by OCR, some by our publishing partners.

Training

The following INSET courses will be available from September 2007:

Get ready – introducing the new A level specifications
(first teaching from September 2008)

These **free** half-day (morning) sessions are designed to give you an overview of the new OCR specifications.

They will:

- **Look at the structure of the new specifications**
- **Compare the new specification content with the old, including coursework and 'Stretch and Challenge' implications**
- **Discuss the support and resources available from OCR**
- **Summarise the benefits of the OCR specifications.**

Get started – towards successful delivery of the new A level specifications
(first teaching from September 2008)

These full-day sessions will give you guidance and support in planning to teach the new AS/A Level specifications.

They will:

- **Give an introduction to the structure and content of the new specifications**
- **Consider approaches to first teaching, and suggest best practice**
- **Look at coursework and 'Stretch and Challenge' implications**
- **Review the support and resources available from OCR.**

This course will have some similarity to the half-day 'Get ready' sessions, but will look at the new specifications in more depth, with the emphasis on first teaching.

Places are allocated on a first come, first served basis – so if you're interested in attending one of these events, visit www.ocr.org.uk/training to find out the dates of the events nearest to you.

Support materials

OCR is producing the following materials to help you prepare for the new A Level in Physics:

Schemes of work and Lesson Plans

Schemes of work are being produced for both Physics A and Physics B. For these subjects we have adopted a 'by teachers for teachers' approach to development of the materials and we have been working with teachers from a number of different centres. The centre involved in the materials can be identified by the use of the centre logo in the top right hand corner of all relevant documents.

For each scheme of work that is produced, a set of accompanying lesson plans will also be available.

These materials for Physics A will be available on the OCR website from autumn 2007 and for Physics B from January 2008. The materials will be available in fixed pdf format, for reference purposes, and also in Word format, so that you can adapt the materials for your own use.

Exemplar Candidate Work

For a number of units within Physics A and Physics B we will produce exemplar candidate work. This will be available on the OCR website in spring 2008. We're also working with publishing partner Heinemann to provide further resources to support the Physics A course, and with the Institute of Physics Publishing to provide resources to support Physics B (Advancing Physics).

Student books, teaching resources and assessment for each course will be published in early spring 2008.

OCR RECOGNISING ACHIEVEMENT Heinemann Official Publisher Partnership

"The content seems to be well documented and the topics well described in the specification."

Other OCR science qualifications

As a Physics teacher, you may be interested to know about OCR's range of GCSE science qualifications, as well as the OCR Level 2 Nationals in science subjects, which offer an excellent grounding for progression to GCE Physics.

We also offer GCEs in sciences such as Biology, Human Biology, Chemistry A, Chemistry B (Salters), Geology, Electronics and Psychology.

AS Science

The OCR AS GCE Science specification extends GCSE Science and contains elements of Biology, Chemistry and Physics, as well as Earth Science and Environmental Science. It is purpose-built for those learners who wish to continue with a broad study of science beyond GCSE, but who choose not to specialise in the separate science disciplines.

GCE Applied Science

This is a new broad-based qualification in Applied Science which may be used to give a general vocational introduction to science. The qualification provides appropriate progression from GCSE Applied Science (Double Award) and from GCSE Additional Applied Science for learners wishing to follow a vocational pathway.

For more information on these qualifications, visit www.ocr.org.uk

Background to the changes

Following a review of 14–19 education, the Qualifications and Curriculum Authority (QCA) has revised the subject criteria for A Levels. These changes are intended to reduce the volume of marking for teachers, and the amount of assessment for learners, and to ensure that every young person has the opportunity to realise their full potential. Along with all awarding bodies, OCR has developed revised A Levels for first teaching from September 2008.

We've made sure it's a change for the better

QCA's decision to revise A Levels has given us a great opportunity to make further improvements to our qualifications. We've been talking to teachers, heads of departments, local authority advisers, subject experts and examiners to make sure the new specifications, support materials and schemes of work meet your needs.

Want to find out more?

For more information on the new OCR A Levels in Physics –

and on all our science qualifications –

visit **www.ocr.org.uk** or call **01223 553998**

www.ocr.org.uk

OCR customer contact centre

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