

Edexcel International AS/A Level

IAL Physics

Event 18IBAS04

Getting Ready to Teach

Event Code:

First teaching in 2018, first assessment 2019



Session agenda

- **10:00 Introductions**
- **10:15 Session 1: Delivering the new specification**
- **11.20 Coffee**
- **11:35 Session 2a: Mathematical and practical skills**
- **12.:30 Session 2b: An overview of the Sample Assessment Materials**
- **13:00 Lunch**
- **14:00 Session 3: Assessment in the new specification including marking activity**
- **15:30 Plenary discussion and questions**
- **16:00 Course Ends**

Aims and Objectives

During the session you will:

- **Get an overview of the main changes in the new specification**
- **Explore possible teaching and learning strategies that may be employed for the new specification**
- **Look at Sample Assessments and Mark Schemes**
- **Look at planning and organisation for the new specification**
- **Explore the support and resources available from Pearson to guide you through teaching the new specification**

Welcome to Pearson Edexcel

Welcome to Pearson Edexcel,
the world's leading learning company
and the UK's largest awarding body.

We set the standard for worldwide
recognised qualifications, built on the
UK educational system and accepted
by universities worldwide.

We have a simple mission:
**to help make a measurable impact on
improving people's lives through learning.**

*“We judge
ourselves – and
invite others to
judge us – not by
the products that
we make but by the
impact on
learners.”*

John Fallon,
Chief Executive Officer, Pearson

About Pearson Edexcel?

- As the UK's largest awarding organisation, we are best placed to provide qualifications that are most closely aligned to the British educational system.
- We are the most reliable awarding organisation in the UK, recognised and trusted by educators, learners and employers to provide high quality qualifications.
- By helping you to realise student potential, you can prepare and empower all your students to progress to further education, university and employment.
- Our technology capability allows us to provide you with more advanced support services, tools and resources to make life easier for school leaders, teachers and students.
- Pearson Edexcel are leading the way, challenging thinking and creating new ideas so you can be confident our qualifications will always be world-class

World-class features

All Edexcel qualifications are developed to meet Pearson's **World Class Qualification design principles**

Developed using an understanding and benchmarking of **all educational systems**



Endorsement of educational **thought-leaders and assessment experts** from across the globe

Qualifications that support young people to **develop the capabilities** they need to **progress** and prosper in their lives

The global transferable skills framework

COGNITIVE

Core skills brain uses to think, learn and reason – used to carry out any task.

Critical Thinking, Problem Solving, Analysis, Decision-making, Creativity

INTRAPERSONAL

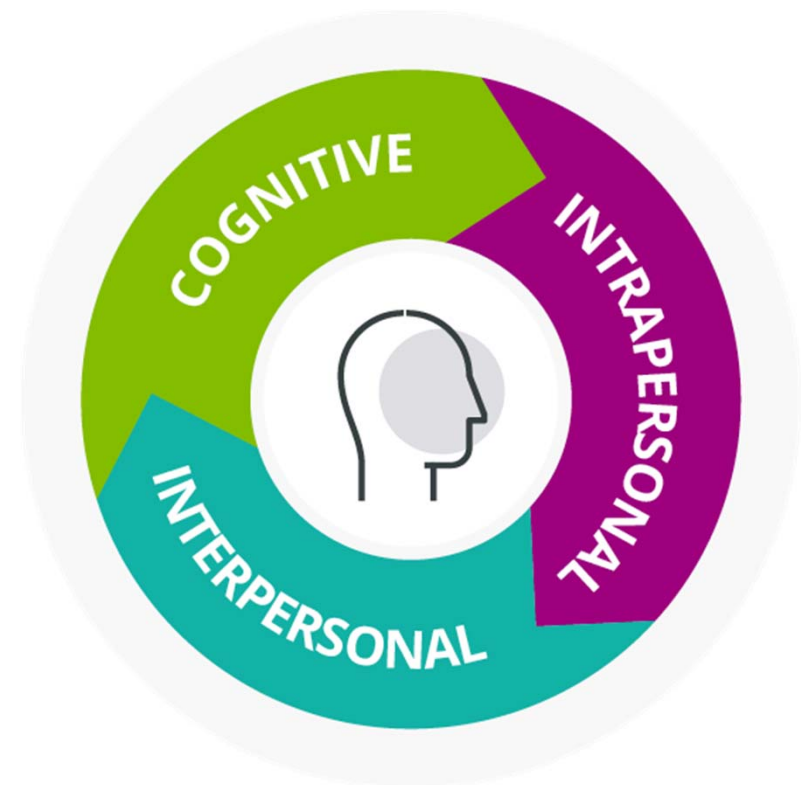
Emotional intelligence, ability to know, understand and manage own emotions and learning.

Adaptability, Continuous Learning, Intellectual Curiosity, Work Ethics, Self-Evaluation

INTERPERSONAL

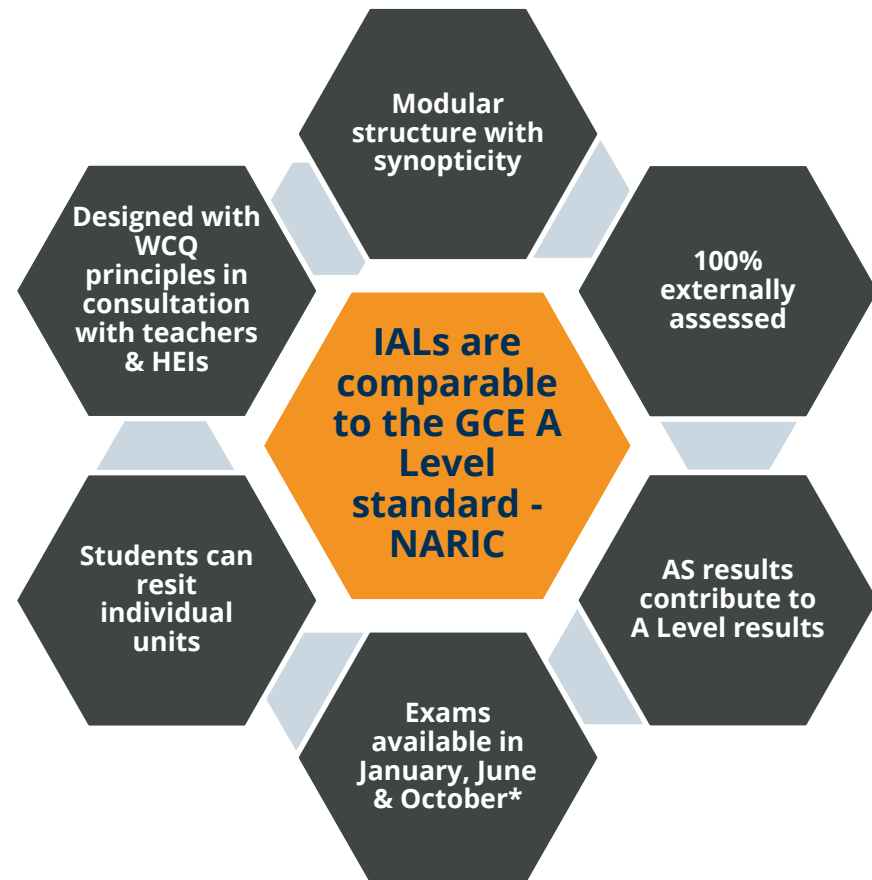
Life skills used every day to communicate and interact with others, individually and in groups.

Teamwork & Collaboration, Communication, Negotiation, Empathy, Leadership



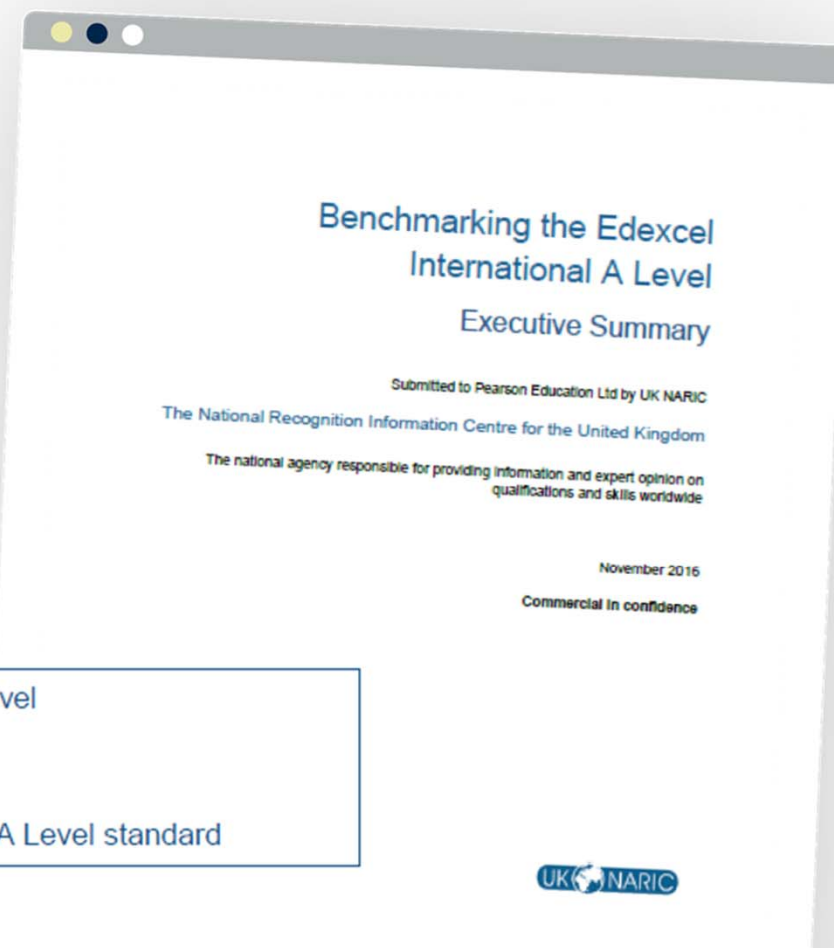
IAL Features

- International A Levels and AS Levels are created for International Students
- Globally recognised for progression to undergraduate studies.



Updated NARIC report for Edexcel IAL

The executive summary confirms that Edexcel IALs are considered comparable to the GCE A Level standard following reforms to the UK regulated qualifications.



Qualification:	Edexcel International Advanced Level
Awarding Institution:	Pearson Education Ltd
Comparability:	Is considered comparable to GCE A Level standard

IAS and IAL 2018

Biology, Chemistry and Physics

Reviewed and updated in light of GCE A level changes, with comparable content

Better defined application of Mathematical Skills to each subject

Opportunities for Core Practical activities throughout each subject

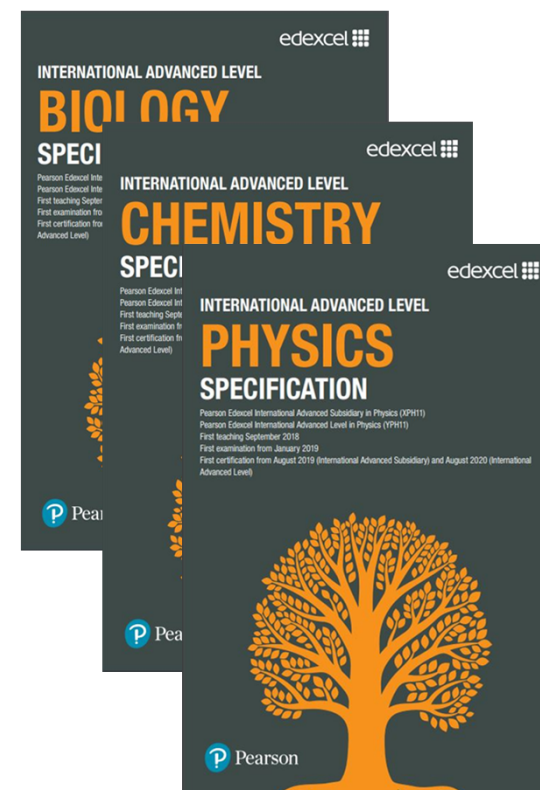
Practical Skills assessed through dedicated units (Unit 3 and Unit 6)

Better consistencies between examinations and use of command words across subjects

Fully modular with Examinations in January, June and October AS contributes to A level

Dedicated textbooks

[Teachingscience@pearson.com](https://www.teachingscience@pearson.com)



Unit availability

Unit	January 2019	June 2019	October 2019	January 2020	June 2020
1	✓	✓	✓	✓	✓
2	x	✓	✓	✓	✓
3	x	✓	✓	✓	✓
4	x	x	x	✓	✓
5	x	x	x	x	✓
6	x	x	x	x	✓
IAS award	x	✓	✓	✓	✓
IAL award	x	x	x	x	✓

- IAS first Award – June 2019
- IAL first Award – June 2020

IAL Physics 2018

Introduction to the new specification

Key Physics 2018 features

We've used your feedback to keep several key features of the legacy qualification, including:

- modular assessment, offered in January, June and October to suit your delivery model
- practical skills will be assessed through an examination both at AS (Unit 3) and at A Level (Unit 6)
- comparable content with the UK GCE A Level – giving comparability between specifications
- a range of question types in exams – testing breadth, as well as depth of knowledge and understanding.

Session 1

Delivering the new Specification

Session 1 Delivering the new specification

Introduction to the new specification

- What it looks like

- How it has changed

- New topics

Approaches to planning the delivery

- Planning for progression over two years

Progression

- From GCSE

- On to university and the workplace

Structure

- Both the International AS and the International A Level in Physics are modular qualifications.
- Three written papers at IAS level (externally assessed).
- Three further written papers at IA2 (externally assessed).
- Students can claim the IAS for completing Units 1-3; and a full International Advanced Level for completing all six units (IAS and IA2 units).

Content changes

- The materials topic has been reduced principally by removing definitions
- Momentum in one dimension & De Broglie equation has moved to AS
- Equation for speed of a transverse wave on a string is added
- Potential introduced to gravitational and electric fields
- Fission and fusion linked to the binding energy per nucleon graph
- Derivations of some equations required
- Huygen's construction, diffraction equation and latent heat all added
- Particle physics section rewritten to make it clear what is required

The Assessment Objectives

		% in IAS	% in IAL
AO1	Demonstrate knowledge and understanding of science.	34-36	32-34
AO2	(a) Application of knowledge and understanding of science in familiar and unfamiliar contexts	34-36	34-36
	(b) (b) Analysis and evaluation of scientific information to make judgements and reach conclusions.	9-11	12-14
AO3	Experimental skills in science, including analysis and evaluation of data and methods.	20	20

Assessment overview

unit	marks	Exam time	Unit code	% of IAS	% of IAL
IAS unit 1	80	1 hour 30 mins	WPH11/01	40	20
IAS unit 2	80	1 hour 30 mins	WPH12/01	40	20
IAS unit 3	50	1 hour 20 mins	WPH13/01	20	10
IA2 unit 4	90	1 hour 45 mins	WPH14/01		20
IA2 unit 5	90	1 hour 45 mins	WPH15/01		20
IA2 unit 6	50	1 hour 20 mins	WPH16/01		10

Assessment availability and first award

Unit	January 2019	June 2019	October 2019	January 2020	June 2020
1	✓	✓	✓	✓	✓
2	✗	✓	✓	✓	✓
3	✗	✓	✓	✓	✓
4	✗	✗	✗	✓	✓
5	✗	✗	✗	✗	✓
6	✗	✗	✗	✗	✓
IAS award	✗	✓	✓	✓	✓
IAL award	✗	✗	✗	✗	✓

From June 2020, all six units will be assessed in January, June and October for the lifetime of the qualifications

From June 2020, IAL and IAS will both be awarded in January, June and October for the lifetime of the qualifications.

New style of questions

AO2b assessed by questions designed to allow candidates to make a conclusion, usually based on calculations.

Quality of written communication questions replace by questions where candidates have to show linkage and lines of reasoning in their answers.

Mathematical requirements

Across the set of AS papers and the set of A2 papers, 40% of the marks must be assessing mathematical skills to level 2 or above.

Approaches to planning the delivery

The table shows the number of specification statements + core practicals for each unit

Unit 1 AS	32 +3
Unit 2 AS	48 + 5
Unit 4 AL	44 + 3
Unit 5 AL	47 +5

Planning the course

There are several factors that will affect the way the course is delivered

- The order of the topics must support the development of the subject as a whole
- The sequence of practical work core practicals and (others) must provide progression of the skills required including, for instance, use of uncertainties
- Will there be one or two teachers?
- In which series of exams are the units sat.
- Modular or linear?
- Look at the [Scheme of Work](#) from the website

Session 2a

Mathematical and Practical skills

Mathematical and Practical Skills

Maths at level 2

- 40% of the marks

Practical Skills

- The core practicals
- Appendix 10
- Integration into teaching and developing competencies
- Resourcing the practicals
- Investigative approaches

Maths Assessment in the IAL

The skill areas

- Arithmetic and numerical computation
- Handling data
- Algebra
- Graphs
- Geometry and trigonometry

These are detailed in Appendix 6 of the specification – page 60
40% of the marks in each set of IAS and IA2 papers, will be for carrying out Maths at level 2 - this is GCSE Higher level.

Practical Skills

The core practicals are

- embedded into the topics
- form an integral part of the teaching
- cover the whole specification
- contain tried and tested procedures
- do not make heavy demands on apparatus resources
- allow students to gain the competencies needed for units 3 & 6.

Practical skills

The core practicals

Mathematical skills linked to the core practicals

Core practical resources

Appendix 10

- Changes in terminology
- Dealing with uncertainties

Session 2b

Overview of the Sample assessment material

Question Papers –in detail

The appendices

- Appendix 8: Data sheet, gives the data that will be provided
- Appendix 7: Equations, gives the formulae that don't need to be memorised
- Appendix 9: Taxonomy, gives the command terms

Question types theory units

Multiple Choice

- These will be in the familiar pattern with four responses of which one is correct.
- The style of these has changed so that there is generally only one thing being tested ie responses are given as uncompleted sums rather than numerical answers thus retaining one step per mark.

Short answer

- The usual calculation (including 'show that' calculations) or short explanation and now perhaps a derivation

Free response

- Some longer answers will require the material to be ordered logically with correct use of technical terms for full marks to be awarded
- Some longer questions will require conclusions to be made or evidence to be evaluated.

Linkage Questions - always 6 marks

These questions assess a student's ability to show a coherent and logical structured answer with linkage and fully-sustained reasoning.

Each question will have 5 or 6 physics points (called indicative content).

The following table shows how the marks are awarded for the number of indicative points in the answer

Number of indicative points seen in answer	Number of marks awarded for indicative points
6	4
5-4	3
3-2	2
1	1
0	0

Marks are then awarded for how the answer is structured and its lines of reasoning

The following table shows how these marks are awarded.

	Number of marks awarded for structure and lines of reasoning
Answer shows a coherent and logical structure with linkage and fully sustained lines of reasoning demonstrated throughout	2
Answer is partially structured with some linkage and lines of reasoning	1
Answer has no linkage between points and is unstructured	0

Questions that assess AO2b

An electric iron rated at 2600 W contains a steel plate which is heated to a working temperature of 215°C. Room temperature is 18°C.

Deduce whether the plate could reach its working temperature in less than 1 minute.

mass of steel plate = 890 g

specific heat capacity of steel = $450 \text{ J kg}^{-1} \text{ K}^{-1}$

(3)

Question types – practical units

Unit 3

No multiple choice

No long planning question (Q7)

50 marks instead of 40

Unit 6

50 marks instead of 40

Otherwise very similar to current specification

Lunch

Session 3

Assessment in the new specification

Exemplar material

Discussion and marking of the new question styles using exemplar material from the June 2016 home GCE series

Plenary Session

Support and Services

Support and services

[Getting Started Guide](#)

[Scheme of work](#)

[Practical Guide](#)

[Mathematics Support](#)

[Transition Guide](#)

[Mapping Guide](#)

[Curriculum Matched Publishing](#)

[Topic Guides](#)

[Exemplar Marked Responses](#)

[Access to scripts](#)

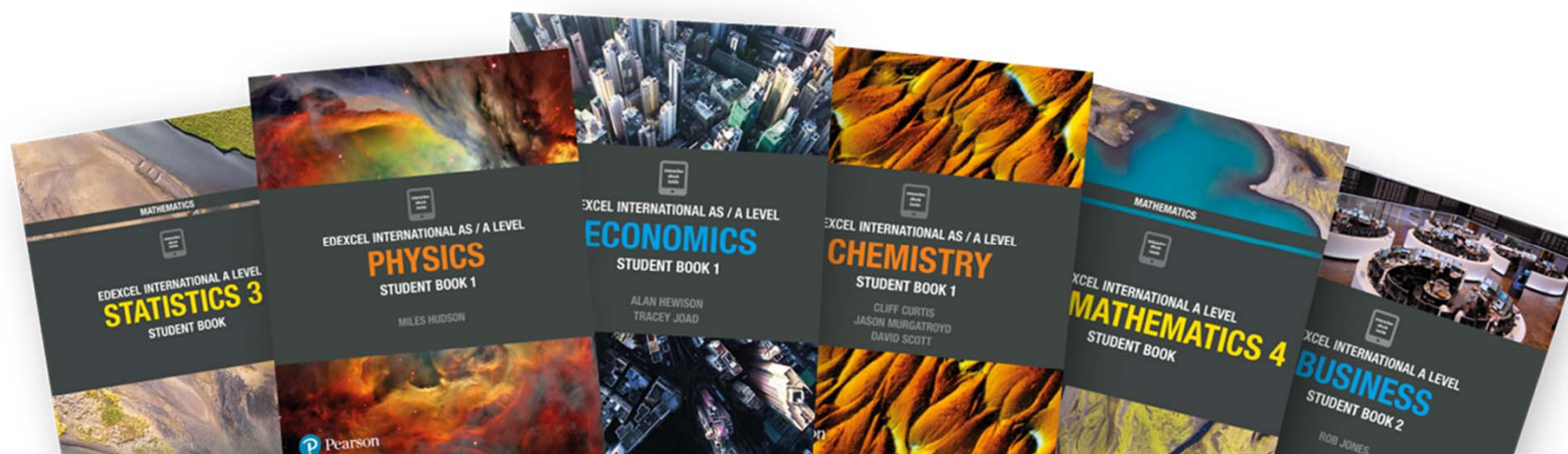
[ResultsPlus](#)

[Exam Wizard](#)

Pearson IAL Science published resources

Developed for the new Pearson Edexcel International A Level (2018) specification, these resources are specifically designed for international students, with a strong focus on progression, recognition and transferable skills, allowing learning in a local context to a global standard.

- 100% curriculum-matched
- Comprehensive textbook
- Exam practice
- Internationally appropriate
- EAL support
- Transferable Skills signposting
- Online e-book
- Teacher support





ResultsPlus is the free online results analysis tool for teachers - it provides analysis features that other similar solutions don't

- Provides a detailed breakdown of student performance in Edexcel exams.
- Helps identify topics where the student can benefit from further learning and allows this knowledge to inform teaching strategies and approaches.
- Provides a comparison of student performance at regional level.
- Allows you to view your school's performance against other Pearson Edexcel schools in your country. You can also find student results analysis from their previous Pearson Edexcel school.
- Mock exams results can also be fed into the system to produce an analysis. So not just post results!
- ResultsPlus Direct gives your students access to their final grades and performance breakdown, wherever they are.
- Schools can sign up for free ResultsPlus account in just a few quick and easy steps: <https://qualifications.pearson.com/en/support/Services/ResultsPlus.html>



ResultsPlus

Grade Performance

- Whole centre
- Department
- Class
- Student

Detailed Analysis

- Performance on each question
- Comparison to Edexcel data

Skills Maps

- Curriculum mapped
- Contextualised performance

Comparison

- by subject
- by class
- by specification
- by centre
- by year

Mock Analysis

- Provides insight
- Develops student learning

Exam Documents

- Exam per
- Mark schemes
- Examiners reports



examWizard is a free tool for teachers containing a bank of past paper questions to help create their own bespoke mock exams and tests to focus on particular topic areas as needed:

- Use existing mark schemes for accurate marking
- Use existing examiner report for insight
- Use the results to understand where students need more support, informing teaching strategies.

Unlike other similar question banks, ExamWizard is:

- Available free to all Edexcel centres
- Updated with latest questions faster, following the exam series
- One stop shop for assessment material with access to whole past papers and examiner reports as well as the ability to construct bespoke ones easily with content tagged to specific attributes.

New Access to Script (ATS) Online Portal

Access to Scripts (ATS) is a free online portal which allows teachers to immediately access electronically marked exam papers

Provides enhanced transparency and

- Offers transparent approach to marking process
- Provides better understanding of marking before requests for enquiries about results are made
- Provides excellent aid for teaching and preparing other cohorts for examinations by helping you to evaluate a student's performance on particular questions in relation to what they have been taught.

Available instantly from results day for all our examination series, for a defined window, you can view and download scripts which have been marked online free of charge from our Self-Service Portal.

For more information on ATS, and the post results windows, visit our post-results pages.



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around the world**

- Connect with other teachers working in international schools and join groups who have shared interests, subjects or location
- Read topical news and articles and share yours
- Advertise jobs at your school or find job opportunities
- Download free resources
- Sign up for events.

Sign up today at:
community.pearsoninternationalschools.com





Progression to university

- Our qualifications are accepted by universities all over the world including top institutions in the UK, United States, Australia, Canada and Singapore.
- Universities recognise and trust the quality of the Pearson Edexcel qualifications and accept them as being comparable to nationally recognised qualifications, offering excellence in learning and achievement.
- Students can equally pursue undergraduate study at a university closer to home as our qualifications are recognised for entry in their region of study.
- We provide a range of free support to help students progress, such as country study guides, case study blogs and interactive webinars.
- We have a proactive programme of student engagement activities such as advice from higher education experts, a specialised website page and social media communities.
- We are closely connected with higher education stakeholders.

Learn more about progression and recognition at:

qualifications.pearson.com/en/support/Services/progress-to-university.html



Other useful links

1. Grade Boundaries

This page shows the minimum marks needed to achieve a certain grade for all UK and international examinations. Also refer to the examiners report which is available for download with other documents.

2. Examination Results Statistics

Results statistics summarise the overall grade outcomes of candidates sitting Pearson Edexcel examinations.



Contact your dedicated Subject Advisor

Your Science Subject Advisor is Stephen Nugus

Email: TeachingScience@pearson.com

Phone: **+44 (0)20 70102190**

Twitter: [@PearsonSciences](https://twitter.com/PearsonSciences)

[Science community](#) – Join the community for a place to chat, share resources and ideas, ask questions and start your own discussions



Please fill in your evaluation forms

**We value your
feedback!**





Thank you for your time

Find out more about us at:
<http://qualifications.pearson.com>