Pearson Edexcel

Your guide to Pearson Edexcel International GCSE (9–1)

Mathematics

First teaching
September 2016

Welcome

Our new suite of Pearson Edexcel International GCSE (9–1) qualifications has been refreshed to meet the needs of you and your students, to keep the content up-to-date and relevant. Designed to understand today's global learner, respect local contexts and ensure a global standard, the suite has been developed to align with UK government intentions to raise standards.

This guide has been designed provide you with in-depth information about the key features of the new Pearson Edexcel International GCSE (9–1) Mathematics A, Mathematics B and Further Pure Mathematics.

Before we go into detail about Mathematics, we wanted to give you an overview of what the overall changes to the Pearson Edexcel International GCSE (9–1) suite of qualifications are.

Why choose Pearson Edexcel International GCSE (9–1)?

With over 3.4 million students, in 97 countries, studying Pearson qualifications worldwide, we offer internationally recognised qualifications to schools, colleges and employers globally. We are also the UK's largest academic and vocational Awarding Organisation.

Our new suite of International GCSE (9–1) qualifications is designed to:

Be more relevant for international students

With more international content, including the addition of further international content topics and the use of local contexts where possible.

Reward outstanding academic achievement

By introducing a new 9–1 grading scale, with the new grade 9 representing a new level of attainment, you can differentiate your top performing students. There's also greater differentiation in the middle of the scale, with three grades (6, 5, and 4) rather than two grades (B and C).

Contain embedded transferable skills

Developing skills such as problem-solving and verbal reasoning, skills that are valued by universities and employers, supporting students to seamlessly progress to higher-level study.

Provide detailed exam analysis with ResultsPlus

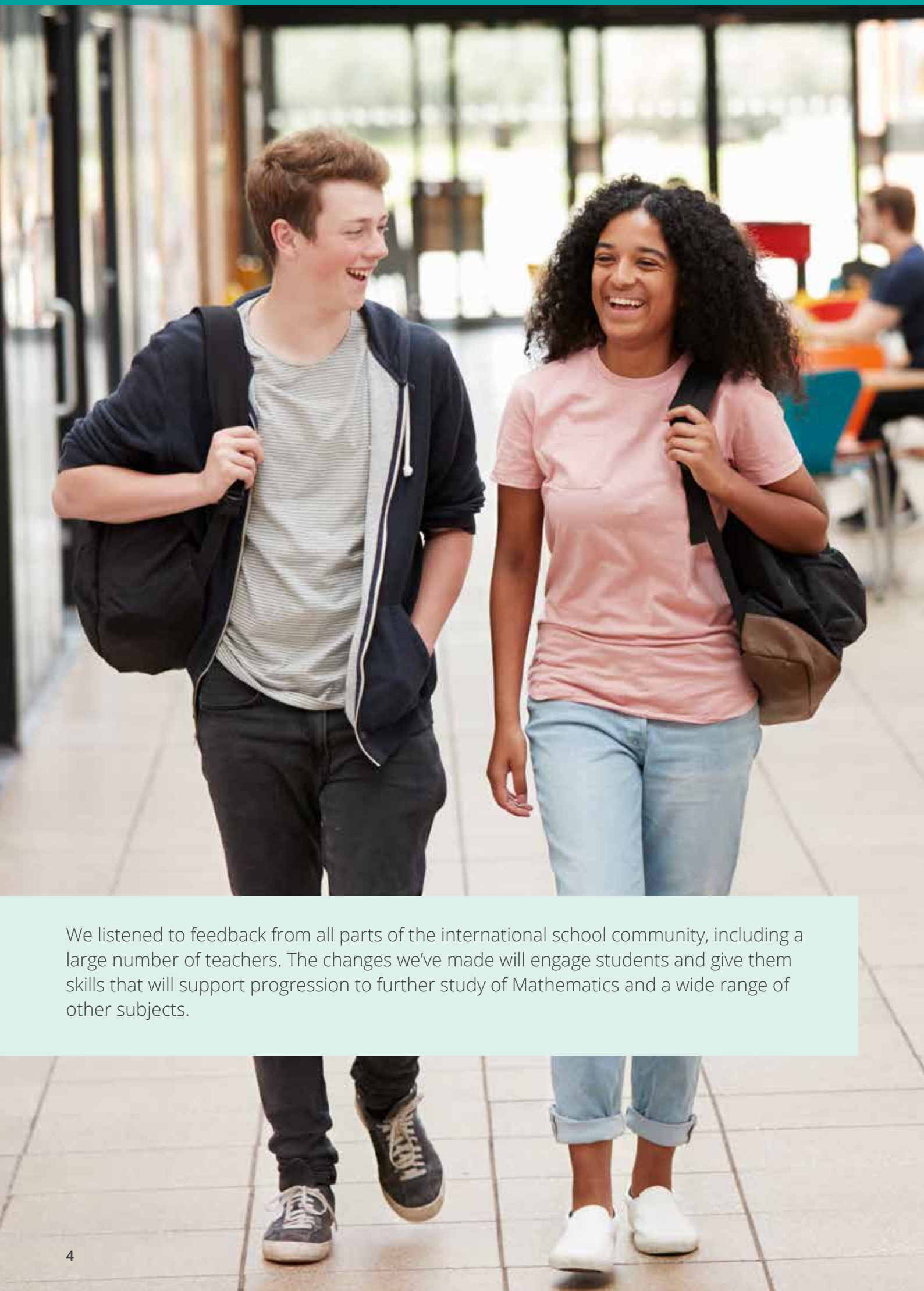
ResultsPlus is a service unique to Pearson that provides free online in-depth mock and actual exam performance analysis, supporting teachers to plan improvements in teaching and learning, driving attainment.

Offer a wider range of teaching and learning materials, resources and training

This support includes schemes of work, Getting Started guides, exemplar materials, ExamWizard, comprehensive textbooks and interactive resources, digital services and tailored teacher training.

Support progression to further study

Developed with the help of teachers and higher-education representatives, they provide seamless progression to further study, including A levels and beyond.



We listened to feedback from all parts of the international school community, including a large number of teachers. The changes we've made will engage students and give them skills that will support progression to further study of Mathematics and a wide range of other subjects.

Why choose Pearson Edexcel International GCSE (9–1) Mathematics qualifications?

Clear and straightforward question papers

Our question papers are clear and provide sufficient challenge and support for students of all ability ranges. Our mark schemes are straightforward so that the assessment requirements are clear.

Reward outstanding academic achievement

To ensure that we fully align with UK government intentions to raise standards, and that international students have the same opportunity to be rewarded for outstanding academic achievement, our new qualifications use a new 9–1 grading scale, instead of the A*–G grading scale that you are used to.

- The new grade 9 represents a new level of attainment and has been introduced to differentiate your top performing students.
- The bottom of the grade 7 broadly aligns with the bottom of the grade A.
- There is also greater differentiation in the middle of the scale with three new grades (6, 5 and 4) rather than two grades (B and C).
- The bottom of the grade 4 broadly aligns with the bottom of the grade C.
- The bottom of the grade 1 broadly aligns with the bottom of the grade G.

Comparable to GCSE

We have designed our Pearson Edexcel International GCSE (9–1) Mathematics A, B and Further Pure Mathematics qualifications to be of a broad equivalent standard to Pearson's regulated Edexcel GCSE qualifications. This ensures that Pearson Edexcel International GCSEs (9–1) are recognised globally and provide learners with the same progression routes.

Broaden and deepen students' skills

We have designed the Pearson Edexcel International GCSE (9–1) Mathematics A, B and Further Pure Mathematics qualifications to extend students' knowledge by broadening and deepening skills, for example:

- Students develop their problem-solving skills by translating problems in mathematical or non-mathematical contexts.
- Students will develop reasoning skills through exercises such as presenting arguments and proofs, and making deductions and drawing conclusions from mathematical information.

Support progression to A Level

Our Pearson Edexcel International GCSE (9–1) Mathematics A, B and Further Pure Mathematics qualifications enable successful progression to A Level and beyond. Through our world-class qualification development process, we have consulted with International Advanced Level and GCE A Level teachers, as well as university professors, to validate the appropriateness of this qualification including the content, skills and assessment structure.

At Pearson Edexcel, we provide Mathematics A, B and Further Pure Mathematics qualifications to offer teachers the choice and flexibility to select a specification that best meets the needs of their learners. Each Mathematics specification has been designed to develop and stretch students in different ways.

A closer look at the Mathematics specifications

Unique features across all 3 Pearson Edexcel International GCSE (9 –1) Mathematics specifications		
Mathematics A	**Mathematics B**	**Further Pure Mathematics**
Tiered papers: Provided at two tiers of entry (Higher and Foundation) that allow students to be entered for a level appropriate to them with questions in each tier that are accessible to students of all abilities within that tier.	**Higher tier only:** To stretch and challenge high-achieving students.	**Higher tier only:** To stretch and challenge high-achieving students.
Equally weighted papers: Feedback from teachers indicates that this is a popular assessment model so we have retained this feature in the new Mathematics A specification to ensure a continuity and familiarity of approach.	**Alternative assessment model, which provides excellent preparation for A level:** Paper 1 is 1.5 hours in length with shorter questions. Paper 2 is 2.5 hours in length with extended answers to more in-depth questions, which is very useful preparation for extended problems encountered at the A Level standard.	**Provides further development for talented students:** Provides an opportunity to stretch strong students and enable them to gain an additional Mathematics qualification. It extends and deepens knowledge covered in the Pearson Edexcel International GCSE (9–1) Mathematics A and B specifications.
Exam resources: A calculator is used and a formulae sheet provided at each tier for both papers, with a small increase in problem-solving and mathematical reasoning in the assessment.	**Exam resources:** A calculator is used and a formulae sheet provided for paper 2.	**A Excellent preparation for A level:** Usually taken by Mathematically gifted students who will progress to GCE A level or International Advanced Level (IAL) Mathematics. This is because the specification topics cover elements of the content that can be found in Core/ Pure units of the GCE A level and IAL Mathematics. Topics include: number, algebra and calculus, geometry and trigonometry. However, it is important to note that this qualification is not compulsory for progression to GCE A level or IAL Mathematics.

Feedback from teachers

Mathematics A specification

The proposed model and assessment questions would certainly support progression to higher levels and secure these qualifications as being rigorous and challenging.

Professor Alison Halstead is the Pro Vice Chancellor for Strategic Academic Developments at Aston University.

Transformations of graphs and solving trigonometric equations are topics that are brand new to this syllabus and will also provide stretch and challenge for higher ability students. These topics however will give students wishing to study A-level Maths a stronger foundation and close the gap between A level and International GCSE.

Jenny Shek, Maths Teacher at Kelletts International School, Hong Kong.

Mathematics B specification

Students passing this qualification could easily progress to Level 3 academic study.

Professor Alison Halstead is the Pro Vice Chancellor for Strategic Academic Developments at Aston University.

Further Pure Mathematics Specification

Students would make the transition to AS and A2 further maths very easily. If students were not going to pursue their maths beyond L2 this qualification would be a significant asset in most other subjects.

Debbie Kennedy, Maths Teacher at an International School.

I particularly welcome a formula sheet for this level as it assesses the students' using and applying skills rather than just recall and knowledge.

Jenny Shek, Maths Teacher at Kelletts International School, Hong Kong.

The differences between Pearson Edexcel International GCSE (9–1) Mathematics A and B

Mathematics A (4MA1)	Mathematics B (4MB1)
Foundation tier (levels 1 – 5) and Higher tier (levels 4 – 9) with an allowable level 3	Higher tier only (levels 4 – 9) with an allowable level 3
2 × 2 hour papers	1 × 1 hour 30 mins paper (Paper 1) 1 × 2 hour 30 mins paper (Paper 2)
Each paper contributes 50% of the qualification	Paper 1 contributes 331/3 % of the qualification Paper 2 contributes 662/3 % of the qualification
2 similar papers with approximately 20 – 25 questions on each paper, with varying marks – those more challenging questions at the end of the paper generally have 6 marks maximum	Paper 1: 26 – 30 questions with varying marks Paper 2: 11–12 questions with varying mark allocations; those at the end can have several parts amounting to 10 – 16 marks as the total for the question
AO2 (assessment objective 2 – shape, space and measures) has a weighting of 22 – 28% [slightly less]	AO2 (assessment objective 2 – shape, space and measures) has a weighting of 27 – 33% [slightly more]
AO3 (assessment objective 3 – handling data) has a weighting of 12 – 18% [slightly more]	AO3 (assessment objective 3 – handling data) has a weighting of 7 – 13% [slightly less]
Higher tier: Cumulative frequency	No cumulative frequency
No matrices	Matrices
No factor theorem or algebraic division of a cubic by a linear factor, Can be asked to expand eg $(x + 3)(x + 2)(x – 1)$	Factor theorem and algebraic division of a cubic by a linear factor
Higher tier: Sequences; know and use nth term = a + $(n – 1)$d and find sum of first n terms of an arithmetic series (S_n)	Sequences - Being able to recognise sequences with a common difference or common integer sequences, and to continue a given sequence
Higher tier: apply to the graph of y = f(x) the transformations y = f(x) + a, y = f(ax), y = f($x + a$), y = af(x) for linear, quadratic, sine and cosine functions & interpret and analyse transformations of functions and write the functions algebraically	Functions but not transformations of graphs

Your guide to assessment timelines

The table below shows each assessment opportunity for Pearson Edexcel International GCSE (9–1) Mathematics A, B and Further Pure Mathematics specifications*.

Mathematics A

	May/June 2018	Jan 2019	May/June 2019
Legacy specification: 4MA0	Final May/June series assessment window	Final ever assessment opportunity	Not available
New specification: 4MA1	Optional first assessment	January series available	May/June series available (Compulsory assessment window for all centres)

Mathematics B

	May/June 2018	Jan 2019	May/June 2019
Legacy specification 4MB0	Final May/ June series assessment window	Final ever assessment opportunity	Not available
New specification: 4MB1	Optional first assessment	January series available	May/June series available (Compulsory assessment window for all centres)

Further Pure Mathematics

	May/June 2018	Jan 2019	May/June 2019
Legacy specification: 4PM0	Final May/ June series assessment window	Final ever assessment opportunity	Not available
New specification: 4PM1	Not available	Not available	May/June series available (Compulsory assessment window for all centres)

*Timelines may vary for UK centres.

Developing transferable skills valued by universities and employers

In recent years, universities and employers have highlighted the need for students and graduates to develop a range of transferable skills, often referred to as 'soft skills', to enable them to better meet the demands of undergraduate study and the world of work.

In fact, universities and employers consider transferable skills to be the largest skills gap overall.

1 in 6

employers have difficulty finding candidates with the skills they require[1]

54%

of companies say that skills shortages impact their ability to serve their customers[2]

1 in 3

skills in a job posting is a "soft skill"[1]

87%

of university professors do not think students have the research skills needed for degree-level study[3]

Redeveloping our International GCSEs has ensured we meet the needs of today's learners to support their progression to universities and employment worldwide. We've embedded transferable skills in the qualifications and resources. This means teachers help students develop these skills while they teach, rather than having to add something additional to their lessons, and students are aware of the skills they're developing. These skills are highly valued by universities and employers.

[1] *Employability - Personal & Social Capability Framework report from Pearson, 2016.*
[2] *Employability report from PSB for Pearson, 2016.*
[3] *Bridging the Gap: Understanding the Differing Research Expectations of First-Year Students and Professors, Meg Raven, Mount Saint Vincent University, 2016.*

Supporting you at every stage

We provide an unparalleled level of support services, tools, resources and training alongside our qualifications, making teachers and students lives easier at every stage.

At a glance: support for you at every stage			
FREE resources and support	**Planning, teaching & learning**	**Exam preparation and assessment**	**Results support**
Getting started guide	✓		
Training events (face-to-face and online)	✓		
Subject advisor support	✓	✓	✓
Free access to **Maths Emporium** website	✓	✓	
Community forums	✓	✓	✓
Schemes of work	✓		
Lesson Plans*	✓		
Skills mapping	✓		
Sample assessment materials	✓	✓	
Examiner reports	✓	✓	✓
Exemplar marked responses	✓	✓	
Past papers		✓	
examWizard		✓	
Mark schemes		✓	
ResultsPlus mock exam analysis		✓	
ResultsPlus		✓	✓
Access to Scripts service (ATS)			✓
Additional online teacher materials	✓	✓	
Additional paid for resources			
Curriculum-matched Student Books with ActiveBooks	✓	✓	
ActiveLearn Digital Service*	✓	✓	
Online Teacher Resource Pack	✓	✓	

*Available for Pearson Edexcel International GCSE (9–1) Mathematics A

Your free subject support

- **Our subject advisors** provide fast, reliable, expert help and aim to answer all emailed questions within 48 hours and resolve 90% of issues phoned in on the first call. Email **TeachingMaths@pearson.com** or call **+ 44 (0)20 7010 2174**
- **Connect with other educators around the world**, share ideas and resources and stay up to date with the latest subject developments by joining our international schools community at **community.pearsoninternationalschools.com**

Offering more advanced support services and tools

Our technology capability also allows us to provide the following unique services and tools to teachers and students:

ResultsPlus provides detailed information on exam performance and a platform to view and compare student results – as individuals or as groups – across the world. It helps with planning improvements in teaching and learning. ResultsPlus Direct is a free online service that gives students a detailed breakdown and comparison of their performance in Pearson Edexcel exams, globally, to help them identify areas of improvement.

examWizard is our free exam preparation tool containing a bank of past Pearson Edexcel exam questions, mark schemes and examiners' reports for a range of subjects. It saves you time by enabling you to create your own mock exams, topic tests, homework or revision activities in minutes and links directly to associated examiner reports and mark schemes!

Access to Scripts Service (ATS) is an online service which allows access to view electronically marked exam papers, free of charge, providing enhanced transparency and support for teachers to evaluate a student's performance on particular questions in relation to what they have been taught.

Awarding reliability. We use ePEN, our unique, image-based marking system ensuring real time monitoring, quality control and reporting to ensure the highest quality marking and provision of data for tools such as ResultsPlus. Pearson Edexcel exam marking processes have been proven to produce the most reliable results. This demonstrates that our qualifications maintain the highest standards and can be relied upon to deliver to expectation.

Stay Informed

Sign up for regular eNews updates for the latest news and information on your subject **quals.pearson.com/edexcel-internationalgcseenquiry**

Feedback from teachers on our qualifications support

> One of the good features of ResultsPlus is that it provides the top ten questions that students scored poorly in, so we as the lecturers can actually identify the topics that students found difficult and can incorporate a different approach when teaching our current students.

Dr Khong Yoke Kum, Chemistry Lecturer,
A levels Department, HELP Academy, Malaysia.

> Because of ResultsPlus, students can learn about their mistakes and rectify.

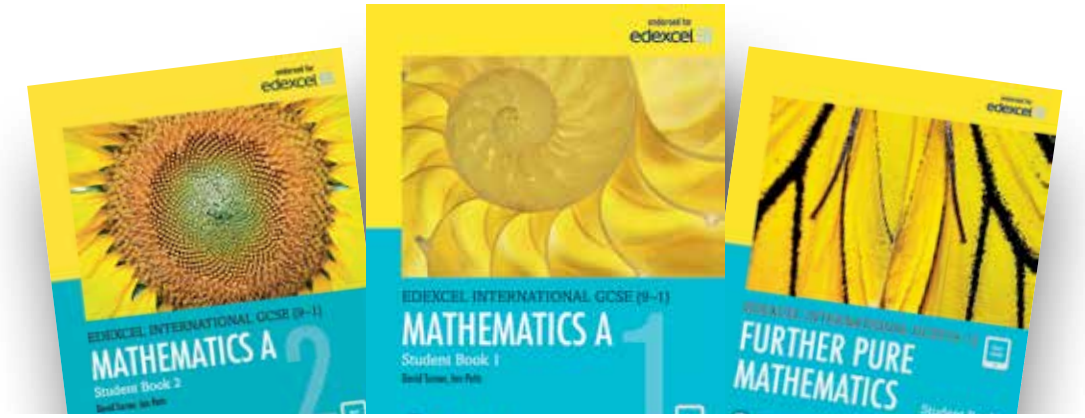
Kanagambigai, Chief Counsellor,
Chemistry Lecturer, A levels Department,
HELP Academy, Malaysia commenting on
the ResultsPlus mocks service.

> I used the website with its course outlines, past papers, summaries of key points, revision notes and mark schemes... they provide great tips about possible exam questions and how you could answer them.

Alexia Kattavenos, student, The Nicosia Grammar School, Cyprus

Published resources

Developed for Mathematics A and Further Pure Mathematics, these completely new resources have progression, international relevance and support at their core. They provide comprehensive coverage of the new specifications and are designed to support students with the best preparation possible for the examination.



Specifically developed for international learners, with appropriate international content.

The **new 9–1 grading scale** ensures a consistent international standard of qualification, allowing learners to progress further and achieve their full potential.

Each Student Book will provide access to an **ActiveBook**, a digital version of the Student Book, which can be accessed online, anytime, anywhere, ideal for learning beyond the classroom, revision and exam practice.

Transferable skills, needed for **progression** into higher education and employment, are embedded throughout and explicitly signposted, allowing students to understand, and engage with, the skills they're gaining.

English language focused content, checked by an EAL (English as an Additional Language) specialist, addresses the needs of EAL students with carefully graded writing to B2/C1 level (CEFR) and a glossary provided of specialist vocabulary.

The new ActiveLearn Digital Service (for Mathematics A) brings together your planning, teaching and assessment across one service, saving you valuable time. Online teacher resource (Further Pure Mathematics) provide easy access to additional support.

Exam Practice tests and exam-style questions cover the whole chapter and provide quick, effective feedback on students' progress and gets them accustomed to what they'll see in the exam.

Chapter summaries state the most important points in each chapter and aid revision.

You do not have to purchase our published resources, or endorsed resources from any other publisher, to deliver our qualifications. For details of all available published resources, please visit qualifications.pearson.com

Pearson Edexcel International GCSE (9–1) Mathematics A

Title	ISBN
Student Book and ActiveBook 1	978 0 435181 44 4
Student Book and ActiveBook 2	978 0 435183 05 9
ActiveLearn Digital Service Subscription: Small*	978 0 435183 09 7
ActiveLearn Digital Service Subscription: Medium*	978 0 435183 08 0
ActiveLearn Digital Service Subscription: Large*	978 0 435183 07 3
ActiveLearn Digital Service Subscription: Extra large*	978 0 435183 06 6
ActiveLearn Digital Service Subscription: Super*	978 0 435183 11 0

**Identify which tier your school size matches: Small school is fewer than 100 pupils, medium school is 101–300 pupils, large school is 301–500 extra large school is 501-999 pupils and super school is 1000+ pupils.*

Pearson Edexcel International GCSE (9–1) Further Pure Mathematics

Title	ISBN
Further Pure Mathematics Student Book and ActiveBook	978 0 435188 54 2
Further Pure Mathematics Online Teacher Resource Pack	978 0 435191 21 4

Learn more at www.pearsonglobalschools.com

> **I decided to take Edexcel International GCSEs as they are accepted by institutions around the world for higher studies. The course is modern, well structured & examinations based. Thanks to my ever supporting parents, school, teachers and Edexcel for helping me to gain a world-class qualification.**

Ashfaq Faiz, Riyadh, Saudi Arabia

About Pearson Edexcel

At the core of everything we do at Pearson is the desire to make a measurable impact on improving people's lives through learning. From primary school to secondary school, through to professional certification; our qualifications help educate millions of people worldwide.

Foundations for success

Pearson Edexcel International GCSE (9–1) is part of the iProgress family for ages 5 to 19, which also includes iPrimary, iLowerSecondary and International A Level (IAL). We offer more than just a qualification. With professional development training that keeps teachers up-to-date with the latest educational practices, supporting materials that make planning and teaching lessons easier, and student textbooks and online resources, you'll have more time to focus on the individual development of your students' progress.

Progress to further study and beyond

Developed with the help of teachers and higher-education representatives, they provide seamless progression to further study, including A Levels and beyond.

Find out more

To find out more about our Pearson Edexcel International GCSE (9–1) qualifications, visit our website,
quals.pearson.com/edexcel-internationalgcse

Or complete our online form to request a local consultant to contact you,
quals.pearson.com/edexcel-internationalgcseenquiry

Pearson Edexcel