



Getting Ready to Teach International GCSE Mathematics Modular

Welcome to this Professional Development Training

Designed for teachers teaching or who are looking to teach the Pearson Edexcel International GCSE Mathematics Modular Specification.

- To explore the content of International GCSE mathematics A Modular Specification
- To look at how assessment objectives lead to the way examination questions are designed
- To see how our mark schemes recognise complete and partial achievement
- To look at examiner reports and how to use them.
- To look at planning a course of study using the resources on the Pearson website.
- Network, discuss best practice and share ideas with other teachers

Welcome to Pearson

Welcome to Pearson Edexcel

We are the world's leading learning company and as the **UK's largest awarding organisation**, best placed to provide qualifications aligned to the British

Our international **heritage stretches back over 150 years**.

Today, we partner with schools, universities and employers worldwide, offering world-class, globally-recognized qualifications to over **3.5 million students a year**.



6,500

Trusted and recognized qualifications partner to 6,500 schools, colleges and employers globally.

10 million

We mark over 10 million exam scripts on behalf of the UK Department for Education each year.

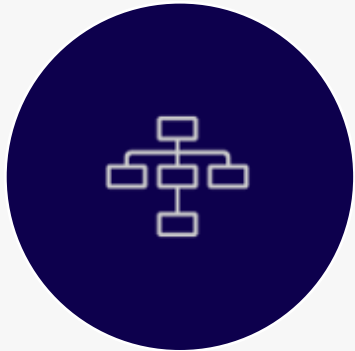
70

We operate in 70 countries worldwide.

Introducing International GCSE Modular

The two different routes of Assessment

If you're happy with the linear approach, there is no pressure to move to the modular route; our linear International GCSEs will continue to be offered and taken widely by students around the world.



Modular route

Unit assessments can be taken over multiple exam series.

Grades are calculated on raw marks which are then converted to a UMS (Uniform Mark Scale).

Students can re-sit individual units in any exam series.

Once a student has all their unit results, they can 'cash in' these results for their grade.

A modular route is only offered by Pearson Edexcel at International GCSE

Linear route

Assessments for all units are taken together in one exam series.

Grades are calculated on raw marks only.

Students can re-sit assessments for all units together in one exam series.

The grade students receive are calculated at the end of the exam series in which they sat their assessments.



Modular exam structure

The modular and linear approach contain the same content, but the modular approach breaks the journey into two units with an exam at the end of each unit.

Unit 1	Unit 2
Foundation Tier <ul style="list-style-type: none">• Duration: 2 hours• Total number of marks: 100• Weighting: 50%• Grad range: 5-1	Foundation Tier <ul style="list-style-type: none">• Duration: 2 hours• Total number of marks: 100• Weighting: 50%• Grad range: 5-1
Higher Tier <ul style="list-style-type: none">• Duration: 2 hours• Total number of marks: 100• Weighting: 50%• Grad range: 9-4 with an allowable grade 3	Higher Tier <ul style="list-style-type: none">• Duration: 2 hours• Total number of marks: 100• Weighting: 50%• Grad range: 9-4 with an allowable grade 3
For each unit exam, a formulae sheet will be included, and the use of a calculator is permitted.	
Approximately 40% of questions are the same across Foundation and Higher Tier papers.	

Modular content summary

The modular and linear approach contain the same content, but the modular approach breaks the journey into two units with an exam at the end of each unit.

Unit 1	Unit 2
Number (AO1) <ul style="list-style-type: none"> • Basic number skills • Standard form • Limits of accuracy • Surds and indices 	Number (AO1) <ul style="list-style-type: none"> • Ratio and proportion • Percentage skills • Standard form • Repeated percentage change
Algebra (AO1) <ul style="list-style-type: none"> • Basic algebra skills • Set notation • Plotting graphs • Solving basic quadratics $x^2 + bx + c = 0$ • Solving quadratics $ax^2 + bx + c = 0$ • Completing the square • The quadratic formula 	Algebra (AO1) <ul style="list-style-type: none"> • Inequalities • Simultaneous equations • Sequences • Change of subject • Algebraic proof • Direct and inverse proportion • Summation of arithmetic series • Function notation and transformations • Differentiation
<p>Topics in black: studied by both Foundation and Higher Tiers students Topics in red: studied by Higher Tier students only.</p>	

Modular content summary, cntd.

The modular and linear approach contain the same content, but the modular approach breaks the journey into two units with an exam at the end of each unit.

Unit 1	Unit 2
<p>Shape, Space and Measure (AO2)</p> <ul style="list-style-type: none">• Properties and areas of shapes• Trigonometry• Pythagoras' theorem• Compound measures (speed, density)• Sine and Cosine rule• Sine area of a triangle• 3D Pythagoras' theorem	<p>Shape, Space and Measure (AO2)</p> <ul style="list-style-type: none">• Angles in polygons and circles• Symmetry• Constructions• Volume• Similarity• Transformations• Circle theorems• Similar area and volume• Vectors
<p>Handling Data (AO3)</p> <ul style="list-style-type: none">• Basic probability• Tree diagrams• Conditional probability• Histograms	<p>Handling Data (AO3)</p> <ul style="list-style-type: none">• Statistical measure• Cumulative frequency diagrams
<p>Topics in black: studied by both Foundation and Higher Tiers students Topics in red: studied by Higher Tier students only.</p>	

Teaching in a Modular Way

You may want to change the way you teach the International GCSE Mathematics A Specification Content if you take the Modular route for assessment.

- To support your planning and teaching of the course, we are producing **course planners, editable schemes of work** and **Getting Started Guide**.
- First teaching for International GCSE Mathematics A (Modular) was September 2024
- First assessment of International GCSE Mathematics A (Modular) was May/June 2025

Modular Maths Specification

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

Pearson Edexcel International GCSE (9–1)

Sample assessment material for first teaching September 2024

Time 2 hours

Paper reference 4WM1F/01

Mathematics A (Modular)

UNIT 1F

Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided – there may be more space than you need.
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page. Anything you write on the formulae page will gain NO credit.


Information

- The total mark for this unit is 100.
- The marks for **each** question are shown in brackets – use this as a guide as to how much time to spend on each question.

Advice


- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

19A



5 8 1 5 4 9 A 0 1 2 8

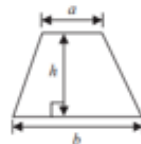
Turn over >



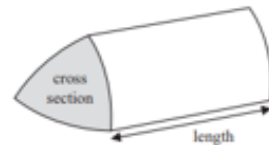
International GCSE Mathematics

Formulae sheet – Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$

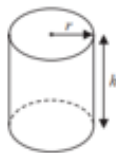


Volume of prism = area of cross section \times length



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi r h$



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT W

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Answer ALL TWENTY FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Nav found the following table that shows the age, in years, of each of seven cities.

City	Age (years)
Cadiz	3124
Suzhou	2534
Jenin	4469
Nanjing	2516
Gaziantep	5669
Alexandria	2351

(a) Write down the name of the city with the greatest age.

(1)

(b) Write the number 2534 in words.

(1)

(c) Write the number 2351 correct to the nearest ten.

(1)

(d) Work out the difference between the age of Cadiz and the age of Nanjing.

_____ years

(1)

A millennium is 1000 years.

(e) What is the age of Jenin in whole millenniums?

_____ millenniums

(1)

(Total for Question 1 is 5 marks)

Re-sits for Modular International GCSE

- Learners can re-sit either unit irrespective of whether the qualification is to be cashed in.
- If a learner resits a unit more than once, only the better of the two most recent attempts of that unit will be available for aggregation to a qualification grade.
- Results of units will be held in Pearson Edexcel's unit bank for as many years as this specification remains available.
- Once International GCSE in Mathematics A (Modular) has been certificated, all unit results are deemed to be used up at that level. These results cannot be used again towards a further award of the same qualification at the same level.

Tiering Options–

Modular International GCSE

Tiering Options

Year 10 Summer

Higher Unit 1

Autumn Year 11

Foundation Unit 1

Summer Year 11

Foundation Unit 2
Or
Higher Unit 2

Year 10 Summer

Foundation Unit 1

Autumn Year 11

Higher Unit 1

Summer Year 11

Foundation Unit 2
Or
Higher Unit 2

Uniform Mark Scale (UMS)

Unit grade	Maximum uniform mark	9	8	7	6	5	4	3	2	1	U
Unit 1F or 2F	120					60	48	36	24	12	0
Unit 1H or 2H	120	108	96	84	72	60	48	42			

Qualification grade	Maximum uniform mark	9	8	7	6	5	4	3	2	1	U
Foundation Tier	240					120	96	72	48	24	0
Higher Tier	240	216	192	168	144	120	96	84			

Specification

Edexcel International GCSE courses

In Edexcel examinations this means that the specification includes details of:

The mathematical facts and skills that must be learned.



Content

The way in which the student will have to demonstrate what they have learned.

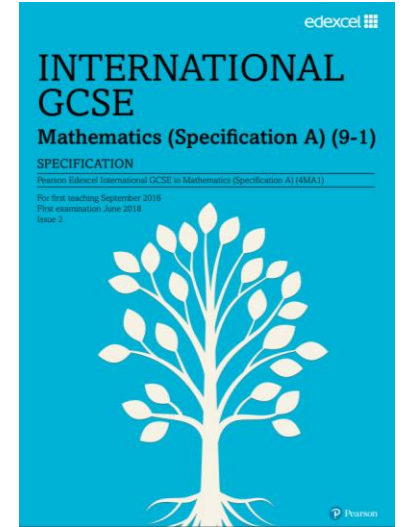


Assessment
Objectives

Edexcel International GCSE courses

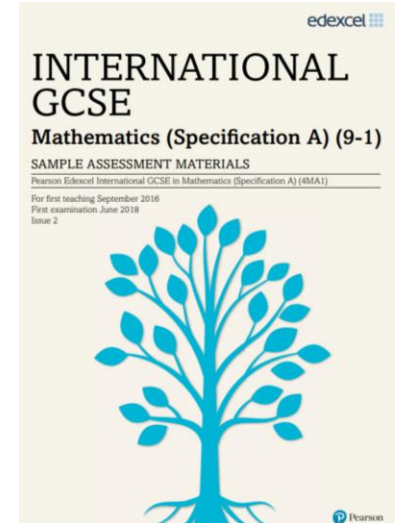
Specification

- The specification is the main document you need to teach the course.
- It outlines the aims of the course, the content you **MUST** cover and all the information you need about assessing your students.
- A copy of this document is in your online pack and on our website.



SAMs

- SAMs is short for Sample Assessment Materials. This document is just as important as the specification.
- The SAMs are examples of the question papers and mark schemes and show the question types and how they will be marked by the examiners.
- We base all of our future papers and assessments on these Sample Assessment Materials.



Using the specification

Content

1 4MA1 – Foundation and Higher tier

This is arranged as six broad topics arranged into sub-topics as appropriate. As a minimum all the content must be taught in each tier. A column for additional notes is included to clarify the detail of what must be covered.

1 Numbers and the number system

What learners need to study:		Notes
1.1 Integers	A understand and use integers (positive, negative and zero)	
	B understand place value	
	C use directed numbers in practical situations	e.g. temperatures
	D order integers	
	E use the four rules of addition, subtraction, multiplication and division	
	F use brackets and the hierarchy of operations	
	G use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'	
	H identify prime factors, common factors and common multiples	
1.2 Fractions	A understand and use equivalent fractions, simplifying a fraction by cancelling common factors	$\frac{8}{60} = \frac{2}{15}$ in its simplest form (lowest terms)
	B understand and use mixed numbers and vulgar fractions	

Foundation tier covers grades 1 to 5

Higher Tier covers grades 4 to 9*

Note: Higher tier assumes complete knowledge of the Foundation content.

Assessment

How the content is assessed

Our examinations are constructed by a senior team of experienced examiners'

They consider aspects of assessment such as:

- Content
- Assessment objectives
- Problem solving and mathematical communication
- Mark schemes
- Grading – the demand of questions

What are assessment objectives?

4MA1

A01 – Demonstrate knowledge of facts, techniques and relationships in:

- Numbers and the number system
- Equations, formulae and identities
- Sequences, functions and graphs

(57 – 63%)

A02 – Demonstrate knowledge of facts, techniques and relationships in:

- Geometry
- Vectors and transformation geometry

(22 – 28%)

A03 – Demonstrate knowledge of facts, techniques and relationships in:

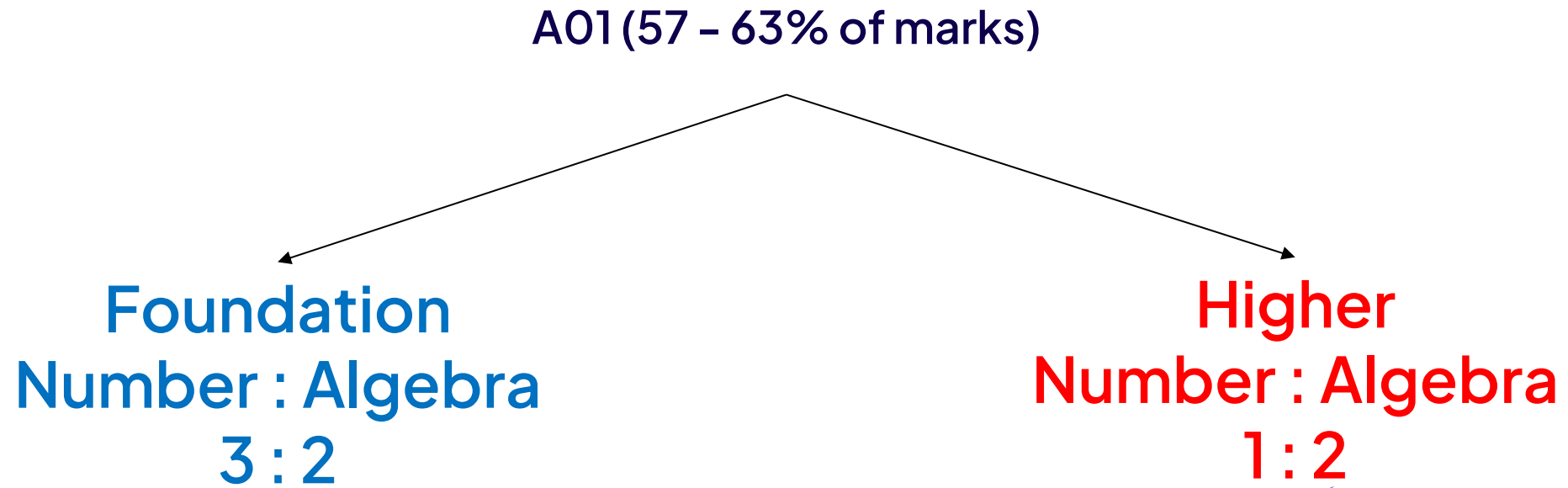
- Statistics and probability

(12 – 18%)

Relationship of assessment objectives to papers

4MA1	Assessment objective		
	AO1	AO2	AO3
Unit 1	28.5–31.5%	11–14%	6–9%
Unit 2	28.5–31.5%	11–14%	6–9%
Total for International GCSE	57–63%	22–28%	12–18%

A01 Split for Foundation and Higher



This split could be a factor in helping to decide whether a student is a Foundation or Higher candidate. The greater emphasis on Algebra is preparation for progression to A level.

Structure of 4MA1 papers 1F and 2F

Content	Assessment
<p>Assesses all the content in the specification.</p> <p>Questions may come from any topic area from the Assessment Objectives across the specification (including questions that address more than one topic).</p>	<p>Each paper:</p> <ul style="list-style-type: none">• Is assessed through a 2-hour examination set and marked by Edexcel.• Is weighted at 50 % of the qualification.• Targets grades 1 – 5• Has around 20 – 25 questions with varying mark allocations which will be stated .• Has a total number of marks of 100.• Allows the use of a calculator is allowed.• Is ramped in demand

Structure of 4MA1 papers 1H and 2H

Content	Assessment
<p>Assesses all the content in the specification.</p> <p>Questions may come from any topic area from the Assessment Objectives across the specification (including questions that address more than one topic).</p>	<p>Each paper:</p> <ul style="list-style-type: none">• Is assessed through a 2-hour examination set and marked by Edexcel.• Is weighted at 50 % of the qualification.• Targets grades 4 – 9• Has around 20 – 25 questions with varying mark allocations which will be stated .• Has a total number of marks of 100.• Allows the use of a calculator is allowed.• Is ramped in demand

Mark allocation of grades 4MA1

Higher Tier

- 40% marks distributed evenly over grades 4 & 5
- 60% of marks distributed evenly over grades 6, 7, 8 & 9

Foundation tier

- All marks distributed evenly over grades 1, 2, 3, 4 & 5

What types of questions are asked – a summary

4MA1

- Short answer questions
- Extended response questions which generally have a maximum of 6 marks
- Problem solving and reasoning questions

An example of a grade 4/5 question

26 The diagram shows a roof support.

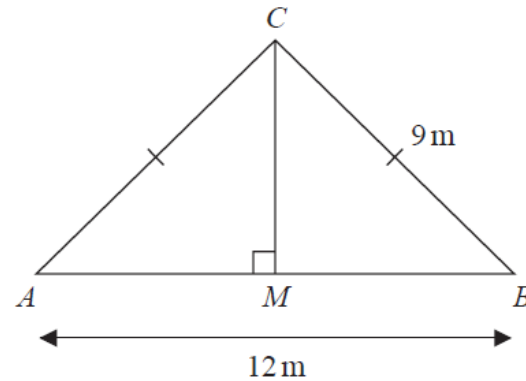


Diagram **NOT**
accurately drawn

This question was on
both F tier and H tier.

The roof support is made from four lengths of wood, AB , AC , BC and MC

$$AC = BC = 9 \text{ m} \quad AB = 12 \text{ m}$$

$$\text{angle } AMC = 90^\circ$$

Lewis is going to buy lengths of wood to make the roof support.

The wood costs 21.50 euros per metre.

Each length of wood he buys has to be a whole number of metres.

Work out the total cost of the wood Lewis needs to buy.

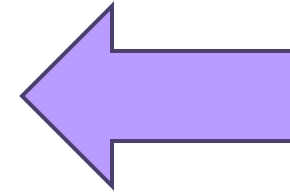
Show your working clearly.

An example of a grade 8 question

22 The straight line **L** has equation $x + y = 5$

The curve **C** has equation $2x^2 + 3y^2 = 210$

Find the coordinates of the points where **L** and **C** intersect.
Show clear algebraic working.



This question was
only on H tier.

Activity 1

- Work through the grade 5 question shown and then the grade 8 question.
- What skills are being assessed?
- Do they represent problem solving?
- Are you convinced about the claim that the level 8 question is a good preparation for A level?

Mathematical Skills

4MA1 – overarching mathematical skills

As well as testing knowledge of the content of the course students are assessed on their ability to:

- Solve problems both in a mathematical setting and in a practical setting
- Show reasoning, interpreting and communication skills.

4MA1 – overarching mathematical skills

Relationship of problem solving and mathematical reasoning skills to papers.

Paper	Problem Solving	Reasoning, interpretation and communication
Foundation (1F and 2F)	25%	15%
Higher (1H and 2H)	30%	20%

4MA1 – overarching mathematical skills

Problem solving

450 students were asked how they travelled to school on Monday.
Each student walked or travelled by bus or travelled by car or travelled by bicycle.
Each student used just one method of travel.

One of these students is chosen at random.

The table shows information about the probability of each method of travel.

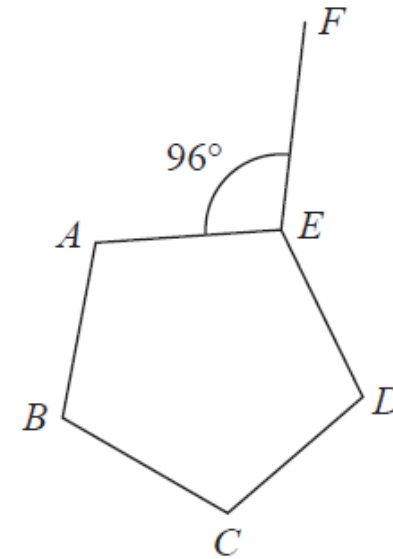
Method of travel	walk	bus	car	bicycle
Probability	0.20	x	$2x$	0.26

Work out how many of the 450 students travelled by car.

4MA1 – overarching mathematical skills

Show reasoning, interpreting and communication skills.

In the diagram, $ABCDE$ is a regular pentagon.



Angle $AEF = 96^\circ$

Work out the size of the obtuse angle FED
Show your working clearly.

Activity 2

- **Work through the previous two questions.**
- **Make a note of any issues that occur to you**

4MA1 – overarching mathematical skills

450 students were asked how they travelled to school on Monday.
Each student walked or travelled by bus or travelled by car or travelled by bicycle.
Each student used just one method of travel.

One of these students is chosen at random.

The table shows information about the probability of each method of travel.

Method of travel	walk	bus	car	bicycle
Probability	0.20	x	$2x$	0.26

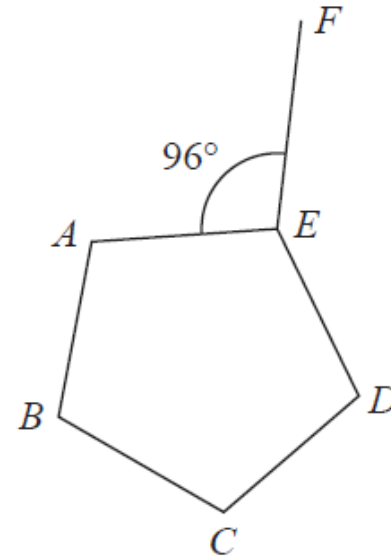
Work out how many of the 450 students travelled by car.

A plan for this is:

- Use the fact that the sum of the probabilities is 1 to find x
- Double the value of x
- Multiply this by 450

4MA1 – overarching mathematical skills

In the diagram, $ABCDE$ is a regular pentagon.



Angle $AEF = 96^\circ$

Work out the size of the obtuse angle FED
Show your working clearly.

One possible plan is:

- Work out the interior angle of this pentagon
- Add this to 96
- Subtract the answer from 360

**How do I make sure I cover
all of the content?**

Planning the course and lessons

How do I make sure I cover all the content?

- Specification
- Year planners
- Lesson Plans
- Schemes of Work for 4MA1 are published in Word so that they can be adapted to your school.
- Approved textbooks

Qualification aims and objectives

Qualification aims and objectives

The Pearson Edexcel International GCSE in Mathematics (Specification A) qualification enables students to:

- develop their knowledge and understanding of mathematical concepts and techniques
- acquire a foundation of mathematical skills for further study in the subject or related areas
- enjoy using and applying mathematical techniques and concepts, and become confident in using mathematics to solve problems
- appreciate the importance of mathematics in society, employment and study.

An example from the specification (4MA1)

1 Numbers and the number system

	Students should be taught to:	Notes
1.1 Integers	A understand and use integers (positive, negative and zero)	
	B understand place value	
	C use directed numbers in practical situations	e.g. temperatures
	D order integers	
	E use the four rules of addition, subtraction, multiplication and division	
	F use brackets and the hierarchy of operations	
	G use the terms 'odd', 'even', 'prime numbers', 'factors' and 'multiples'	
	H identify prime factors, common factors and common multiples	
1.2 Fractions	A understand and use equivalent fractions, simplifying a fraction by cancelling common factors	$\frac{8}{60} = \frac{2}{15}$ in its simplest form (lowest terms)
	B understand and use mixed numbers and vulgar fractions	
	C identify common denominators	

This is the content that must be taught.

Examples clarifying the content.

Scheme of work



Pearson International GCSE in Mathematics (Specification A) (4MA1)

Two-year Scheme of Work

For first teaching from September 2016

Year Planner

This is the module planner from the Scheme of Work – International GCSE mathematics Specification A

Unit	Title	Specification Reference	Estimated teaching hours
20	Polygons	4.2A recognise and give the names of polygons	5
		4.2D understand the term 'regular polygon' and calculate interior and exterior angles of regular polygons	
		4.2E understand and use the angle sum of polygons	
21	Compound measures	4.4F understand and use the relationship between average speed, distance and time	5
		4.4G use compound measure such as speed, density and pressure	
22	Perimeter, area and volume	4.9B find the perimeter of shapes made from triangles and rectangles	6
		4.9C find the area of simple shapes using the formulae for the areas of triangles and rectangles	
		4.9D find the area of parallelograms and trapezia	
		4.10C find the surface area of simple shapes using the area formulae for triangles and rectangles	
		4.10E find the volume of prisms, including cuboids and cylinders, using an appropriate formula	
23	Circles and cylinders	4.6A recognise the terms 'centre', 'radius', 'chord', 'diameter', 'circumference', 'tangent', 'arc', 'sector' and 'segment' of a circle	6
		4.6B understand chord and tangent properties of circles	
		4.9E find circumferences and areas of circles using relevant formulae; find perimeters and areas of semicircles	
		4.10D find the surface area of a cylinder	
		4.10E find the volume of prisms, including cuboids and cylinders, using an appropriate formula	

An example of a lesson plan from the Scheme of Work

Problem solving and reasoning are embedded

Common misconceptions

Teaching approach idea

7. Degree of accuracy

Teaching time

3-5 hours

OBJECTIVES

1 J	e.g. identify upper and lower bounds where values are given to a degree of accuracy
	solve problems using upper and lower bounds where values are given to a degree of accuracy

POSSIBLE SUCCESS CRITERIA

Round 16,000 people to the nearest 1000

Round 1100 g to 1 significant figure.

Work out the upper and lower bounds of a formula where all terms are given to 1 decimal place.

Be able to justify that measurements to the nearest whole unit may be inaccurate by up to one half in either direction.

OPPORTUNITIES FOR REASONING/PROBLEM SOLVING

This sub-unit provides many opportunities for students to evaluate their answers and provide counterarguments in mathematical and real-life contexts, in addition to requiring them to understand the implications of rounding their answers.

COMMON MISCONCEPTIONS

Students readily accept the rounding for lower bounds, but take some convincing in relation to upper bounds.

NOTES

Students should use 'half a unit above' and 'half a unit below' to find upper and lower bounds. Encourage use of a number line when introducing the concept.

EXAMPLE QUESTIONS FROM SAMs: 01 Q 8

Mark Schemes and Examiner Reports

Mark Schemes

What are mark schemes?

- These give the answers to the questions
- They often give a range of responses a student might give
- They also advise markers of common errors
- Examiners use the mark scheme positively and look to reward marks for correct work seen rather than penalise candidates for what is not seen.
- They are an important resource for teachers where you can see exactly how each mark is awarded and what it is awarded for.

What types of marks are awarded?

M marks – are Method marks. In the case of a single method mark, the whole method must be complete for the award of the mark.

A marks – are Accuracy marks. This mark is awarded for the correct answer. The A mark is, however, dependent on the corresponding M mark being awarded.

If the correct answer comes from an incorrect method, in which case the M mark is not awarded, then the A mark will also not be awarded.

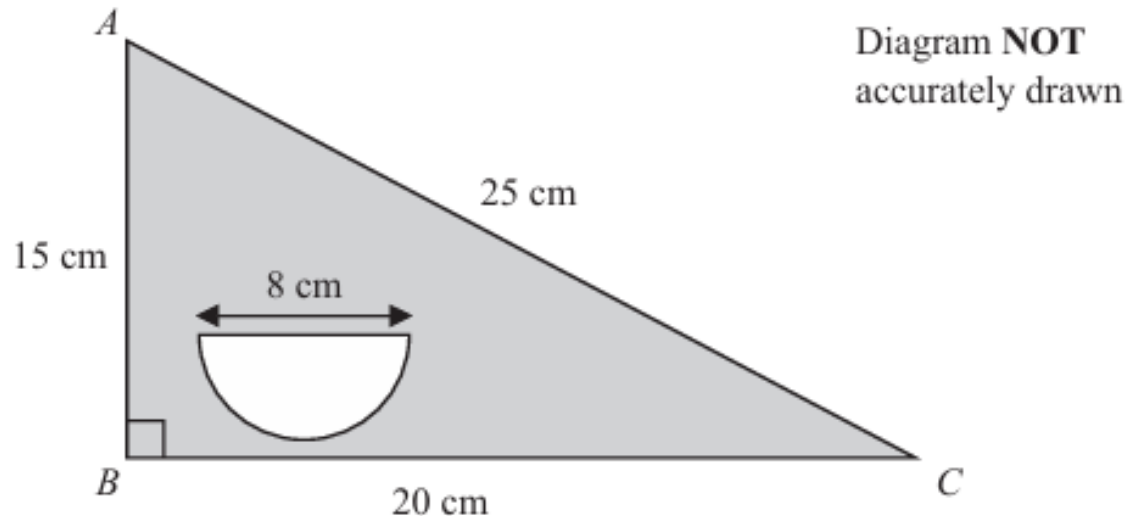
B marks – are independent marks. They are awarded for a correct answer seen. These marks are often used in questions with the command 'write down', where the answer is not the result of a calculation or method.

Typically, 55 – 60 M
25 – 30 A
15 – 20 B

What is in a mark scheme?

When constructing a mark scheme, the exam writer will be thinking about the overall strategy a successful student will use to answer the question:

4 The diagram shows triangle ABC and a semicircle.



$AB = 15\text{ cm}$ $BC = 20\text{ cm}$ $AC = 25\text{ cm}$ angle $ABC = 90^\circ$

The diameter of the semicircle is 8 cm

Work out the area of the region shown shaded in the diagram.
Give your answer correct to 3 significant figures.

Paper 1H Mod International
GCSE

A possible strategy is:

- Calculate the area of the triangle.
- Calculate the area of the semicircle.
- Find the difference in areas and write down the answer

What is in a mark scheme?

4	$\frac{15 \times 20}{2} (=150)$		3	M1 use of the correct figures for area of the triangle The first two M1 marks can be awarded in either order
	$\frac{\pi \times 4^2}{2} (=8\pi = 25.1\dots)$			M1 (indep) for a correct method to find the area of the semicircle using correct figures allow use of 3.14... or $\frac{22}{7}$ for π The first two M1 marks can be awarded in either order
	<i>Correct answer scores full marks (unless from obvious incorrect working)</i>	125		A1 awrt 125
				Total 3 marks

How do they all fit together?

- Senior examiners will use the content and assessment objectives to devise the questions and the mark schemes.
- The exam paper will not only satisfy the percentage of content in the assessment objectives, but also the percentage of questions for each grade.
- The following two slides show a question and its mark scheme.

How do they
all fit
together?

(b) Solve $\frac{2x+3}{5} + \frac{6x-5}{4} = \frac{163}{100}$

Show clear algebraic working.

4 marks

What is in a mark scheme?

eg $\frac{4(2x+3)+5(6x-5)}{20} (=1.63)$ oe or $\frac{40x+60}{100} (+) \frac{150x-125}{100} \left(= \frac{163}{100} \right)$ oe $4(2x+3) + 5(6x-5) = 1.63 \times 5 \times 4$ oe		4	M1	Writing fractions over a common denominator (can be 2 fractions) or for a method to remove the denominator by multiplying each term by eg 20 or 100 etc (if expanded numerator, allow one error) or $20(2x+3) + 25(6x-5) = 163$ (could all be written over 100)
eg $8x + 12 + 30x - 25 = 32.6$ or $40x + 60 + 150x - 125 = 163$ or $\frac{190x-65}{100} = \frac{163}{100}$ or $\frac{38x-13}{20} = \frac{163}{100}$ oe			M1	Removing brackets and fractions on the LHS in an equation with no more than one error from expanding on the numerator or an equation with terms on numerator of fraction simplified with no more than one error from expanding on the numerator
$8x + 30x = 32.6 - 12 + 25$ or oe eg $38x = 45.6$ or $190x = 228$			M1	Terms in x on one side and number terms the other in a correct equation.
<i>working required</i>	1.2		A1	oe dep on M1

What is in a mark scheme?

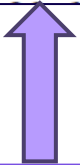
Alternative methods

eg $\frac{4(2x+3)+5(6x-5)}{20} (=1.63)$ oe or $\frac{40x+60}{100} (+) \frac{150x-125}{100} \left(= \frac{163}{100} \right)$ oe $4(2x+3)+5(6x-5) = 1.63 \times 5 \times 4$ oe		4	M1 Writing fractions over a common denominator(can be 2 fractions) or for a method to remove the denominator by multiplying each term by eg 20 or 100 etc (if expanded numerator, allow one error) or $20(2x+3)+25(6x-5)=163$ (could all be written over 100)
---	--	---	---

This describes what the student has to show to get the first M mark

What is in a mark scheme?

<p>eg $8x + 12 + 30x - 25 = 32.6$ or $40x + 60 + 150x - 125 = 163$ or $\frac{190x - 65}{100} = \frac{163}{100}$ or $\frac{38x - 13}{20} = \frac{163}{100}$ oe</p>			<p>M1 Removing brackets and fractions on the LHS in an equation with no more than one error from expanding on the numerator or an equation with terms on numerator of fraction simplified with no more than one error from expanding on the numerator</p>
---	--	--	---



Keeping track of the next stage of the different methods shown for the first M mark

What is in a mark scheme?

Note at this stage the working must be accurate to earn the M mark

$8x + 30x = 32.6 - 12 + 25$ or oe eg $38x = 45.6$ or $190x = 228$			M1	Terms in x on one side and number terms the other in a correct equation.
<i>working required</i>	1.2		A1	oe dep on M1

Note that no marks will be given without some working shown (even if the correct answer is found)

Activity 4

Marking a question

4MA1H June 2025 Question 3

3

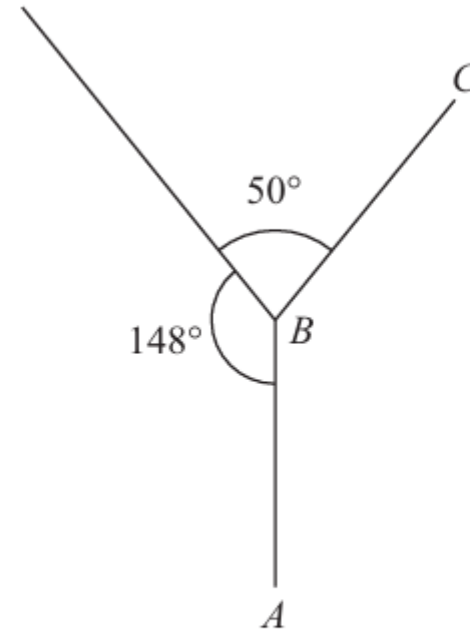


Diagram **NOT**
accurately drawn

AB and BC are two sides of a regular polygon with n sides.

Work out the value of n
Show your working clearly.

Activity 4

Mark scheme for Q3 Paper 1H 4MA1 June 2025

Marking a question

3	eg $360 - (148 + 50) (= 162)$ or $180 - 50 (= 130)$ or $180 - 148 (= 32)$			4	M1 for method to interior angle of the polygon or start to the method of finding the exterior angle of the polygon
	eg $180 - "162" (= 18)$ or $148 - "130" (= 18)$ or $50 - "32" (= 18)$	eg $180(n - 2) = "162"n$ or $180(n - 2) \div n = "162"$			M1 for method to find the exterior angle or for setting up an equation using sum of interior angles formula
	eg $360 \div "18"$	eg $(n =) 360 \div (180 - "162")$			M1 for a complete method
	<i>Working required</i>		20		A1 dep on M1
					Total 4 marks

Activity 4

Marking a question

Response A

M1 for $360 - (148 + 50)$ (evaluated incorrectly)

M1 for setting up an equation using the sum of interior angle formula

M1 for complete method - they have rearranged the equation to reach 360 ($180 - "162"$) (they have 15 instead of 18 but comes from a correct method)

A0 incorrect answer

Response B

M1 for $360 - (148 + 50)$ (= 162)

M1M1A1 correct answer of 20 coming from a trial and improvement method - the A mark is dep on M1 so this answer gains full marks

NOTE: check the diagram for angles

Examiner Reports

Examiner reports

The importance of reading examiner reports when the examination results are published cannot be understated.

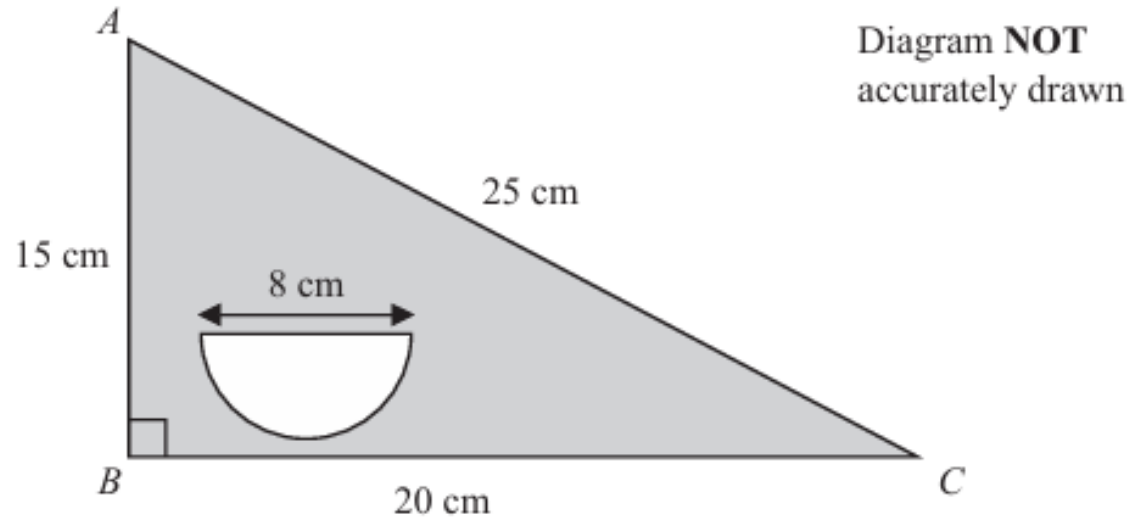
They highlight the areas for development that centres need to concentrate on and some topics receive frequent mention in these reports year on year.

The following slides show the main points from some introductory paragraphs as well as examples of detailed reports on questions.

Examiner reports

This is the question we met earlier from June 2025 Paper 1H Modular

- 4 The diagram shows triangle ABC and a semicircle.



$$AB = 15 \text{ cm} \quad BC = 20 \text{ cm} \quad AC = 25 \text{ cm} \quad \text{angle } ABC = 90^\circ$$

The diameter of the semicircle is 8 cm

Work out the area of the region shown shaded in the diagram.
Give your answer correct to 3 significant figures.

Here is the Examiner Report about this question

Question 4 Most candidates gained either one mark for the correct area of the triangle, or three marks for a fully correct answer. The most common error was seen when candidates attempted to calculate the area of the semicircle, either using the diameter instead of the radius, using the wrong formula, eg or or not dividing the area by 2. Some lost the final mark due to premature rounding, leading to an area of 124 instead of the 125 expected. A surprising number of candidates used $\frac{1}{2}ab\sin C$ for the area of a right-angled triangle. Often when this formula was used, it was used incorrectly; with some messy attempts at using trigonometric ratios to find one of the other angles in the triangle first.

Examiner reports

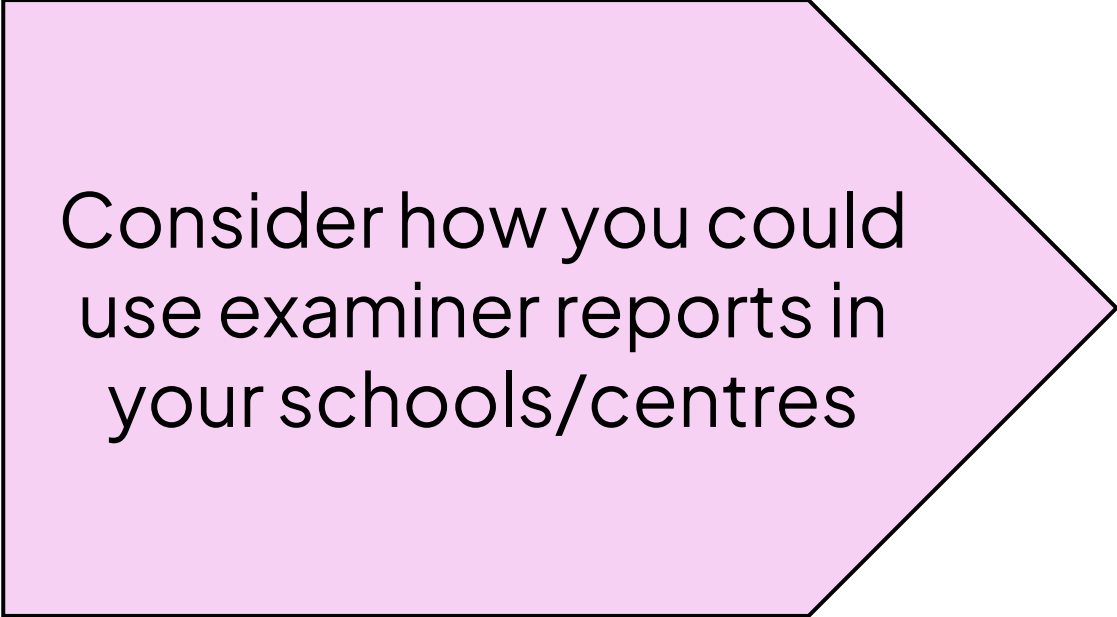
Summary

Summary

Based on candidates' performance in this paper, the following areas should be prioritised for improvement:

- Learn the suggested list of formulae provided, and practise applying those provided on the formula sheet correctly in context.
- Read each question carefully and ensure they are responding precisely to what is being asked, particularly when a specific format (e.g. proportion or probability) is required.
- Write clearly and legibly to avoid errors caused by misreading their own handwriting.
- Avoid premature rounding in multi-step problems; instead, use a sufficient number of decimal places or store values in the calculator's memory until the final step.
- Show all working in a clear, logical, and sequential manner, especially for "show that" questions or those requiring algebraic steps.
- Practise breaking down complex, multi-step problems—even partial attempts may gain method marks.
- Strengthen understanding and application of more advanced probability concepts and problem-solving techniques.
- Manage exam time effectively—avoid spending too long on a single question at the expense of others.
- Develop a strong understanding of standard algebraic techniques, such as completing the square, and apply this method confidently to solve quadratic equations.
- Always check that the final answer satisfies the requirements of the question, including correct format and units.

Activity 3




Consider how you could
use examiner reports in
your schools/centres

And finally, Exam technique

The exam paper

Please check the examination details below before entering your candidate information

Candidate surname		Other names	
Centre Number	Candidate Number		
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		
Pearson Edexcel International GCSE			
Thursday 15 May 2025			
Morning (Time: 2 hours)	Paper reference	4MA1/1H	
Mathematics A			
PAPER 1H			
Higher Tier			
You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.			Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
 - *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
 - *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

P78903A
©2025 Pearson Education Ltd.
Y1/1/1/1/1/1/




Pearson

The exam paper

Students should try to answer every question. Often some marks can be picked up by weaker students on questions at the end of the paper.

Good students check their answers:

- Is my answer reasonable?
- Can I check using substitution?
- Can I use approximations?

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
- Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Note this carefully.
Without sufficient work, correct answers may not receive credit!
SHOW ALL WORKING

However, if a student needs more space, they can ask for A4 size paper and hand it in with their completed question paper.

There are 100 marks to be answered in 120 minutes. Some questions will be answered faster than others. Encourage students to **THINK** about questions which may be puzzling at first sight. There is time!

Turn over

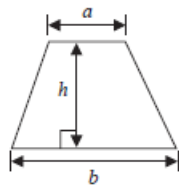
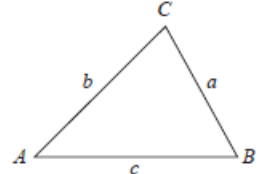
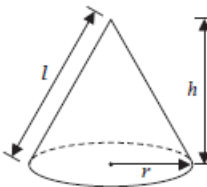
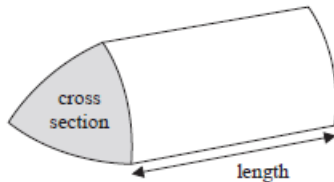
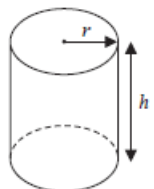
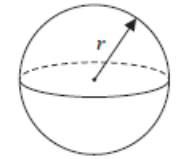
The formula sheet

This is the 4MA1 Formula sheet
Higher Tier

They may be questions for which formulae have to be learned!

They are not on the formula sheet,

International GCSE Mathematics Formulae sheet – Higher Tier

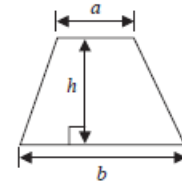
<p>Arithmetic series Sum to n terms, $S_n = \frac{n}{2} [2a + (n-1)d]$</p>	<p>Area of trapezium $= \frac{1}{2}(a+b)h$</p> 
<p>The quadratic equation The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$</p>	
<p>Trigonometry</p> 	<p>In any triangle ABC Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$ Area of triangle $= \frac{1}{2}ab \sin C$</p>
<p>Volume of cone $= \frac{1}{3}\pi r^2 h$ Curved surface area of cone $= \pi r l$</p> 	<p>Volume of prism $= \text{area of cross section} \times \text{length}$</p> 
<p>Volume of cylinder $= \pi r^2 h$ Curved surface area of cylinder $= 2\pi r h$</p> 	<p>Volume of sphere $= \frac{4}{3}\pi r^3$ Surface area of sphere $= 4\pi r^2$</p> 

The formula sheet

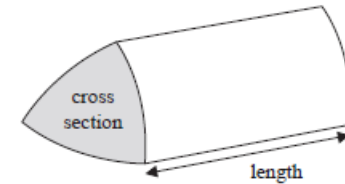
This is the 4MA1 Formula sheet
Foundation Tier

International GCSE Mathematics Formulae sheet – Foundation Tier

$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$

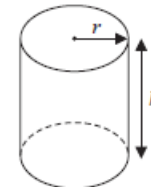


$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



$$\text{Volume of cylinder} = \pi r^2 h$$

$$\text{Curved surface area of cylinder} = 2\pi r h$$



How can I teach good exam technique?

- Ensuring that students practise using a whole paper and understand how it is laid out.
- Understand the importance of looking at the mark allocation.
- Read the whole question first, before any attempt is made to answer it.
- Always show complete methods – an examiner can only assess what a student is thinking by their written work in the examination paper.
- Encouraging students to write neatly and work in an orderly manner.
- Understanding that we always provide more than enough paper – you don't need to fill the whole booklet!
- Walking-talking mocks

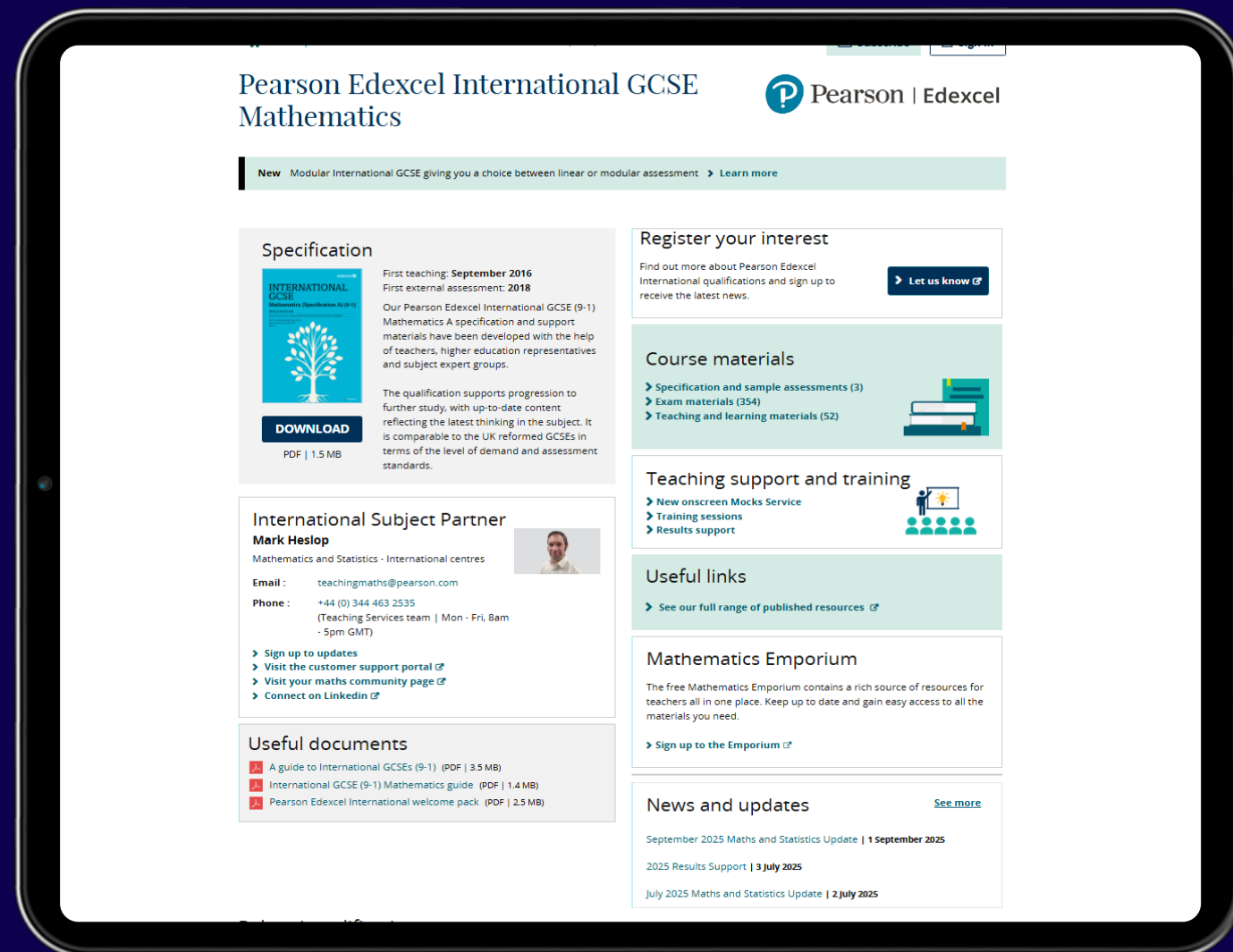
How can I teach good exam technique?

Walking talking mocks

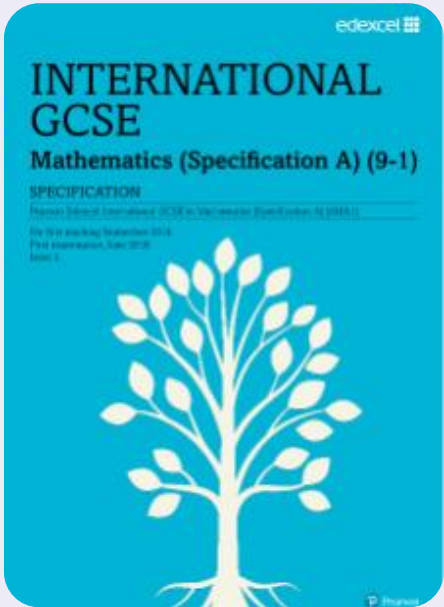
- Students sit in the same exam room where they will do their exam, preferably in the same seats
- Students are given an exam paper which is as close to being like the real thing as possible – so a ‘write-on’ exam paper
- Students are literally talked through every question on the paper – the person leading the session takes them through the smallest steps, such as underlining key words, how to plan, things to remember etc.
- Students then write their responses in timed conditions.

Support

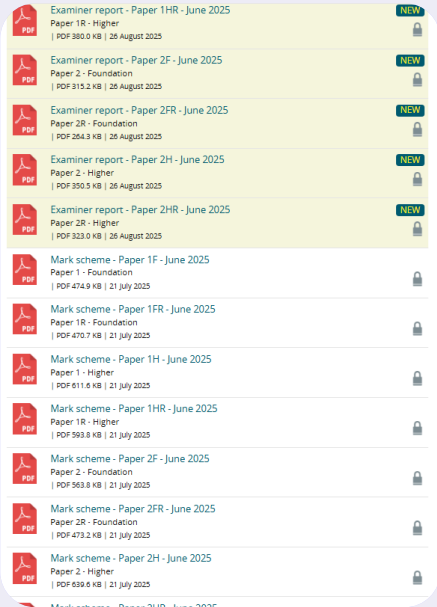
Support for you at every Stage



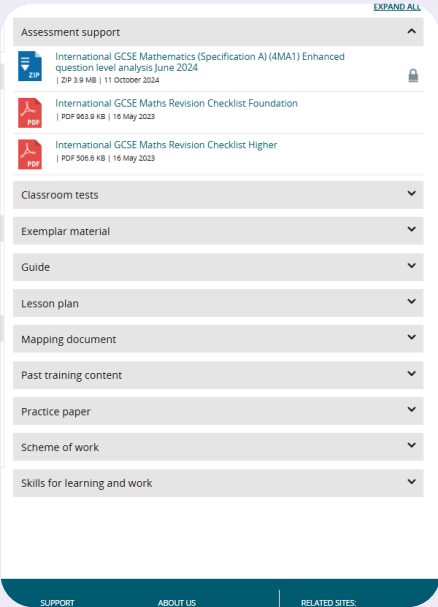
Teaching and Learning Materials



Specification



Past Papers



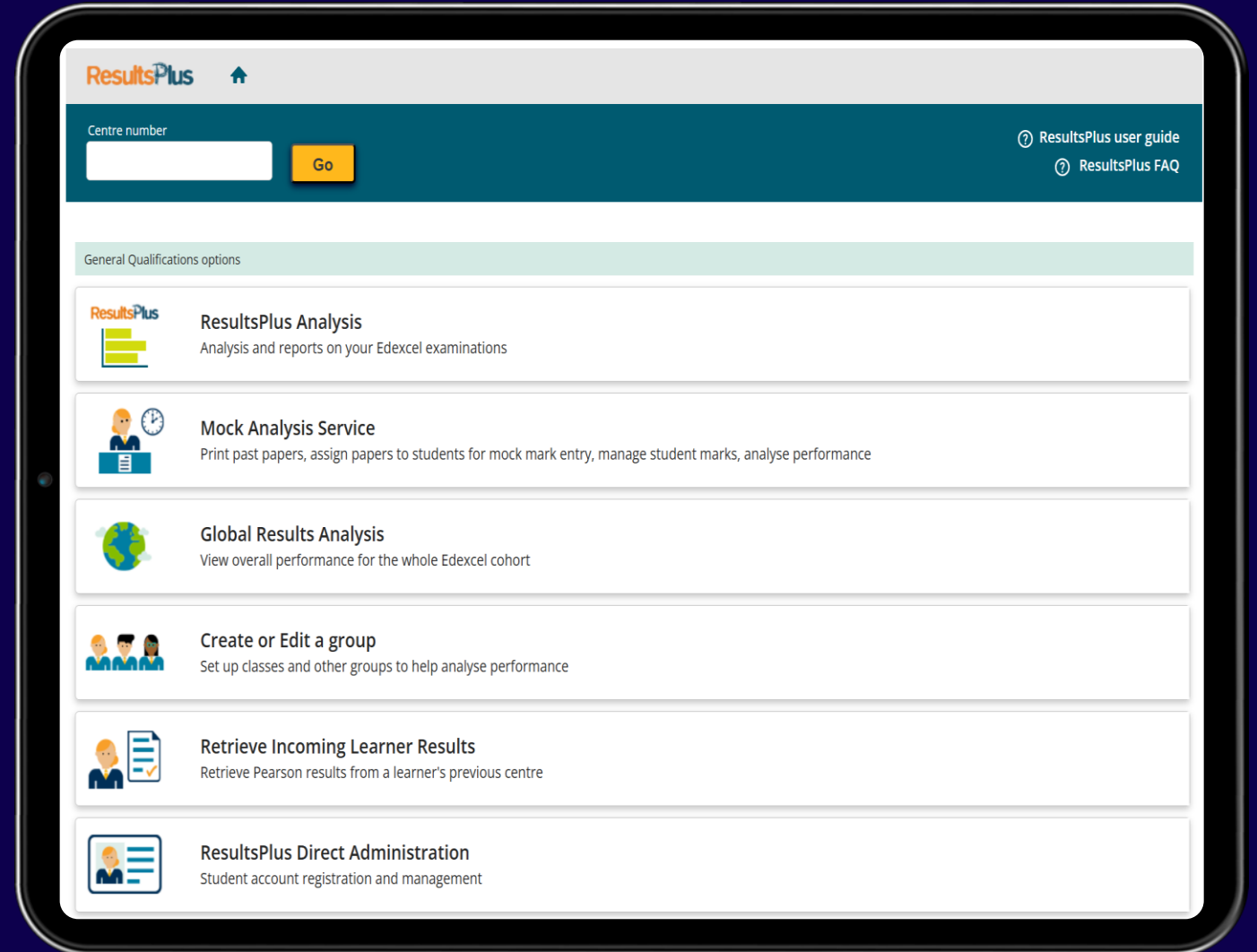
Teaching and Learning Materials



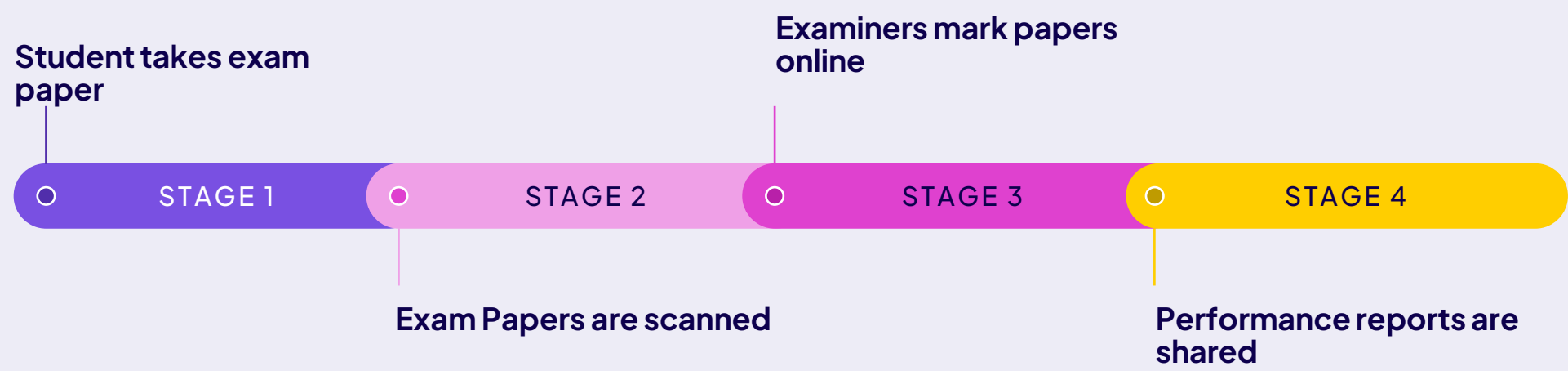
Past Training Content

Results Plus

- Provides detailed analysis of your learners performance.
- Identify potential topics, skills and types of question where students may need to develop their learning further.
- See actual scores for each exam question for a student, class or group.
- Understand how your students' performance compares with class and Pearson Edexcel national averages.
- Acquire data that may support effective learning and teaching approaches.



Results Plus



Exam Wizard

- Saves time by creating your own mock paper exams, topic tests, homework or revision activities.
- Uses our Pearson back catalogue of exam questions to practice and develop these skills with your learners'.
- Gain access to past papers and test questions to create tailored learners plans, which target individuals weaknesses.
- Works in conjunction with ResultsPlus to help create exam practice resources for whole cohorts or individual learners.

The screenshot displays the Exam Wizard web application. The top navigation bar includes 'examWizd', 'Find Past Papers', 'Build a paper', 'My Papers', 'Help', and 'Log out'. The left sidebar contains search filters: 'Search papers', 'Select a qualification' (International GCSE (9-1)), 'Select a specification' (All selected (1)), 'Select a year' (Select one or more), 'Select a series' (Select one or more), and 'Select a unit' (Select one or more). At the bottom of the sidebar are 'Search' and 'Clear' buttons. The main content area shows 'Showing 1 - 20 of 21 results' with pagination controls. Below this is a table of past papers.

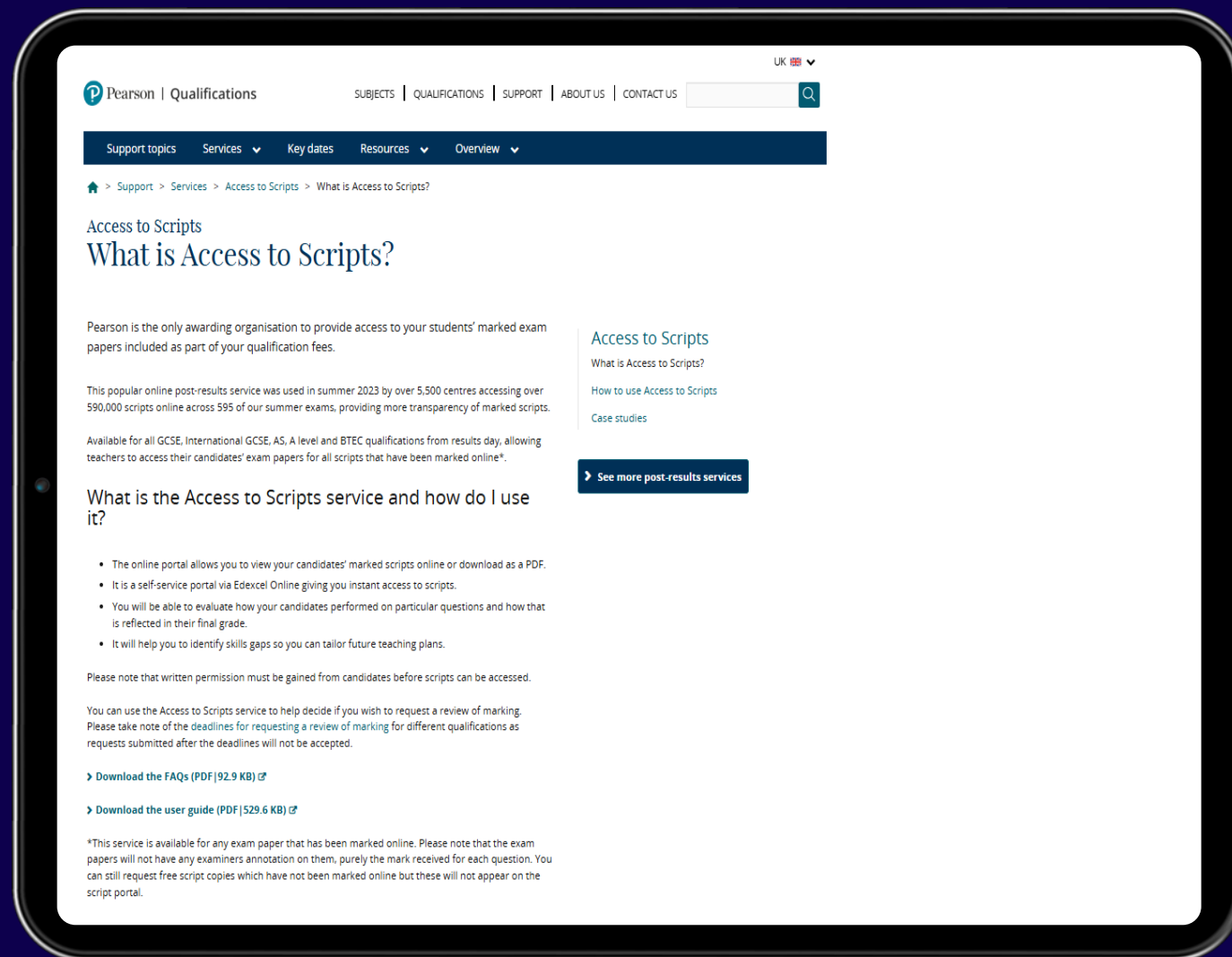
Paper name	Code	Tier	Series	Year	Export PDF
Paper 1: Physical geography	4GE1/01		Nov	2021	
Paper 1: Physical geography	4GE1/01		Nov	2020	
Paper 1: Physical geography	4GE1/01		June	2022	
Paper 1: Physical geography	4GE1/01R		June	2022	
Paper 1: Physical geography	4GE1/01		Nov	2023	
Paper 1: Physical geography	4GE1/01		June	2023	
Paper 1: Physical geography	4GE1/01		SAM	SAM	
Paper 1: Physical geography	4GE1/01		June	2024	
Paper 1: Physical geography	4GE1/01		Specimen papers	Specimen papers	
Paper 1: Physical geography	4GE1/01		Nov	2024	

Access to Scripts

Access to Scripts is an online service, included as part of your qualification fees, that allows you to view your candidates' marked scripts online or download as a PDF.

The Access to Scripts service provides a rich source of information, enabling detailed analysis to inform teaching and learning and support students – giving insights and visibility that performance data alone cannot provide.

Pearson is the only awarding organisation to provide access to your students' marked exam papers included as part of your qualification fees.

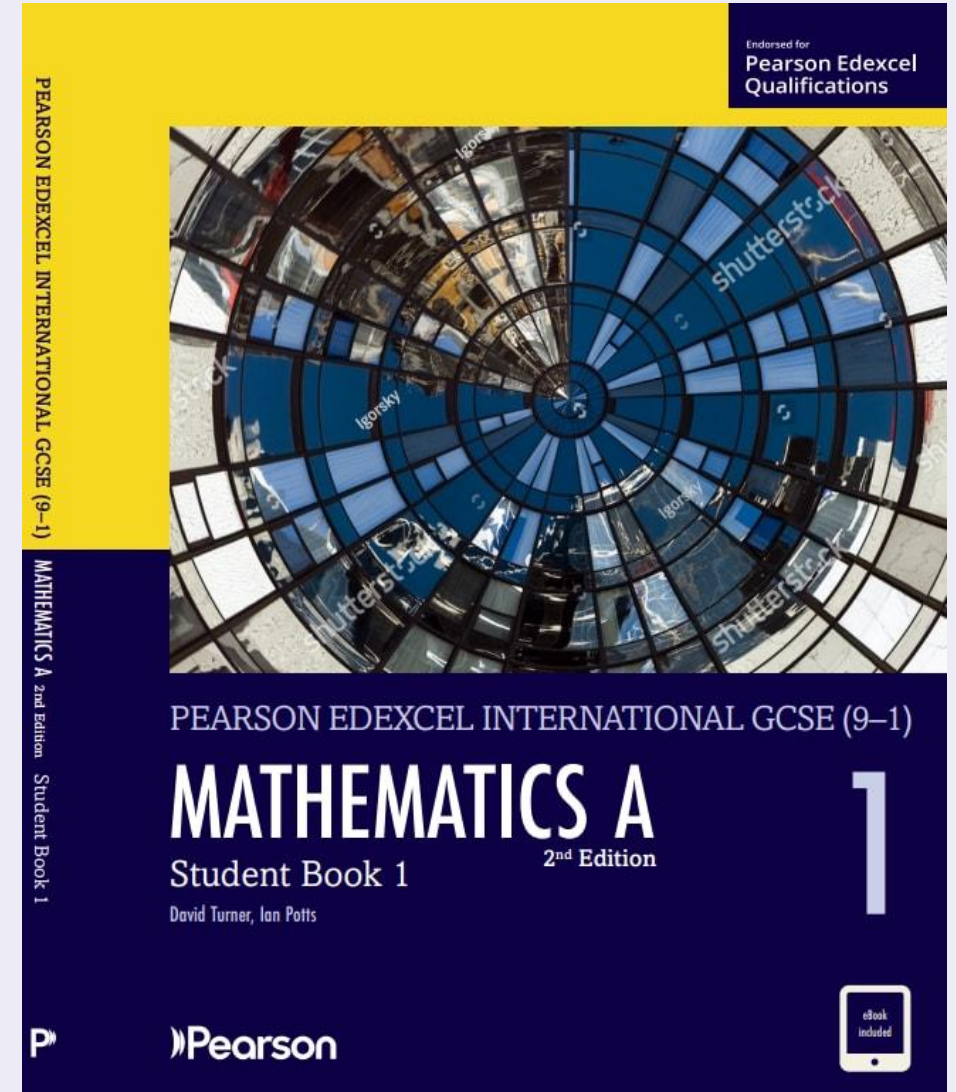


Paid for Resource

For the latest Pearson Edexcel International GCSE (9–1) Mathematics A and Mathematics B specification, a fully reviewed and revised edition of our popular course now suitable for both modular and linear routes.

For more information and access to samples visit:

www.pearson.com/international-schools



Subject Partner Support



Our subject partners are experts in their fields and are here to support you throughout the year.

Mark Heslop

Email: Teachingmaths@pearson.com

Phone: +44 (0) 344 463 2535 (Mon–Fri, 8.00–17.00)

[Sign up](#) to receive regular updates from your Subject Partner on qualification news and support for your subject.



Questions



Thank you