

IGCSE Mathematics

A school's experience



Our 10:10 ethic

Twyford CE High School

Twyford CE High School

- Mixed 11-18 comprehensive
- Selective on church (etc.) attendance
- 1456 pupils

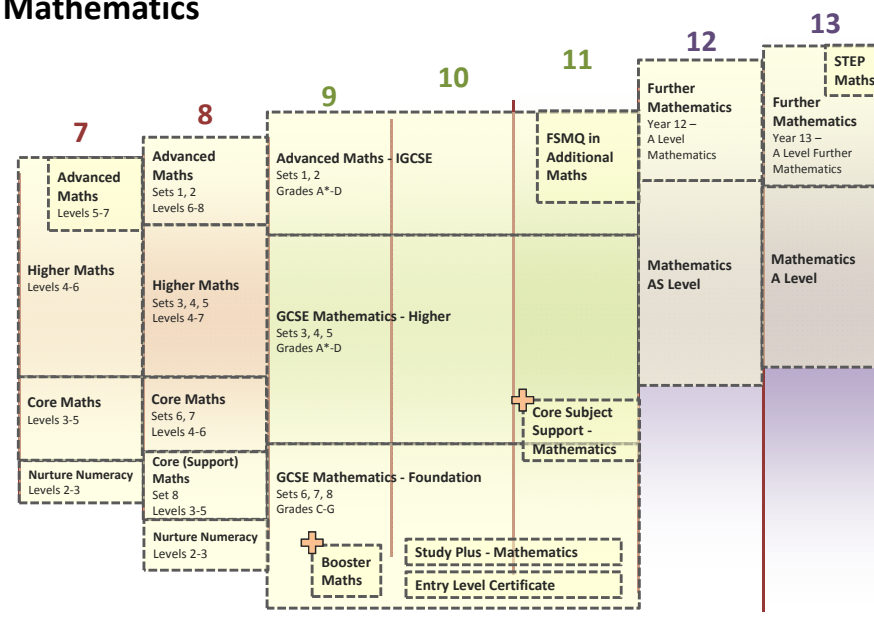
2013 Results

- 77% A*-C (GCSE incl Ma & En)
- 88% A*-C (GCSE Ma)
- 37% A*-A (GCSE Ma)
- 84% A*-C (A Level Ma)
- Year 13: 81 Ma + 27 Fm
- 64 statements
- 265 on SEN register (18%)

Robert Massey

- 2014-present: Assistant Headteacher (Assessment Coordinator)
- 2012-2014: Whole School Assessment Coordinator
- 2009-2014: Head of Maths
- 2003-present: Maths teacher at Twyford High School
- 2002-2003: PGCE at Oxford
- 1999-2002: Maths and Computer Science at Cambridge

Mathematics



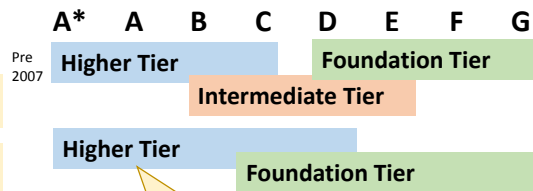
IGCSE Mathematics – the motivation for top end stretch

GCSE Higher tier

Challenging enough?

Prepares for A Level?

Interesting?

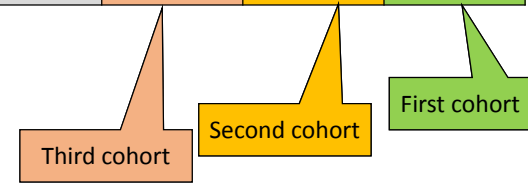


Standards of grades unchanged... but Higher Tier seems 'watered down' – unfulfilling for high achievers

IGCSE Mathematics – a long term pilot

	Year 7	Year 8	Year 9	Year 10	Year 11
2010-2011	Key Stage 3	Key Stage 3	GCSE	GCSE	GCSE
2011-2012	Accelerated	Accelerated	IGCSE	GCSE	GCSE
2012-2013	Accelerated	Accelerated	IGCSE	IGCSE	GCSE
2013-2014	Accelerated	Accelerated	IGCSE	IGCSE	IGCSE

Planned from the outset – could enter for GCSE or IGCSE (or both)



IGCSE Mathematics – an exercise in branding?

Welcome to GCSE!

When does "GCSE Maths" really start?

- Start of Year 10?
- Start of Year 9?
- Start of primary?
- End of Year 9?
- Start of Year 7?

Cambridge (CIE) Edexcel

IGCSE Mathematics – an exercise in branding?

2 year course.... Or 3 year course? **3 years**

Resourcing?

Which groups? **Sets 1 and 2 (out of 8)**

Units of scheme of work? →

Tie in with FSMQ? ✓

Tie in with GCSE? ✓

Easy transition out of the pilot

Which exam board?

- Number 1
- Data 1
- Algebra 1
- Shape 1
- Data 2
- Algebra 2
- Number 2
- Shape 2
- Data 3
- Algebra 3
- Shape 3
- Algebra 4

IGCSE Mathematics – content in addition to GCSE

Edexcel Additional content

- Set language and notation
- Function notation
- Calculus
- Intersecting chords theorem
- Gradient of curve by drawing tangent
- Quadratic inequalities
- Simple conditional probability
- Modulus of a vector

Cambridge Additional content

- Set language and notation
- Venn Diagrams
- Personal and household finance
- Rate of change with simple kinematic graphs
- Estimate gradients of curves by grading tangent
- Function notation
- Linear programming
- Magnitude of a vector
- Matrices (sum, product, determinant, inverse, transformations)
- Shears and stretches

IGCSE Mathematics – exam structure

Syllabus 0580 (without coursework)¹

Core curriculum <i>Grades available: C–G</i>	Extended curriculum <i>Grades available: A*–E</i>
Paper 1 1 hour Short-answer questions. Candidates should answer each question. Weighting: 35%	Paper 2 1½ hours Short-answer questions. Candidates should answer each question. Weighting: 35%
Paper 3 2 hours Structured questions. Candidates should answer each question. Weighting: 65%	Paper 4 2½ hours Structured questions. Candidates should answer each question. Weighting: 65%

Edexcel

Two 2-hour papers

4 hours of exams

All calculator papers

“Functional Maths” not specifically assessed

Foundation content assumed at Higher

IGCSE Mathematics – can we use it in the UK?

“No”

(unless you disguise it)

Funded for teaching in state schools	✓
Counts towards Ebacc	✓

Cambridge IGCSE Mathematics (0580) ✘

✓ Cambridge International Level 1/Level 2 Certificate (0580)

Edexcel International GCSE Mathematics A (4MA0) ✘

✓ Edexcel Level 1/Level 2 Certificate in Mathematics (KMA0)

The content is the same....

IGCSE Mathematics – is it really any different?

Perception?

Style of assessment?

Language demands?

Grade Boundaries?

IGCSE Maths

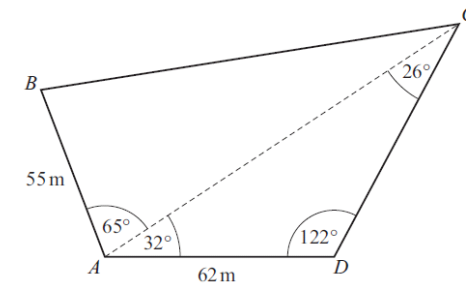
Grade	Percentage
A*	90ish
A	75ish
B	60ish
C	45ish

GCSE Maths

Grade	Percentage
A*	80ish
A	65ish
B	55ish
C	45ish

A field, $ABCD$, is in the shape of a quadrilateral.
A footpath crosses the field from A to C .

A

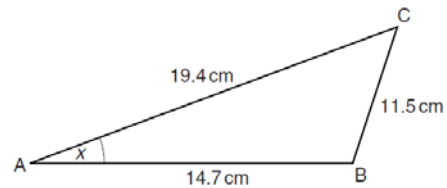


NOT TO SCALE

- Use the sine rule to calculate the distance AC and show that it rounds to 119.9m, correct to 1 decimal place.
- Calculate the length of BC .
- Calculate the area of triangle ACD .
- The field is for sale at \$4.50 per square metre.

Calculate the cost of the field.

- The diagram shows a triangle ABC .
 $AB = 14.7$ cm, $BC = 11.5$ cm and $AC = 19.4$ cm.

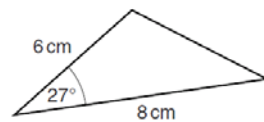


Not to scale

- Show that triangle ABC is **not** a right-angled triangle.
 - Calculate angle x .
- (b) Calculate the area of this triangle.

B

[3]



Not to scale

A

Cambridge IGCSE
November 2013
Paper 4 (Extended)
Question 2

B

OCR Linear GCSE
November 2013
Paper 4 (Higher)
Question 16

Current GCSE

AO1 – Recall and use their knowledge of the prescribed content (45%-55%)

AO2 – Select and apply mathematical methods in a range of contexts (25%-35%)

AO3 – Interpret and analyse problems and generate strategies to solve them (15-25%)

New GCSE

AO1 – Use and apply standard techniques (40%/50%)

AO2 – Reason, interpret and communicate mathematically (30%/25%)

AO3 – Solve problems within mathematics and in other contexts (30%/25%)

CIE IGCSE

A – Mathematical techniques (Core – 80%, Extended – 45%)

B – Applying mathematical techniques to solve problems (Core – 20%, Extended – 55%)

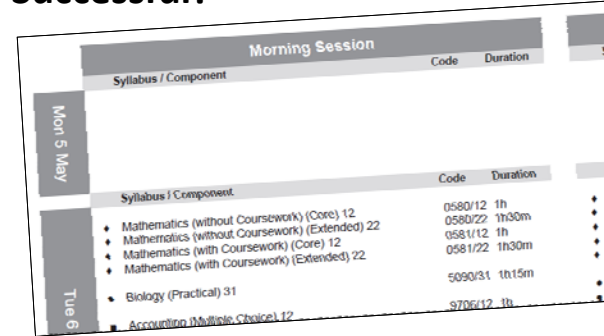
Edexcel IGCSE

AO1 – Demonstrate knowledge, understanding and skills in number and algebra (55%)

AO2 – Demonstrate knowledge, understanding and skills in shape, space and measure (25%)

AO3 – Demonstrate knowledge, understanding and skills in handling data (20%)

Successful?



Cambridge IGCSE
 Tuesday 6 May
 Monday 12 May

Edexcel Certificate
 Wednesday 14 May
 Tuesday 20 May

GCSE
 Monday 9 June
 Friday 13 June

IGCSE Mathematics – outcomes

“I’ve never known a set 2 be so “on it” at this stage in the year”

Time for maturity...?

Focus from “branding”?

	December Mock IGCSE	December Mock GCSE	March Mock IGCSE
A*	12	35	14
A* - A	34	50	39
A* - B	47	52	50
A* - C	52	52	52

Numbers of students

