Cambridge Secondary 2

Cambridge IGCSE

Syllabus

Cambridge IGCSE® (9–1) Mathematics 0626

For Centres in the UK

For examination in June and November 2017, 2018 and 2019.

Version 2

This syllabus is regulated in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 (9–1) Certificate (QN: 601/5294/1).

Please check the syllabus page at **www.cie.org.uk/igcse** to see if this syllabus is available in your administrative zone.

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Why choose Cambridge?

Cambridge International Examinations prepares school students for life, helping them develop an informed curiosity and a lasting passion for learning. We are part of Cambridge Assessment, a department of the University of Cambridge.

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Our programmes and qualifications set the global standard for international education. They are created by subject experts, rooted in academic rigour and reflect the latest educational research. They provide a strong platform for learners to progress from one stage to the next, and are well supported by teaching and learning resources.

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Christoph Guttentag, Dean of Undergraduate Admissions, Duke University, USA

Quality management

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Contents

Changes to this syllabus

For information about changes to this syllabus for 2017, 2018 and 2019, go to page 42.

The latest syllabus is version 2, published September 2016. There are no significant changes which affect teaching.

Any textbooks endorsed to support the syllabus for examination from 2017 are still suitable for use with this syllabus.

1 Why choose this syllabus?

Key benefits

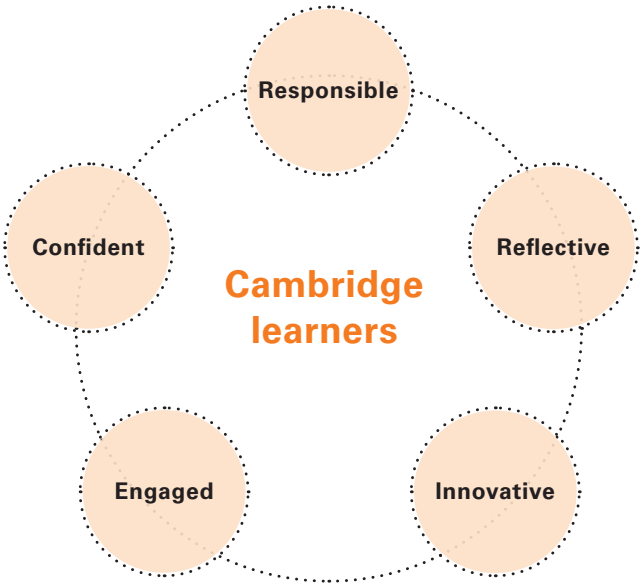
Cambridge IGCSE® syllabuses are created especially for international students. For over 25 years, we have worked with schools and teachers worldwide to develop syllabuses that are suitable for different countries, different types of schools and for learners with a wide range of abilities.

Cambridge IGCSE (9–1) Mathematics allows learners to:

- develop competence and fluency with mathematical concepts, methods and skills
- develop a feel for numbers, patterns and relationships
- develop an ability to consider problems, select appropriate strategies and present and interpret results
- develop the ability to reason, make inferences and communicate using mathematical concepts
- acquire a solid foundation of mathematical knowledge for further study.

Our programmes balance a thorough knowledge and understanding of a subject and help to develop the skills learners need for their next steps in education or employment.

Our approach encourages learners to be:



'The strength of Cambridge IGCSE qualifications is internationally recognised and has provided an international pathway for our students to continue their studies around the world.'

Gary Tan, Head of Schools and CEO, Raffles International Group of Schools, Indonesia

Recognition and progression

The combination of knowledge and skills in Cambridge IGCSE (9–1) Mathematics gives learners a solid foundation for further study. Candidates who achieve grades 4 to 9 are well prepared to follow a wide range of courses including Cambridge International AS & A Level Mathematics.

Cambridge IGCSEs are accepted and valued by leading universities and employers around the world as evidence of academic achievement. Many universities require a combination of Cambridge International AS & A Levels and Cambridge IGCSEs to meet their entry requirements.

Learn more at **www.cie.org.uk/recognition**

Supporting teachers

We provide a wide range of practical resources, detailed guidance and innovative training and professional development so that you can give your learners the best possible preparation for Cambridge IGCSE.

Support for Cambridge IGCSE

Teaching resources

- Syllabus
- Scheme of work
- Learner guide
- Endorsed textbooks and digital resources
- Teacher support **teachers.cie.org.uk**
- Discussion forum
- Resource List

Exam preparation resources

- Question papers
- Mark schemes
- Example candidate responses to understand what examiners are looking for at key grades
- Examiner reports to improve future teaching

Training

- Face-to-face workshops around the world
- Online self-study training
- Online tutor-led training
- Professional development qualifications

Community

Community forum **teachers.cie.org.uk**

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‘Cambridge IGCSE is one of the most sought-after and recognised qualifications in the world. It is very popular in Egypt because it provides the perfect preparation for success at advanced level programmes.’

Mrs Omnia Kassabgy, Managing Director of British School in Egypt BSE

2 Syllabus overview

Aims

The syllabus aims summarise the context in which you should view the syllabus content and describe the purposes of a course based on this syllabus. They are not listed in order of priority.

The aims are to enable learners to:

- develop an understanding of mathematical principles, concepts and methods in a way which encourages confidence, provides satisfaction and enjoyment, and develops a positive attitude towards mathematics
- develop a feel for number and understand the significance of the results obtained
- apply mathematics in everyday situations and develop an understanding of the part which mathematics plays in their own lives and in the world around them
- analyse and solve problems, present the solutions clearly, and check and interpret the results
- recognise when and how a situation may be represented mathematically, identify and interpret relevant factors, select an appropriate mathematical method to solve the problem, and evaluate the method used
- use mathematics as a means of communication with emphasis on the use of clear expression and structured argument
- develop an ability to apply mathematics in other subjects, particularly science and technology
- develop the abilities to reason logically, make deductions and inferences, and draw conclusions
- appreciate patterns and relationships in mathematics and make generalisations
- appreciate the interdependence of different areas of mathematics
- acquire a foundation for their further study of mathematics or for other disciplines.

Teacher support for Cambridge IGCSE (9–1) Mathematics

We provide a wide range of support resources to give your learners the best possible preparation for Cambridge programmes and qualifications. Support for IGCSE (9–1) Mathematics includes a Scheme of Work, Support for Calculus and Practice Question and Worked Examples. These and other resources are available online through Teacher Support at **https://teachers.cie.org.uk**

Content

Candidates may follow either the Core curriculum or the Extended curriculum. Candidates aiming for grades 4 to 9 should follow the Extended curriculum.

All candidates will study the following topics:

1 Number
2 Algebra and graphs
3 Geometry
4 Mensuration
5 Co-ordinate geometry
6 Trigonometry
7 Matrices and transformations
8 Probability
9 Statistics

The study of mathematics offers opportunities for the use of ICT, particularly spreadsheets and graph-drawing packages. For example, spreadsheets may be used in the work on percentages (C1.12 and E1.12), personal and small business finance (C1.16 and E1.16), algebraic formulae (C2.1 and E2.1), statistics (C9 and E9), etc. Graph-drawing packages may be used in the work on graphs in practical situations and graphs of functions (C2 and E2), statistics (C9 and E9), etc. It is important to note that use or knowledge of ICT will **not** be assessed in the examination papers.

As well as demonstrating skill in the techniques listed in section 3, 'Subject content', candidates will be expected to apply them in the solution of problems and to make connections between different areas of mathematics.

The weightings in the assessment of the main topic areas of Mathematics are shown in the table below.

Components	Number %	Algebra %	Space and shape %	Statistics and probability %
Core (Papers 1, 3 and 5)	40–45	20–25	20–25	10–15
Extended (Papers 2, 4 and 6)	20–25	35–40	25–30	10–15

Assessment

All candidates take **three** papers. Candidates who have studied the Core curriculum take Papers 1, 3 and 5 and are eligible for grades 1 to 5.

Candidates who have studied the Extended curriculum take Papers 2, 4 and 6 and are eligible for grades 4 to 9 (grade 3 allowed).

Core candidates take:

Paper 1 1 hour
60 marks 25%
Short-answer and structured questions based on the Core curriculum
Electronic calculators are required
Assessing Grades 1–5
Externally assessed

and:

Paper 3 1 hour 30 minutes
84 marks 35%
Short-answer and structured questions based on the Core curriculum
Electronic calculators are **not** permitted
Assessing Grades 1–5
Externally assessed

and:

Paper 5 2 hours
96 marks 40%
Structured questions based on the Core curriculum
Electronic calculators are required
Assessing Grades 1–5
Externally assessed

Extended candidates take:

Paper 2 1 hour
60 marks 25%
Short-answer and structured questions based on the Extended curriculum
Electronic calculators are required
Assessing grades 4–9
Externally assessed

and:

Paper 4 1 hour 30 minutes
84 marks 35%
Short-answer and structured questions based on the Extended curriculum
Electronic calculators are **not** permitted
Assessing Grades 4–9
Externally assessed

and:

Paper 6 2 hours
96 marks 40%
Structured questions based on the Extended curriculum
Electronic calculators are required
Assessing Grades 4–9
Externally assessed

- Candidates should have an electronic calculator for Papers 1, 2, 5 and 6. Algebraic or graphical calculators are not permitted. Three significant figures will be required in answers except where otherwise stated.
- In Papers 1, 2, 5 and 6 candidates should use the value of π from their calculators if their calculator provides this. Otherwise, they should use the value of 3.142 given on the front page of the question paper only.
- Tracing paper may be used as an additional material for all of the written papers.

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3 Subject content

Candidates may follow either the Core curriculum or the Extended curriculum. Candidates aiming for grades 5 to 9 should follow the Extended curriculum.

Formulae will only be given where stated in the notes. The formulae will be given as part of the relevant question and not as a separate formulae list.

C1 Number

	Core curriculum	Notes/Examples
C1.1	Identify and use natural numbers, integers (positive, negative and zero), prime numbers, square numbers, common factors and common multiples, rational and irrational numbers (e.g. π, $\sqrt{2}$), real numbers, reciprocals.	Includes expressing numbers as a product of prime factors. Finding the Lowest Common Multiple (LCM) and Highest Common Factor (HCF) of two numbers.
C1.2	Understand notation of Venn diagrams. Definition of sets e.g. $A = \{x: x \text{ is a natural number}\}$ $B = \{a, b, c, \ldots\}$	Notation Number of elements in set A — $n(A)$ Universal set — $\mathscr{E}$ Union of A and B — $A \cup B$ Intersection of A and B — $A \cap B$
C1.3	Calculate with squares, square roots, cubes and cube roots and other powers and roots of numbers.	Evaluate $3^2 \times \sqrt[4]{16}$
C1.4	Use directed numbers in practical situations.	e.g. temperature changes, flood levels.
C1.5	Use the language and notation of simple vulgar and decimal fractions and percentages in appropriate contexts. Recognise equivalence and convert between these forms.	
C1.6	Order quantities by magnitude and demonstrate familiarity with the symbols $=, \neq, >, <, \geqslant, \leqslant$.	
C1.7	Understand the meaning of indices (fractional, negative and zero) and use the rules of indices. Use the standard form $A \times 10^n$ where n is a positive or negative integer, and $1 \leqslant A < 10$.	$5^{\frac{1}{2}} = \sqrt{5}$ Evaluate $5^{-2}, 100^{\frac{1}{2}}, 7^0$ Work out $2^{-3} \times 2^4$, $(2^3)^2$, $(2^{-3} \div 2^4)$ Convert numbers into and out of standard form. Calculate with values in standard form.
C1.8	Use the four rules for calculations with whole numbers, decimals and fractions (mixed and vulgar), including correct ordering of operations and use of brackets.	Applies to positive and negative integers.

E1 Number

	Extended curriculum	Notes/Examples
E1.1	Identify and use natural numbers, integers (positive, negative and zero), prime numbers, square numbers, common factors and common multiples, rational and irrational numbers (e.g. π, $\sqrt{2}$), real numbers and reciprocals.	Includes expressing numbers as a product of prime factors. Finding the Lowest Common Multiple (LCM) and Highest Common Factor (HCF) of two or more numbers.
E1.2	Use language, notation and Venn diagrams to describe sets and represent relationships between sets. Definition of sets e.g. $A = \{x: x \text{ is a natural number}\}$ $B = \{(x,y): y = mx + c\}$ $C = \{x: a \leqslant x \leqslant b\}$ $D = \{a, b, c, \ldots\}$	Notation Number of elements in set A — $n(A)$ "…is an element of…" — $\in$ "…is not an element of…" — $\notin$ Complement of set A — A' The empty set — $\varnothing$ Universal set — $\mathscr{E}$ A is a subset of B — $A \subseteq B$ A is a proper subset of B — $A \subset B$ A is not a subset of B — $A \nsubseteq B$ A is not a proper subset of B — $A \not\subset B$ Union of A and B — $A \cup B$ Intersection of A and B — $A \cap B$
E1.3	Calculate with squares, square roots, cubes and cube roots and other powers and roots of numbers.	Evaluate $3^2 \times \sqrt[4]{16}$
E1.4	Use directed numbers in practical situations.	e.g. temperature changes, flood levels.
E1.5	Use the language and notation of simple vulgar and decimal fractions and percentages in appropriate contexts. Recognise equivalence and convert between these forms.	Includes the conversion of recurring decimals to fractions, e.g. change $0.\dot{7}$ to a fraction.
E1.6	Order quantities by magnitude and demonstrate familiarity with the symbols $=, \neq, >, <, \geqslant, \leqslant$.	
E1.7	Understand the meaning of indices (fractional, negative and zero) and use the rules of indices. Use the standard form $A \times 10^n$ where n is a positive or negative integer, and $1 \leqslant A < 10$.	$5^{\frac{1}{2}} = \sqrt{5}$ Evaluate 5^{-2}, $100^{\frac{1}{2}}$, $8^{-\frac{2}{3}}$ Work out $2^{-3} \times 2^4$, $(2^3)^2$, $(2^{-3} \div 2^4)$ Convert numbers into and out of standard form. Calculate with values in standard form.
E1.8	Use the four rules for calculations with whole numbers, decimals and fractions (mixed and vulgar), including correct ordering of operations and use of brackets.	Applies to positive and negative integers.

C1 Number

	Core curriculum continued	Notes/Examples continued
C1.9	Make estimates of numbers, quantities and lengths, give approximations to specified numbers of significant figures and decimal places and round off answers to reasonable accuracy in the context of a given problem.	
C1.10	Give appropriate upper and lower bounds for data given to a specified accuracy.	e.g. measured lengths.
C1.11	Demonstrate an understanding of ratio and proportion. Calculate average speed. Use other common measures of rate.	To include numerical problems involving direct and inverse proportion. Use ratio and scales in practical situations. *Formulae for other rates will be given in the question, e.g. pressure and density.*
C1.12	Calculate a given percentage of a quantity. Express one quantity as a percentage of another. Calculate percentage increase or decrease.	
C1.13	Use a calculator efficiently. Apply appropriate checks of accuracy.	
C1.14	Calculate times in terms of the 24-hour and 12-hour clock. Read clocks, dials and timetables.	
C1.15	Calculate using money and convert from one currency to another.	
C1.16	Use given data to solve problems on personal and household finance involving earnings, simple interest and compound interest. Extract data from tables and charts.	Includes discount, profit and loss.
C1.17	*Extended curriculum only*	
C1.18	*Extended curriculum only*	

E1 Number

	Extended curriculum continued	Notes/Examples continued
E1.9	Make estimates of numbers, quantities and lengths, give approximations to specified numbers of significant figures and decimal places and round off answers to reasonable accuracy in the context of a given problem.	Estimate powers and roots of any given positive number.
E1.10	Give appropriate upper and lower bounds for data given to a specified accuracy.	e.g. measured lengths.
	Obtain appropriate upper and lower bounds to solutions of simple problems given data to a specified accuracy.	e.g. the calculation of the perimeter or the area of a rectangle.
E1.11	Demonstrate an understanding of ratio and proportion.	To include numerical problems involving direct and inverse proportion.
	Increase and decrease a quantity by a given ratio.	
	Calculate average speed.	
	Use other common measures of rate.	Use ratio and scales in practical situations. *Formulae for other rates will be given in the question, e.g. pressure and density.*
E1.12	Calculate a given percentage of a quantity.	
	Express one quantity as a percentage of another.	
	Calculate percentage increase or decrease.	
	Carry out calculations involving reverse percentages.	e.g. finding the cost price given the selling price and the percentage profit.
E1.13	Use a calculator efficiently.	
	Apply appropriate checks of accuracy.	
E1.14	Calculate times in terms of the 24-hour and 12-hour clock.	
	Read clocks, dials and timetables.	
E1.15	Calculate using money and convert from one currency to another.	
E1.16	Use given data to solve problems on personal and household finance involving earnings, simple interest and compound interest.	Includes discount, profit and loss.
	Extract data from tables and charts.	
E1.17	Use exponential growth and decay in relation to population and finance.	e.g. depreciation, growth of bacteria.
E1.18	Calculate with surds, including simplifying expressions.	
	Rationalise the denominator.	

C2 Algebra and graphs

	Core curriculum	Notes/Examples
C2.1	Use letters to express generalised numbers and express basic arithmetic processes algebraically.	
	Substitute numbers for words and letters in formulae.	
	Transform simple formulae.	
	Construct simple expressions and set up simple equations.	
C2.2	Manipulate directed numbers.	
	Use brackets and extract common factors.	e.g.expand $3x(2x - 4y)$, $(x + 4)(x - 7)$
	Factorise where possible expressions of the form: $x^2 + bx + c$ $x^2 - b^2$	e.g.factorise $9x^2 + 15xy$
C2.3	*Extended curriculum only*	
C2.4	Use and interpret positive, negative and zero indices.	
	Use the rules of indices.	e.g. simplify $3x^4 \times 5x$, $10x^3 \div 2x^2$, $(x^6)^2$
C2.5	Derive and solve simple linear equations in one unknown.	
	Derive and solve simultaneous linear equations in two unknowns.	
	Derive and solve simple quadratic equations by factorisation.	Simple quadratic equations of the form $x^2 + bx + c = 0$ $x^2 - b^2 = 0$
	Derive and solve simple linear inequalities.	e.g. $x + 2 \leqslant 5$, $-2 \leqslant 2x \leqslant 3$ including representing and interpreting inequalities on a number line. Interpretation of results may be required.

E2 Algebra and graphs

	Extended curriculum	Notes/Examples
E2.1	Use letters to express generalised numbers and express basic arithmetic processes algebraically.	
	Substitute numbers for words and letters in complicated formulae.	
	Construct and transform complicated formulae and equations.	e.g. transform formulae where the subject appears twice.
E2.2	Manipulate directed numbers.	
	Use brackets and extract common factors.	e.g. expand $3x(2x-4y)$, $(x+4)(x-7)$, $(x+4)(x-7)(x+2)$
	Expand products of algebraic expressions.	
	Factorise where possible expressions of the form: $ax + bx + kay + kby$ $a^2x^2 - b^2y^2$ $a^2 + 2ab + b^2$ $ax^2 + bx + c$	e.g. factorise $9x^2 + 15xy$
E2.3	Manipulate algebraic fractions.	e.g. $\frac{x}{3}+\frac{x-4}{2}$, $\frac{2x}{3}-\frac{3(x-5)}{2}$, $\frac{3a}{4}\times\frac{9a}{10}$, $\frac{3a}{4}\div\frac{9a}{10}$, $\frac{1}{x-2}+\frac{2}{x-3}$
	Factorise and simplify rational expressions.	e.g. $\frac{x^2-2x}{x^2-5x+6}$
E2.4	Use and interpret positive, negative and zero indices.	
	Use and interpret fractional indices.	e.g. solve $32^x = 2$
	Use the rules of indices.	e.g. simplify $3x^{-4}\times\frac{2}{3}x^{\frac{1}{2}}$, $\frac{2}{5}x^{\frac{1}{2}}\div 2x^{-2}$, $\left(\frac{2x^5}{3}\right)^3$
E2.5	Derive and solve linear equations in one unknown.	
	Derive and solve simultaneous linear equations in two unknowns.	
	Derive and solve quadratic equations by factorisation, completing the square or by use of the formula.	
	Derive and solve simultaneous equations, involving one linear and one quadratic, including the intersection of a line and a circle.	
	Derive and solve linear inequalities.	Including representing and interpreting inequalities on a number line. Interpretation of results may be required.

C2 Algebra and graphs

	Core curriculum continued	Notes/Examples continued
C2.6	*Extended curriculum only*	
C2.7	Continue a given number sequence.	Recognise sequences of square, cube and triangular numbers.
	Recognise patterns in sequences including the term-to-term rule and relationships between different sequences.	Recognise sequences of the powers of 2, 3, 4 and 5.
	Find and use the nth term of sequences.	Linear, simple quadratic and cubic sequences.
C2.8	*Extended curriculum only*	
C2.9	Interpret and use graphs in practical situations including travel graphs and conversion graphs.	e.g. interpret the gradient of a straight line graph as a rate of change.
	Draw graphs from given data.	
C2.10	Construct tables of values for functions of the form $ax + b$, $\pm x^2 + ax + b$, $\frac{a}{x}$ $(x \neq 0)$, where a and b are integer constants.	
	Draw and interpret such graphs.	
	Solve linear and quadratic equations approximately, including finding and interpreting roots by graphical methods.	
	Recognise, sketch and interpret graphs of functions (linear, quadratic, cubic and reciprocal).	Knowledge of turning points and asymptotes is not required.
C2.11	*Extended curriculum only*	

E2 Algebra and graphs

	Extended curriculum continued	Notes/Examples continued
E2.6	Represent inequalities graphically and use this representation to solve simple linear programming problems.	The conventions of using broken lines for strict inequalities and shading unwanted regions will be expected.
E2.7	Continue a given number sequence.	
	Recognise patterns in sequences including the term-to-term rule and relationships between different sequences.	Subscript notation may be used.
	Find and use the nth term of sequences.	Linear, quadratic, cubic and exponential sequences and simple combinations of these.
E2.8	Express direct and inverse proportion in algebraic terms and use this form of expression to find unknown quantities.	Interpret graphs that represent direct and inverse proportion.
E2.9	Interpret and use graphs in practical situations including travel graphs and conversion graphs.	
	Draw graphs from given data.	
	Apply the idea of rate of change to simple kinematics involving distance-time and speed-time graphs, acceleration and deceleration.	May include estimation and interpretation of the gradient of a tangent at a point.
	Calculate distance travelled as area under a linear speed-time graph.	May include calculation under a linear graph or estimations under a non-linear graph.
E2.10	Construct tables of values and draw graphs for functions of the form ax^n (and simple sums of these) and functions of the form b^x.	a is a rational constant, b is a positive integer, and $n = -2, -1, 0, 1, 2, 3$. Sums would not include more than three functions.
	Solve associated equations approximately, including finding and interpreting roots by graphical methods.	Find turning points of quadratics by completing the square.
	Draw and interpret graphs representing exponential growth and decay problems.	
	Recognise, sketch and interpret graphs of functions (linear, quadratic, cubic, reciprocal, exponential and trigonometric).	Knowledge of turning points and asymptotes is required.
E2.11	Estimate gradients of curves by drawing tangents.	

C2 Algebra and graphs

	Core curriculum continued	Notes/Examples continued
C2.12	Interpret simple expressions as functions with inputs and outputs and find simple inverse functions.	
C2.13	*Extended curriculum only*	
C2.14	*Extended curriculum only*	

E2 Algebra and graphs

	Extended curriculum continued	Notes/Examples continued
E2.12	Interpret expressions as functions with inputs and outputs and find inverse functions. Use function notation, e.g. $f(x) = 3x - 5$, $f: x \mapsto 3x - 5$, to describe simple functions. Find inverse functions $f^{-1}(x)$. Form composite functions as defined by $gf(x) = g(f(x))$.	
E2.13	Use iterations to find approximate solutions.	Subscript notation may be used.
E2.14	Understand the idea of a derived function. Use the derivatives of functions of the form ax^n, and simple sums of not more than three of these. Apply differentiation to gradients and turning points (stationary points). Discriminate between maxima and minima by any method.	a is a rational constant and $n = 0, 1, 2, 3, 4$. e.g. $2x^3 + x - 7$.

C3 Geometry

	Core curriculum	Notes/Examples
C3.1	Use and interpret the geometrical terms: point, line, parallel, bearing, right angle, acute, obtuse and reflex angles, perpendicular, similarity and congruence. Use and interpret vocabulary of triangles, quadrilaterals, circles, polygons and simple solid figures including nets.	
C3.2	Measure lines and angles. Construct a triangle given the three sides using a ruler and a pair of compasses only. Construct other simple geometrical figures from given data using a ruler and a protractor as necessary. Construct angle bisectors and perpendicular bisectors using a straight edge and a pair of compasses only. Know that the perpendicular distance from a point to a line is the shortest distance to the line and construct this perpendicular line.	
C3.3	Read and make scale drawings.	
C3.4	Calculate lengths of similar figures.	
C3.5	Recognise congruent shapes.	
C3.6	Recognise rotational and line symmetry (including order of rotational symmetry) in two dimensions.	Includes properties of triangles, quadrilaterals and circles directly related to their symmetries.

E3 Geometry

	Extended curriculum	Notes/Examples
E3.1	Use and interpret the geometrical terms: point, line, parallel, bearing, right angle, acute, obtuse and reflex angles, perpendicular, similarity and congruence. Use and interpret vocabulary of triangles, quadrilaterals, circles, polygons and simple solid figures including nets.	
E3.2	Measure lines and angles. Construct a triangle given the three sides using a ruler and a pair of compasses only. Construct other simple geometrical figures from given data using a ruler and a protractor as necessary. Construct angle bisectors and perpendicular bisectors using a straight edge and a pair of compasses only. Know that the perpendicular distance from a point to a line is the shortest distance to the line and construct this perpendicular line.	
E3.3	Read and make scale drawings.	
E3.4	Calculate lengths of similar figures. Use the relationships between areas of similar triangles, with corresponding results for similar figures and extension to volumes and surface areas of similar solids.	
E3.5	Use the basic congruence criteria for triangles (SSS, ASA, SAS, RHS).	
E3.6	Recognise rotational and line symmetry (including order of rotational symmetry) in two dimensions. Recognise symmetry properties of the prism (including cylinder) and the pyramid (including cone). Use the following symmetry properties of circles: • equal chords are equidistant from the centre • the perpendicular bisector of a chord passes through the centre • tangents from an external point are equal in length.	Includes properties of triangles, quadrilaterals and circles directly related to their symmetries.

C3 Geometry

	Core curriculum continued	Notes/Examples continued
C3.7	Calculate unknown angles using the following geometrical properties: • angles at a point • angles at a point on a straight line and intersecting straight lines • angles formed within parallel lines • angle properties of triangles and quadrilaterals • angle properties of regular polygons • angle in a semi-circle • angle between tangent and radius of a circle.	Candidates will be expected to use the correct geometrical terminology when giving reasons for answers.
C3.8	Use the following loci and the method of intersecting loci for sets of points in two dimensions which are: • at a given distance from a given point • at a given distance from a given straight line • equidistant from two given points • equidistant from two given intersecting straight lines.	

E3 Geometry

	Extended curriculum continued	Notes/Examples continued
E3.7	Calculate unknown angles using the following geometrical properties: • angles at a point • angles at a point on a straight line and intersecting straight lines • angles formed within parallel lines • angle properties of triangles and quadrilaterals • angle properties of regular polygons • angle in a semi-circle • angle between tangent and radius of a circle • angle properties of irregular polygons • angle at the centre of a circle is twice the angle at the circumference • angles in the same segment are equal • angles in opposite segments are supplementary; cyclic quadrilaterals • alternate segment theorem.	Candidates will be expected to use the correct geometrical terminology when giving reasons for answers.
E3.8	Use the following loci and the method of intersecting loci for sets of points in two dimensions which are: • at a given distance from a given point • at a given distance from a given straight line • equidistant from two given points • equidistant from two given intersecting straight lines.	

C4 Mensuration

	Core curriculum	Notes/Examples
C4.1	Use current units of mass, length, area, volume and capacity in practical situations and express quantities in terms of larger or smaller units.	Convert between units including units of area and volume.
C4.2	Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium and compound shapes derived from these.	
C4.3	Carry out calculations involving the circumference and area of a circle.	Answers may be asked for in multiples of π.
	Solve simple problems involving the arc length and sector area as fractions of the circumference and area of a circle.	Where the sector angle is a factor of 360.
C4.4	Carry out calculations involving the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder.	Answers may be asked for in multiples of π.
	Carry out calculations involving the surface area and volume of a sphere, pyramid and cone.	*Formulae will be given for the surface area and volume of a sphere, pyramid and cone in the question.*
C4.5	Carry out calculations involving the areas and volumes of compound shapes.	Answers may be asked for in multiples of π.

E4 Mensuration

	Extended curriculum	Notes/Examples
E4.1	Use current units of mass, length, area, volume and capacity in practical situations and express quantities in terms of larger or smaller units.	Convert between units including units of area and volume.
E4.2	Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium and compound shapes derived from these.	
E4.3	Carry out calculations involving the circumference and area of a circle. Solve problems involving the arc length and sector area as fractions of the circumference and area of a circle.	Answers may be asked for in multiples of π.
E4.4	Carry out calculations involving the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder.	Answers may be asked for in multiples of π.
	Carry out calculations involving the surface area and volume of a sphere, pyramid and cone.	*Formulae will be given for the surface area and volume of a sphere, pyramid and cone in the question.*
E4.5	Carry out calculations involving the areas and volumes of compound shapes.	Answers may be asked for in multiples of π.

C5 Co-ordinate geometry

	Core curriculum	Notes/Examples
C5.1	Demonstrate familiarity with Cartesian co-ordinates in two dimensions.	Solve geometrical problems on co-ordinate axes.
C5.2	Find the gradient of a straight line. Calculate the gradient of a straight line from the co-ordinates of two points on it.	
C5.3	*Extended curriculum only*	
C5.4	Interpret and obtain the equation of a straight line graph in the form $y = mx + c$.	Problems will involve finding the equation where the graph is given or two co-ordinates are given with one being of the form $(0, c)$.
C5.5	Determine the equation of a straight line parallel to a given line.	e.g. find the equation of a line parallel to $y = 4x - 1$ that passes through $(0, -3)$.
C5.6	*Extended curriculum only*	
C5.7	*Extended curriculum only*	
C5.8	*Extended curriculum only*	

E5 Co-ordinate geometry

	Extended curriculum	Notes/Examples
E5.1	Demonstrate familiarity with Cartesian co-ordinates in two dimensions.	Solve geometrical problems on co-ordinate axes.
E5.2	Find the gradient of a straight line. Calculate the gradient of a straight line from the co-ordinates of two points on it.	
E5.3	Calculate the length and the co-ordinates of the midpoint of a straight line from the co-ordinates of its end points.	
E5.4	Interpret and obtain the equation of a straight line graph.	
E5.5	Determine the equation of a straight line parallel to a given line.	e.g. find the equation of a line parallel to $y = 4x - 1$ that passes through (0, –3).
E5.6	Find the gradient of parallel and perpendicular lines.	e.g. find the gradient of a line perpendicular to $y = 3x + 1$. e.g. find the equation of a line perpendicular to one passing through the co-ordinates (1, 3) and (–2, –9).
E5.7	Recognise and use the equation of a circle, centred at the origin.	
E5.8	Find the equation of the tangent to a circle at a given point.	Use the fact that the tangent is perpendicular to the radius.

C6 Trigonometry

	Core curriculum	Notes/Examples
C6.1	Interpret and use three-figure bearings.	Measured clockwise from the North, i.e. 000°–360°.
C6.2	Apply Pythagoras' theorem and the sine, cosine and tangent ratios for acute angles to the calculation of a side or an angle of a right-angled triangle.	Angles will be quoted in degrees. Answers should be written in degrees and decimals to one decimal place.
C6.3	*Extended curriculum only*	
C6.4	*Extended curriculum only*	
C6.5	*Extended curriculum only*	

E6 Trigonometry

	Extended curriculum	Notes/Examples
E6.1	Interpret and use three-figure bearings.	Measured clockwise from the North, i.e. 000°–360°.
E6.2	Apply Pythagoras' theorem and the sine, cosine and tangent ratios for acute angles to the calculation of a side or an angle of a right-angled triangle. Solve trigonometrical problems in two dimensions involving angles of elevation and depression. Extend sine and cosine values to angles between 90° and 180°.	Angles will be quoted in degrees. Answers should be written in degrees and decimals to one decimal place.
E6.3	Know the exact values for the sine and cosine ratios of 0°, 30°, 45°, 60° and 90°. Know the exact values for the tangent ratios of 0°, 30°, 45° and 60°. Extend sine and cosine and tangent values to angles between 90° and 360°. Graph and know the properties of trigonometric functions. Solve simple trigonometric equations.	e.g. $\sin x = \frac{\sqrt{3}}{2}$ for values of x between 0 and 360°.
E6.4	Solve problems using the sine and cosine rules for any triangle and the formula area of triangle $= \frac{1}{2}ab\sin C$.	
E6.5	Solve simple trigonometrical problems in three dimensions including angle between a line and a plane.	

C7 Matrices and transformations

	Core curriculum	Notes/Examples
C7.1	Describe a translation by using a vector represented by e.g. $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or **a**.	
	Add and subtract vectors.	
	Multiply a vector by a scalar.	
C7.2	Reflect simple plane figures in horizontal or vertical lines.	
	Rotate simple plane figures about the origin, vertices or midpoints of edges of the figures, through multiples of 90°.	
	Construct given translations and enlargements of simple plane figures.	Positive and fractional scale factors for enlargements only.
	Recognise and describe reflections, rotations, translations and enlargements.	Positive and fractional scale factors for enlargements only.
C7.3	*Extended curriculum only*	
C7.4	*Extended curriculum only*	
C7.5	*Extended curriculum only*	

E7 Matrices and transformations

	Extended curriculum	Notes/Examples
E7.1	Describe a translation by using a vector represented by e.g. $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or **a**.	
	Add and subtract vectors.	
	Multiply a vector by a scalar.	
E7.2	Reflect simple plane figures.	
	Rotate simple plane figures through multiples of 90°.	
	Construct given translations and enlargements of simple plane figures.	Positive, fractional and negative scale factors for enlargements.
	Recognise and describe reflections, rotations, translations and enlargements.	Positive, fractional and negative scale factors for enlargements.
E7.3	Calculate the magnitude of a vector $\begin{pmatrix} x \\ y \end{pmatrix}$ as $\sqrt{x^2 + y^2}$.	Vectors will be printed as $\overrightarrow{AB}$ or **a** and their magnitudes denoted by modulus signs, e.g. $\lvert\overrightarrow{AB}\rvert$ or $\lvert\mathbf{a}\rvert$.
	Represent vectors by directed line segments.	
	Use the sum and difference of two vectors to express given vectors in terms of two coplanar vectors.	In their answers to questions, candidates are expected to indicate **a** in some definite way, e.g. by an arrow or by underlining, thus $\overrightarrow{AB}$ or a.
	Use position vectors.	Use vectors to construct geometric arguments.
E7.4	Display information in the form of a matrix of any order.	
	Calculate the sum and product (where appropriate) of two matrices.	
	Calculate the product of a matrix and a scalar quantity.	
	Use the algebra of 2 × 2 matrices including the zero and identity 2 × 2 matrices.	
	Calculate the determinant $\lvert\mathbf{A}\rvert$ and inverse $\mathbf{A}^{-1}$ of a non-singular matrix **A**.	
E7.5	Use the following reflections of the plane: reflection (M), rotation (R), translation (T), enlargement (E), and their combinations.	
	Identify and give precise descriptions of transformations connecting given figures.	
	Describe transformations using co-ordinates and matrices (singular matrices are excluded).	

C8 Probability

	Core curriculum	Notes/Examples
C8.1	Calculate the probability of a single event as either a fraction, decimal or percentage.	Problems could be set involving extracting information from tables or graphs.
C8.2	Understand and use the probability scale from 0 to 1.	
C8.3	Understand that the probability of an event occurring = 1 – the probability of the event not occurring.	
C8.4	Understand relative frequency as an estimate of probability.	
C8.5	Calculate the probability of simple combined events, using possibility diagrams, tree diagrams and Venn diagrams.	In possibility diagrams, outcomes will be represented by points on a grid, and in tree diagrams, outcomes will be written at the end of branches and probabilities by the side of the branches. Venn diagrams will be limited to two sets.
C8.6	Calculate simple conditional probability from Venn diagrams, tree diagrams and tables.	

E8 Probability

	Extended curriculum	Notes/Examples
E8.1	Calculate the probability of a single event as either a fraction, decimal or percentage.	Problems could be set involving extracting information from tables or graphs.
E8.2	Understand and use the probability scale from 0 to 1.	
E8.3	Understand that the probability of an event occurring = 1 – the probability of the event not occurring.	
E8.4	Understand relative frequency as an estimate of probability.	
E8.5	Calculate the probability of simple combined events, using possibility diagrams, tree diagrams and Venn diagrams.	In possibility diagrams, outcomes will be represented by points on a grid, and in tree diagrams, outcomes will be written at the end of branches and probabilities by the side of the branches.
E8.6	Calculate conditional probability from Venn diagrams, tree diagrams and tables.	

C9 Statistics

	Core curriculum	Notes/Examples
C9.1	Collect, classify and tabulate statistical data.	
C9.2	Read, interpret and draw simple inferences from tables and statistical diagrams. Compare sets of data using tables, graphs and statistical measures. Appreciate restrictions on drawing conclusions from given data.	
C9.3	Understand and use sampling.	Including random and systematic sampling. Know the limitations of sampling.
C9.4	Construct and interpret bar charts, pie charts, pictograms, stem and leaf diagrams, simple frequency distributions, histograms with equal intervals and scatter diagrams.	
C9.5	Calculate the mean, median, mode and range for individual and discrete data and distinguish between the purposes for which they are used.	
C9.6	*Extended curriculum only*	
C9.7	*Extended curriculum only*	
C9.8	Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram.	
C9.9	Draw, interpret and use lines of best fit by eye.	

E9 Statistics

	Extended curriculum	Notes/Examples
E9.1	Collect, classify and tabulate statistical data.	
E9.2	Read, interpret and draw inferences from tables and statistical diagrams. Compare sets of data using tables, graphs and statistical measures. Appreciate restrictions on drawing conclusions from given data.	
E9.3	Understand and use sampling.	Including random, stratified and systematic sampling. Know the limitations of sampling.
E9.4	Construct and interpret bar charts, pie charts, pictograms, stem and leaf diagrams, simple frequency distributions, histograms with equal and unequal intervals and scatter diagrams.	For unequal intervals on histograms, areas are proportional to frequencies and the vertical axis is labelled 'frequency density'.
E9.5	Calculate the mean, median, mode and range for individual and discrete data and distinguish between the purposes for which they are used.	
E9.6	Calculate an estimate of the mean for grouped and continuous data. Identify the modal class from a grouped frequency distribution.	
E9.7	Construct and use cumulative frequency diagrams. Estimate and interpret the median, percentiles, quartiles and inter-quartile range. Construct and interpret box-plots.	
E9.8	Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram.	
E9.9	Draw, interpret and use lines of best fit by eye.	

4 Details of the assessment

For information on the Assessment objectives (AOs), see section 5.

Core Assessment

Paper 1 – Core

1 hour, 60 marks
Candidates answer **all** questions.
This paper consists of short-answer and structured questions based on the Core curriculum.
Calculators are required to answer questions in Paper 1.
This is a compulsory component for Core candidates.
This written paper is an externally set assessment, marked by Cambridge.

Paper 3 – Core

1 hour 30 minutes, 84 marks
Candidates answer **all** questions.
This paper consists of short-answer and structured questions based on the Core curriculum.
Calculators are **not** permitted in Paper 3.
This is a compulsory component for Core candidates.
This written paper is an externally set assessment, marked by Cambridge.

Paper 5 – Core

2 hours, 96 marks
Candidates answer **all** questions.
This paper consists of structured questions based on the Core curriculum.
Calculators are required to answer questions in Paper 5.
This is a compulsory component for Core candidates.
This written paper is an externally set assessment, marked by Cambridge.

Extended Assessment

Paper 2 – Extended

1 hour, 60 marks

Candidates answer **all** questions.

This paper consists of short-answer and structured questions based on the Extended curriculum.

Calculators are required to answer questions in Paper 2.

This is a compulsory component for Extended candidates.

This written paper is an externally set assessment, marked by Cambridge.

Paper 4 – Extended

1 hour 30 minutes, 84 marks

Candidates answer **all** questions.

This paper consists of short-answer and structured questions based on the Extended curriculum.

Calculators are **not** permitted in Paper 4.

This is a compulsory component for Extended candidates.

This written paper is an externally set assessment, marked by Cambridge.

Paper 6 – Extended

2 hours, 96 marks

Candidates answer **all** questions.

This paper consists of structured questions based on the Extended curriculum.

Calculators are required to answer questions in Paper 6.

This is a compulsory component for Extended candidates.

This written paper is an externally set assessment, marked by Cambridge.

5 Assessment objectives

The assessment objectives (AOs) are:

AO1 Use mathematical techniques

AO2 Reason, interpret and communicate mathematically when solving problems

AO1 Mathematical techniques

Candidates should be able to recall and apply mathematical knowledge, terminology and definitions to carry out routine procedures or straightforward tasks requiring single or multi-step solutions in mathematical or everyday situations including:

- organising, processing and presenting information accurately in written, tabular, graphical and diagrammatic forms
- using and interpreting mathematical notation correctly
- performing calculations and procedures by suitable methods, including using a calculator
- understanding systems of measurement in everyday use and making use of these
- estimating, approximating and working to degrees of accuracy appropriate to the context and converting between equivalent numerical forms
- using geometrical instruments to measure and to draw to an acceptable degree of accuracy
- recognising and using spatial relationships in two and three dimensions.

AO2 Reason, interpret and communicate mathematically when solving problems

Candidates should be able to analyse a problem, select a suitable strategy and apply appropriate techniques to obtain its solution, including:

- making logical deductions, making inferences and drawing conclusions from given mathematical data
- recognising patterns and structures in a variety of situations, and forming generalisations
- presenting arguments and chains of reasoning in a logical and structured way
- interpreting and communicating information accurately and changing from one form of presentation to another
- assessing the validity of an argument and critically evaluating a given way of presenting information
- solving unstructured problems by putting them into a structured form involving a series of processes
- apply combinations of mathematical skills and techniques using connections between different areas of mathematics in problem solving
- interpreting results in the context of a given problem and evaluating the methods used and solutions obtained.

Weighting for assessment objectives

The approximate weightings allocated to each of the assessment objectives (AOs) are summarised below.

Assessment objectives as a percentage of the Core qualification

Assessment objective	Weighting in IGCSE %
AO1 Use mathematical techniques	45–55
AO2 Reason, interpret and communicate mathematically when solving problems	45–55

Assessment objectives as a percentage of the Extended qualification

Assessment objective	Weighting in IGCSE %
AO1 Use mathematical techniques	35–45
AO2 Reason, interpret and communicate mathematically when solving problems	55–65

Assessment objectives as a percentage of each component

Assessment objective	Weighting in components %					
	Paper 1	**Paper 2**	**Paper 3**	**Paper 4**	**Paper 5**	**Paper 6**
AO1 Use mathematical techniques	55–65	45–55	50–60	40–50	35–45	25–35
AO2 Reason, interpret and communicate mathematically when solving problems	35–45	45–55	40–50	50–60	55–65	65–75

6 What else you need to know

This section is an overview of other information you need to know about this syllabus. It will help to share the administrative information with your exams officer so they know when you will need their support. Find more information about our administrative processes at **www.cie.org.uk/examsofficers**

Before you start

Previous study

We recommend that learners starting this course should have studied a mathematics curriculum such as the Cambridge Secondary 1 programme or equivalent national educational framework. Learners in England will normally have followed the Key Stage 3 programme of study within the National Curriculum for England.

Guided Learning Hours

Cambridge IGCSE syllabuses are designed on the assumption that learners have about 130 guided learning hours per subject over the duration of the course, but this is for guidance only. The number of hours required to gain qualification may vary according to local curricular practice and the learners' prior experience of the subject.

Total qualification time

This syllabus has been designed on the assumption that the total qualification time per subject will include both guided learning and independent learning activities. The estimated number of guided learning hours for this syllabus is 130 hours over the duration of the course. The total qualification time for this syllabus has been estimated to be approximately 200 hours. These values are guidance only. The number of hours required to gain the qualification may vary according to local curricular practice and the learners' prior experience of the subject.

Availability and timetables

You can enter candidates in the June and November exam series. You can view the timetable for your administrative zone at **www.cie.org.uk/timetables**

All Cambridge schools are allocated to one of six administrative zones. Each zone has a specific timetable. This syllabus is **not** available in all administrative zones. To find out about the availability visit the syllabus page at **www.cie.org.uk/igcse**

Private candidates can enter for this syllabus.

Combining with other syllabuses

Candidates can take this syllabus alongside other Cambridge syllabuses in a single exam series. The only exceptions are:

- Cambridge IGCSE Mathematics (0580)
- Cambridge IGCSE International Mathematics (0607)
- syllabuses with the same title at the same level.

Cambridge IGCSE, Cambridge IGCSE (9–1) (Level 1/Level 2 Certificates) and Cambridge O Level syllabuses are at the same level.

Making entries

Exams officers are responsible for submitting entries to Cambridge. We encourage them to work closely with you to make sure they enter the right number of candidates for the right combination of syllabus components. Entry option codes and instructions for submitting entries are in the *Cambridge Guide to Making Entries*. Your exams officer has a copy of this guide.

Option codes for entries

To keep our exams secure we allocate all Cambridge schools to one of six administrative zones. Each zone has a specific timetable. The majority of option codes have two digits:

- the first digit is the component number given in the syllabus
- the second digit is the location code, specific to an administrative zone.

Support for exams officers

We know how important exams officers are to the successful running of exams. We provide them with the support they need to make your entries on time. Your exams officer will find this support, and guidance for all other phases of the Cambridge Exams Cycle, at **www.cie.org.uk/examsofficers**

Retakes

Candidates can retake the whole qualification as many times as they want to. This is a linear qualification so candidates cannot re-sit individual components.

Equality and inclusion

We have taken great care to avoid bias of any kind in the preparation of this syllabus and related assessment materials. In compliance with the UK Equality Act (2010) we have designed this qualification to avoid any direct and indirect discrimination.

The standard assessment arrangements may present unnecessary barriers for candidates with disabilities or learning difficulties. We can put arrangements in place for these candidates to enable them to access the assessments and receive recognition of their attainment. We do not agree access arrangements if they give candidates an unfair advantage over others or if they compromise the standards being assessed.

Candidates who cannot access the assessment of any component may be able to receive an award based on the parts of the assessment they have completed.

Information on access arrangements is in the *Cambridge Handbook (UK)* at **www.cie.org.uk/examsofficers**

Language

This syllabus and the related assessment materials are available in English only.

After the exam

Grading and reporting

Grades 1, 2, 3, 4, 5, 6, 7, 8 or 9 indicate the standard a candidate achieved at Cambridge IGCSE (9–1).

9 is the highest and 1 is the lowest. 'Ungraded' means that the candidate's performance did not meet the standard required for grade 1. 'Ungraded' is reported on the statement of results but not on the certificate. In specific circumstances your candidates may see one of the following letters on their statement of results:

- Q (result pending)
- X (no result)
- Y (to be issued)

These letters do not appear on the certificate.

Regulation

Cambridge International Level 1/Level 2 (9–1) Certificates are regulated in England, Wales and Northern Ireland. This syllabus is included in the *Register of Regulated Qualifications* as a Cambridge International Level 1/ Level 2 (9–1) Certificate.

Candidates awarded grades 1 to 3 have achieved an award at Level 1 of the Regulated Qualifications Framework. Candidates awarded grades 4 to 9 have achieved an award at Level 2 of the Regulated Qualifications Framework.

For the most up-to-date information on the performance tables, including the list of qualifications which count towards the English Baccalaureate, please go to the Department for Education website and search on 'performance tables'.

Grade descriptions

We expect to provide grade descriptions in an update to this syllabus in due course.

Changes to this syllabus for 2017, 2018 and 2019

This syllabus has been updated. The latest syllabus is version 2, published September 2016.

This document has been refreshed and rebranded. The subject content and the specimens remain the same.

Minor changes to the wording of some sections have been made to improve clarity.

Changes to the syllabus code

- Syllabus **0626** is the regulated syllabus for examination from 2017 onwards.

Changes to syllabus content

- The syllabus sections have all been updated and some topics have been expanded slightly to improve their clarity or provide better progression to Level 3 mathematics.
- Some material has been moved from the Extended curriculum to the Core curriculum.
- The syllabus aims have been updated to reflect changes made to the qualification.

Changes to assessment

- The assessment objectives have been updated and the assessment structure revised.
- This qualification will be graded using a numerical grading scale 9–1.
- The qualification comprises **three** compulsory components which are assessed by examination only.
- Paper 1 and Paper 2 are worth 25 per cent of the total marks for the qualification.
- Paper 3 and Paper 4 are worth 35 per cent of the total marks for the qualification.
- Paper 5 and Paper 6 are worth 40 per cent of the total marks for the qualification.
- Calculators are **not** permitted in Paper 3 (Core) and Paper 4 (Extended).

Core assessment

- Core candidates take Papers 1, 3, and 5.
- The weighting of AO2 in the assessment has increased to 45–55 per cent of the whole qualification.
- The weighting of topics in the assessment has changed slightly. Number has increased to 40–45 per cent and Space and Shape has decreased to 20–25 per cent.

Extended assessment

- Extended candidates take Papers 2, 4 and 6.
- The weighting of AO2 in the assessment has increased to 55–65 per cent of the whole qualification.
- The weighting of topics in the assessment has changed slightly. Number has increased to 20–25 per cent and Space and Shape has decreased to 25–30 per cent.

In addition to reading the syllabus, teachers should refer to the updated specimen papers and are encouraged to access resources. These materials are on our website **www.cie.org.uk**

Teachers should take account of the changes described above when using textbooks published to support Cambridge IGCSE Mathematics 0580.

‘While studying Cambridge IGCSE and Cambridge International A Levels, students broaden their horizons through a global perspective and develop a lasting passion for learning.’

Zhai Xiaoning, Deputy Principal, The High School Affiliated to Renmin University of China

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