Cambridge IGCSE Mathematics (9-1) 0980 Syllabus Breakdown & Weekly Lesson Plan

Important Note: The 0980 syllabus is **identical in content** to 0580, with the only difference being the 9-1 grading scale instead of A*-G

. All topics, assessment objectives, and paper structures are the same.

Assessment Structure (Extended Tier: Grades 9-5)

Compulsory Papers :

- **Paper 2**: Non-calculator, 2 hours, 100 marks, 50% weighting
- **Paper 4**: Calculator, 2 hours, 100 marks, 50% weighting

Optional Alternative Papers:

- **Paper 5**: Investigation, 1 hour, 40 marks (substitutes for Paper 2/4)
- **Paper 6**: Modeling, 1 hour 30 minutes, 60 marks (substitutes for Paper 2/4)

Assessment Objectives :

- **AO1 Knowledge & Understanding**: 40-50% (Extended)
- **AO2 Analysis & Communication**: 50-60% (Extended)

Topic Weightings (Extended Papers 2 & 4)

Topic Area	Weighting	Weeks Allocated
Number	15-20%	3 weeks
Algebra (Algebra, Graphs, Functions, Coordinate Geometry)	35-40%	5.5 weeks
Space and Shape (Geometry, Mensuration, Trigonometry, Vectors & Transformations)	30-35%	4.5 weeks
Statistics & Probability	10-15%	2 weeks
Investigation & Modeling Skills	Integrated	1 week
Revision & Exam Practice	-	2 weeks

Detailed 16-Week Lesson Plan

WEEK 1-3: NUMBER (15-20% weight)

Week 1: Number Operations & Indices

- Day 1: Types of numbers, sets, Venn diagrams, prime factorization
- Day 2: Indices rules (positive, zero, negative, fractional), standard form
- Day 3: Surds (simplifying, rationalizing denominators) - **Extended only**
- Day 4: Past paper practice: Number techniques (Paper 2 non-calculator)
- Day 5: **Non-calculator focus**: Exact surd values and manipulation
- Day 6: Past paper review: Common index law errors

Week 2: Financial Mathematics & Applications

- Day 1: Percentages (increase/decrease, reverse percentages, profit/loss)
- Day 2: Simple & compound interest, depreciation, exponential growth/decay
- Day 3: Ratio, proportion, rates (speed, density, pressure)
- Day 4: Past paper practice: Financial math problems (Paper 4 calculator)
- Day 5: **Calculator skills**: Time value of money calculations
- Day 6: Past paper review: Distinguishing simple vs compound interest

Week 3: Bounds, Accuracy & Number Consolidation

- Day 1: Limits of accuracy, upper/lower bounds, error intervals
- Day 2: Estimation, rounding to appropriate accuracy, significant figures
- Day 3: Time, money, currency conversion, calculator efficiency
- Day 4: Past paper practice: Mixed number applications
- Day 5: **Practical**: Real-world estimation problems
- Day 6: **Full Paper 2 practice** (non-calculator number focus) + review

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WEEK 4-8: ALGEBRA (35-40% weight) - HEAVIEST SECTION

Week 4: Algebraic Manipulation & Equations

- Day 1: Expanding brackets, factorizing (quadratics, difference of squares)
- Day 2: Algebraic fractions, simplifying complex expressions
- Day 3: Simultaneous equations (linear & linear/quadratic)
- Day 4: Past paper practice: Algebra techniques (Paper 2)
- Day 5: **Non-calculator**: Factorizing by inspection and grouping

- Day 6: Past paper review: Algebraic fraction errors

Week 5: Functions & Graphs - Core Concepts

- Day 1: Function notation, domain/range, inverse functions
- Day 2: Composite functions, modulus functions, graphing y=|f(x)|
- Day 3: Quadratic functions, completing square, discriminants, roots
- Day 4: Past paper practice: Function problems (Paper 4)
- Day 5: **Graph skills**: Sketching quadratics without calculator
- Day 6: Past paper review: Domain/range mistakes

Week 6: Advanced Functions & Graphing

- Day 1: Exponential & logarithmic functions, graphing transformations
- Day 2: Trigonometric functions (sin, cos, tan graphs for 0°-360°)
- Day 3: Solving trig equations, exact values (30°, 45°, 60°)
- Day 4: Past paper practice: Function transformations
- Day 5: **Calculator focus**: Using graphing to solve equations
- Day 6: Past paper review: Transformation description errors

Week 7: Coordinate Geometry & Sequences

- Day 1: Straight line graphs, gradient, intercepts, parallel/perpendicular
- Day 2: Coordinate geometry of circles (center-radius form, tangents)
- Day 3: Arithmetic & geometric sequences, nth term, sum of series
- Day 4: Past paper practice: Coordinate geometry problems
- Day 5: **Problem-solving**: Finding circle equations from points
- Day 6: Past paper review: Sequence type identification

Week 8: Algebra Consolidation & Assessment

- Day 1: Mixed algebra problems (all types)
- Day 2: **Full Paper 2 mock** (non-calculator algebra focus)
- Day 3: **Full Paper 4 mock** (calculator algebra focus)
- Day 4: Detailed review of mocks, identify weak areas
- Day 5: Targeted revision on functions and equations

- Day 6: Formula and technique consolidation

WEEK 9-13: SPACE AND SHAPE (30-35% weight)

Week 9: Geometry & Circle Theorems

- Day 1: Properties of triangles, quadrilaterals, polygons, symmetry
- Day 2: Circle theorems (angles, tangents, chords, cyclic quadrilaterals)
- Day 3: Constructions, loci, similarity, congruence
- Day 4: Past paper practice: Geometry proof questions
- Day 5: **Practical geometry**: Accurate constructions
- Day 6: Past paper review: Circle theorem application errors

Week 10: Mensuration & 3D Shapes

- Day 1: Perimeter, area (triangles, circles, sectors, segments)
- Day 2: Surface area & volume (prisms, pyramids, cylinders, cones, spheres)
- Day 3: Arc length, sector area,弧度 measure
- Day 4: Past paper practice: Complex mensuration problems
- Day 5: **Calculator focus**: Complex volume calculations
- Day 6: Past paper review: Units and conversion errors

Week 11: Trigonometry - Right-Angled & Non-Right-Angled

- Day 1: SOHCAHTOA, Pythagoras, exact trig values
- Day 2: Sine rule, cosine rule, area formula (½absinC)
- Day 3: 3D trigonometry, angles between lines and planes
- Day 4: Past paper practice: Mixed trig problems
- Day 5: **Non-calculator trig**: Using exact values
- Day 6: Past paper review: 3D visualization problems

Week 12: Vectors & Transformations

- Day 1: Vector notation, addition, subtraction, scalar multiplication
- Day 2: Magnitude, position vectors, vector geometry
- Day 3: Transformations (translation, reflection, rotation, enlargement)

- Day 4: Past paper practice: Vector and transformation questions
- Day 5: **Vectors in geometry**: Proving parallel/collinear
- Day 6: Past paper review: Vector magnitude errors

Week 13: Space & Shape Consolidation

- Day 1: Mixed geometry problems
- Day 2: Mixed mensuration problems
- Day 3: Mixed trigonometry problems
- Day 4: Past paper practice: Extended response questions
- Day 5: **Problem-solving**: Multi-step geometry problems
- Day 6: **Full Paper 4 practice** (Space & Shape focus)

WEEK 14: STATISTICS & PROBABILITY (10-15% weight)

Week 14: Data Handling & Chance

- Day 1: Data collection, histograms, cumulative frequency, box plots
- Day 2: Measures of central tendency/dispersion (mean, median, mode, IQR, standard deviation)
- Day 3: Probability (tree diagrams, Venn diagrams, conditional probability)
- Day 4: Past paper practice: Statistics and probability problems
- Day 5: **Calculator skills**: Statistical functions, probability distributions
- Day 6: Past paper review: Probability tree errors

WEEK 15-16: REVISION & FINAL PREPARATION

Week 15: Mock Exams & Targeted Revision

- Day 1: **Full Paper 2 mock** (non-calculator, 2h)
- Day 2: **Full Paper 4 mock** (calculator, 2h)
- Day 3: Detailed analysis of mocks, identify weak topics
- Day 4: Targeted revision: Algebra & Functions
- Day 5: Targeted revision: Space & Shape

- Day 6: Formula recall and technique practice

Week 16: Final Preparation

- Day 1: Command words workshop (calculate, explain, prove, show)
- Day 2: Exam technique: Time management (1.2 min per mark)
- Day 3: **Final Paper 2 mock** (exam conditions)
- Day 4: **Final Paper 4 mock** (exam conditions)
- Day 5: Review of final mocks, confidence building
- Day 6: Light revision, exam day checklist, Q&A

Past Paper Integration Strategy

1. **Topic-wise practice**: 3-5 questions after each sub-topic from topic booklets
2. **Weekly mixed practice**: Every week includes one full paper section (Paper 2 or 4)
3. **Calculator vs Non-calculator**: Alternate practice between Paper 2 and Paper 4 style
4. **Progressive difficulty**: Start with grades 4-6 questions, move to 7-9 questions
5. **Cumulative testing**: Every 2 weeks, mixed topic test covering all topics taught

Key Resources:

- **Official syllabus**:

0980 syllabus for 2025-2027

- **Past papers**: 2019-2024 series (0625 papers are identical to 0980)
- **Formula sheet**: Provided in exam (see syllabus Appendix)
- **Calculator**: Scientific calculator required for Papers 2 & 4

Exam Tips:

- **Paper 2** (non-calculator): Master mental math, exact values, and algebraic manipulation
- **Paper 4** (calculator): Use calculator efficiently but show full working
- **AO2 focus**: Practice "explain", "interpret", and "communicate" questions extensively
- **Common pitfalls**: Confusing compound interest formula, misapplying circle theorems, sign errors in vectors