

Mathematics

Curriculum Principles

By the end of their all-through education, a student of mathematics at Dixons Trinity Chapeltown will:

- know the fundamental skills in mathematics which allow students to understand how to use this knowledge in future learning and employment. These include money management; reading timetables; discovering and understanding patterns in data and being able to solve problems.
- recognise the beauty in sophisticated mathematical methods; be analytical thinkers and have a thirst for mathematical reasoning. On leaving Dixons Trinity Chapeltown, students will have developed fluency in procedures and be keen problem solvers.

Our unifying ‘sentence’ is: “The mathematics department at Dixons Trinity Chapeltown allowed students to question and explore the beauty of mathematics, leading to the development of resilient and analytical problem solvers.”

In order to achieve a true understanding of mathematics, topics have been intelligently sequenced based on the following rationale:

- the overall aim of the all-through mathematics curriculum is to provide students with the knowledge they need to increase their cultural capital and be successful in their lives beyond the academy. With this in mind, throughout both Primary and Secondary, the schemes of work sequence topics in an order closely following that set out by the ‘mathematics Mastery Programme’. Adopting a spiral curriculum, in which topic areas are revisited and extended on a yearly basis, this sequence of learning promotes a deeper understanding of the mathematical concepts being taught, both in-line with the National Curriculum and in the wider domain.
- within the classroom, all through, lessons roughly follow a six-part lesson format: Do Now, New Learning, Talk Task, Develop Learning, Independent Task, Plenary. In basecamp and lower peak, there is more emphasis on ‘talk tasks’ to develop deeper understanding whilst middle and upper peaks spend more time on practice and application to promote resilience and independence. Secondary lessons in middle peak synthesise knowledge learned in a lesson with an exam question and there is a greater emphasis on this in upper peak to provide students with applied practice, underpinned by real life contexts. In accordance with the curriculum overview, each peak throughout Primary and Secondary promotes a slight variation in pedagogy suitable to the students’ developmental stage, whilst continuing to promote ambitious expectations for all pupils and educational equality throughout.
- the concept of interrupting the forgetting process permeates the all-through mathematics long term plan (LTP) and schemes of work (SOW). Interleaving and spaced learning are utilised in several ways. Across each year, new learning is split into units of work, each beginning with quick revision, then focussing on extension and application of similar learning the year before. As a result, students will consistently revisit topics (spaced learning) and interleave concepts throughout their mathematics career. In addition, in base camp and lower peak a daily mathematics meeting begins the learning each day. This focusses on revision of previous concepts using ‘call and response’ and targeted questioning in order to address students’ gaps. Additionally, ‘Fluency Fridays’ allow Teachers to deliver bespoke intervention with students whilst also ensuring students are fluent in the fundamentals of mathematics. In Secondary, every lesson begins with a ‘Do Now’, which promotes recall of integral knowledge, along with applied practice, from topics in the previous unit of work, allowing for spaced practice of up to six weeks. In addition, each topic taught has a mini-test and consolidation or extension re-test attached to assess understanding. Staff mark all re-tests and gaps in learning are addressed through global feedback, with opportunity for targeted additional practice. These tests ensure learning is revisited repeatedly. Spaced learning through retrieval practice and brain dumps in morning meetings and recall homework from knowledge organisers, are supplementary ways in which the forgetting process is interrupted, leading to true mastery of the mathematical curriculum.

The mathematics curriculum will address social disadvantage by addressing gaps in students’ knowledge and skills:

student is exposed to. Additionally, in Secondary, disadvantaged students are supported to succeed in mathematics through prioritised invites to Maths Homework club [and Y11 intervention](#). Run weekly, this provides focussed time with a teacher after school where students can have access to a computer in order to master the skills set in the homework.

- students with special educational needs or disabilities have additional support. Double staffing is used all through to target this cohort to help close any gaps. Such students also receive further intervention in class in the form of DIRT and targeted intervention to close their gaps. Students are also invited to attend maths homework club after school to support them to complete their Sparx Maths. All students access the same curriculum, and we have the highest expectations of all. We teach to the top with scaffolding and support for those who need it in order to allow all students to achieve and experience the very best of what has been thought and said.

We fully believe mathematics can contribute to the personal development of students at DTC:

- students will be encouraged to develop socially in mathematics lessons through the celebration of making mistakes and setting high expectations helps students to develop listening and speaking skills. Taking part in the weekly Maths Club and opportunities to be a Maths Ambassador also encourage teamwork and problem solving skills. Self-awareness is developed through self-assessment, which enables students to have an accurate understanding of their strengths and weaknesses, to accept them and the understand how to learn from them. Additionally, students are encouraged to tutor other students in Sparx Maths and TTRS clubs, developing further their social interaction skills in a professional manner.
- developing morality is evident in much of the mathematics curriculum where there is reference to real life contexts and students are encouraged to make decisions thus developing an understanding that certain choices may have different consequences and outcomes. One example where this applies is in percentages where comparing interest rates occurs and the role of 'loan sharks' can be discussed. Additionally, topics such as tracking and how the media use misleading statistical diagrams are also addressed.
- encouraging students to question how mathematics impacts the way the world works promotes the spiritual growth of our students. Referring to 'big issues' such as the gender pay gap, birth and death rates, gambling through probability and global warming within contextual questions allows students to have a concrete understanding of where mathematics fits into the bigger picture. Teaching a variety of strategies that allow creativity to blossom (i.e. construction and symmetry) and incorporating enrichment tasks during Maths Week such as money management and sport investigations allow students to develop more than just their problem solving skills in this subject.
- being a universal language, and having phenomena developed all over the world, lends mathematics to promoting cultural capital. Discussion when introducing many topics, such as place value, time, Fibonacci sequences, Pythagoras and Trigonometry to name a few, allows cultural influences to be explored.

At KS2, KS3 and KS4, our belief is that homework should be interleaved revision of powerful knowledge that has been modelled and taught in lessons. This knowledge is recalled and applied through a range of low-stakes quizzing and practice.

Opportunities are built in to make links to the world of work to enhance the careers, advice and guidance that students are exposed to:

- the mathematics curriculum provides students with opportunities to consider the world of work and how mathematics leads to successful careers. Each learning intention has a purpose attached for all students to see and, where relevant, the SoW refers to how the skill in question relates to specific careers or a future life context. For example, when teaching constructions, reference can be made to any form of design work or navigational career. Every unit of work also contains a careers spotlight where students are introduced to a variety of careers, which utilise the learning of the unit. Information about qualifications needed, salaries and career progression are also referenced.
- Additionally, map and scale reading skills developed as part of the Duke of Edinburgh Award, which all children participate in, further develops mathematical skill.

A true love of mathematics involves learning about various cultural domains. We teach beyond the specification requirements, but do ensure students are well prepared to be successful in GCSE examinations:

- built into each Secondary SOW is content that will benefit students in their understanding of the wider impact of mathematics. For example, in Y7 students will recap telling the time and its Babylonian origins, explore where our place value systems came from and be introduced to Fibonacci and the 'Golden Ratio'. In Y8, students will discover Venn diagrams and the nuances of interest rates through percentages. Y9 and Y10 offer an insight into the history of Pythagoras Theorem and the origins of Trigonometry. Whilst not strictly appearing on the GCSE specification, providing this additional information will allow students to build their cultural capital and deepen their understanding into the true beauty behind the mathematics they learn.
- in Y5 to Y8, students take part in Maths Week during Cycle 1. A variety of enrichment activities are provided to complement their mathematics lessons to allow students to further explore the domain of mathematics. Such activities include Roman Numerals, symmetry in Mandala patterns, code breaking, visits from external companies running problem solving activities and tasks such as 'setting up your life'.



Mathematics

Curriculum overview

All children are entitled to a curriculum and to the powerful knowledge which will open doors and maximise their life chances. Below is a high-level overview of the critical knowledge children will learn in this particular subject, at each key stage from Reception through to Year 11, in order to equip students with the cultural capital they need to succeed in life. The curriculum is planned vertically and horizontally giving thought to the optimum knowledge sequence for building secure schema.

Review of topics is a continual process; in Primary, daily Maths meetings recapping knowledge covered in previous units occurs and in Secondary, every lesson has a Do Now that recaps knowledge covered in the last unit covered. All through, these reviews are an opportunity to close gaps of specific students identified through intervention planning and continual effective formative assessment.

		Knowledge, skills and understanding to be gained at each stage*		
		Cycle 1	Cycle 2	Cycle 3
EYFS	New learning	<p>Early mathematical experiences</p> <p>Classifying; matching; comparing; ordering</p> <p>Pattern, shape and early number</p> <p>Recognise, describe, copy patterns; 3-D shapes; position; count up to 6 objects reliably; one more/one less; concept of zero; addition and subtraction within 6</p> <p>Measures, length and time</p> <p>Capacity, size and length of every day objects using every day vocabulary; weeks, seasons, time; ordinal language</p>	<p>Numbers</p> <p>Numbers up to 10: count, represent, recognise and order; addition and subtraction, augmentation and reduction</p> <p>Numbers up to 15: explore, represent, count and order; grouping and sharing</p> <p>Numbers within 20: investigate number combinations; ordinal numbers; double and half</p>	<p>Shape and pattern</p> <p>Describe / sort shapes; recognise, continue and create pattern</p> <p>Addition and subtraction</p> <p>Commutativity; comparing two amounts; doubling and halving</p> <p>Money and measures</p> <p>Compare / describe coins capacities, volumes, weights and lengths</p> <p>Number</p> <p>Different representations; recognise and extend a pattern; recognise, compare and say numbers to 50</p>
YEAR 1	Manipulation and making links	<p>Number</p> <p>Numbers up to 20: identifying, comparing, ordering, doubling, halving, addition, subtraction and number bonds</p> <p>Shape and pattern</p> <p>Common 2D and 3D shapes; positioning; instructional language</p>	<p>Number</p> <p>Telling the time; exploring calculation strategies within 20; numbers to 50; addition and subtraction within 20</p> <p>Fractions and measures</p> <p>Recognise and find a half, one quarter; compare lengths and masses; measure and record</p>	<p>Number</p> <p>Numbers 50 to 100 and beyond; counting in 1s / 5s / 10s; place value; add / subtract beyond 20; multiply and divide</p> <p>Money and measures</p> <p>Recognise value of coins and notes; add / subtract with money; compare, describe and measure capacity / volume</p>
YEAR 2	Manipulation and making links	<p>Number</p> <p>Numbers within 100; add and subtract 2-digit numbers; addition and subtraction word problems; multiply and divide by 2 / 5 / 10</p> <p>Measures and graphs</p> <p>Measuring length: cm, m; reading scales; tally charts; pictograms; tables; totalling</p>	<p>Number</p> <p>Time; simple fractions of objects; equivalent fractions; 2-digit calculation, including regrouping / adjusting; money</p> <p>Geometry</p> <p>Faces; shapes and patterns; lines; turn; positional language</p>	<p>Number</p> <p>Numbers within 1000; exploring calculation strategies, including mental and formal written methods; multiply / divide by 3 / 4</p> <p>Measures</p> <p>Capacity and volume measures; appropriate measures for mass; read scales up to 1000</p>
YEAR 3	Building independence and autonomy	<p>Number</p> <p>Number sense and exploring calculation strategies; place value; rounding; addition; subtraction using various strategies</p> <p>Measures and graphs</p> <p>Interpret data from charts / tables; solve one-step and two-step problems; measure / compare / add / subtract lengths using appropriate units</p>	<p>Number</p> <p>Multiplication and division methods; problem solving; inverse; formal methods of multiply / divide</p> <p>Time and fractions</p> <p>Tell / record / write time in 12-hour using am / pm; use simple fractions; simple fraction calculation methods</p>	<p>Shape and measure</p> <p>Angles; parallel / perpendicular lines; draw and measure 2D shapes; measure using appropriate tools and units</p> <p>Number</p> <p>Securing multiplication and division for 6 and 8 times tables; mental addition / subtraction; numbers beyond 1000</p>



		Knowledge, skills and understanding to be gained at each stage*		
		Cycle 1	Cycle 2	Cycle 3
YEAR 4	Building independence and autonomy	New learning Number Reasoning with 4-digit numbers; rounding; addition / subtraction; multiplication / division methods Data Discrete and continuous data; interpret and present using graphical methods	Number Securing multiplication facts; equivalent fraction; add / subtract fractions to more than 1; decimals Geometry Time conversions; calculate perimeter and area of rectilinear shapes	Problem solving Solving problems involving measure and money; fractions and decimals Geometry and pattern Shape and symmetry; position and direction; reasoning with patterns and sequences; 3D shapes
YEAR 5	Formalisation and consolidation	New learning Number Reasoning with large whole numbers; integer addition and subtraction; factors; primes; squares; cubes Graphs and geometry Tables and line graphs; perimeter and area of non-rectilinear shapes	FDP Converting between fractions; decimals and percentages; four operations with fractions Angles and transformations Acute; obtuse; reflex, draw and measure angles; angle facts; translations; reflections	Number Solving multi-step problems with whole numbers and decimals using all operations Geometry Unit conversion; regular and irregular polygons; nets of 3D shapes; circles; volume / capacity and cube numbers
YEAR 6	Formalisation and consolidation	Application and extension of key skills Integers and decimals addition and subtraction; multiplication and division; calculation problems including algebraic solving	Equivalence; simplification; comparing, ordering and calculation of fractions; missing angles and lengths; coordinates and shapes	Conversions of metric measures; time; area; volume; FDP equivalence; statistical diagrams; averages; proportion problems
YEAR 7	Formalisation and consolidation	New learning Unit 1: Algebra Order of operations, algebraic notation, simplifying including expanding and factorising single brackets, negative numbers, substituting, forming expressions, solving 1, 2 and 3-step equations, common sequences, nth term Unit 2: Number Place value, inequalities, comparing numbers, +/- methods, decimals, money calculations, factors & multiples, HCF & LCM, product of prime factors, \times/\div methods, decimals, estimation, rounding, perimeter and area including compound shapes, time	Unit 3: Geometry Reading scales, powers of 10, unit conversions, identify, draw & measure angles, properties of 2D shapes, angle facts, tessellation Unit 4: Fractions Fractions of amounts, converting improper fractions and mixed numbers, simplifying including algebraic fractions, equivalent fractions, four operations including algebraic fractions, comparing, ordering	Unit 5: Percentages Fraction/decimal/% conversions, ordering fractions/decimals/%, % of (calculator and non-calculator), expressing %, % increase and decrease
		CEAIG Careers in animation (Unit 1: linear sequences) and interior design (Unit 2: perimeter)	Careers in astronomy (Unit 3: angles) and catering (Unit 4: fractions of amounts)	Careers in accountancy (Unit 5: % increase/decrease)
YEAR 8	Formalisation and consolidation	New learning Unit 1: Probability and Statistics Averages, probability scale, sample space and listing outcomes, single event probability, probability 'not', frequency trees, pictograms, bar graphs, line graphs, pie charts Unit 2: Number Index laws, powers and roots, Pythagoras' theorem, standard form, prime factorisation for HCF and LCM, set notation, Venn diagrams including problem solving	Unit 3: Algebra Inequalities, complex simplifying including algebraic fractions, formulae, transposing formulae, solving equations involving brackets and with variables on both sides, forming and solving from worded and geometric problems, expanding binomials, factorising quadratics, fractional sequences, problem solving with linear sequences, plotting linear functions from a table Unit 4: 2D Geometry Constructions including triangles, angle facts involving parallel lines, conversions of units including squared and cubed units, composite shapes, area of specific	Unit 5: Proportional Reasoning % increase/decrease, percentage change, repeated percentage change, simple and compound interest, reverse percentage, rates and ratio, speed/distance/time, density/mass/volume, pressure/force/area Unit 6: 3D Geometry Properties of 3D shapes, nets, plans and elevations, volume of prisms, pyramids and cones, surface area



		Knowledge, skills and understanding to be gained at each stage*		
		Cycle 1	Cycle 2	Cycle 3
			quadrilaterals, circumference and area of circles and part circles	
	CEAIG	Careers in medicine (Unit 1: statistical diagrams) and ecology (Unit 2: index laws)	Careers in cryptoanalysis (Unit 3: forming and solving) and fashion design (Unit 4: area)	Careers in space travel (Unit 5: speed, distance, time) and architecture (Unit 6: plans and elevations)
YEAR 9 Application and extension	New learning	<p>Unit 1: Statistics Representing data, comparing data sets, scatter graphs, time series and moving averages, MMR from tables, frequency diagrams including polygons and simple histograms, identifying errors from statistical diagrams</p> <p>Unit 2: Graphs and Proportion Coordinates, mid-points, linear graphs, equation of a straight line, direct/inverse proportion, scales and scale drawing</p>	<p>Unit 3: Algebraic Expressions Arithmetic and geometric sequences nth term, algebraic fractions, transposing formulae involving factorisation, binomials, polynomials, factorising quadratics to solve them, difference of two squares, form and solve inequalities</p> <p>Unit 4: 2D Geometry Perpendicular and angle bisectors, loci problems, mixed angle fact problems, angles in polygons, congruence and similarity, similar shapes lengths/areas/volumes, arc lengths, sector areas, geometric proof</p>	<p>Unit 5: Algebra - Graphs Solve linear functions graphically, form and solve inequalities graphically, simultaneous equations, simultaneous equations graphically, quadratic/cubic/reciprocal/exponential graphs</p> <p>Unit 6: Geometry – Triangles and Transformations Pythagoras, 3D Pythagoras, trigonometry introduction, trigonometric functions, trigonometric graphs, transformations including enlargement by negative and fractional scale factors</p>
	CEAIG	Careers in data analysis (Unit 1: MMR from tables) and land surveyance (Unit 2: scales)	Careers in computer game design (Unit 3: sequences) and network coverage (Unit 4: loci)	Careers in meteorology (Unit 5: construct and solve inequalities) and surveyance and cartography (Unit 6: Pythagoras)
YEAR 10 Application and extension	New learning	<p>Unit 1: Probability and Statistics Probability of combined events, AND/OR rules in probability, theoretical/experimental probabilities and expected frequency. grouped data, compare data sets, compound measures, SDT graphs</p> <p>Unit 2: Algebra - Graphs Lengths of line segments, equation of a straight line not from a graph, parallel/perpendicular lines, sketching quadratic functions, area under curves, gradient of curves</p>	<p>Unit 3: 3D Geometry and Limits Estimate complex calculations including roots and in context, error intervals, plans and elevations, 3D shapes surface area and volume, cones and spheres, limits of accuracy, upper/lower bounds, percentage error</p> <p>Unit 4: Statistics and Probability Product rule for counting, sampling methods, capture re-capture, bias, probability from Venn diagrams, combined and conditional probability, cumulative frequency, interquartile range, box plots</p>	<p>Unit 5: Number Complex index laws including equations, calculating with standard form, simple and compound interest, growth/decay, estimating roots, surds, ratio problems, converting recurring decimals and fractions</p> <p>Unit 6: Algebra Solving harder quadratic equations through factorising and the quadratic formula, complex algebraic fractions, non-linear simultaneous equations including graphically, function notation</p> <p>Bespoke revision LTP for Foundation path</p>
	CEAIG	Careers in medicine (Unit 1: probability) politics (Unit 2: algebraic argument)	Careers in graphic design (Unit 3: 3D shapes) and market research (Unit 4: sampling)	Careers in banking (Unit 5: growth and decay) and scientific research (Unit 6: complex graphs)
YEAR 11 Application and extension	Application and extension of key knowledge	<p>Unit 1: 2D Geometry Loci problems, bearings, similarity and scale factors, column vectors, vector geometry, 3D trigonometry, exact trigonometric values, sine and cosine rules, sine rule for area</p> <p>Unit 2: Number and Algebra Iteration and recursion, graphing proportion, circle theorems including proof, algebraic and geometric proof, circle functions and tangents, quadratic nth term, transformation of functions, quadratic inequalities</p>	Bespoke revision LTP for each class	



		Knowledge, skills and understanding to be gained at each stage*		
		Cycle 1	Cycle 2	Cycle 3
	CEAIG	Careers in nautical navigation (Unit 1: bearings) and statistical modelling (Unit 2: Iteration and recursion)		

*A powerful, knowledge-rich curriculum teaches both **substantive knowledge** (facts; knowing that something is the case; what we think about) and non-declarative or **procedural knowledge** (skills and processes; knowing how to do something; what we think with). There are no skills without bodies of knowledge to underpin them. In some subjects, a further distinction can be made between substantive knowledge (the domain specific knowledge accrued e.g. knowledge of the past) and disciplinary knowledge (how the knowledge is accrued e.g. historical reasoning). Please refer to the DAT Curriculum Principles, published on our website, for further information about how we have designed our all-through curriculum.



Year 1 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction									Planning days	Y8 expedition		
	Unit 1 Numbers within 10. Shape: 2D	Unit 1 Numbers within 10. Number: One more / less	Unit 1 Numbers within 10. Unit 1/2 Keep up	Unit 2 Adding and subtracting within 10. Money: coins 1-10	Unit 2 Adding and subtracting within 10. Time: Using the clock	Unit 6 Time. Time: Using the clock	Unit 6 Time. Unit 3 Shape and pattern. Shape: 3D	Unit 3 Shape and pattern. Number: Counting in 2s	Unit 4 Numbers within 20 Unit 4 Keep up	Unit 4 Numbers within 20 Number: Counting in 10s	Unit 4 Numbers within 20 Unit 4/5 Keep up	Unit 5 Adding and subtracting within 20 Number: 'between' 'greater / less	Unit 5 Adding and subtracting within 20 Measure: heavier/ lighter
Cycle 2						Cycle assessment weeks		Data input		Y7 expedition			
	Unit 5 Adding and subtracting within 20 Unit 7 Keep up	Unit 7 Exploring calculation strategies within 20 Money: 1-50p	Unit 7 Exploring calculation strategies within 20 Number: Swap to Dienes, counting in 10s and 1s	Unit 8 Numbers to 50 Unit 8 Keep up	Unit 8 Numbers to 50 Number: 'Before' backwards 0-50	Unit 9 Addition and subtraction within 20 Number: Counting in 5s	Unit 9 Addition and subtraction within 20 Unit 10 Keep up	Unit 10 Fractions Measure: Capacity half /full / empty	Unit 10 Fractions Money: £1 and £2 coins / notes	Data day Unit 11 Length and mass Unit 11 Keep up	Unit 11 Length and mass Number: 'between' longer shorter / est	Unit 12 Numbers 50 to 100 and beyond Number: 'Before' backwards 0-100	Unit 12 Numbers 50 to 100 and beyond Unit 12 Keep up
Cycle 3								Cycle assessment weeks		Y9 expedition			Recognition
	Unit 12 Numbers 50 to 100 and beyond Shape: Positional language, turns	Unit 13 Addition and subtraction within 100 Number: Balancing equations	Unit 13 Addition and subtraction within 100 Number: Missing number balanced equations in	Unit 13 Addition and subtraction within 100 Unit 14 Money Unit 13/14 Keep up	Unit 14 Money Money: First/then now adding	Unit 14 Money Number: 3 part equations	Unit 15 Multiplication and division Unit 15 Keep up	Unit 15 Multiplication and division Number: Writing digits	Unit 15 Multiplication and division Measure: Using a ruler	Unit 16 Capacity and volume Unit 16 Keep up	Unit 16 Capacity and volume Unit 16 Keep up		

Year 2 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction									Planning days	Y8 expedition		
	Unit 1 Numbers within 100 Place value Counting on & back in 1s (crossing 10s)	Unit 1 Numbers within 100 Place value Writing 2 digit numbers (numerals)	Unit 1 Numbers within 100 Number bonds to 10 Time (hour and half past)	Unit 1 Numbers within 100 Unit 2 Adding and subtracting 2 digit numbers Number bonds within 10 3D shapes	Unit 2 Adding and subtracting 2 digit numbers Number bonds within 10 Unit 1/2 Keep up	Unit 2 Adding and subtracting 2 digit numbers Partitioning numbers Interpreting data (tables/block diagrams)	Unit 3 Addition and subtraction word problems Partitioning numbers Counting on and back in 10s (from any number)	Unit 3 Addition and subtraction word problems Partitioning numbers Unit 3 Keep up	Unit 7 Time Number bonds within 20 2D shapes	Data day Unit 7 Time Number bonds within 20 Measuring using cm	Unit 5 Graphs Partitioning numbers Unit 7/5 Keep up	Unit 5 Graphs Unit 6 Multiplication & division Partitioning numbers Whole/half turns	Unit 6 Multiplication & division Number bonds within 20 Counting in 2s (number line)
Cycle 2						Cycle assessment weeks		Data input		Y7 expedition			
	Unit 6 Multiplication & division 10x tables Unit 6 Keep up	Unit 6 Multiplication & division Unit 8 Fractions 10x tables Counting in 5s (number line)	Unit 8 Fractions 10x tables writing numbers (words)	Revisit Previous Learning Fractions Unit 4 Keep up/8	Unit 4 Measuring length Fractions Fact families (multiplication & division)	Unit 9 Add & subtract 2 digit numbers (exchanging) 2x tables Money: total amounts	Unit 9 Add & subtract 2 digit numbers (exchanging) 2x tables Unit 9 Keep up	Unit 9 Add & subtract 2 digit numbers (exchanging) 2x tables Coin recognition (coins & notes)	Unit 10 Money 5x tables Using the inverse to solve +/- equations	Data day Unit 10 Money 5x tables Unit 10 Keep up	Unit 11: Faces, shapes & patterns + - (regrouping) Reading scales (divisions of 1s, 2s, 5s & 10s)	Unit 11: Faces, shapes & patterns money Reading temperature on a thermometer	Unit 11: Faces, shapes & patterns money Unit 11 Keep up
Cycle 3									Cycle assessment weeks		Y9 expedition		Recognition
	Unit 13: Measuring capacity and volume + - (regrouping) Money: different coins, same amount.	Unit 13: Measuring capacity and volume + - (regrouping) Unit 12 Keep up	Unit 14: Mass Fractions Time: to nearest 5 minutes	SATS TAF evidence collection Time: calculating durations	SATS TAF evidence collection	SATS TAF evidence collection	SATS TAF evidence collection Reading scales: estimating points	Unit 12 Numbers within 1000 Consolidate place value knowledge Unit 14 Keep up	Unit 15: Exploring calculation strategies Consolidate place value knowledge Unit 12 Keep up	Unit 15: Exploring calculation strategies Consolidate place value knowledge Unit 15 Keep up	Unit 16: Multiplication & division 3x and 4x Consolidate place value knowledge Unit 16 Keep up	Unit 16: Multiplication & division 3x and 4x Consolidate place value knowledge	



Year 3 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction									Planning days	Y8 expedition		
		Unit 1 Number sense and exploring calculation strategies Number: Mental addition and subtraction 2d	Unit 1 Number sense and exploring calculation strategies Number: Represent numbers to 1,000	Unit 1 Number sense and exploring calculation strategies Number: Place value of digits in numbers up to 3 d	Unit 1 Number sense and exploring calculation strategies Number: Derive multiplication and division equations using arrays (multiples of 2, 5 & 10)	Unit 1 Number sense and exploring calculation strategies Number: Skip count in intervals of 2, 3, 4, 5 and 10 Unit 1 Keep up	Unit 2 Place Value. Number: Represent multiplication and division calculations with bead string, part-whole model and array representations	Unit 2 Place Value. Number: Recognise, find and write fractions of lengths, shapes and quantities	Unit 2 Place Value. Number: Choose calculation strategies for 3-digit addition and subtraction	Unit 2 Place Value. Number: Derive facts from known facts 'If I know..., what else do I know?' (number bonds)	Unit 3 Graphs Number: Doubles and halves Unit 2: Keep up	Unit 4 Addition and subtraction Shape and Pattern: Name and describe 2-D and 3-D shapes according to properties	Unit 4 Addition and subtraction Shape and Pattern: Describe position, direction and movement (straight line movements and rotations including angles)
Cycle 2							Cycle assessment weeks		Data input		Y7 expedition		
	Unit 4 Addition and subtraction Unit 3/4Keep up	Unit 4 Addition and subtraction Measure: Read scales with intervals of 2, 5, 10 and 100 (comparing to increments of 1)	Unit 5 Length and perimeter Measure: Use standard units of measure and know their abbreviations Read temperature on a thermometer	Unit 6 Multiplication and division Time: Tell the time to the nearest five minutes	Unit 6 Multiplication and division Money: Coin recognition of all coins and notes (£5, £10, £20)	Unit 6 Multiplication and division Number: Recognise that two halves/three thirds/four quarters are equal to one whole Count in halves, thirds and quarters within 10	Unit 6 Multiplication and division Unit 6 Keep up Number: Derive facts from known facts (multiplication / division and addition / subtraction)	Unit 7 Deriving multiplication and division facts Number: Doubles & halves	Unit 7 Deriving multiplication and division facts Number: Choose and justify efficient calculation strategies for age-appropriate calculations	Unit 7 Deriving multiplication and division facts Unit 7 Keep up Number: Multiply by 10 and 100 recognising the importance of place value	Unit 8 Time Data: Read scales in steps of 2, 3, 4, 5 and 10	Unit 8 Time Unit 8: Keep up Number: Introduce counting in tenths	Unit 9 Fractions Shape and measure: Identify right angles and that two right angles make a half turn
Cycle 3									Cycle assessment weeks		Y9 expedition		Recognition
	Unit 9 Fractions Shape and Measure: Calculate the perimeter of simple 2-D shapes	Unit 9 Fractions Time: Tell the time to the nearest minute	Unit 9 Fractions Unit 9 Keep up Time: Tell the time from an analogue clock using Roman numbers I to XII	Unit 10 Angles and shape Number: Recognise equivalent fractions using a fraction wall	Unit 10 Angles and shape Number: Count in halves, thirds, quarters and tenths	Unit 10 Angles and shape Unit 10 Keep up Number: Find fractions	Unit 11 Measures Number: Multiplication and division by 10 and 100	Unit 11 Measures Number: Derive new facts from known number facts	Unit 11 Measures Unit 11 Keep up Data: Read scales Interpret tallies, tables, bar charts and pictograms	Unit 12 Securing multiplication and division Measures: Read scales with intervals of	Unit 13 Exploring calculation strategies and place value perpendicular and parallel lines	Unit 13 Exploring calculation strategies and place value Money:	



Year 4 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction									Planning days	Y8 expedition		
		Unit 1: Reasoning with 4 Digit Numbers	Unit 1: Reasoning with 4 Digit Numbers	Unit 2: Addition and Subtraction	Unit 2: Addition and Subtraction	Unit 2: Addition and Subtraction	Unit 3: Multiplication and Division	Unit 3: Multiplication and Division	Unit 3: Multiplication and Division	Unit 3: Multiplication and Division	Unit 3: Multiplication and Division	Unit 4: Interpreting and Presenting Data	Unit 4: Interpreting and Presenting Data
Cycle 2						Cycle assessment weeks		Data input			Y7 expedition		
	Revision Unit 5: Securing Multiplication Facts	Unit 5: Securing Multiplication Facts	Unit 5: Securing Multiplication Facts	Unit 6: Fractions	Unit 6: Fractions	Unit 6: Fractions	Unit 6: Fractions	Unit 7: Time	Unit 7: Time	Unit 8: Decimals	Unit 8: Decimals	Unit 8: Decimals	Unit 9: Area and Perimeter
Cycle 3								Cycle assessment weeks		Y9 expedition		Recognition	
	Unit 9: Area and Perimeter	Unit 10: Solving Measure and Money Problems	Unit 10: Solving Measure and Money Problems	Unit 10: Solving Measure and Money Problems	Unit 11: 2-D Shape and Symmetry	Unit 11: 2-D Shape and Symmetry	Unit 11: 2-D Shape and Symmetry	Unit 12: Position and Direction	Unit 12: Position and Direction	Unit 13: Reasoning with Patterns and Sequences	Unit 13: Reasoning with Patterns and Sequences	Unit 14: 3-D Shapes	



Year 7 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction							Expedition	Re-induction	Planning days			
		Baseline Homework Presentation	Unit 1 Algebra Algebraic notation	Unit 1 Algebra Substitution	Unit 1 Algebra Simplifying	Unit 1 Algebra Simplifying	Unit 1 Algebra Solving	Catch Up	Unit 1 Algebra Solving	Unit 1 Algebra Sequences	Unit 2 Number Place value, inequalities and ordering	Unit 2 Number Four operations inc. decimals	Unit 2 Number Four operations inc. decimals
Cycle 2		Re-induction				Cycle Assessment Weeks		Re-induction		Planning days			
	Unit 2 Number Factors and multiples	Unit 2 Number Factors and multiples	Unit 2 Number Rounding and estimation	Unit 2 Number Application	Unit 2 Number Application	Unit 3 Geometry Unit conversion	Assessments	Unit 3 Geometry Angle types, estimating, draw and measure	Unit 3 Geometry Properties of triangles and quadrilaterals	Unit 3 Geometry Angle facts	Unit 3 Geometry Mixed angle facts	Unit 4 Fractions Fractions of amounts	Unit 4 Fractions Fraction equivalence
Cycle 3	Re-induction						Re-induction		Cycle assessment weeks			Planning days	
	Unit 4 Fractions Four operations with fractions	Unit 4 Fractions Four operations with fractions	Unit 4 Fractions Compare and order fractions	Unit 4 Fractions Worded fraction problems	Unit 5 Percentages Expressing percentages	Unit 5 Percentages FDP	Unit 5 Percentages FDP	Unit 5 Percentages Percentage of amounts	Revision and Assessments	Revision and Assessments	Unit 5 Percentages Percentages increase and decrease	Unit 5 Percentages Simple interest	Dream Team Recognition



Year 8 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction					Cycle Assessment Weeks			Re-induction	Planning days			
		Unit 1 Probability and Statistics Probability scales and simple probability	Unit 1 Probability and Statistics Probability NOT and from listing outcomes and frequency trees	Unit 1 Probability and Statistics Calculating MMMR	Unit 1 Probability and Statistics Simple statistical diagrams	Unit 1 Probability and Statistics Pie charts	Catch Up Assessment	Unit 2 Number Index laws	Unit 2 Number Calculating with powers and roots, inc. Pythagoras	Unit 2 Number Standard form	Unit 2 Number Prime factorisation, HCF and LCM	Unit 2 Number Sets and Venn diagrams	Unit 3 Algebra Inequalities
Cycle 2		Re-induction						Re-induction			Expedition		
	Unit 3 Algebra Complex manipulation	Unit 3 Algebra Complex manipulation	Unit 3 Algebra Formulae	Unit 3 Algebra Forming and Solving	Unit 3 Algebra Forming and Solving	Unit 3 Algebra Sequences	Catch Up	Unit 4 2D Geometry Constructions	Unit 4 2D Geometry Angles in parallel lines	Unit 4 2D Geometry Unit conversions	Catch Up	Unit 4 2D Geometry Area of trapezia and compound shapes	Unit 4 2D Geometry Circles
Cycle 3	Re-induction						Re-induction		Cycle assessment weeks				Planning days
	Unit 5 Proportional Reasoning Percentage increase/decrease	Unit 5 Proportional Reasoning Reverse percentages	Unit 5 Proportional Reasoning Compound interest	Unit 5 Proportional Reasoning Ratio	Unit 5 Proportional Reasoning Compound measures	Unit 6 3D Geometry Solids' properties, nets, plans, elevations	Unit 6 3D Geometry Surface area	Unit 6 3D Geometry Volume of prisms	Revision and Assessments	Revision and Assessments	Unit 6 3D Geometry Volume of cylinders, cones and pyramids	Unit 6 3D Geometry Volume of composite prisms	Dream Team Recognition

Year 9 Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction								Re-induction	Planning days			
		Maths Induction Catch Up	Unit 1 Statistics Collecting and organising data	Unit 1 Statistics Interpret and compare statistical representations	Unit 1 Statistics MMMMR from a frequency table	Unit 1 Statistics Frequency diagrams	Unit 1 Statistics Identifying errors and misconceptions in statistical diagrams	Unit 2 Graphs and Proportion Coordinates and mid-points	Unit 2 Graphs and Proportion Linear functions	Unit 2 Graphs and Proportion Direct proportion	Unit 2 Graphs and Proportion Inverse proportion	Unit 2 Graphs and Proportion Scale	Catch Up
Cycle 2		Re-induction				Cycle assessment weeks		Re-induction		Planning days			
	Unit 3 Algebraic Expressions Sequences	Unit 3 Algebraic Expressions Expanding	Unit 3 Algebraic Expressions Factorising	Unit 3 Algebraic Expressions Solving	Unit 3 Algebraic Expressions Solving	Unit 3 Algebraic Expressions Transposing Formulae	Assessments	Unit 4 Geometry Angles Constructions and Loci	Unit 4 Geometry Angles Angles in polygons	Unit 4 Geometry Angles Congruency	Unit 4 Geometry Angles Similarity	Unit 4 Geometry Angles Arcs and sectors	Unit 5 Algebra Graphs Form and solve inequalities
Cycle 3	Re-induction						Re-induction		Cycle assessment weeks		DofE		Planning days
	Unit 5 Algebra Graphs Graphing inequalities and identifying regions	Unit 5 Algebra Graphs Simultaneous equations	Unit 5 Algebra Graphs Simultaneous equations	Unit 5 Algebra Graphs Quadratic graphs	Unit 5 Algebra Graphs Other algebraic graphs	Y9 Unit 6 Triangles and Transformations Pythagoras	Y9 Unit 6 Triangles and Transformations Trigonometry	Y9 Unit 6 Triangles and Transformations Trigonometry Extensions	Revision and Assessments	Revision and Assessments	Y9 Unit 6 Triangles and Transformations Transformations	Y9 Unit 6 Triangles and Transformations Transformations Mixed	Dream Team Recognition



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction					Cycle assessment weeks			Re-induction	Planning days			
		Unit 1 Probability and Statistics Experimental probability	Unit 1 Probability and Statistics Probability of combined events	Unit 1 Probability and Statistics MMMR from a frequency table	Unit 1 Probability and Statistics Cumulative frequency and box plots	Unit 1 Probability and Statistics Compound measures	Assessments	Unit 2 Algebra Graphs Line segments and equation of a line from coordinates	Unit 2 Algebra Graphs Parallel and perpendicular lines	Unit 2 Algebra Graphs Sketching quadratics	Unit 2 Algebra Graphs Gradient of and area under curves	Unit 3 Limits and 3D Geometry Estimation	Unit 3 Limits and 3D Geometry Bounds of accuracy
Cycle 2		Re-induction						Re-induction	Date input	Planning days	Y7 expedition		
	Unit 3 Limits and 3D Geometry Volume and S.A.	Unit 3 Limits and 3D Geometry Volume and S.A.	Unit 3 Limits and 3D Geometry Plans and Elevations and 3D Geometry Applications	Unit 4 Statistics and Probability Populations inc. capture recapture	Unit 4 Statistics and Probability Outcomes inc. product rule and sample space	Unit 4 Statistics and Probability Venn diagrams	Unit 4 Statistics and Probability Probability of combined events	Unit 4 Statistics and Probability Conditional probability	Unit 5 Number Index laws inc. equations, fractional and negative	Unit 5 Number Standard form calculations	Unit 5 Number Interest inc. growth and decay	Unit 5 Number Surds	Unit 5 Number Surds
Cycle 3	Re-induction						Re-induction		Cycle assessment weeks				Planning days
	Unit 5 Number Ratio	Unit 6 2D Geometry Trig inc. SOGCAHTOA, 3D, sine and cosine rule, area	Unit 6 2D Geometry Loci	Unit 6 2D Geometry Bearings	Unit 6 2D Geometry Vectors inc. column and vector geometry	Unit 7 Algebra Solving quadratic equations	Unit 7 Algebra Solving quadratic equations	Unit 7 Algebra Algebraic fractions	Revision and Assessments	Revision and Assessments	Unit 7 Algebra Non-linear simultaneous equations	Unit 7 Algebra Function notation	Recognition Dream Team

Unit 7: Algebra

Solving harder quadratic equations through factorising and the quadratic formula, complex algebraic fractions, non-linear simultaneous equations including graphically, function notation



Y11 Mathematics

Long Term Plan 2023/2024

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Induction					Cycle assessment weeks			Re-induction	Planning days	Mocks	Mocks	
		Year 11 Unit 2 Number and Algebra Iteration and Recursion	Year 11 Unit 2 Number and Algebra Graphing Proportion	Year 11 Unit 2 Number and Algebra Circle Theorems	Year 11 Unit 2 Number and Algebra Function Transformation	Year 11 Unit 2 Number and Algebra Algebraic and Geometric Proof	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	n/a	n/a	Bespoke revision
Cycle 2		Re-induction					Mocks	Re-induction	Data input	Planning days			
	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	n/a	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision
Cycle 3	Re-induction						Re-induction		Cycle assessment weeks				Planning days
	Bespoke revision	Bespoke revision	Bespoke revision	Bespoke revision	GCSE's begin								

Bespoke revision is created by the class teacher based on the students current gaps.

