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Iceni Primary Academy Maths Long Term Plan

Sept 2024

Maths planning at Iceni Academy Hockwold

Class	Year	Scheme of learning followed	Notes
Acorn	R	White Rose Maths scheme of learning	
Willow	1	White Rose scheme of learning version 3.0	
Elm	2	White Rose scheme of learning version 3.0	
Beech	3/4	White Rose scheme of learning version 3.0 mixed age teaching	
Oak	5/6	White Rose scheme of learning version 3.0 mixed age teaching	

Years 1-6 will use White Rose 'small steps' which the subject leader has collated into one side-by-side document to demonstrate progression and aid adaptive teaching.

Daily Assessment for Learning is carried out in all classes to determine if a 'small step' can be moved on from and if resources/strategies other than those suggested by White Rose can be utilised effectively before moving on.

Resources and strategies chosen by teachers for their known effectiveness in teaching a small step will also be used.

NB Using White Rose small steps as a basis for teaching has been chosen as a new scheme of learning for our Academy from September 2022 for the following reasons:

- **EEF recommendations about using manipulatives, concrete resources and representations more across all year groups**
- **Being able to combine Assessment for Learning with taking small steps and consolidating them as needed**
- **A consistent language of maths across the school**
- **Subject leader investigation into our previous Long Term Plan's interlocking at key termly assessment points using NTS tests; research into White Rose's fit with our testing arrangements demonstrated our bespoke Long Term Plan was no longer fit for purpose**
- **Preferred by Early Career Teachers and staff new to the school because of the additional planning and resourcing ideas in one place**

Supporting documents: White Rose 'ready to progress' document which maps the national curriculum across years 1-6 for each topic against where it is covered within the small steps; White Rose Year 1-6 Calculation Policies for Addition and Subtraction/Multiplication and Division; Third Space Learning's 'The Ultimate Maths Vocabulary List' for Years 1-6 with definitions. ATT Maths Community action steps 24/25 will be creating Calc Policies.

Our new Maths Long Term Plan is a working document; once new 'small steps' are published for the next term they will be added as below		
Progression colour key:	**Autumn Term colour**	**Spring Term colour**	**Summer Term colour**

EEF's Summary of recommendations for improving Maths in EYFS and KS1 (2020)

1
Develop practitioners' understanding of how children learn mathematics

- Professional development should be used to raise the quality of practitioner' knowledge of mathematics, of children's mathematical development and of effective mathematical pedagogy.

- Developmental progressions show us how children typically learn mathematical concepts and can inform teaching.

- Practitioners should be aware that developing a secure grasp of early mathematical ideas takes time, and specific skills may emerge in different orders.

- The development of self-regulation and metacognitive skills are linked to successful learning in early mathematics.

2
Dedicate time for children to learn mathematics and integrate mathematics throughout the day

- Dedicate time to focus on mathematics each day.

- Explore mathematics through different contexts, including storybooks, puzzles, songs, rhymes, puppet play, and games.

- Make the most of moments throughout the day to highlight and use mathematics, for example, in daily routines, play activities, and other curriculum areas.

- Seize chances to reinforce mathematical vocabulary.

- Create opportunities for extended discussion of mathematical ideas with children.

3
Use manipulatives and representations to develop understanding
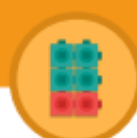
- Manipulatives and representations can be powerful tools for supporting young children to engage with mathematical ideas.

- Ensure that children understand the links between the manipulatives and the mathematical ideas they represent.

- Ensure that there is a clear rationale for using a particular manipulative or representation to teach a specific mathematical concept.

- Encourage children to represent problems in their own way, for example with drawings and marks.

- Use manipulatives and representations to encourage discussion about mathematics.

- Encourage children to use their fingers—an important manipulative for children.

4
Ensure that teaching builds on what children already know

- It is important to assess what children do, and do not, know in order to extend learning for all children.

- A variety of methods should be used to assess children's mathematical understanding, and practitioners should check what children know in a variety of contexts.

- Carefully listen to children's responses and consider the right questions to ask to reveal understanding.

- Information collected should be used to inform next steps for teaching. Developmental progressions can be useful in informing decisions around what a child should learn next.

5
Use high quality targeted support to help all children learn mathematics

- High quality targeted support can provide effective extra support for children.

- Small-group support is more likely to be effective when:

  a. children with the greatest needs are supported by the most experienced staff;

  b. training, support and resources are provided for staff using targeted activities;

  c. sessions are brief and regular; and

  d. explicit connections are made between targeted support and everyday activities or teaching.

- Using an approach or programme that is evidence-based and has been independently evaluated is a good starting point.

Improving Mathematics in Key Stages Two and Three – Recommendations Summary

Education Endowment Foundation

1
Use assessment to build on pupils' existing knowledge and understanding

- Assessment should be used not only to track pupils' learning but also to provide teachers with information about what pupils do and do not know
- This should inform the planning of future lessons and the focus of targeted support
- Effective feedback will be an important element of teachers' response to assessment
- Feedback should be specific and clear; encourage and support further effort, and be given sparingly.
- Teachers not only have to address misconceptions but also understand why pupils may persist with errors
- Knowledge of common misconceptions can be invaluable in planning lessons to address errors before they arise

2
Use manipulatives and representations

- Manipulatives (physical objects used to teach maths) and representations (such as number lines and graphs) can help pupils engage with mathematical ideas
- However, manipulatives and representations are just tools: how they are used is essential
- They need to be used purposefully and appropriately to have an impact
- There must be a clear rationale for using a particular manipulative or representation to teach a specific mathematical concept
- Manipulatives should be temporary; they should act as a 'scaffold' that can be removed once independence is achieved

3
Teach pupils strategies for solving problems

- If pupils lack a well-rehearsed and readily available method to solve a problem they need to draw on problem-solving strategies to make sense of the unfamiliar situation
- Select problem-solving tasks for which pupils do not have ready-made solutions
- Teach them to use and compare different approaches
- Show them how to interrogate and use their existing knowledge to solve problems
- Use worked examples to enable them to analyse the use of different strategies
- Require pupils to monitor, reflect on, and communicate their problem solving

4
Enable pupils to develop a rich network of mathematical knowledge

- Emphasise the many connections between mathematical facts, procedures, and concepts
- Ensure that pupils develop fluent recall of facts
- Teach pupils to understand procedures
- Teach pupils to consciously choose between mathematical strategies
- Build on pupils' informal understanding of sharing and proportionality to introduce procedures
- Teach pupils that fractions and decimals extend the number system beyond whole numbers
- Teach pupils to recognise and use mathematical structure

5
Develop pupils' independence and motivation

- Encourage pupils to take responsibility for, and play an active role in, their own learning
- This requires pupils to develop metacognition – the ability to independently plan, monitor and evaluate their thinking and learning
- Initially, teachers may have to model metacognition by describing their own thinking
- Provide regular opportunities for pupils to develop metacognition by encouraging them to explain their thinking to themselves and others
- Avoid doing too much too early
- Positive attitudes are important, but there is scant evidence on the most effective ways to foster them
- School leaders should ensure that all staff, including non-teaching staff, encourage enjoyment in maths for all children

6
Use tasks and resources to challenge and support pupils' mathematics

- Tasks and resources are just tools – they will not be effective if they are used inappropriately by the teacher
- Use assessment of pupils' strengths and weaknesses to inform your choice of task
- Use tasks to address pupil misconceptions
- Provide examples and non-examples of concepts
- Use stories and problems to help pupils understand mathematics
- Use tasks to build conceptual knowledge in tandem with procedural knowledge
- Technology is not a silver bullet – it has to be used judiciously and less costly resources may be just as effective

7
Use structured interventions to provide additional support

- Selection should be guided by pupil assessment
- Interventions should start early, be evidence-based and be carefully planned
- Interventions should include explicit and systematic instruction
- Even the best-designed intervention will not work if implementation is poor
- Support pupils to understand how interventions are connected to whole-class instruction
- Interventions should motivate pupils – not bore them or cause them to be anxious
- If interventions cause pupils to miss activities they enjoy, or content they need to learn, teachers should ask if the interventions are really necessary
- Avoid 'intervention fatigue'. Interventions do not always need to be time-consuming or intensive to be effective

8
Support pupils to make a successful transition between primary and secondary school

- There is a large dip in mathematical attainment and attitudes towards maths as children move from primary to secondary school
- Primary and secondary schools should develop shared understandings of curriculum, teaching and learning
- When pupils arrive in Year 7, quickly attain a good understanding of their strengths and weaknesses
- Structured intervention support may be required for Year 7 pupils who are struggling to make progress
- Carefully consider how pupils are allocated to maths classes
- Setting is likely to lead to a widening of the attainment gap between disadvantaged pupils and their peers, because the former are more likely to be assigned to lower groups

Acorn Class

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Getting to know you		Match, sort and compare VIEW		Talk about measure and patterns VIEW		It's me 1, 2, 3 VIEW		Circles and tri... VIEW	1, 2, 3, 4, 5 VIEW		Shapes with 4 ... VIEW
Spring term	Alive in 5 VIEW		Mass and capa... VIEW	Growing 6, 7, 8 VIEW		Length, height and time VIEW		Building 9 and 10 VIEW			Explore 3–D shapes VIEW	
Summer term	To 20 and beyond VIEW		How many now? VIEW	Manipulate, compose and decompose VIEW		Sharing and grouping VIEW		Visualise, build and map VIEW			Make connecti... VIEW	Consolidation

Willow Class

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number — **Place value** (within 10) — VIEW					Number — **Addition and subtraction** (within 10) — VIEW					Geometry — Shape — VIEW	Consolidation
Spring term	Number — **Place value** (within 20) — VIEW		Number — **Addition and subtraction** (within 20) — VIEW			Number — **Place value** (within 50) — VIEW		Measurement — **Length and height** — VIEW		Measurement — **Mass and volume** — VIEW		
Summer term	Number — **Multiplication and division** — VIEW		Number — **Fractions** — VIEW		Geometry — Position and direction — VIEW	Number — **Place value** (within 100) — VIEW		Measurement — Money — VIEW	Measurement — **Time** — VIEW			Consolidation

Elm Class

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

Autumn term

Number
Place value
VIEW

Number
Addition and subtraction
VIEW

Geometry
Shape
VIEW

Spring term

Measurement
Money
VIEW

Number
Multiplication and division
VIEW

Measurement
Length and height
VIEW

Measurement
Mass, capacity and temperature
VIEW

Summer term

Number
Fractions
VIEW

Measurement
Time
VIEW

Statistics
VIEW

Geometry
Position and direction
VIEW

Consolidation

Beech Class Y3/4

| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |

Autumn term

Number
Place value
VIEW

Number
Addition and subtraction
VIEW

Number
Multiplication and division A
VIEW

Measurement
Area
VIEW

Spring term

Number
Multiplication and division B
VIEW

Measurement
Length and perimeter
VIEW

Number
Fractions A
VIEW

Measurement
Mass and capacity
VIEW

Number
Fractions B
VIEW

Summer term

Measurement
Time
VIEW

Number
Decimals
VIEW

Measurement
Money
VIEW

Geometry
Shape
VIEW

Geometry
Position and ...
VIEW

Statistics
VIEW

Oak Class Y5/6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

Autumn term

Number
Place value
VIEW

Number
Addition and ...
VIEW

Number
Multiplication and division A
VIEW

Number
Fractions A
VIEW

Number
Multiplication and division B
VIEW

Free trial

Spring term

Number
Multiplication ...
VIEW

Number
Fractions B
VIEW

Number
Decimals A
VIEW

Measurement
Area, perimeter and volume
VIEW

Number
Decimals B
VIEW

Number
Fractions, decimals and percentages
VIEW

Summer term

Ratio
VIEW

Algebra
VIEW

Geometry
Shape
VIEW

Geometry
Position and direction
VIEW

Statistics
VIEW

Measurement
Converting units
VIEW

Place Value Progression (EYFS with KS1 from p25)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Roman numerals	Roman numerals to 1,000	
Sort objects	Numbers to 20	Represent numbers to 100	Represent numbers to 1,000	Numbers to 10,000	Numbers to 1,000,000 Numbers to 10,000,000
Count objects	Count objects to 100 by making 10s	Partition numbers to 100	Partition numbers to 1,000	Numbers to 100,000	
Count objects from a larger group	Recognise 10 and 1s	Number line to 100	Number line to 1,000	Numbers to 1,000,000	
Represent objects	Use a place value chart	Hundreds	Thousands	Read and write numbers to 1,000,000	Read and write numbers to 10,000,000
Recognise number as words	Partition numbers to 100	Represent numbers to 1,000	Represent numbers to 10,000	Powers of 10	Powers of 10
Count on from any number	Write numbers to 100 in words	Partition numbers to 1,000	Partition numbers to 10,000	10/100/1,000/10,000/100,000 more or less	
1 more	Flexibly partition numbers to 100	Flexible partitioning of numbers to 1,000	Flexible partitioning of number to 10,000	Partition numbers to 1,000,000	
Count backwards within 10	Write numbers to 100 in expanded form	Hundreds, tens and ones	Find 1, 10, 100, 1,000 less	Number line to 1,000,000	Number line to 10,000,000
1 less		Find 1, 10 or 100 more or less	Number line to 10,000	Compare and order numbers to 100,000	Compare and order any integers
Compare groups by matching	10s on the number line to 100	Number line to 1,000	Estimate on a number line to 10,000	Compare and order numbers to 1,000,000	
Fewer, more, same	10s and 1s on the number line to 100	Compare numbers to 1,000	Compare numbers to 10,000		Round any integer
Less than, greater than, equal to	Estimate numbers on a number line	Order numbers to 1,000	Order numbers to 10,000		
Compare numbers	Compare objects	Count in 50s			
Order objects and numbers	Order objects and numbers		Round to the nearest 10	Round to the nearest 10, 100 or 1,000	
The number line	Count in 2s, 5s, 10s		Round to the nearest 100	Round within 100,000	
Count within 20	Count in 3s		Round to the nearest 1,000	Round within 1,000,000	
Understand 10			Round to the nearest 10,100 or 1,000		
Understand 11, 12 and 13				Understand negative numbers	Negative numbers
Understand 14, 15 and 16				Count through zero in 1s	
Understand 17, 18 and 19				Count through zero in multiples	
Understand 20				Compare and order negative numbers	
1 more and 1 less				Find the difference	
The number line to 20					
Use a number line to 20					

Estimate on a number line to 20					
Compare numbers to 20					
Order numbers to 20					
Count from 20 to 50					
20, 30, 40 and 50					
Count by making groups of tens					
Groups of tens and ones					
Partition into tens and ones					
The number line to 50					
Estimate on a number line to 50					
1 more, 1 less					
Count from 50 to 100					
Tens to 100					
Partition into tens and ones					
The number line to 100					
1 more, 1 less					
Compare numbers with the same number of tens					
Compare any two numbers					

Addition and Subtraction Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Mental strategies	
Introduce parts and wholes	Bonds to 10	Apply number bonds within 10	Add and subtract 1s, 10s, 100s and 1000s	Add whole numbers with more than four digits	Add and subtract integers
Part-whole model	Face families – addition and subtraction bonds within 20	Add and subtract 1s	Add up to two 4-digit numbers – no exchange	Subtract whole numbers with more than four digits	
Write number sentences	Related facts	Add and subtract 10s	Add two 4-digit numbers – one exchange	Round to check answers	
Fact families – addition facts	Bonds to 100 (tens)	Add and subtract 100s	Add two 4-digit numbers – more than one exchange	Inverse operation + and -	
Number bonds within 10	Add and subtract 1s	Spot the pattern	Subtract two 4-digit numbers – no exchange	Multi-step + and - problems	
Systematic number bonds within 10	Add by making 10	Add 1s across a 10	Subtract two 4-digit numbers – one exchange	Compare calculations	
Number bonds to 10	Add three 1-digit numbers	Add 10s across a 100	Subtract two 4-digit numbers – more than one exchange	Find missing numbers	
Addition – add together	Add to the next 10	Add 10s across a 100	Efficient subtraction		
Addition – add more	Add across 10	Subtract 1s across a 10	Estimate answers		
Addition problems	Subtract across 10	Subtract 10s across a 100	Checking strategies		
Find a part	Subtract from a 10	Make connections			
Subtraction – find a part	Subtract a 1-digit number from a 2-digit number (across a 10)	Add two numbers (no exchange)			
Fact families - the eight facts	10 more, 10 less	Add two numbers (across a 10)			
Subtraction – take away/cross out (How many left?)	Add and subtract 10s	Add two numbers (across a 100)			
Take away (How many left?)	Add two 2-digit numbers (not across a 10)	Subtract two numbers (across a 10)			
Subtraction on a number line	Add two 2-digit numbers (across a 10)	Subtract two numbers (across a 100)			
Add or subtract 1 or 2	Subtract two 2-digit numbers (not across a 10)	Add 2-digit and 3-digit numbers			
Add by counting on within 20	Subtract two 2-digit numbers (across a 10)	Subtract a 2-digit number from a 3-digit number			
Add ones using number bonds	Mixed addition and subtraction	Complements to 100			
Find and make number bonds to 20	Compare number sentences	Estimate answers			
Doubles	Miss number problems	Inverse operations			

Near doubles		Make decisions			
Subtract ones using number bonds					
Subtraction – counting back					
Subtraction – finding the difference					
Related facts					
Missing number problems					

Multiplication and Division Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Times tables	**Times tables**	**Times tables**	**Times tables**	**Times tables**	**Times tables**
• 0x and 1x Autumn Term • 10x Spring Term • 5x Summer Term • 15 times table question tests each half term Digibugs for Y1 will just be a weekly lettered Digibug – not the curriculum ones – the times table ones Rolling Numbers	• 2x, 5x, 10x Autumn Term • 3x, 6x, 9x Spring Term • Revision of all tables so far Summer Term Digibugs – run a numbered Digibug and a letter each week (if ready move to Club 99 and a numbered Digibug Rolling numbers	• 4x, 8x Autumn Term • 11x, 12x Autumn Term • All tables Autumn Term MTC practice Rolling numbers	Weekly MTC Practice STICKY SUMS Rolling numbers	STICKY SUMS Continued MTC until passed Rolling numbers Weekly Arithmetic papers	STICKY SUMS Rolling numbers Weekly Arithmetic papers
Count in 2s	Recognise equal groups	Multiplication – equal groups	Multiples of 3	Multiples	Common multiples
Count in 10s	Make equal groups	Use arrays	Multiply and divide by 6	Common multiples	
Count in 5s	Add equal groups	Multiples of 2	6 times-table and division facts	Factors	Common factors
Recognise equal groups	Introduce the x symbol	Multiples of 5 and 10	Multiply and divide by 9	Common factors	
Add equal groups	Multiplication sentences	Sharing and grouping	9 times-table and division facts	Prime numbers	Primes to 100
Make arrays	Use arrays	Multiply by 3	The 3, 6 and 9 times tables	Square numbers	Square and cube numbers
Make doubles	Make equal groups - grouping	Divide by 3	Multiply and divide by 7	Cube numbers	
Make equal groups - grouping	Make equal groups - sharing	The 3 times-table	7 times-table and division facts	Multiply by 10, 100 and 1,000	
Make equal groups – sharing.	The 2 times-table	Multiply by 4	11 times-table and division facts	Divide by 10, 100, 1,000	
	Divide by 2 (introduce to ÷ sign)	Divide by 4	12 times-table and division facts	Multiples of 10, 100, 1,000	
	Doubling and halving	The 4 times-table	Multiply by 1 and 0	Multiply up to a 4-digit number by a 1-digit number	Rules of divisibility
	Odd and even numbers	Multiply by 8	Divide a number by 1 and itself	Multiply a 2-digit number by a 2-digit number (area model)	Multiply up to a 4-digit number by a 2-digit number
	The 10 times table	Divide by 8	Multiply three numbers	Multiply a 2-digit number by a 2-digit number	Solve problems with multiplication

	Divide by 10	The 8 times-table	Factor pairs	Multiply a 3-digit number by a 2-digit number	Short division
	The 5 times table	The 2, 4 and 8 times-tables	Use factor pairs	Multiply a 4-digit number by a 2-digit number	Division using factors
	Divide by 5	Multiples of 10	Multiply by 10	Solve problems with multiplication	Introduction to long division
	The 5 and 10 times tables	Related calculations	Multiply by 100	Short division	Long division with remainders
		Reasoning about multiplication	Divide by 10	Divide a 4-digit number by a 1-digit number	Solve problems with division
		Multiply a 2-digit number by a 1-digit number – no exchange	Divide by 100	Divide with remainders	Solve multi-step problems
		Multiply a 2-digit number by a 1-digit number – with exchange	Related facts – multiplication and division	Efficient division	Order of operations
		Link multiplication and division	Informal written methods for multiplication	Solve problems with multiplication and division	Mental calculations and estimation
		Divide a 2-digit number by a 1-digit number – no exchange	Multiply a 2-digit number by a 1-digit number		Reason from known facts
		Divide a 2-digit number by a 1-digit number – flexible partitioning	Multiply a 3-digit number by a 1-digit number		
		Divide a 2-digit number by a 1-digit number – with remainders	Divide a 2-digit number by a 1-digit number (1)		
		Scaling	Divide a 2-digit number by a 1-digit number (2)		
		How many ways?	Divide a 3-digit number by a 1-digit number		
			Correspondence problems		
			Efficient multiplication		

Fractions Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise a half of an object or a shape	Introduction to parts and whole	Understand the denominators of unit fractions	Understand the whole	Find fractions equivalent to a unit fraction	Equivalent fractions and simplifying
Find a half of an object or a shape	Equal and unequal parts	Compare and order unit fractions	Count beyond 1	Find fractions equivalent to a non-unit fractions	Equivalent fractions on a number line
Recognise a half of a quantity	Recognise a half	Understand the numerators of non-unit fractions	Partition a mixed number	Recognise equivalent fractions	
Find a half of a quantity	Find a half	Understand the whole	Number lines and mixed numbers	Convert improper fractions to mixed numbers	
Recognise a quarter of an object or a shape	Recognise a quarter	Compare and order non-unit fractions	Compare and order mixed numbers	Convert mixed numbers to improper fractions	
Find a quarter of an object or a shape	Find a quarter	Fractions and scales	Understand improper fractions	Compare fractions less than 1	Compare and order (denominator)
Recognise a quarter of a quantity	Recognise a third	Fractions on a number line	Convert mixed numbers to improper fractions	Order fractions less than 1	Compare and order (numerator)
Find a quarter of a quantity	Find a third	Count in fractions on a number line	Convert improper fractions to mixed numbers	Compare and order fractions greater than 1	
	Find the whole	Equivalent fractions on a number line	Equivalent fractions on a number line	Add and subtract fractions within the same denominator	Add and subtract simple fractions
	Unit fractions	Equivalent fractions as bar models	Equivalent fraction families	Add fractions within 1	Add and subtract any two fractions
	Non-unit fractions	Add fractions	Add two or more fractions	Add fractions with total greater than 1	Add mixed numbers
					Subtract mixed numbers

	Recognise the equivalence of a half and two-quarters	Subtract fractions	Add fractions and mixed numbers	Add to a mixed number	
	Recognise three-quarters	Partition the whole	Subtract two fractions	Add two mixed numbers	
	Find three-quarters	Unit fractions of a set of objects	Subtract from whole amounts	Subtract fractions	
	Count in fractions up to a whole	Non-unit fractions of a set of objects	Subtract from mixed numbers	Subtract from a mixed number	
		Reasoning with fractions of an amount	Tenths as fractions	Subtract from a mixed number – breaking the whole	
			Tenths as decimals	Subtract two mixed fractions	
			Tenths on a place value chart	Multiply a unit fraction by an integer	Multi-step problems
			Tenths on a number line	Multiply a non-unit fraction by an integer	
			Divide a 1-digit number by 10	Multiply a mixed number by an integer	Multiply fractions by integers
			Divide a 2-digit number by 10	Calculate a fraction of a quantity	Multiply fractions by fractions
			Hundredths as fractions	Fraction of an amount	Divide a fraction by an integer
			Hundredths as decimals	Find the whole	Divide any fraction by an integer
			Hundredths on a place value chart	Use fractions as operators	Mixed questions with fractions
			Step 10 Divide a 1- or 2-digit number by 100	Decimals up to 2 decimal places	Fraction of an amount
			Make a whole with tenths	Equivalent fractions and decimals (tenths)	Fraction of an amount – find the whole
			Make a whole with hundredths	Equivalent fractions and decimals (hundredths)	Ratio
			Partition decimals	Equivalent fractions and decimals	Add or multiply?
			Flexibly partition decimals	Thousandths as fractions	Use ratio language
			Compare decimals	Thousandths as decimals	Introduction to the ratio symbol
			Order decimals	Thousandths on a place value chart	Ratio and fractions
			Round to the nearest whole number	Order and compare decimals (same number of decimal places)	Scale drawing
			Halves and quarters as decimals	Order and compare any decimals with up to 3 decimal places	Use scale factors

				Round to the nearest whole number	Similar shapes
				Round to 1 decimal place	Ratio problems
				Understand percentages	Proportion problems
				Percentages as fractions	Recipes
Decimals continued					Decimals continued
				Percentages as decimals	Place value within 1
				Equivalent fractions, decimals and percentages	Place value – integers and decimals
				Use known facts to add and subtract decimals within 1	Round decimals
				Complements to 1	Add and subtract decimals
				Add and subtract decimals across 1	Multiply by 10, 100 and 1,000
				Add decimals with the same number of decimal places	Divide by 10, 100 and 1,000
				Subtract decimals with the same number of decimal places	Multiply decimals by integers
				Add decimals with different numbers of decimal places	Divide decimals by integers
				Subtract decimals with different numbers of decimal places	Multiply and divide decimals in context
				Efficient strategies for adding and subtracting decimals	Decimal and fraction equivalents
				Decimal sequences	Fractions as division
				Multiply by 10, 100 and 1,000	Understand percentages
				Divide by 10, 100 and 1,000	Fractions to percentages
				Multiply and divide decimals – missing values	Equivalent fractions, decimals and percentages
					Order fractions, decimals and percentages
					Percentage of an amount – one step
					Percentage of an amount – multi-step

Measures Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Compare lengths and heights	Count money – pence	Measure in metres and centimetres	What is area?		Metric measures
Measure length using objects	Count money – pounds (notes and coins)	Measure in millimetres	Count squares		Convert metric measures
Measure length in centimetres	Count money – pounds and pence	Measure in centimetres and millimetres	Make shapes		Calculate with metric measures
Heavier and lighter	Choose notes and coins	Metres, centimetres and millimetres	Compare areas		Miles and kilometres
Measure and mass	Make the same amount	Equivalent lengths (metres and centimetres)	Measure in kilometres and metres		Imperial measures
Compare mass	Compare amounts of money	Equivalent lengths (centimetres and millimetres)	Equivalent lengths (kilometres and metres)	Perimeter of rectangles	Shapes – same area
Full and empty	Calculate with money	Compare lengths	Perimeter on a grid	Perimeter of rectilinear shapes	Area and perimeter
Compare volume	Make a pound	Add lengths	Perimeter of a rectangle	Perimeter of polygons	Area of a triangle – counting squares
Measure capacity	Find change	Subtract lengths	Perimeter of rectilinear shapes	Area of rectangles	Area of a right-angled triangle
Compare capacity	Two-step problems	What is a perimeter?	Find missing lengths in rectilinear shapes	Area of compound shapes	Area of any triangle
Money	Measure in centimetres	Measure perimeter	Calculate perimeter of rectilinear shapes	Estimate area	Area of a parallelogram
Unitising	Measure in metres	Calculate perimeter	Perimeter of regular polygons	Kilograms and kilometres	Volume – counting cubes
Recognise coins	Compare lengths and heights	Use scales	Perimeter of polygons	Millimetres and millilitres	Volume of a cuboid

Recognise notes	Order lengths and heights	Measure mass in grams	**Money**	Convert units of length
Count in coins	Four operations with lengths and heights	Measure mass in kg and grams		Convert between metric and imperial units
Time	Compare mass	Equivalent masses (kg and g)	Write money using decimals	Convert units of time
Before and after	Measure in grams	Compare mass	Convert between pounds and pence	Calculate with timetables
Days of the week	Measure in kilograms	Add and subtract mass	Compare amounts of money	Cubic centimetres
Months of the year	Four operations with mass	Measure capacity and volume in millimetres	Estimate with money	Compare volume
Hours, minutes and seconds	Compare volume and capacity	Measure capacity and volume in litres and millilitres	Calculate with money	Estimate volume
Tell the time to the hour	Measure in millilitres	Equivalent capacities and volumes (litres and millilitres)	Solve problems with money	Estimate capacity
Tell the time to the half hour	Measure in litres	Compare capacity and volume	**Time**	
	Four operations with volume and capacity	Add and subtract capacity and volume	Years, months, weeks and days	
	Temperature	**Money**	Hours, minutes and seconds	
	Time	Pounds and pence	Convert between analogue and digital times	
	O'clock and half past	Convert pounds and pence	Convert to the 24 hour clock	
	Quarter past and quarter to	Add money	Convert from the 24 hour clock	
	Tell the time past the hour	Subtract money		
	Tell the time to the hour	Find change		
	Tell the time to 5 minutes	**Time**		
	Minutes in an hour	Roman numerals to 12		
	Hours in a day	Tell the time to 5 minutes		
		Tell the time to the minute		
		Read time on a digital clock		
		Use am and pm		
		Years, months and days		
		Days and hours		
		Hours and minutes – use start and end of starts		
		Hours and minutes - use durations		
		Minutes and seconds		
		Units of time		
		Solve problems with time		

Shape Progression (Geometry)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise and name 3D shapes	Recognise 2D and 3D shapes	Turns and angles	Understand angles as turns	Understand and use degrees	Measure and classify angles
Sort 3D shapes	Count sides on 2D shapes	Right angles	Identify angles	Classify angles	Calculate angles
Recognise and name 2D shapes	Count vertices on 2D shapes	Compare angles	Compare and order angles	Estimate angles	Vertically opposite angles
Sort 2D shapes	Draw 2D shapes	Measure and draw accurately	Triangles	Measure angles up to 180°	Angles in a triangle
Patterns with 2D and 3D shapes	Lines of symmetry on shapes	Horizontal and vertical	Quadrilaterals	Draw lines and angles accurately	Angles in a triangle – special cases
	Use lines of symmetry to complete shapes	Parallel and perpendicular	Polygons	Calculate angles around a point	Angles in a triangle – missing angles
	Sort 2D shapes	Recognise and describe 2D shapes	Lines of symmetry	Calculate angles on a straight line	Angles in a quadrilateral
	Count faces on 3D shapes	Draw polygons	Complete a symmetric figure	Lengths and angles in shapes	Angles in polygons
	Count edges on 3D shapes	Recognise and describe 3-D shapes		Regular and irregular polygons	Circles
	Count vertices on 3D shapes	Make 3D shapes		3D shapes	Draw shapes accurately
	Sort 3D shapes				Nets of 3D shapes
	Make patterns with 2D and 3D shapes				

Statistics Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Make tally charts	Interpret pictograms	Interpret charts	Draw line graphs	Line graphs
	Tables	Draw pictograms	Comparison, sum and difference	Read and interpret line graphs	Dual bar charts
	Block diagrams	Interpret bar charts	Interpret line graphs	Read and interpret tables	Read and interpret pie charts
	Draw pictograms (1-1)	Draw bar charts	Draw line graphs	Two-way tables	Pie charts with percentages
	Interpret pictograms (1-1)	Collect and represent data		Read and interpret timetables	Draw pie charts
	Draw pictograms (2 ,5,and 10)	Two-way tables		Read and interpret line graphs	The Mean
	Interpret pictograms (2,5 and 10)			Read and interpret tables	

Geometry Progression (Position and Direction)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Describe turns	Language of position		Describe position using coordinates	Read and plot coordinates	The first quadrant
Describe position – left and right	Describe movement		Plot coordinates	Problem solving with coordinates	Read and plot points in four quadrants
Describe position – forwards and backwards	Describe turns		Draw 2D shapes on a grid	Translation	Solve problems with coordinates
Describe position – above and below	Describe movement and turns		Translate on a grid	Translation with coordinates	Translations
Ordinal numbers	Shape patterns with turn		Describe translation on a grid	Lines of symmetry	Reflections
				Reflection in horizontal and vertical lines	

Algebra Progression

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					1-step function machines
					2-step function machines

						Form expressions
						Substitution
						Formulae
						Form equations
						Solve 1-step equations
						Solve 2-step equations
						Find pairs of values
						Solve problems with two unknowns

KS1 with EYFS

Place Value Progression		
EYFS	**Year 1**	**Year 2**
Match, Sort and Compare		
Match objects	Sort objects	Numbers to 20
Match pictures and objects	Count objects	Count objects to 100 by making 10s
Identify a set	Count objects from a larger group	Recognise 10 and 1s
Sort objects to a type	Represent objects	Use a place value chart
Explore sorting techniques	Recognise number as words	Partition numbers to 100
Create sorting rules	Count on from any number	Write numbers to 100 in words
Compare amounts	1 more	Flexibly partition numbers to 100
	Count backwards within 10	Write numbers to 100 in expanded form
It's me – 1 2 3	1 less	
Find 1,2,3	Compare groups by matching	10s on the number line to 100
Subitise 1, 2, 3	Fewer, more, same	10s and 1s on the number line to 100
	Less than, greater than, equal to	Estimate numbers on a number line
1,2,3,4,5	Compare numbers	Compare objects
Find 4 and 5	Order objects and numbers	Order objects and numbers

Subitise 4 and 5	The number line	Count in 2s, 5s, 10s
Represent 4 and 5	Count within 20	Count in 3s
	Understand 10	
Alive in 5	Understand 11, 12 and 13	
Introducing zero	Understand 14, 15 and 16	
Find zero to 5	Understand 17, 18 and 19	
Subitise zero to 5	Understand 20	
Represent zero to 5	1 more and 1 less	
	The number line to 20	
Growing 6,7,8	Use a number line to 20	
Find 6,7,8	Estimate on a number line to 20	
Represent 6,7,8	Compare numbers to 20	
One more	Order numbers to 20	
	Count from 20 to 50	
Building 9 and 10	20, 30, 40 and 50	
Find 8 and 10	Count by making groups of tens	
Compare numbers to 10	Groups of tens and ones	
Represent 9 and 10	Partition into tens and ones	
Conceptual subitising to 10	The number line to 50	
One more	Estimate on a number line to 50	
One less	1 more, 1 less	
Composition to 10	Count from 50 to 100	
Bonds to 10 in two part	Tens to 100	
Make arrangements to 10	Partition into tens and ones	
Bonds to 10 in 3 parts	The number line to 100	
Doubles to 10 (find)	1 more, 1 less	
Doubles to 10 (make)	Compare numbers with the same number of tens	
Explore even and odd	Compare any two numbers	
To 20 and beyond		
Build numbers beyond 10 (to 13)		
Continue patterns beyond 10 (to 13)		
Build numbers beyond 10 (14-20)		
Continue patterns beyond 10 (14-20)		
Verbal counting beyond 20		
Verbal counting patterns		

Addition and Subtraction Progression

EYFS	Year 1	Year 2
How many now?		
Add more	Introduce parts and wholes	Bonds to 10
How many did I add?	Part-whole model	Face families – addition and subtraction bonds within 20
Take away	Write number sentences	Related facts
How many did I take away?	Fact families – addition facts	Bonds to 100 (tens)
	Number bonds within 10	Add and subtract 1s
	Systematic number bonds within 10	Add by making 10
	Number bonds to 10	Add three 1-digit numbers
	Addition – add together	Add to the next 10
	Addition – add more	Add across 10
	Addition problems	Subtract across 10
	Find a part	Subtract from a 10
	Subtraction – find a part	Subtract a 1-digit number from a 2-digit number (across a 10)
	Fact families - the eight facts	10 more, 10 less
	Subtraction – take away/cross out (How many left?)	Add and subtract 10s
	Take away (How many left?)	Add two 2-digit numbers (not across a 10)
	Subtraction on a number line	Add two 2-digit numbers (across a 10)
	Add or subtract 1 or 2	Subtract two 2-digit numbers (not across a 10)
	Add by counting on within 20	Subtract two 2-digit numbers (across a 10)
	Add ones using number bonds	Mixed addition and subtraction
	Find and make number bonds to 20	Compare number sentences
	Doubles	Miss number problems
	Near doubles	
	Subtract ones using number bonds	
	Subtraction – counting back	
	Subtraction – finding the difference	
	Related facts	
	Missing number problems	

Multiplication and Division Progression

EYFS	Year 1	Year 2
Sharing and Grouping	Count in 2s	Recognise equal groups
Explore sharing	Count in 10s	Make equal groups
Sharing	Count in 5s	Add equal groups
Explore grouping	Recognise equal groups	Introduce the x symbol
Grouping	Add equal groups	Multiplication sentences
	Make arrays	Use arrays
	Make doubles	Make equal groups - grouping
	Make equal groups - grouping	Make equal groups - sharing
	Make equal groups – sharing.	The 2 times-table
		Divide by 2
		Doubling and halving
		Odd and even numbers
		The 10 times table
		Divide by 10
		The 5 times table
		Divide by 5
		The 5 and 10 times tables

Fractions Progression

EYFS	Year 1	Year 2
	Recognise a half of an object or a shape	Introduction to parts and whole
	Find a half of an object or a shape	Equal and unequal parts
	Recognise a half of a quantity	Recognise a half
	Find a half of a quantity	Find a half
	Recognise a quarter of an object or a shape	Recognise a quarter
	Find a quarter of an object or a shape	Find a quarter
	Recognise a quarter of a quantity	Recognise a third
	Find a quarter of a quantity	Find a third

		Find the whole
		Unit fractions
		Non-unit fractions
		Recognise the equivalence of a half and two-quarters
		Recognise three-quarters
		Find three-quarters
		Count in fractions up to a whole

Measures Progression		
EYFS	**Year 1**	**Year 2**
Measure and Pattern	Compare lengths and heights	Count money – pence
Compare size	Measure length using objects	Count money – pounds (notes and coins)
Compare mass	Measure length in centimetres	Count money – pounds and pence
Compare capacity	Heavier and lighter	Choose notes and coins
Explore simple patterns	Measure and mass	Make the same amount
Copy and continue simple patterns	Compare mass	Compare amounts of money
Create simple patterns	Full and empty	Calculate with money
	Compare volume	Make a pound
Mass and Capacity	Measure capacity	Find change
Compare mass	Compare capacity	Two-step problems
Find a balance	**Money**	Measure in centimetres
Explore capacity	Unitising	Measure in metres
Compare capacity	Recognise coins	Compare lengths and heights
	Recognise notes	Order lengths and heights
Length, Height and Time	Count in coins	Four operations with lengths and heights
Explore length	**Time**	Compare mass
Compare length	Before and after	Measure in grams
Explore height	Days of the week	Measure in kilograms
Compare height	Months of the year	Four operations with mass
Talk about time	Hours, minutes and seconds	Compare volume and capacity
	Tell the time to the hour	Measure in millilitres

	Tell the time to the half hour	Measure in litres
		Four operations with volume and capacity
		Temperature
		Time
		O'clock and half past
		Quarter past and quarter to
		Tell the time past the hour
		Tell the time to the hour
		Tell the time to 5 minutes
		Minutes in an hour
		Hours in a day

Shapes Progression		
EYFS	**Year 1**	**Year 2**
Circles and Triangles	Recognise and name 3D shapes	Recognise 2D and 3D shapes
Identify and name circles and triangles	Sort 3D shapes	Count sides on 2D shapes
Compare circles and triangles	Recognise and name 2D shapes	Count vertices on 2D shapes
Shapes in the environment	Sort 2D shapes	Draw 2D shapes
	Patterns with 2D and 3D shapes	Lines of symmetry on shapes
Shapes with 4 sides		Use lines of symmetry to complete shapes
Identify and name shapes with 4 sides		Sort 2D shapes
Combine shapes with 4 sides		Count faces on 3D shapes
Shapes in the environment		Count edges on 3D shapes
		Count vertices on 3D shapes
3D shapes		Sort 3D shapes
Recognise and name 3D shapes		Make patterns with 2D and 3D shapes
Find 2D shapes within a 3D shape		
Use 3D shapes for tasks		
3D shapes in the environment		

Identify more complex patterns		
Copy and continue patterns		
Patterns in the environment		
Manipulate, Compose and Decompose		
Select shapes for a purpose		
Rotate shapes		
Manipulate shapes		
Explain shape arrangements		
Compose shapes		
Decompose shapes		
Copy 2D shape pictures		
Find 2D shapes in 3D shapes		

Geometry Progression – position and direction

EYFS	Year 1	Year 2
Visual, Build and Map	Describe turns	Language of position
Identify units of repeating patterns	Describe position – left and right	Describe movement
Create own pattern rules	Describe position – forwards and backwards	Describe turns
Explore own pattern rules	Describe position – above and below	Describe movement and turns
Replicate and build scenes and constructions	Ordinal numbers	Shape patterns with turn
Visualise from different positions		
Describe positions J		
Give instructions to build		
Explore mapping		
Represent maps with models		
Create own maps of familiar places		
Create own maps and plans from story situations		
Make connections		
Deepen understanding		
Patterns and relationships		

Powerful Knowledge and Skills

By the end of EYFS:

- Count objects, actions and sounds
- Subitise
- Link the number symbol with the cardinal number value
- Count beyond 10
- Compare numbers
- Understand the one more than and one less than relationship with consecutive numbers
- Explore the composition of numbers to 10
- Automatically recall number bonds 0 to 10
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills
- Compose and decompose shapes
- Continue, copy and create repeating patterns
- Compare length, weight and capacity

By the end of Year 1:

- Count to and across 100, forwards & backwards from any number
- Read and write numbers to 20 in numerals & words
- Read and write numbers to 100 in numerals
- Say 1 more/1 less to 100
- Count in multiples of 2, 5 & 10
- Use bonds and subtraction facts to 20
- Add & subtract: 1 digit & 2 digit numbers to 20, including zero
- Solve one-step multiplication and division using objects, pictorial
- representation and arrays
- Recognise half and quarter of object, shape or quantity
- Sequence events in chronological order
- Use language of day, week, month and year
- Tell time to hour & half past

By the end of Year 2:

- Recognise and use inverse (+/-)
- Calculate and write multiplication & division calculations using multiplication tables
- Recognise, find, name and write 1/3; 1/4; 2/4; 3/4
- Write and recognise equivalence of simple fractions
- Compare and order numbers up to 100 and use < > =
- Read and write all numbers to 100 in digits & words
- Say 10 more/less than any number to 100
- Count in steps of 2, 3 & 5 from zero and in 10s from any number (forwards and backwards)
- Recall and use multiplication & division facts for 2, 5 & 10 tables
- Recall and use +/- facts to 20
- Derive and use related facts to 100
- Recognise place value of any 2-digit number
- Add & subtract: 2-digit numbers & ones
- Add & subtract 2-digit numbers & tens
- Add & subtract two 2-digit numbers
- Add & subtract three 1-digit numbers
- Tell time to five minutes, including quarter past/to

By the end of Year 3:

- Compare & order numbers up to 1000
- Read & write all numbers to 1000 in digits and words
- Find 10 or 100 more/less than a given number
- Count from 0 in multiples of 4, 8, 50 and 100
- Recall & use multiplication & division facts for 3, 4, 8 tables
- Recognise place value of any 3-digit number
- Add and subtract: 3-digit numbers and ones
- 3-digit numbers and tens
- 3-digit numbers and hundreds
- Add and subtract: Numbers with up to 3-digits using written columnar
- method
- Estimate and use inverse to check
- Multiply: 2-digit by 1-digit
- Count up/down in tenths
- Compare and order fractions with same denominator
- Add and subtract fractions with same denominator within one whole
- Tell time using 12 and 24 hour clocks; and using Roman numerals
- Tell time to nearest minute
- Know number of days in each month and number of seconds in a minute

By the end of Year 4:

- Count backwards through zero to include negative numbers
- Compare and order numbers beyond 1,000
- Compare and order numbers with up to 2 decimal places
- Read Roman numerals to 100
- Find 1,000 more or less than a given number
- Count in multiples of 6, 7, 9, 25 and 1000
- Recall and use multiplication and division facts for all tables to 12x12
- Recognise place value of any 4-digit number
- Round any number to the nearest 10, 100 or 1,000
- Round decimals with 1 decimal-place to nearest whole number
- Add and subtract numbers with up to 4-digits using written columnar method
- Multiply 2-digit and 3-digit numbers by 1-digit numbers
- Count up and down in hundredths
- Recognise and write equivalent fractions
- Add and subtract fractions with same denominator
- Read, write and convert time between analogue and digital 12 and 24 hour clocks

By the end of Year 5:

- Count forwards and backward with positive and negative numbers through zero
- Count forwards/backwards in steps of powers of 10 for any given number up to 1,000,000
- Compare and order numbers up to 1,000,000
- Compare and order numbers with 3 decimal places
- Read Roman numerals to 1,000
- Identify all multiples and factors, including finding all factor pairs of two numbers
- Use known tables to derive other number facts
- Recall prime numbers up to 19

- Recognise and use square numbers and cube numbers
- Recognise place value of any number up to 1,000,000
- Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 or 100,000
- Round decimals with 2 decimal places to nearest whole number and 1 decimal place
- Add and subtract: Numbers with more than 4-digits using formal written method
- Use rounding to check answers
- Multiply: 4-digits by 1-digit/ 2-digit
- Divide: Up to 4-digits by 1-digit
- Multiply & divide: Whole numbers & decimals by 10, 100 and 1,000
- Recognise and use thousandths
- Recognise mixed numbers and improper fractions and convert from one to another
- Multiply proper fractions and mixed numbers by whole numbers
- Identify and write equivalent fractions
- Solve time problems using timetables and converting between different units of time

By the end of Year 6:

- Use negative numbers in context and calculate intervals across zero
- Compare and order numbers up to 10,000,000
- Identify common factors, common multiples and prime numbers
- Round any whole number to a required degree of accuracy
- Identify the value of each digit to 3 decimal places
- Use knowledge of order of operations to carry out calculations involving four operations
- Multiply: 4-digit by 2-digit
- Divide: 4-digit by 2-digit
- Add and subtract fractions with different denominators and mixed numbers
- Multiply simple pairs of proper fractions, writing the answer in the simplest form.
- Divide proper fractions by whole numbers
- Calculate % of whole number