AUSTHORPE PRIMARY SCHOOL
WHOLE SCHOOL LONG TERM PLAN
MATHEMATICS

RED KITE LEARNING TRUST

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value	Early number sense: counting	Sort, represent and count objects to 20	Count forwards and backwards and compare numbers within 20 and 50	Represent numbers to 1,000	Represent numbers to 1,000	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
	Numbers: Reading and writing numbers	Introduce <, > and =	Count objects and represent numbers in 100 and write in words and numerals	100s, 10s and 1s	100s, 10s and 1s		
		Ordinal numbers		Number line to 1,000	Number line to 1,000	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	Round any whole number to a required degree of accuracy.
	Subitise with numbers 1-5			Find 1, 10, 100 more or less than a given number	Find 1, 10, 100 and 1,000 more or less		
		Using a number line					
	Compare numbers within 1-5 understanding the cardinal value of each number.	Count forwards and backwards up to 100	Use place value chart	Compare objects and numbers to 1,000	Compare numbers		
			Compare and order objects and numbers		Order numbers		Use negative numbers in context, and calculate intervals across zero.
		Write numbers to 100		Order numbers	Count in 1,000s	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers,	
	Ordering numbers: Number representation	Tens and ones	Count in 2s 3s 5s and 10s		Count in 25s		
			Know 10 more and 10 less	Count in 50s			
		One more and one less			Round to the nearest 10, 100 and 1,000		Solve number and practical problems that
		Compare groups of	Compare money		Partitioning		

		objects and numbers			Number line to 10,000	including through zero.	involve all of the above
		Order groups of objects and numbers			Negative numbers	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 .	.
		Introducing a 100 square			Roman numerals to 100		
		Partitioning numbers				Solve number problems and practical problems that involve all of the above .	
						Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
Addition and Subtraction	Finding one more than a number	Intro parts and wholes (single and group object)	Know addition and subtraction fact families to 20	Add and subtract multiples of 100	Add and subtract 1s, 10s, 100s and 1,000s	Add and subtract whole numbers with more than 4	Solve addition and subtraction multi step

AUSTHORPE PRIMARY SCHOOL
WHOLE SCHOOL LONG TERM PLAN
MATHEMATICS

RED KITE
LEARNING TRUST

A place to SHINE

Finding one less than a number Number bonds Automatically recall number bonds for numbers 0-5.	Part-whole model Addition symbol Addition facts Find and make number bonds to 10 and 20 Compare number bonds Addition - adding together Addition – adding more Addition using bonds Finding a part Subtraction – crossing out	Check calculations and compare number sentences Know bonds to 100 Know 10 more and 10 less Add and subtract 10s Add and subtract one digit and 2 digit numbers from 2 digit numbers not crossing and crossing 10 Mixed addition and subtraction activities Know bonds to 100 Add 3 1 digit numbers	Add and subtract 1s Add and subtract 3-digit and 1-digit numbers – not crossing 10 Add a 2-digit and 1-digit number - crossing 10 Add 3-digit and 1-digit numbers – crossing 10 Add 3-digit and 2-digit numbers – crossing 100 Add two 2-digit numbers - crossing 10 - add ones & add tens Add and subtract a 2-digit and 3-digit	Add two 3-digit numbers - not crossing 10 or 100 Add two 4-digit numbers – no exchange Add two 3-digit numbers - crossing 10 or 100 Add two 4-digit numbers – one exchange and more than one exchange	digits, including using formal written methods (columnar addition and subtraction). Add and subtract numbers mentally with increasingly large numbers.	problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.

		Subtraction – using the symbol	Find totals and differences and find change	numbers – not crossing 10 or 100			
		Subtraction- find a part		Add a 2-digit and 3-digit numbers – crossing 10 or 100			
		Subtraction – counting back					
		Subtraction – finding the difference		Add two 3-digit numbers – not crossing 10 or 100 and crossing 10 or 100	Subtract a 3-digit number from a 3-digit number - no exchange		
		Comparing addition and subtraction statements			Subtract two 4-digit numbers – no exchange		
				Subtract a 1-digit number from 2-digits - crossing 10			
		Add by counting on within 20			Subtract a 3-digit number from a 3-digit number - exchange		
		Add by making 10		Subtract a 1-digit number from a 3-digit number – crossing 10			
		Subtractions – not crossing 10		Subtract 3-digit and 2-digit	Subtract two 4-digit numbers – one exchange and more than one exchange		

		Subtraction - crossing 10		numbers – not crossing 100

Subtract a 2-digit number from a 3-digit number – crossing 100
Add and subtract 100s

Subtract a 2-digit number from a 2-digit number - crossing 10
Spot the pattern – making it explicit

Subtract a 2-digit number from a 3-digit number – crossing 10 or 100

Subtract a 3-digit number | | Estimate answers
Efficient subtraction

Checking strategies | | |

| | | | | from a 3-digit number – no exchange and exchange

Estimate answers to calculations | | | |
|---|---|---|---|---|---|---|---|
| **Multiplication and Division** | Doubling numbers

Sharing and halving numbers | Count in 2's

Count in 5's

Count in 10's

Make and add equal groups

Make arrays

Make doubles

Make equal groups – grouping

Make equal groups - sharing | Make equal groups
Add equal groups

Make arrays

Recognise make and add equal groups

Multiplication using x symbol

Make doubles

X2 x5 x10 times tables

Divide by 2 5 and 10 | Multiplication – equal groups

Multiplication using the symbol

Using arrays

2, 3, 4, 5 and 8 times-table

Make equal groups - sharing and grouping

Multiply by 3, 4, 5 and 10 | 6, 7, 9, 11 and 12 times-tables

6, 7, 9, 11 and 12 times table and division facts

Multiply by 10 and 100 | Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers.

Establish whether a number up to 100 is prime and | Multiply multi-digit number up to 4 digits by a 2 digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division, and interpret remainders as whole number |

				Divide by 2, 3, 5 and 10	Multiply by 1 and 0	recall prime numbers up to 19.	remainders, fractions or by rounding as appropriate for the context.
					Divide by 10 and 100		
					Multiply and divide by 3, 6	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) .	Divide numbers up to 4 digits by a 2 digit number using the formal written method of short division, interpreting remainders according to context.
					Divide by 1 and itself		
				Multiply 2-digit by 1-digit	Multiply 2-digits by 1-digit		
						Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	
				Divide 2-digit by 1-digit	Divide 2-digits by 1-digit		
					Divide 3-digits by 1-digit		Perform mental calculations, including with mixed operations and large numbers.
					Multiply 3 numbers		
				Scaling	Factor pairs		Identify common factors, common
					Efficient multiplication	Multiply and divide numbers mentally drawing	
					Written methods		

					Correspondence problems	upon known facts.	multiples and prime numbers.
						Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers.	Use their knowledge of the order of operations to carry out calculations involving the four operations.
						Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context.	
						Solve problems involving addition	

						and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.	
Fractions (Decimals and Percentages)	Halving	Making a half Making a whole Find a half of a quantity Making a quarter Find a quarter Find a quarter of a quantity Find a quarter	Make equal parts Recognise and findhalf a third and a quarter Count in fractions Fraction problem solving	Recognise and find half, quarter and third Unit and non-unit fractions Equivalence ½ and 2/4 Equivalent fractions Count in fractions Making the whole	What is a fraction? Unit and non-unit fractions Equivalent fractions Count in fractions Tenths	Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1 Generate and describe linear

				Tenths	Count in tenths	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number .	number sequences (with fractions)
				Count in tenths			
				Tenths as decimals	Fractions of a set of objects		Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.
				Fractions on a number line			
				Fractions of a set of objects			
				Compare fractions	Add fractions	Add and subtract fractions with the same denominator and denominators that are multiples of the same number.	
				Order fractions	Add 2 or more fractions		Multiply simple pairs of proper fractions, writing the answer in its simplest form.
				Add fractions	Subtract fractions		
					Subtract 2 fractions		
				Subtract fractions	Subtract from whole amounts	Multiply proper fractions and mixed numbers by whole numbers, supported by	Divide proper fractions by whole numbers.
					Fractions greater than 1		Associate a fraction with

					Calculate fractions of a quantity Problem solving – calculate quantities _____ Recognise tenths and hundredths Tenths as decimals Tenths on a place value grid Tenths on a number line Divide 1-digit by 10 Divide 2-digits by 10 Hundredths Hundredths as decimals	materials and diagrams. Read and write decimal numbers as fractions . Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

					Hundredths on a place value grid Divide 1 or 2-digits by 100 Bonds to 10 and 100 Make a whole Write decimals Compare decimals Order decimals Round decimals Halves and quarters as decimals		
Geometry	Shape Compare numbers within 1-5 understanding the cardinal	Recognise and name 3D shapes Sort 3D shapes	Recognise 2 and 3D shape Count sides and vertices on 2D shape	Turns and angles Right angles in shapes Compare angles	Turns and angles Right angles in shapes Compare angles	Read, write, order and compare numbers with up to three decimal places.	Identify the value of each digit in numbers given to three decimal places and multiply

value of each number. Patterns Continue, copy and create repeating patterns.	Recognise and name 2D shapes Sort 2D shapes Patterns with 3D and 2D shapes Describe turns Describe position	Lines of symmetry Count faces edges and vertices on 3D shape Describe position Describe movement and turns	Draw accurately Horizontal and vertical Parallel and perpendicular Recognise and describe 2-D shapes Recognise and describe 3-D shapes Make 3-D shapes	Identify angles Compare and order angles Horizontal and vertical Recognise and describe 2-D shapes What is area? Comparing area Counting squares	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Solve problems involving number up to three decimal places. Recognise the per cent symbol (%) and understand that per cent	numbers by 10, 100 and 1000 giving answers up to 3dp. Multiply one digit numbers with up to 2dp by whole numbers. Use written division methods in cases where the answer has up to two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy.

					Making shapes	relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.	Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.
					Triangles		
					Quadrilaterals		
					Lines of symmetry	Solve problems which require knowing percentage and decimal equivalents of and those fractions with a denominator of a multiple of 10 or 25.	Recall and use equivalences between simple FDP including in different contexts.
					Complete a symmetric figure		
						Solve problems involving number up to three decimal places.	

						Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	
Measurement	Weight Length and width Time Capacity	Compare length Compare heights	Measure and compare length in cm and m Four operations and problem solving with length	O'clock and half past Quarter past and quarter to Months and years	Years, months, weeks and days	Identify 3D shapes, including cubes and other cuboids, from 2D representations.	Illustrate and name parts of circles, including radius, diameter and circumference and know that

		Measuring length –non-standard Introducing a ruler Adding length problems Subtracting length problems Introducing weight and mass Measure and compare mass Weight and mass problems Introducing capacity and volume	Tell time to the hour half hour quarter hour and to 5 minutes Writing time Find and compare durations of time Introduce weight and mass Compare and measure weight and mass Introduce capacity and volume in millilitres and litres 4 operations with mass and volume	Hours in a day Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Finding and comparing the duration Comparing durations Start and end times	Hours, minutes and seconds Telling the time to 5 minutes Telling the time to the minute Using a.m. and p.m. 24-hour clock Analogue to digital – 12 hour and 24 hour	Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and	the diameter is twice the radius. Draw 2D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons. 2 Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

AUSTHORPE PRIMARY SCHOOL
WHOLE SCHOOL LONG TERM PLAN
MATHEMATICS

		Measure and compare capacity	Temperature activity	Measuring time in seconds		measure them in degrees (o).	Describe positions on the full coordinate grid (all four quadrants).
		Recognising coins		Measure length in m, cm and mm	Equivalent lengths - m & cm and mm & cm	Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and ½ a turn (total 180o) other multiples of 90o.	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
		Counting in coins		Equivalent length in cm & mm and m & cm			
		Before and after			Add and subtract lengths		
		Dates		Compare lengths	Kilometres		
		Time to the hour		Add and subtract lengths	Measure perimeter		
		Time to half the hour			Perimeter on a grid	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	
		Writing time		Measure and calculate perimeter	Perimeter of a rectangle		
		Comparing time			Perimeter of rectilinear shapes		

				Compare mass Measure mass Add and subtract mass Compare volume Measure capacity Compare capacity Add and subtract capacity Temperature Count money (pounds and pence) Convert pounds and pence Add and subtract money	Pounds and pence Convert pounds and pence Add and subtract money Find change Ordering money Estimating money		

Statistics			Make tally charts Draw pictograms Interpret pictograms Block diagrams	Make a tally chart Draw and interpret pictograms (2, 5 and 10) Draw and interpret bar charts Draw and interpret tables	Interpret charts Comparison, sum and difference Introducing line graphs Draw and interpret line graphs	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa,

					Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]. Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time. Estimate volume [for example	using decimal notation to up to 3dp. Convert between miles and kilometres. Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. Calculate the area of parallelograms and triangles.

						using 1cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. Use all four operations to solve problems involving measure.	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3, m3 and extending to other units (mm3, km3).
Algebra						Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in	Interpret and construct pie charts and line graphs and use these to solve problems. Calculate the mean as an average.

AUSTHORPE PRIMARY SCHOOL
WHOLE SCHOOL LONG TERM PLAN
MATHEMATICS

RED KITE
LEARNING TRUST

Austhorpe Primary
A place to SHINE

tables including timetables.

Use simple formulae Generate and describe linear number sequences. Express missing number problems algebraically.

Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables.

Solve problems involving the relative sizes of

two quantities where missing values can be found by using integer multiplication and division facts.

Solve problems involving similar shapes where the scale factor is known or can be found.

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.