



Broadwood Primary School Maths Yearly Overview: Year 5

Number Facts Targets to be practised throughout the year:

* Add and subtract numbers mentally with increasingly large numbers, * multiply and divide numbers mentally drawing upon known facts, * Ready to Progress Criteria 5NF-1: Secure fluency in multiplication table facts, and corresponding division facts, through continued practice, * Ready to Progress Criteria 5NF-2: Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth)

Autumn 1						
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Place Value: large whole numbers	Place Value with Multiplication and Division by 10, 100, 1000		Measures: Conversion (metric conversions to be revisited regularly in key skills sessions)	Multiplication and Division (factors, primes, multiples, squares)		Area
- identify the place value in large whole numbers - read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit - round any number up to 1 000 000 to the nearest 10, 100, 1000, 10000 and 100000 - read Roman numerals to 1000 (M) and recognise years written in Roman numerals	- count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 - Ready to Progress criteria 5NPV-1: Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01 - multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 - Links to Ready to Progress criteria 5MD-1: Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size		- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 - convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) - Links to Ready to Progress criteria 5NPV-5: Convert between units of measure, including using common decimals and fractions	- 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 recall prime numbers up to 19 - recognise and use square numbers and cube numbers, and the notation for squared and cubed - Links to Ready to Progress criteria 5MD-2: Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.		- calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres and square metres - estimate the area of irregular shapes - Links to Ready to Progress criteria 5G-2



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Autumn 2						
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Place Value and Decimals	Addition and Subtraction (formal methods – including application of perimeter)	Multiplication and Division (formal methods)		Assessment	Problem solving with Time	Shape
Links to Ready to Progress criteria 5NPV-2: Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning	- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres - practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency - add and subtract whole numbers with more than 4 digits, including using formal written methods - use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers - Links to Ready to Progress criteria 5MD-3: Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. - 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 - Links to Ready to Progress criteria 5MD-4: Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.			- solve problems involving converting between units of time - use all four operations in problems involving time including conversions (for example, days to weeks, expressing the answer as weeks and days) - complete, read and interpret information in tables, including timetables	identify 3-D shapes, including cubes and other cuboids, from 2-D representations



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Spring 1						
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Place Value with Fractions and Decimals	Fractions (as a number)		Fractions as operators	Angles	Revisit all four operations (introducing algebra)	
- recognise and describe linear number sequences, including those involving fractions and decimals e.g 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$... - find the term-to-term rule in words e.g add $\frac{1}{2}$) - Links to Ready to Progress criteria 5NPV-4: Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts - Recall fraction decimal equivalents for $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{10}$	- Links to Ready to Progress criteria 5F-2: Find equivalent fractions and understand that they have the same value and the same position in the linear number system - recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ - compare and order fractions whose denominators are all multiples of the same number - identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths (links to Ready to Progress criteria 5F-3) - add and subtract fractions with the same denominator and denominators that are multiples of the same number - multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams		- continue to develop understanding of fractions as operators by finding fractions of numbers and quantities - Links to Ready to Progress criteria 5F-1: Find non-unit fractions of quantities	- Links to Ready to Progress criteria 5G-1: Compare angles, estimate and measure angles in degrees ($^{\circ}$) and draw angles of a given size - know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles - draw given angles, and measure them in degrees - identify: angles at a point and one whole turn, angles at a point on a straight line and $\frac{1}{2}$ a turn, other multiples of 90° - use conventional markings for parallel lines and right angles	- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why - solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes - solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign - use and explain the equals sign to indicate equivalence, including in missing number problems (for example, $13 + 24 = 12 + 25$; $33 = 5 \times$) - understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements (for example, $4 \times 35 = 2 \times 2 \times 35$;	



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Spring 2					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Decimals		Application of Place Value, Decimals & Fractions through Measures		Assessment	Fractions (calculating)
- read and write decimal numbers as fractions e.g. $0.71 = 71/100$ - 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 - read, write, order and compare numbers with up to three decimal places - solve problems involving number up to three decimal places - Ready to progress criteria 5NPV-3: Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.		- use number in context - apply their understanding of the number system to the decimal numbers and fractions that they have met so far - use their knowledge of place value and multiplication and division to convert between standard units - interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero - solve practical problems using place value knowledge - connect fractions and decimals in the context of measures - solve puzzles involving decimals - use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling - solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes - find unknowns e.g. in context of measure and express these algebraically (e.g. $4 + 2b = 20$ for a rectangle of sides 2 cm and b cm and perimeter of 20cm)			- add and subtract fractions with the same denominator and denominators that are multiples of the same number - multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams



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Summer 1				
Week 1	Week 2	Week 3	Week 4	Week 5
Decimals and Percentages	Multiplication and Division: Scaling including ratio and proportion	Volume and Capacity	Position and Direction	Statistics
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal - solve problems which require knowing percentage and decimal equivalents of halves, quarters and fifths and those fractions with a denominator of a multiple of 10 or 25 - make connections between percentages, fractions and decimals (for example, 100% represents a whole quantity and 1% is 100 1 , 50% is 100 50 , 25% is 100 25) and relate this to finding 'fractions of'	- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates - use multiplication and division as inverses for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres	- Estimate volume and capacity e.g. using 1 cm³ blocks to build cuboids (including cubes) - use all four operations to solve problems involving measure using decimal notation, including scaling	- 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 - recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes	- solve comparison, sum and difference problems using information presented in a line graph - complete, read and interpret information in tables, including timetables - connect work on coordinates and scales to the interpretation of time graphs



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Summer 2					
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6 – 7
Multiplication and Division: Scaling including ratio and proportion	Measures: Converting Units (introduce imperial units)	Reasoning About Shape & Angles	Formal Methods Revisit with Measures integrated into Number application	<i>Assessment</i>	Ready to Progress
• solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • use multiplication and division as inverses, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres	• understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	• 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 • use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals • use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign		Teacher Assessment informs planning in response to cohort need