

Mathematics Target Sheet -Year 5

Year 5 Expectations

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Number and Place Value	Counting	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
	Comparing Numbers	count forwards or backwards in steps of powers of 10 for any given number up to 1000000
	Identifying, Representing and Estimating Numbers	Read, write, order and compare numbers to at least 1000000 and determine the value of each digit
	Reading and Writing Numbers	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
	Understanding Place Value	<i>Read, write, order and compare numbers to at least 1000000 and determine the value of each digit</i>
Rounding		round any number up to 1000000 to the nearest 10, 100, 1000, 10 000 and 100000
	Problem Solving	solve number problems and practical problems that involve all of the above
Number: Addition and	Number bonds	
	Mental Calculations	add and subtract numbers mentally with increasingly large numbers
	Written Methods	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
	Inverse Operations, Estimating and Checking Answers	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
Problem Solving	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	
Number: Multiplication and Division	Multiplication and Division Facts	
	Mental Calculation	multiply and divide numbers mentally drawing upon known facts
		multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
	Written Calculation	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
		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
	Properties of Numbers	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
Order of Operations	know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	
	establish whether a number up to 100 is prime and recall prime numbers up to 19	
Inverse Operations, Estimating and Checking Results	recognise and use square numbers and cube numbers, and the notation for squared () ² and cubed () ³	
	<i>estimate the answer to a calculation and use inverse operations to check answers</i>	
Problem Solving	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	
Number: Fractions	Counting in Fractional Steps	
	Recognising Fractions	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
	Comparing Fractions	compare and order fractions whose denominators are all multiples of the same number
	Comparing Decimals	read, write, order and compare numbers with up to three decimal places
Rounding including Decimals	round decimals with two decimal places to the nearest whole number and to one decimal place	

	<p>Equivalence (Including Fractions, Decimals and Percentages)</p> <p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)</p> <p>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</p> <p>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 as a decimal fraction</p>	
	<p>Addition and Subtraction of Fractions</p> <p>add and subtract fractions with the same denominator and multiples of the same number</p>	
	<p>Multiplication and Division of Fractions</p> <p>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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)</p>	
	<p>Multiplication and Division of Decimals</p> <p>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p>	
	<p>Problem Solving</p> <p>solve problems involving numbers up to three decimal places</p>	
	<p>solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.</p>	
	<p>Ratio and Proportion</p>	
Measurement	<p>Comparing and Estimating</p> <p>calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring)</p> <p>estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)</p>	
	<p>Measuring and Calculating</p> <p>use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.</p> <p>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes</p>	
	<p>Telling the Time</p> <p>Converting</p> <p>solve problems involving converting between units of time</p> <p>convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>solve problems involving converting between units of time</p> <p>understand and use equivalences between metric units and common imperial units such as inches, pounds and pints</p>	
Geometry: Properties of Shapes	<p>Identifying Shapes and their Properties</p> <p>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p>	
	<p>Drawing and Constructing</p> <p>draw given angles, and measure them in degrees ($^\circ$)</p>	
	<p>Comparing and Classifying</p> <p>use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>distinguish between regular and irregular polygons based on reasoning about equal sides and angles</p> <p>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</p> <p>identify:</p> <ul style="list-style-type: none"> * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) * other multiples of 90° 	
	<p>Position, Direction and Movement</p> <p>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</p>	
	<p>Pattern</p>	
S	<p>Interpreting, Constructing and Presenting Data</p> <p>complete, read and interpret information in tables, including timetables</p>	

	Solving Problems	solve comparison, sum and difference problems using information presented in a line graph
Algebra	Equations Formulae Sequences	<i>use the properties of rectangles to deduce related facts and find missing lengths and angles</i>