



Whole School Maths Curriculum Overview: Year 6

#TheSawthorneExperience



Year 6	Autumn Term				
Topic	Place Value	Addition, subtraction, multiplication and division	Fractions A	Fractions B	Converting Units
The Big Ideas	<p>For whole numbers, the more digits a number has, the larger it must be: any 4-digit whole number is larger than any 3-digit whole number. But this is not true of decimal numbers: having more digits does not make a decimal number necessarily bigger. For example, 0.5 is larger than 0.35.</p> <p>Ordering decimal numbers uses the same process as for whole numbers ie we look at the digits in matching places in the numbers, starting from the place with the highest value ie from the left. The number with the higher different digit is the higher number. For example, 256 is greater than 247 because 256 has 5 tens but 247 has only 4 tens. Similarly 1.0843 is smaller than 1.524 because 1.0843 has 0 tenths but 1.524 has 5 tenths.</p>	<p>Deciding which calculation method to use is supported by being able to take apart and combine numbers in many ways. For example, calculating $8.78 + 5.26$ might involve calculating $8.75 + 5.25$ and then adjusting the answer. The associative rule helps when adding three or more numbers: $367 + 275 + 525$ is probably best thought of as $367 + (275 + 525)$ rather than $(367 + 275) + 525$.</p> <p>Standard written algorithms use the conceptual structures of the mathematics to produce efficient methods of calculation. Standard written multiplication method involves a number of partial products. For example, 36×24 is made up of four partial products 30×20, 30×4, 6×20, 6×4. There are connections between factors, multiples and prime numbers and between fractions, division and ratios.</p>	<p>Fractions express a relationship between a whole and equal parts of a whole. Pupils should recognise this and speak in full sentences when answering a question involving fractions. For example, in response to the question 'What fraction of the journey has Tom travelled?' the pupil might respond, 'Tom has travelled two thirds of the whole journey.' Equivalent fractions are connected to the idea of ratio: keeping the numerator and denominator of a fraction in the same proportion creates an equivalent fraction. Putting fractions in place on the number lines helps understand fractions as numbers in their own right.</p>		<p>To read a scale, first work out how much each mark or division on the scale represents. The unit of measure must be identified before measuring. Selecting a unit will depend on the size and nature of the item to be measured and the degree of accuracy required.</p>

Key Knowledge and Skills	<ul style="list-style-type: none"> Numbers to 1,000,000 Numbers to 10,000,000 Read and write numbers to 10,000,000 Powers of 10 Number line to 10,000,000 Compare and order any integers Round any integer Negative numbers 	<ul style="list-style-type: none"> Add and subtract integers Common factors Common multiples Rules of divisibility Primes to 100 Square and cube numbers Multiply up to a 4-digit number by a 2-digit number Solve problems with multiplication Short division Division using factors Introduction to long division Long division with remainders Solve problems with division Solve multi-step problems Order of operations Mental calculations and estimation Reason from known facts 	<ul style="list-style-type: none"> Equivalent fractions and simplifying Equivalent fractions on a number line Compare and order (denominator) Compare and order (numerator) Add and subtract simple fractions Add and subtract any two fractions Add mixed numbers Subtract mixed numbers Multi-step problems 	<ul style="list-style-type: none"> Multiply fractions by integers Multiply fractions by fractions Divide a fraction by an integer Divide any fraction by an integer Mixed questions with fractions Fraction of an amount Fraction of an amount - find the whole 	<ul style="list-style-type: none"> Metric measures Convert metric measures Calculate with metric measures Miles and kilometres Imperial measures
National Curriculum Statements	<p>Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Round any whole number to a required degree of accuracy. Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve all of the above.</p>	<p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.</p>	<p>Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Identify common factors, common multiples and prime numbers. Solve addition and subtraction multi-step problems in contexts, deciding which</p>	<p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (Y5). Multiply simple pairs of proper fractions, writing the answer in its simplest form. Divide proper fractions by whole numbers. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Solve problems involving addition, subtraction, multiplication and division. Associate a fraction with</p>	<p>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, using decimal notation</p>

		<p>Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. 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. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p>	<p>operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division</p>	<p>division and calculate decimal fraction equivalents</p>	<p>to up to three decimal places. Convert between miles and kilometres</p>
<p>Key Vocabulary</p>	<p>units, ones, tens, hundreds, thousands, ten thousand, hundred thousand, million, digit, one-, two-, three- or four-digit number numeral 'teens' number place, place value, stands for, represents, exchange the same number as, as many as equal to, Of two objects/amounts: >, greater than, more than, larger than, bigger than <, less than, fewer than, smaller than, ³, greater than or equal to ², less than or equal to Of three or more, objects/amounts: greatest, most, largest, biggest, least, fewest, smallest, one... ten... one hundred... one thousand more/less compare, order, size ascending/descending order first... tenth... twentieth, last, last but one, before, after next, between, half-way between</p>	<p>ADDITION AND SUBTRACTION add, addition, more, plus, increase sum, total, altogether, score double, near double how many more to make...? subtract, subtraction, take (away), minus, decrease leave, how many are left/left over? difference between half, halve, how many more/fewer is... than...?, how much more/less is...? equals, sign, is the same as tens boundary, hundreds boundary units boundary, tenths boundary inverse MULTIPLICATION AND DIVISION lots of, groups of times, multiply, multiplication, multiplied by multiple of, product once, twice, three times... ten times... times as (big, long, wide... and so on) repeated addition</p>	<p>part, equal parts, fraction, proper/improper fraction mixed number, numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, third, sixth, ninth, twelfth, fifth, tenth, twentieth, hundredth, thousandth proportion, ratio in every, for every, to every, as many as decimal, decimal fraction, decimal point, decimal place, percentage, per cent, %</p>		<p>length, width, height, depth, breadth long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, longer, shorter, taller, higher... and so on, longest, shortest, tallest, highest... and so on, far, further, furthest, near, close distance, apart/between, distance to... from... edge, perimeter, circumference kilometre (km), metre (m), centimetre (cm), millimetre (mm) mile, yard, feet, foot, inches, inch ruler, metre stick, tape measure, compasses</p>

	<p>guess how many, estimate nearly, roughly, close to, about the same as, approximate, approximately, \hat{A}, is approximately equal to, just over, just under exact, exactly, too many, too few, enough, not enough, round (up or down), nearest, round to the nearest ten/hundred/thousand integer, positive, negative above/below zero, minus</p>	<p>array, row, column, double, halveshare, share equally one each, two each, three each... group in pairs, threes... tens equal groups of divide, division, divided by, divided into, remainder factor, quotient, divisible by inverse</p>	<p>mass: big, bigger, small, smaller, balances weight: heavy/light, heavier/lighter, heaviest/lightest weigh, weighs tonne, kilogram (kg), half-kilogram, gram (g) pound (lb), ounce (oz) balance, scales</p>
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*Red words are the newly taught vocabulary.

Sentence Stems

Progression

Misconceptions