

KS3 Mathematics Curriculum Coverage: 2023 – 2024



Year 9 Spring Term

Sequenced	Block 6: Pythagoras	Block 7: Number	Block 8: Percentages	Block 9: Maths and money	Block 10: Lines of symmetry
Key Knowledge	<p>To know that:</p> <ul style="list-style-type: none"> an integer is a whole number the difference between significant figures and decimal places square numbers up to and including 12^2 identify the hypotenuse in a right-angled triangle the existence of common Pythagorean triples e.g. 3,4,5 6/8/10 5/12/13 $a^2 + b^2 = \text{hyp}^2$ / $a^2 + b^2 = c^2$ drawing a diagonal in a rectangle creates two right-angled triangles 	<p>To know:</p> <ul style="list-style-type: none"> the difference between integers, real and rational numbers (h) the difference between HCF and LCM that dividing a fraction is the same as multiplying by the reciprocal how to find equivalent fractions with common denominators how to write a number in standard form recognise numbers that are in the form $a \times 10^n$ that are not in standard form 	<p>To know:</p> <ul style="list-style-type: none"> Equivalence of fractions, decimals and percentages percentage multipliers below and over 100 that to carry out a percentage change you multiply by the multiplier and to reverse a percentage change you divide by the multiplier 	<p>To know:</p> <ul style="list-style-type: none"> the terms debit, credit and balance the meaning of the readings on a gas or electric or mileage readings the meaning of deposit and equal monthly payments the meaning of VAT 	<p>To know:</p> <ul style="list-style-type: none"> know the conditions for a shape to have reflective symmetry know the lines of symmetry for triangles, quadrilaterals and other polygons know that lines in the form $x=a$ are vertical and $y=b$ are horizontal $y= x$ and $y= -x$ are diagonal lines reflecting a shape by a diagonal line changes it's orientation an object and its image when reflected are congruent (the same lengths and angles)
Key Skills	<p>To be able to:</p> <ul style="list-style-type: none"> Calculate missing side lengths in right-angled triangles using Pythagoras' theorem Determine whether a triangle is right-angled using Pythagoras' theorem Apply Pythagoras' theorem to 3D shapes 	<p>To be able to:</p> <ul style="list-style-type: none"> directed number - addition, subtraction, multiplication, division of negative numbers including with algebra mental methods - addition, subtraction, multiplication, division including working with decimals. fractions - addition, subtraction, multiplication, division standard form - addition, subtraction, multiplication, division and converting between ordinary and standard form surds - addition, subtraction, multiplication, division and simplification (H) 	<p>To be able to:</p> <ul style="list-style-type: none"> calculate percentage increase and decrease with and without a calculator express a change as a percentage solve reverse percentage problems solve problems with percentage change and repeated percentage change 	<p>To be able to:</p> <ul style="list-style-type: none"> solve problems with bank statements and bills calculate simple and compound interest solve problems with value added tax VAT solve problems with exchange rates and unit pricing problems 	<p>To be able to:</p> <ul style="list-style-type: none"> identify lines of reflective symmetry in shapes draw the lines with equations $x=a$ and $y=b$ reflect a shape using horizontal, vertical and diagonal lines of reflection when the reflection line is/isn't touching the object on a grid or x-y co-ordinate axes
	Tier 2 and 3 key vocabulary	Tier 2 and 3 vocabulary	Tier 2 and 3 vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary
Subject specific	square, square root, integer, significant figures, decimal places, hypotenuse, opposite, adjacent, right-angled, origin, quadrant, negative, hypotenuse, gradient, line segment, cuboid, 2d, 3d, Pythagoras	integer, rational, irrational, root, square root, cube, cube root, surd, positive, negative, inverse, operations, quotient, product, sum, difference, decimal, adjust, compensate, remainder, factor, highest common factor, multiple, lowest common multiple, prime, prime factors, numerator, denominator, mixed number, common denominator, improper fraction, standard form, power, index, exponent	percentage fraction decimal equivalence convert change increase decrease reduce multiplier reverse percentage	total debit credit balance expense percentage principle annual rate deposit interest per annum compound multiplier tax original exemption salary overtime wage currency convert exchange value unit proportion unitary	reflect line symmetry congruent object image vertical/horizontal vertex perpendicular distance