

# Maths

PLC N°	PLC Level	Year 7 Half Term 1
<b>Place Value, Integers &amp; Decimals and Operations</b>		
1	Emerging	Understand place value (Ten millions to millionths).
2	Emerging	Be able to order integers and use equality/inequality symbols.
3	Emerging	Understand calculation vocabulary and be able to calculate with positive integers (mental & written methods).
4	Developing	Be able to order decimals and use equality/inequality symbols.
5	Developing	Be able to draw and interpret continuous scales including using decimals. Identify 'sensible' scales.
6	Developing	Be able to add and subtract decimal numbers and complete monetary calculations. Be able to multiply and divide integers and decimals by powers of 10.
7	Developing	Know and use commutative, associative and distributive facts when calculating.
8	Developing	Understand the order of operations, inverses and related facts.
9	Secure	Understand and use multiplicative relationships.
10	Secure	Be able to calculate with negative numbers (4 operations).
11	Mastering	Be able to find positive powers of negative numbers.
12	Mastering	Be able to multiply and divide decimal numbers.
PLC N°	PLC Level	Year 7 Half Term 2
<b>Special Numbers</b>		
13	Developing	Define factor & multiple and identify factors, multiples and primes.
14	Secure	Define squaring, cubing and rooting and be able to perform these operations mentally.
15	Secure	Define and identify the Highest Common Factor (HCF) and Lowest Common Multiple of up to 3 numbers.
16	Secure	Be able to perform prime factorisation.
<b>Introduction to Fractions</b>		
17	Emerging	Define and understand fractions.
18	Developing	Be able to find equivalent fractions, compare fractions and understand how to fully simplify a fraction.
19	Developing	Express a quantity as a fraction of another.
20	Developing	Be able to find fractions of quantities.
21	Secure	Be able to convert between mixed and improper fractions.
22	Mastering	Be able to find the original quantity given a fraction of a quantity.
23	Developing	Define and be able to find reciprocals.

24	Secure	Be able to multiply and divide fractions (including integers by fractions).
25	Mastering	Be able to raise fractions to a power.
<b>PLC N°</b>	<b>PLC Level</b>	<b>Year 7 Half Term 3</b>
<b>Rounding</b>		
26	Emerging	Be able to round any whole number to the nearest 10 through to 100,000.
27	Developing	Be able to round to the nearest whole.
28	Secure	Be able to round numbers to a given place value (up to 3 decimal places).
29	Secure	Be able to use rounding to check calculations and approximate.
30	Mastering	Be able to identify how large or small a rounded value could have been (bounds).
<b>Decimals &amp; Fractions</b>		
31	Developing	Be able to convert between common fractions and decimals.
32	Secure	Be able to order integers, fractions and decimals.
33	Secure	Understand and use notation for recurring decimals.
<b>Perimeter</b>		
34	Emerging	Be able to draw and measure lengths to $\pm 1$ mm.
35	Developing	Define and be able to find a perimeter and understand associated units.
36	Secure	Be able to find missing lengths given a perimeter.
<b>PLC N°</b>	<b>PLC Level</b>	<b>Year 7 Half Term 4</b>
<b>Fractions</b>		
37	Developing	Be able to add and subtract fractions with the same denominator.
38	Secure	Be able to add and subtract fractions with different denominators.
39	Mastering	Be able to add and subtract mixed/improper fractions.
<b>Algebraic Convention</b>		
40	Emerging	Understand a letter is used to represent a (variable) value. Understand basic algebraic notation and vocabulary.
41	Developing	Write maths 'sentences' including the use of brackets and fractions.
<b>Substitution</b>		
42	Developing	Be able to substitute values into expressions and simple formulae, understanding the order of operations in algebra.
<b>Forming, Simplifying &amp; Solving</b>		
43	Developing	Be able to simplify expressions by collecting like terms.
44	Developing	Be able to simplify expressions by indices or cancellation.

45	Developing	Be able to form and solve a one-step equation by using inverse operations.
46	Secure	Be able to form and solve a two-step equation by using inverse operations.
<b>PLC N°</b>	<b>PLC Level</b>	<b>Year 7 Half Term 5</b>
<b>Area</b>		
47	Emerging	Define area and understand associated units.
48	Developing	Be able to find areas of squares and rectangles. Given an area find missing lengths.
49	Secure	Given an area of a rectangle find missing lengths.
50	Secure	Be able to find areas of rectilinear shapes.
51	Mastering	Solve complex problems involving rectilinear shapes.
<b>Sequences</b>		
52	Emerging	Be able describe and find missing numbers in sequences using a term to term rule.
53	Emerging	Be able to describe and draw pictorial patterns.
54	Developing	Identify special sequences of numbers (triangular, squares, cubes).
55	Secure	Be able to generate terms of a sequence given a term to term or position to term rule.
56	Secure	Identify if a number appears in a sequence using mathematical reasoning.
57	Secure	Generalise a pattern or sequence using an algebraic rule (nth term).
58	Mastering	Identify more complex special sequences of numbers (quadratic, geometric, Fibonacci).
<b>Angles</b>		
59	Emerging	Be able to estimate ( $\pm 10^\circ$ ), measure and draw ( $\pm 2^\circ$ ) acute & obtuse angles.
60	Developing	Be able to estimate ( $\pm 10^\circ$ ), measure and draw ( $\pm 2^\circ$ ) reflex angles.
61	Developing	Understand and use shape notation for lines and angles (including AB and $\angle ABC$ notation). Define parallel and perpendicular.
62	Developing	Identify angles at a point, in a triangle, on a line and vertically opposite angles in geometrical diagrams. Be able to find missing angles using these facts.
63	Secure	Recognise and know properties of triangles.
64	Secure	Recognise and know properties of quadrilaterals.
65	Secure	Define and be able to calculate interior and exterior angles.
66	Mastering	Be able to create simple proofs using geometrical reasoning (e.g. why will certain shapes tessellate).
<b>PLC N°</b>	<b>PLC Level</b>	<b>Year 7 going into Year 8 Half Term 6</b>

<b>Bearings</b>		
<b>67</b>	<b>Secure</b>	Understand how to measure a bearing and be able to draw a bearing.
<b>Form &amp; Solve Equations (angle context)</b>		
<b>68</b>	<b>Mastering</b>	Be able to form and solve equations involving algebra and properties of shape.
<b>Using a Scientific Calculator</b>		
<b>69</b>	<b>Emerging</b>	Understand and use keys for converting exact values to decimals.
<b>70</b>	<b>Developing</b>	Understand and use keys for mixed and improper fractions including conversion.
<b>71</b>	<b>Developing</b>	Understand and use keys for powers and roots.
<b>72</b>	<b>Developing</b>	Understand and use bracket keys for substitution (including fractions and negatives).
<b>73</b>	<b>Developing</b>	Understand, interpret and round when values are recurring.
<b>74</b>	<b>Secure</b>	Be able to solve complex calculator problems and understand approximations.
<b>Measures</b>		
<b>75</b>	<b>Emerging</b>	Be able to read 12 & 24 clocks.
<b>76</b>	<b>Emerging</b>	Understand and use standard measures of length, mass and capacity.
<b>77</b>	<b>Developing</b>	Understand and use approximate equivalence between metric and imperial measures.
<b>78</b>	<b>Developing</b>	Identify sensible units and be able to make sensible estimates.
<b>79</b>	<b>Secure</b>	Know and be able to convert between units of time (including decimal quantities).
<b>80</b>	<b>Secure</b>	Be able to convert between standard metric units of length, mass and capacity.
<b>81</b>	<b>Secure</b>	Be able to convert between miles and kilometres.
<b>Coordinates</b>		
<b>82</b>	<b>Emerging</b>	Be able to draw a correct set of axes with a correctly labelled continuous scale.
<b>83</b>	<b>Emerging</b>	Be able to interpret and plot coordinates in 4 quadrants.
<b>84</b>	<b>Developing</b>	Be able to find a midpoint of 2 coordinates.
<b>85</b>	<b>Secure</b>	Be able to find coordinates determined by geometrical information.