

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Unit Title</b>	<u>Addition Fundamentals</u>	<u>Subtraction Fundamentals</u>	<u>Multiplication</u>	<u>Division</u>	<u>FDP</u>	<u>Measure</u>
<b>Pre Unit A</b>	Mental addition methods - chunking, fact families, number bonds etc. (check for verbal reasoning and understanding of numbers as words) , estimation for answer checking	Mental subtraction methods - chunking, fact families, number bonds etc. (check for verbal reasoning and understanding of numbers as words), estimation for answer checking	Mental multiplication methods - chunking, fact families, known timestables etc. (check for verbal reasoning and understanding of numbers as words), estimation for answer checking	Mental division methods - chunking, fact families, known timestables etc. (check for verbal reasoning and understanding of numbers as words), estimation for answer checking	Review of calculating with simple fractions	Ordering & comparing values (integers, decimals, fractions, negatives, percentages)
<b>Check In Topics</b>						
<b>Tier 1 Fundamentals</b>	Column addition and subtraction Adding & Subtracting Fact families Partitioning	Rounding Timestables Adding & subtracting with negative numbers	Place Value (including decimal) Identifying values on a ruler and protractor Completing number lines (one number given)	multiplying and dividing by powers of 10 short division method Timestables	Estimating Place value Ordering numbers (inc decimals)	Fact families finding missing numbers (scales, number lines, sequences etc.) Identifying patterns & conjecture
<b>Tier 2 Skills</b>	Times tables Values of digits Squaring and cubing	Multiplying & dividing fact families Grid method of multiplication for basic multiplication Shape Properties	Finding missing terms in a simple linear sequence Continuing Simple sequences	multiplying and dividing Representations of numbers (inc. FDP)	Mixed to improper fractions converting FDP Converting units	Inverse operations Substitution Understanding algebraic notation (e.g what does 4x mean)
<b>Tier 3 Problem Solving</b>	Money calculations e.g cafe menus, bank account balances etc.	Worded problems on basic solving one step equations (e.g a number has been added to 2 and the answer is 6)	Comparing scale in a real life context inc. images	LCM simple worded questions	HCF simple worded questions	Worded two step solving equations questions (simple)
<b>Powerful Knowledge</b>						
<b>Incorporate intention PN slide into your lesson at relevant point</b>	1) Negative numbers - What happens when you spend more money than you have in your bank account. What is an overdraft 2) History of the fraction and Egyptian fractions 3) Use of < and > signs to denote width and height use examples rides and bridges	1) Fractions being used in real life 2) Use of negatives in weather forecasts and how that affects i.e. below zero water freezing 3) Invention of time using sundials and why countries have different time zones	1) Link to LCM why do hot dog buns come in packs of 6 and 12 but hotdogs in 10's 2) Link to why square and cube numbers are called so 3) How a wage is calculated plus what is taken out at source	1) What is the largest known prime number and when was it discovered 2) what is the division sign - link to discovery and that its just a blank fraction	1) Use of percentages to denote profit and loss real life example 2) Decimal scale of measurement 3) History of the fraction and Egyptian fractions	1) Estimation of costs for building projects and what can affect these 2) Why cars in the UK have mph and in euope Kph and ramifications 3) Use of measurements in real life
	Written methods of addition for integers - covers place value of numbers up to 1 billion (can be taught using concrete, pictoral & abstract methods) - shown in grids as counters and discussing that we ad up in the same column (size)	Written methods of subtraction for integers - covers place value of numbers up to 1 billion (can be taught using concrete, pictoral & abstract methods)	Multiples - LCM from Listing	Prime numbers & Factors - HCF from listing	Equivalent Fractions/Simplifying Fractions	Rounding to 10, 100, 1000 (covered in primary) and up to 3 decimal places
	Written methods of addition - covers place value of numbers up to 5 decimal places (can be taught using concrete, pictoral & abstract methods) - its worth making links to keeping place value aligned and adding the same size/value in order to preempt understanding of fraction addition	Written methods of subtraction-covers place value of numbers up to 5 decimal places (can be taught using concrete, pictoral & abstract methods) - its worth making links to keeping place value aligned and subtracting the same size/value in order to preempt understanding of fraction addition	Writing repeated multiplication as indices (squares, cubes and roots etc.) NOT laws of indices	Prime Factor decomposition inc HCF & LCM as extension	Mixed numbers to Improper fractions	Rounding to significant figures

	naming edges, faces, vertices tc.	this is part of naming basic 3D shapes and their properties
	compare negative numbers	falls under SP2A Pre-unit

<b>Content A</b>	Adding negative numbers (can talk about direction on number lines etc.)	Subtracting negative numbers (can talk about direction on number lines etc.)	Multiplying by powers of 10 inc decimals - place value - can extend to writing powers of 10 using indices and even standard form	Dividing by powers of 10 inc. decimals - can extend to writing powers of 10 using indices and even standard form	Converting between Fractions, decimals and percentages	Estimation
	Adding like terms - introduction to algebraic notation and collecting like terms, reinforce the idea of the same things can be added.	Subtracting fractions (like denominators) - reinforce the idea of sizes and values being important for addition, can include negative fractions	Written Methods of multiplication for integers - can include up to 4 digit by 4 digit numbers - must show grid method, Chinese method & column method to be discussed (can be taught using concrete, pictorial & abstract methods)	Written Methods of division for integers - short division method (can be taught using concrete, pictorial & abstract methods) can talk about arrays and fact families	compare/order fractions, decimals and percentages, <b>including mixed and improper</b>	Measuring and drawing in different units
	Adding fractions (like denominators) - reinforce the idea of sizes and values being important for addition, can include negative fractions, include algebraic fractions for extend	subtracting like terms - introduction to algebraic notation and collecting like terms, reinforce the idea of the same things can be added. Could look at identities at this point	Multiplication of decimal numbers - can be shown pictorially or using manipulatives	Division of decimal numbers - can be shown pictorially or using manipulatives	Expressing one number as a fraction of another	estimating lengths/weights
	Adding time - introduce the idea of working in different bases - how this works can be done using concrete, pictorial or abstract methods)	subtracting time -how this works can be done using concrete, pictorial or abstract methods)	Multiplication of negative numbers - can be shown pictorially or using manipulatives	Division of negative numbers - can be shown pictorially or using manipulatives	adding and subtracting unlike fractions	Using known measurements to estimate <b>e.g man against house</b>
	<b>understand that adition is commutative (e.g 3+6 = 6+3)</b>	<b>understand that subtraction is not commutative (e.g 3 - 6 is different to 6 - 3)</b>	Multiplying fractions - proper and integers (fractions of amounts)	Dividing fractions - proper and integers	adding and subtracting mixed numbers	converting between units of measure (metric & imperial)
	<b>order and compare whole numbers using place value, ascending and descending, including &lt; &gt; signs</b>	<b>symmetry of subtraction (e.g. 4 - 1 = 3 so 1 - 4 = -3 or 22 - 49 = ? so work out 49 - 22 then change the sign)</b>	Multiplying with algebra (inc, fractions, decimals & negatives and algebraic terms) - extend to expanding brackets	Dividing with algebra (inc, fractions, decimals & negatives and algebraic terms) - extend to factorising brackets	Multiplying and dividing mixed numbers	Problem solving with measure and measuring in real life contexts
	<b>using given numbers, make the largest/smallest number???</b>	<b>estimate answers before calculating</b>	Multiplying Time (only whole multiples of time)	Dividing Time (only whole factors)	<b>work with frctions and decimals e.g 3/4 + 0.7</b>	
	<b>estimate answers before calculating???</b>	<b>order of operation with AS</b>	<b>understand that mulitplication is commutave</b>	<b>understand that division is not commutative</b>		
	<b>fact families, understand equality</b>	<b>fact families, understand equality - use bar models</b>	<b>estimate answers before calculating NOT estimation</b>	<b>estimate answers before calculating - NOT estimation</b>		
			<b>order of operation with BIDMAS</b>	<b>order of operations with all BIDMAS</b>		
<b>Interpret calculator display (e.g. if an calculator displays 42.584 and the question is about money, what does this number represent? What if the question was about length, what does it mean? Do you need to truncate? Can you round your answer from the calculator display?)</b>						
<b>Learning evaluation A</b>	<a href="#"><u>Learning Evaluation A</u></a>	<a href="#"><u>Learning Evaluation A</u></a>	<a href="#"><u>Learning Evaluation A</u></a>	<a href="#"><u>Learning Evaluation A</u></a>	<a href="#"><u>Learning Evaluation A</u></a>	<a href="#"><u>Learning Evaluation A</u></a>
<b>Mid Unit Mark Scheme</b>		<a href="#"><u>AU2A Mark Scheme</u></a>	<a href="#"><u>SP1A Mark Scheme</u></a>		<a href="#"><u>SU1A Mark Scheme</u></a>	<a href="#"><u>SU2A Mark Scheme</u></a>
<b>Mental Maths Questions</b>	<a href="#"><u>Mental Addition Questions</u></a>	<a href="#"><u>Mental Subtraction Questions</u></a>	<a href="#"><u>Mental Multiplication Questions</u></a>	<a href="#"><u>Mental Division Questions</u></a>	<b>NONE</b>	<b>NONE</b>
<b>Feedback marksheet</b>	<a href="#"><u>AU1A</u></a>	<a href="#"><u>AU2A</u></a>	<a href="#"><u>SP1A</u></a>	<a href="#"><u>SP2A</u></a>	<a href="#"><u>SU1A</u></a>	<a href="#"><u>SU2A</u></a>
<b>DIRT A</b>	<a href="#"><u>DIRT Resources</u></a>	<a href="#"><u>DIRT Resources</u></a>				



Title	<u>Addition Applications</u>	<u>Subtraction Applications</u>	<u>Multiplication Applications</u>	<u>Division Applications</u>	<u>Percentages</u>	<u>Geometry</u>
<b>Pre Unit B</b>	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit	Unit A revision - covering topics identified as gaps, lacking understanding from the mid-unit
<b>Check In Topics</b>						
<b>Tier 1 Fundamentals</b>	Column addition and subtraction Shape Properties Fraction of amount Partitioning	Rounding Timestables Adding & subtracting with negative numbers	Place Value (including decimal) Identifying values on a ruler and protractor Completing number lines (one number given)	multiplying and dividing by powers of 10 bus stop method Timestables	Estimating Place value Ordering numbers (inc decimals)	Fact families finding missing numbers (scales, number lines, sequences etc.) Identifying patterns & conjecture
<b>Tier 2 Skills</b>	Times tables Values of digits Ordering numbers Squaring and cubing	Multiplying & dividing fact families Grid method of multiplication for basic multiplication Shape Properties	Finding missing terms in a simple linear sequence Continuing Simple sequences	multiplying and dividing Representations of numbers (inc. FDP)	Mixed to improper fractions converting FDP Converting units	Inverse operations Substitution Understanding algebraic notation (e.g what does 4x mean)
<b>Tier 3 Problem Solving</b>	Money calculations	Worded problems on basic solving one step equations (e.g a number has been multiplied by 2 and the answer is 6)	Comparing scale in a real life context inc. images	HCF simple worded questions	LCM simple worded questions	Worded two step solving equations questions (simple)
<b>Powerful Knowledge</b>						
<b>Incorporate intention PN slide into your lesson at relevant point</b>	1) History of scales and the conversion from imperial to metric 2) Euclid and the invention of lines and angles 3) The origins of perimeter and how it was original defined in Latin and Greek	1) Debt management 2) How business use patterns to make sales predictions 3) Why buses and trains use timetables and where they come from	1) How a builder will use area to estimate cost 2) Best buys 3) Invention of algebra by Al-Khwarizimi	1) How is a bouncing ball a geometric sequence 2) decking and what that has to do with area 3) Best buy real life example and where would they buy from	1) meaning of word percent and other cent words 2) World finance and what affects currency value	1) How angles are used in construction i.e. brick laying 2) Examples of symmetry in architecture 3) How governments use pie charts to display data
	Addition with money - shopping, wages, budgeting etc.	subtraction with money - budgeting, debt etc.	Multiplication with money - calculating pay, purchasing multiples, best buy?	Division with money - calculating hours worked, best buy?	Expressing one number as a percentage of another	line and angle notation
	Perimeter including algebra ( $P = 2w+2l$ ), fractions decimals & explain why it can't be negatives	Perimeter problems including algebra, fractions decimals & explain why it can't be negatives	Area including algebra ( $A=bh$ ), fractions and decimals	Area including algebra, fractions and decimals	percentage increase and decrease (non calc) - shoe percentages of amounts - basic ones are covered at KS2 so just a reminder on those)	types of angle
	Increasing sequences including algebra, fractions and decimals, ext: <u>substitution into sequences, including non linear sequences (can only be addition skills e.g fibonacci)</u>	Decreasing sequences including algebra, fractions and decimals, <u>substitution, including non linear (can only be subtraction skills)</u>	Geometric sequences (increasing only or decreasing by multiplying by fractions/decimals)	Geometric sequences	percentage increase and decrease using multipliers(calc)	drawing and measuring angles
	scales/number lines	scales/number lines	Function Machines (single) - include inverse Talk about the connection between algebraic expressions and function machines	Function Machines (single)- include inverse Talk about the connection between algebraic expressions and function machines	Percentage change	Symmetry
	Function machines (single) - include inverse	Function machines (single) - include inverse	Function Machines (double)	Function Machines (double)- include inverse	Problem solving with FDP	types of triangle and quadrilateral and their properties





<b>Content B</b>	<a href="#">form and solve</a> one step equations, <a href="#">use substitution to check?</a>	<a href="#">form and solve</a> one step equations, <a href="#">substitution</a>	<a href="#">solve</a> one step equations - should discuss equations/expressions/terms as all will have been seen - forming for extension	<a href="#">Form and solve</a> one step equations, <a href="#">substitution</a>	Worded contextual Problems with FDP	angles in triangles and quadrilaterals
	worded problems including fractions, decimals etc.	worded problems including fractions, decimals etc.	<a href="#">solve</a> two step equations - forming as an extension	<a href="#">Form and solve</a> two step equations	Finance with FDP	Naming basic 3D shapes and their properties - faces, vertices, edges
	Addition and key angle facts (lines, point, triangles)	Subtraction and key angle facts (lines, point, triangles)	worded problems including fractions, decimals etc.	worded problems including fractions, decimals etc.	<a href="#">percentage of an amount - to be covered within increase and decrease</a>	Applying knowledge - pie charts (percentages and drawing angles) - teach drawing pie charts from information given not calculating angles also interpreting pie charts as proportions (percentages, fractions etc) as this is all that has been covered
	Timetable problems (bus, train etc.)	Timetable problems (bus, train etc.)				Problem solving with geometric reasoning
	Frequency trees	Frequency Trees				Real life geometric reasoning
	Two way tables	two way tables				
	<a href="#">terms, identity, expression, formula etc.</a>					
	<a href="#">Interpret calculator display (e.g. if an calculator displays 42.584 and the question is about money, what does this number represent? What if the question was about length, what does it mean? Do you need to truncate? Can you round your answer from the calculator display?)</a>					
<b>Learning evaluation B</b>	<a href="#">Unit B Evaluation</a>	<a href="#">Unit B Evaluation</a>	<a href="#">Unit B Evaluation</a>	<a href="#">Unit B Evaluation</a>	<a href="#">Unit B Evaluation</a>	<a href="#">Unit B Evaluation</a>
<b>Mid Unit Mark Scheme</b>		<a href="#">AU2B Mark Scheme</a>	<a href="#">SP2B Mark Scheme</a>			<a href="#">SU2B Mark Scheme</a>
<b>DIRT B</b>	<a href="#">DIRT Resources</a>	<a href="#">DIRT Resources</a>				
<b>Feedback Marksheet</b>	<a href="#">AU1B</a>	<a href="#">AU2B</a>	<a href="#">SP1B</a>	<a href="#">SP2B</a>	<a href="#">SU1B</a>	<a href="#">SU2B</a>
<b>End of unit</b>	<a href="#">End of unit assessment</a>	<a href="#">End of unit assessment</a>	<a href="#">End of unit assessment</a>	<a href="#">End of unit assessment</a>	<a href="#">End of unit assessment</a>	<a href="#">End of Unit Assessment</a>
<b>End of unit Markscheme</b>	<a href="#">EOU Mark Scheme</a>	<a href="#">EOU Mark Scheme</a>	<a href="#">EOU Mark Scheme</a>	<a href="#">EOU Mark Scheme</a>	<a href="#">EOU Mark Scheme</a>	<a href="#">EOU Mark Scheme</a>
<b>ORACY Qs</b>	<a href="#">AU1 Oracy</a>	<a href="#">AU2 Oracy</a>	<a href="#">SP1 Oracy</a>	<a href="#">SP2 Oracy</a>	<a href="#">SU1 Oracy</a>	<a href="#">SU2 Oracy</a>

