

Positive and Negative Numbers: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to multiply and divide any number from 1 to 10,000 by 10 or 100 and understand the effect.	Children will recap the effect of multiplying and dividing numbers by 10 and 100. Children will then apply this to any number between 1 and 10,000 through a variety of differentiated activities.	<ul style="list-style-type: none"> • Can the children multiply and divide by 10? • Can the children multiply and divide by 100? • Can the children multiply and divide by larger multiples of 10? 	<ul style="list-style-type: none"> • Slides • Worksheet 1A/1B/1C • Operation Cards (FSD? activity only) • Number Cards 1A/1B (FSD? activity only)
Lesson 2	To be able to order positive and negative numbers.	Children will start by counting on and back in tens from a four-digit number. They will then move on to exploring what happens when a larger number is taken away from a smaller number (such as 7 - 12), expressing the answer as a negative number. They will order negative numbers on a number line and start to order positive and negative numbers.	<ul style="list-style-type: none"> • Can the children order negative and positive numbers on a number line? • Can the children order positive and negative numbers? • Can the children solve calculations involving negative numbers? 	<ul style="list-style-type: none"> • Slides • Worksheet 2A/2B/2C • Calculators (FSD? activity only)
Lesson 3	To be able to use the < and > signs accurately and to order and compare negative numbers.	Children will recap what the < and > symbols mean and use these to compare both positive and negative numbers. They will start by comparing two numbers, then extend to comparing sequences of numbers. They can also play a card game to compare the value or various positive and negative numbers.	<ul style="list-style-type: none"> • Do children understand what a negative number is? • Can the children use the < and > signs correctly? • Can the children order positive and negative numbers? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A • Number Cards 3A/3B • Symbol Cards • Truncated Playing Cards (FSD? activity only) • Action Cards (FSD? activity only) • Instruction Sheet (FSD? activity only)
Lesson 4	To be able to solve problems involving negative numbers in the context of temperature.	Children will start by counting on and back in steps of 100 from a five-digit number. They will then move on to solving problems involving negative numbers in the context of temperature. Children will use line graphs showing the average low and high temperatures for a variety of worldwide cities, using the information to ask and answer questions.	<ul style="list-style-type: none"> • Can children use negative numbers in the context of temperature? • Can children find the difference between a positive and negative number? • Can children use line graphs to interpret temperatures? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Graph Sheet • Clue Cards (FSD? activity only) • Graph Cards (FSD? activity only)
Lesson 5	To be able to use negative numbers in the context of money.	Children will start by counting on and back in steps of 1000 from a five-digit number. They will then solve a variety of problems involving negative numbers in the context of overdrafts. Children will work out ending balances from a start figure and amount spent. They can also keep a running track of a balance by adding and taking away different amounts of money.	<ul style="list-style-type: none"> • Can the children order positive and negative numbers? • Can the children calculate differences involving negative numbers? • Can the children calculate money amounts involving negative numbers? 	<ul style="list-style-type: none"> • Slides • Game Board 5A/5B/5C • Counters and dice • Bank Balance Cards 5A/5B (FSD? activity only)

Mental and Written Addition: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To use formal column methods to solve addition problems.	Children will use formal column addition methods to solve problems. They will work out how much stock shopkeepers have in their store or play an addition target number game. They will be encouraged to use mental methods as well as rounding and estimating to check their answers.	<ul style="list-style-type: none"> • Can children use formal column addition? • Can children use mental methods to check their answers? • Can children explain their workings out? 	<ul style="list-style-type: none"> • Slides • Worksheet 1A/1B/1C • Game Sheet (FSD...? activity only)
Lesson 2	To solve addition problems using the rounding and adjusting method.	Children will use rounding and adjusting to solve addition problems. They will work out how much stock each department has. They will be encouraged to think about the best method to use when solving problems and to explain their methods.	<ul style="list-style-type: none"> • Can children use the rounding and adjusting method to solve addition problems? • Can children use alternative methods to check their answers? • Can children explain their methods? 	<ul style="list-style-type: none"> • Slides • Problem Cards • Game Sheet A/B • Shopping Trolley Card A/B • Green Number Cards A/B (FSD...? activity only) • Red Number Cards A/B (FSD...? activity only)
Lesson 3	To use addition to solve problems involving mass.	Children will use addition methods to arrange items of stock on shop shelves, keeping within the weight limit of the shelf. They will need to employ a variety of problem-solving strategies to ensure they keep within the specific requirements of the shopkeepers. The alternative activity involves your class weighing a variety of classroom items and finding their total weight.	<ul style="list-style-type: none"> • Can children add multiple weights? • Can children choose appropriate methods when adding? • Can children explain their methods and answers? 	<ul style="list-style-type: none"> • Slides • Problem Cards (TI only) • Problem Requirement Cards (TI only) • Aisle Requirement Cards A/B/C • Stock Sheet A/B/C • Stationary Cards (FSD...? activity only) • Worksheet 3A/3B (FSD...? activity only) • Digital weighing scales (FSD...? activity only) • Near Doubles Cards A/B (Plenary only)
Lesson 4	To solve addition problems involving money.	Children will work out how much money has been spent on rebranding the store. They will have the opportunity to use the addition methods they feel are most appropriate to solve each problem, including using estimation to check answers.	<ul style="list-style-type: none"> • Can children add numbers with decimals? • Do children understand a running total? • Do children understand the sequence of numbers when moving from negative to positive numbers? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Stock Sheet (FSD...? activity only) • Budget Cards (FSD...? activity only) • Shop catalogue
Lesson 5	To solve a variety of addition problems.	Children will solve a variety of addition problems involving money. They will be the customers at the shop and work out how much money their shop costs.	<ul style="list-style-type: none"> • Can children solve addition word problems? • Can children use a variety of methods to solve problems? • Can children explain their workings and check their answers? 	<ul style="list-style-type: none"> • Slides • Product List • Challenge Cards A/B/C • Customer Cards A/B (FSD...? activity only)

Mental and Written Subtraction: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To recap the formal written method for subtraction.	Children revisit the formal written method for subtraction by using it to find the difference in heights between mountains. They have the opportunity to discuss the suitability of the method for different problems and begin to use their knowledge of the method to investigate differences within given criteria.	<ul style="list-style-type: none"> Can children use the formal written method from subtraction efficiently and effectively? Are children able to describe the process of exchanging and why/when it needs to be done? Are children able to make decisions on when the formal written method is appropriate for a calculation and when a mental method would be more suitable? 	<ul style="list-style-type: none"> Slides Worksheet 1A/1B/1C Mountains Map 1A/1B Worksheet 1D (FSD? activity only) Laptops (FSD? activity only) Maps and atlases (FSD? activity only)
Lesson 2	To subtract numbers with up to three decimal places.	Through the use of the formal written method for subtraction the children will find the differences between distances in the context of world records. They will be faced with problems involving an inconsistent number of decimal places and given the chance to explain how to solve these kind of questions. Alternatively they are given the chance to attempt a world record, giving them the opportunity to develop their accurate measuring skills as well as subtracting decimal numbers.	<ul style="list-style-type: none"> Are children able to lay out a column subtraction including numbers with up to three decimal places? Can children subtract numbers containing a consistent number of decimal places? Are children able to solve subtraction problems involving numbers with a different number of decimal places? 	<ul style="list-style-type: none"> Slides Conversion Card World Record Cards Worksheet 2A/2B/2C Results Sheet Plain Paper Large measuring tape/rulers
Lesson 3	To find the difference between positive and negative numbers.	Children explore negative numbers in the context of a timeline where negative numbers are represented as dates before 0 AD. They are challenged to find the difference between a date before 0 AD and one after using a number line with two jumps to cover the difference.	<ul style="list-style-type: none"> Can children can define a negative number? Are children able to describe what happens when you subtract a negative number from a positive number? Can children calculate a negative number subtracted from a positive number? 	<ul style="list-style-type: none"> Slides Positive and Negative Signs Teacher Cards 3A Worksheet 3A/3B/3C Challenge Card 3A Historical Timeline 3A Event Cards (FSD? activity only) String, paperclips, paper strips (FSD? activity only)
Lesson 4	To use the informal partitioned subtraction method.	This lesson introduces a new method to the children using partitioning and negative numbers to subtract. The children must use their existing knowledge of negative numbers and the number line to help them find the difference between two numbers. The children are given time to practise and apply the new method before being asked of the advantages and disadvantages of the method.	<ul style="list-style-type: none"> Can children use partitioning to solve a subtraction problem? Are children able to describe what is happening when you add a negative number? Can children describe their preferred method, backing up their decision with reasoned explanations? 	<ul style="list-style-type: none"> Slides Numbers in Words Card Worksheet 4A/4B/4C Budget Card 4A Budget Card 4B (FSD? activity only)
Lesson 5	To use rounding to check our answers for accuracy.	Children are challenged to use their estimating and rounding knowledge to help them make sensible and practical estimations of numbers. They must estimate a subtrahend for a question with limited information before choosing the most suitable answer from a selection.	<ul style="list-style-type: none"> Can children round to the nearest 10, 100, 1,000, 10,000 and nearest whole number? Can children choose what to round the numbers in a question to, to produce an effective estimate? Are children able to decide whether their answer is feasible based on their estimate? 	<ul style="list-style-type: none"> Slides Rounding Loop Cards Worksheet 5A/5B Challenge Card 5A Check Yourself Sheet A/B (FSD? activity only)

Symmetry, Reflection and Coordinates: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To translate polygons on a coordinate grid.	Children will describe the shapes on a grid according to the coordinates of their vertices, then describe translations of shapes using algebraic terms, e.g. $x + 12, y - 4$.	<ul style="list-style-type: none"> Can children name the features of coordinate grids? Do children understand what a translation is? Can children translate polygons in the first quadrant of a coordinate grid? 	<ul style="list-style-type: none"> Slides Worksheets 1A/1B/1C French elastic (optional) Translation Flash Cards Blank Coordinate Grid
Lesson 2	To reflect shapes on a grid.	Children will learn how to reflect shapes horizontally, vertically and diagonally on a grid. They will then practise doing this, reflecting shapes or simple patterns.	<ul style="list-style-type: none"> Do children know what a transformation is? Do children know that reflection is a type of transformation? Can children reflect shapes across a mirror line? 	<ul style="list-style-type: none"> Slides Worksheets 2A/2B/2C Mirrors, tracing paper Diagonal Reflection 2A A range of physical maths resources (FSD? only)
Lesson 3	To find lines of reflective symmetry in shapes.	Children will find lines of symmetry inside shapes, then learn how to reflect shapes where a mirror line is either bisecting, touching or not touching the shape.	<ul style="list-style-type: none"> Do children know what a mirror line is? Can children use mirrors or tracing paper to check or find lines of symmetry? Can children accurately draw lines of symmetry inside shapes? 	<ul style="list-style-type: none"> Slides Worksheets 3A/3B/3C/3D Lines of Symmetry sheet Mirrors Tracing paper
Lesson 4	To find and draw congruent shapes on a grid.	Children will look at several different types of transformation and identify which result in new shapes that are congruent with the original. They will then draw translations of shapes which are congruent with the original.	<ul style="list-style-type: none"> Do children know the identical properties of congruent shapes? Do children understand why some shapes are incongruent? Can children draw congruent copies of an original shape on a grid? 	<ul style="list-style-type: none"> Slides Worksheets 4A/4B/4C Tracing paper Congruent Shapes 4A Congruent Shapes cards
Lesson 5	To explore ways in which some congruent shapes can tessellate.	Children will relate transformation of shapes to tessellation, and make tessellating patterns by rotating, translating or reflecting shapes.	<ul style="list-style-type: none"> Do children know what tessellation is? Do children know that some shapes will tessellate and some will not? Can children create tessellating patterns by reflecting or rotating shapes? 	<ul style="list-style-type: none"> Slides Worksheets 5A/5B/5C/5D Art software Thick card/foam, poster paint (FSD? only)

Factors and Multiples: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to find all factor pairs of a number.	Children will identify what a factor is and learn how to find all the factor pairs for a given number using a methodical process. Children will express factor pairs using arrays, or alternatively 'factor rainbows'.	<ul style="list-style-type: none"> Do children know what a factor is? Can children find factors of numbers? Can children work methodically to find all factor pairs of a number? 	<ul style="list-style-type: none"> Slides Worksheet 1A Challenge Cards 1A/1B/1C Factor Rainbows sheet (FSD? activity only)
Lesson 2	To be able to find common factors of two numbers.	Children will learn how to identify common factors of two-digit numbers. They will sort numbers into Venn diagrams to identify common factors in two or more numbers. They can also play a game to identify greatest common factors.	<ul style="list-style-type: none"> Do children understand what a common factor is? Can children identify common factors of two numbers? Can children identify common factors of three numbers? 	<ul style="list-style-type: none"> Slides Worksheet 2A/2B/2C Multiplication Grid Game Board 2A/2B (FSD? activity only) Game Cards 2A/2B (FSD? activity only)
Lesson 3	To be able to solve problems involving factors and multiples.	Children will identify the difference between factors and multiples. They will sort numbers into Carroll diagrams according to various criteria. They will also solve puzzles for which will encourage a greater understanding of the relationship between factors and multiples.	<ul style="list-style-type: none"> Can children describe what factors and multiples are? Can children use their knowledge of factors and multiples to sort numbers? Can children use their knowledge of factors and multiples to solve problems? 	<ul style="list-style-type: none"> Slides Worksheet 3A/3B/3C Challenge Cards 3A/3B (FSD? activity only)
Lesson 4	To be able to double and halve multiples of 10 to 1000 and multiples of 100 to 10,000.	Children will learn some strategies for doubling and halving multiples of 10 and 100. Children are encouraged to solve calculations mentally wherever possible, using their understanding of factors and multiples to help them.	<ul style="list-style-type: none"> Can children double and halve three-digit multiples of ten? Can children double and halve four-digit multiples of ten? Can they double and halve multiples of 100 to 10,000? 	<ul style="list-style-type: none"> Slides Game Sheet 4A/4B/4C Spinner 4A/4B/4C Number Cards 4A/4B (FSD? activity only) Blank Number Cards (FSD? activity only)
Lesson 5	To be able to multiply by factors of 100.	Children will practise multiplying by factors of 100, namely 25, 50 and 75. Children are taught a variety of strategies to help them do this. They are encouraged to solve problems mentally wherever possible.	<ul style="list-style-type: none"> Can the children multiply by 50 by multiplying by 100 and halving? Can they multiply by 25 by multiplying by 100 and dividing by 4 using jottings? Can they multiply by 25 by multiplying by 100 and dividing by 4 mentally? 	<ul style="list-style-type: none"> Slides Worksheet 5A Calculation Cards 5A/5B Multiplication Webs 5A/5B/5C (FSD? activity only)

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To recognise percentages, understand what they mean, and compare them to equivalent fractions and decimals.	Firstly children will consider, then define, what percentages are, with reference to percentage statistics. After that they will compare percentages and their fraction equivalents and learn how to convert percentages to decimals using place value knowledge.	<ul style="list-style-type: none"> • Can children express percentages as fractions? • Can children compare percentages to equivalent fractions and decimals? • Can children express percentages as decimals? 	<ul style="list-style-type: none"> • Slides • Percentage Activity 1A–1D sheets • Percentage Party!!! board game and instructions (FSD...? activity only)
Lesson 2	To use known and derived facts (and ad hoc methods) to calculate percentages and solve percentage problems.	With reference to pie charts and stacked bar charts, children will read and compare percentages. They will then devise and use ad hoc methods for finding percentages of amounts which are exact multiples of 100. Some children may also use ad hoc methods for finding percentages of 50 and 25. After this, children will solve one- and two-step percentage problems.	<ul style="list-style-type: none"> • Can children read and compare percentages shown using charts and graphs? • Can children devise and explain ad hoc methods for calculating percentages of multiples of 100? • Can children devise and explain ad hoc methods for calculating percentages of common fractions of 100 such as $\frac{1}{2}$, $\frac{1}{4}$ and multiples of $\frac{1}{5}$? 	<ul style="list-style-type: none"> • Slides • Worksheets 2A/2B/2C • Percentage Speed Challenge cards (FSD...? activity only)
Lesson 3	To find and use algorithms for calculating percentages of amounts and converting fractions to percentages.	Children will use doubling, repeated addition or place value knowledge to find percentages of multiples of 100. They will then learn how to use four-cell models to visualise and solve percentage problems, including those where the amounts given must be expressed as a fraction, then converted into a percentage.	<ul style="list-style-type: none"> • Can children express percentages and proportions of amounts as fractions? • Can children use an algorithm to find percentages of amounts? • Can children use an algorithm to express fractions as percentages? 	<ul style="list-style-type: none"> • Slides • Worksheets 3A/3B/3C <p>FSD...? activity only:</p> <ul style="list-style-type: none"> • Challenge Card 3 • Poster paper and/or presentation software
Lesson 4	To find one per cent of any amount using place value knowledge.	Children will practise finding 1% of multiples of 100, then learn how to find 1% of other amounts (e.g. £150) using place value knowledge. Following this they may either practise finding one per cent of two-, three- and four-digit amounts, or find one per cent more or less of amounts found on everyday objects.	<ul style="list-style-type: none"> • Can children explain how 1% of 100 is calculated, and how this can help when finding 1% of other amounts? • Can children use place value knowledge to find one per cent of amounts? • Can children correctly identify amounts which are not 1% of a total amount? 	<ul style="list-style-type: none"> • Slides • Worksheets 4A/4B/4C <p>FSD...? activity only:</p> <ul style="list-style-type: none"> • One Per Cent More or Less instructions • Sticky notes
Lesson 5	To use a two-step algorithm to find percentages and fractions of amounts.	Now they know how to find one per cent of an amount, children will consider ways in which they can easily find two, three or four per cent using repeated addition or doubling. They will write and improve instructions for finding percentages. They may then either practise finding small percentages or explore ways in which spreadsheets and coding languages may be used to automatically calculate percentages.	<ul style="list-style-type: none"> • Can children find one per cent of an amount, including amounts where one per cent is a decimal number with one decimal place? • Can children devise, refine and use a two-step algorithm for finding percentages? • Using their algorithm, can children find two and four per cent of amounts where one per cent is a decimal number with one decimal place? 	<ul style="list-style-type: none"> • Slides • Worksheets 5A/5B/5C <p>FSD...? activity only:</p> <ul style="list-style-type: none"> • Teacher's Notes • Spreadsheet software

Primes, Squares and Cubes: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To make connections between square numbers and area.	Review the children's understanding of area and its units by making the link between finding the area of squares and rectangle and square numbers. Investigate why we use the units cm^2 and begin to use this knowledge to solve problems involving area and square numbers.	<ul style="list-style-type: none"> • Are children able to make the link between area and squaring a number? • Can children find the area of a square by squaring the length of the sides? • Are children able to recognise and use the 2 notation? 	<ul style="list-style-type: none"> • Slides • Worksheets 1A/1B/1C • Squared paper • Challenge Card 1A (FSD? activity only)
Lesson 2	To make connections between 3 and finding the volume of a cube.	Begin to use cube numbers in context when making the link between volume and cube numbers. Revisit the formula of length x width x depth and begin to use this in problems involving volume and cube numbers.	<ul style="list-style-type: none"> • Can children describe what the 3 notation means? • Are children able to make the link between finding the volume of a cube and 3 a number? • Can children use their understanding of volume and cube numbers in a problem solving calculation? 	<ul style="list-style-type: none"> • Slides • Worksheet 2A/2B/2C • Gift Box Sizing Guide • Worksheet 2C/2D (FSD? activity only)
Lesson 3	To investigate and identify prime numbers.	Investigate the factors of numbers and use this to pick out numbers with only two factors. Use this criterion to define prime numbers and composite numbers. Using this understanding the children launch into investigating and identifying prime numbers to 120 using methods such as Eratosthenes' sieve.	<ul style="list-style-type: none"> • Can children describe what a prime number is? • Are children able to use the vocabulary 'prime' and 'composite' with confidence? • Are children able to identify the prime numbers between 1 and 20? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A/3B/3C • Multiplication Grid • Challenge Card 3A
Lesson 4	To identify the prime factors of a number.	Leading on from the previous lesson, the children use their knowledge of prime numbers to find the prime factors of the numbers 2-50. Whilst using factor trees to identify prime factors, the children can consolidate their understanding of square and cube numbers and their notations by writing the multiplication sentences of each number's prime factors.	<ul style="list-style-type: none"> • Can children describe what a prime factor is? • Are children able to complete a factor tree for a given number? • Can children identify the prime factors of a number? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Prime Factor Cards (FSD? activity only) • Teacher Cards (FSD? activity only)
Lesson 5	To solve problems involving square, cube and prime numbers.	Children practise the use of square and cube numbers in number sentences before becoming number detectives. They must identify a number based on clues including prime, square and cube numbers. Some clues may be useless and the children must identify the unhelpful information.	<ul style="list-style-type: none"> • Can children define the key vocabulary of square, cube, prime and composite numbers? • Can children identify square, cube, prime and composite numbers? • Can children solve problems involving square, cube, prime and composite numbers? 	<ul style="list-style-type: none"> • Slides • Worksheet 5A/5B/5C • Hundred Squares • Points Card 5A (FSD? activity only) • Calculation Cards 5A/5B/5C (FSD? activity only) • Help Sheet 5A

Formal Multiplication: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To use the grid method of multiplication to solve multiplication problems.	Children will recap how to use the grid method to solve multiplication calculations, starting with simple calculations and moving on to solve three-digit by two-digit and four-digit by two-digit calculations. They have some 'sometimes, always or never' statements and target numbers to investigate. They will also think about how they can work out what the question is when they are given a completed grid using their knowledge of multiplication facts.	<ul style="list-style-type: none"> • Can children find the answer to two-digit by one-digit multiplications using the grid method? • Can children find the answer to two-digit by two-digit multiplications using the grid method? • Can children find the answer to three-digit by two-digit multiplications using the grid method? 	<ul style="list-style-type: none"> • Slides • Worksheet 1A • Sometimes, Always, Never Cards 1A/1B/1C • Question Cards (FSD? activity only) • Digit Cards (FSD? activity only) • Calculators
Lesson 2	To use the expanded standard method to solve multiplication problems.	Children will compare the expanded and grid methods to identify similarities and differences. They will learn how to use the expanded method to multiply two-, three- and four-digit numbers by a single digit. They can solve missing number problems by filling in the gaps in expanded method calculations.	<ul style="list-style-type: none"> • Can children answer two-digit by one-digit multiplication questions using the expanded standard method? • Can children answer three-digit by one-digit multiplication questions using the expanded standard method? • Can children answer four-digit by one-digit multiplication questions using the expanded standard method? 	<ul style="list-style-type: none"> • Slides • Worksheet 2A/2B/2C • Calculation Cards A/B (FSD? activity only)
Lesson 3	To use the formal short multiplication method to solve multiplication problems.	Children will compare the expanded method and formal short multiplication method to identify similarities and differences. They will recap how the short multiplication method works and use short multiplication to multiply two-, three- and four-digit numbers by a single digit, including to solve word problems.	<ul style="list-style-type: none"> • Can children use the formal short multiplication method to solve two-digit by one-digit calculations? • Can children use the formal short multiplication method to solve three-digit by one-digit calculations? • Can children use the formal short multiplication method to solve four-digit by one-digit calculations? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A/3B/3C • Domino Cards 3A/3B (FSD? activity only) • Blank Dominos (FSD? activity only)
Lesson 4	To use the formal long multiplication method to solve multiplication problems.	Children will learn how to use the formal method of long multiplication. They will be taken through each step of the process, building on their understanding of the short multiplication method to help them.	<ul style="list-style-type: none"> • Can children use the formal long multiplication method to solve two-digit by two-digit calculations? • Can children use the formal long multiplication method to solve three-digit by two-digit calculations? • Can children use the formal long multiplication method to solve four-digit by two-digit calculations? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Calculation Cards 4A/4B/4C (FSD? activity only) • Dice (FSD? activity only)
Lesson 5	To be able to use formal multiplication methods to solve problems.	Children will recap how to use long multiplication then recap which other methods they have used throughout the week to solve multiplication problems. They will choose an appropriate method to solve a variety of word problems and investigations.	<ul style="list-style-type: none"> • Can children use a variety of formal multiplication methods? • Can children choose a method appropriate to the problem? • Can children solve multiplication problems using a formal method? 	<ul style="list-style-type: none"> • Slides • Worksheet 5A/5B/5C • Price Sheet 5A/5B • Challenge Cards 5A/5B (FSD? activity only)

Short Division: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To be able to multiply and divide numbers mentally drawing on known facts.	Children will start by identifying errors in simple calculations, then go on to practise solving calculations mentally using known multiplication and division facts, including multiplying and dividing by powers of ten, and multiplying by nine, eleven, etc. Children are encouraged to recall known facts quickly through a variety of games and activities.	<ul style="list-style-type: none"> • Can children multiply numbers mentally drawing on known facts? • Can children divide numbers mentally drawing on known facts? • Can children use appropriate jottings and written methods when a calculation can't be solved mentally? 	<ul style="list-style-type: none"> • Slides • Calculation Chains sheet • Game Board 1A/1B/1C • Dice and counters • Top Trump Cards 1A/1B (FSD? activity only) • Spinner (FSD? activity only)
Lesson 2	To be able to use the formal written method of short division.	Children will start by comparing the chunking and short division methods before recapping how short division works. They will do several calculations together as a class, checking each one with the chunking method. They can then practise short division independently but through a group activity, or solve missing number problems.	<ul style="list-style-type: none"> • Can children format a short division question correctly? • Can children solve division problems using the short division method? • Can children check their calculations using other division and multiplication methods? 	<ul style="list-style-type: none"> • Slides • Calculation Cards 2A/2B/2C • Points Cards • Missing Number Challenge 2A/2B/2C (FSD? activity only)
Lesson 3	To be able to solve problems using the short division method.	Children will work through a variety of word problems that involve short division (although some other operations are included to ensure children are reading and understanding the questions). They will think about the steps they need to take to solve the problem, and check their calculations. They can then either solve word problem crosswords or carry out a short division challenge.	<ul style="list-style-type: none"> • Can children use the short division method correctly? • Can children interpret word problems and identify what they need to do to solve them? • Can children check their answers using appropriate methods? 	<ul style="list-style-type: none"> • Slides • Worksheet 3A/3B/3C • Challenge Checklist 3A/3B/3C (FSD? activity only) • Divisibility Rules Card (FSD? activity only)
Lesson 4	To be able to solve problems involving scaling by simple fractions.	Children will start with some quick-fire division questions that involve remainders as a warm-up. They will then go on to solve problems that involve scaling by simple fractions, using short division to find the answers. Bar modelling is used to help children visualise the problems. During their independent work, they will solve a variety of multi-step problems using scaling.	<ul style="list-style-type: none"> • Do children understand the link between fractions and division? • Can children use short division to solve problems that involve scaling by simple fractions? • Can children check their answers using an appropriate method? 	<ul style="list-style-type: none"> • Slides • Challenge Cards 4A/4B/4C • Celebrity Height Cards (FSD? activity only) • Character Cards (FSD? activity only)
Lesson 5	To be able to solve a variety of multi-step problems.	Children will recap the steps they need to take in order to successfully solve word problems. They will then tackle a variety of multi-step problems that involve addition, subtraction, multiplication and division. Children will need to choose an appropriate operation and method for each step of the problem, as well as thinking about how they can check their answer is correct.	<ul style="list-style-type: none"> • Can children identify what multi-step problems are asking them to find out? • Can children choose an appropriate written method for solving calculations, including short division? • Can children check their calculations for accuracy? 	<ul style="list-style-type: none"> • Slides • Calculation Cards 5A/5B/5C • Picture Puzzle 5A/5B cards (FSD? activity only) • Picture Puzzle Images (FSD? activity only) • Picture Puzzle 5A/5B Answer Boards (FSD? activity only)

Describing Data: Maths : Year 5 : Summer Term

	Learning Objective	Overview	Assessment Questions	Resources
Lesson 1	To interpret information in tables.	In this lesson the children will use their knowledge of interpreting data to identify desired information from tables and use the existing information to fill in missing data where needed. They will need to think carefully about which information is useful or irrelevant before using it to answer questions. There is an alternative opportunity for them to use the information from tables to create a top trump game based on their chosen categories.	<ul style="list-style-type: none"> • Can the children input data into a table? • Can children interpret statistics from a table? • Are children able to interpret multiple statistics from a table? 	<ul style="list-style-type: none"> • Slides • Worksheets 1A/1B/1C • Information Table 1A/1B • Card Template 1A • Prediction Cards 1A
Lesson 2	To solve comparison, sum and difference problems using information presented in a line graph.	Children use their understanding of line graphs to interpret and question the information that the graph is presenting. They must use their own interpretation skills to create questions about selected graphs as well as predicting future data and drawing overall conclusions about the information they are presented with.	<ul style="list-style-type: none"> • Can children interpret face-value information from data displayed in a line graph? • Are children able to answer sum/difference information about data displaying in a line graph? • Are children able to identify the purpose of a graph? 	<ul style="list-style-type: none"> • Slides • Flashcard Template 2A • Worksheet 2A/2B/2C • Line Graphs 2A • Line Graphs 2B (FSD? activity only) • Fact Cards 2A (FSD? activity only)
Lesson 3	To tell the story of a line graph.	This lesson challenges the children to look at line graphs from a different angle and see the graphs as telling a story over time. Using minimal information they must think about what the line's angle and steepness is telling them about the data and use their imaginations to think of stories to match a given line graph.	<ul style="list-style-type: none"> • Do children understand that line graphs usually display a change in a variable over a length of time? • Are children able to hypothesise a what has happened to create the data on a line graph? • Can children use a line graph to (approximately) display a change in a variable over time? 	<ul style="list-style-type: none"> • Slides • Teacher Card 3A • Worksheet 3A/3B/3C • Worksheet 3D/3E (FSD? activity only)
Lesson 4	To decide the best ways to present data.	The children will make decisions about the best ways in which to present data based on the types and contexts of the data they are given. This lesson gives the children the opportunity to think about the purpose for their graph or chart. They must decide on the clearest presentations of the data and draw a chart or graph accordingly.	<ul style="list-style-type: none"> • Can children describe the difference between discrete and continuous data? • Are children able to choose a suitable graph to display a set of data? • Can children use reasoning to explain why a type of graph is more suited to a set of data? 	<ul style="list-style-type: none"> • Slides • Worksheet 4A/4B/4C • Graph Paper 4A • Graph Hints and Tips Sheet 4A • Challenge Card 4A (FSD? activity only) • Colouring pens/pencils (FSD? activity only)
Lesson 5	To investigate how graphs can be misleading.	This lesson encourages the children to investigate the scales and layouts of a graph to see how the data can be presented differently and often in misleading ways. They are challenged to look conscientiously at graphs to spot how they have been manipulated and what effect this has on the data shown.	<ul style="list-style-type: none"> • Can children name one way a graph could be made to be misleading? • Can children identify a misleading graph? • Can children describe the effects of a misleading graph? 	<ul style="list-style-type: none"> • Slides • Worksheet 5A/5B/5C • Graph Cards 5A • Graph Paper 5A • Challenge Card 5A • Challenge Card 5B (FSD? activity)