Clarendon Federation

Maths Strategy

S. Wardle October 2025

This teaching strategy has been written alongside the White Rose long term plan to ensure that the full curriculum is covered in Key Stage 1 and Key Stage 2. It also addresses the Government's Ready to Progress criteria released in July 2020; these objectives are in red.

Teachers will use the strategy to inform their unit planning and their session planning. The strategy is time weighted. However, teachers will adapt timings to support the learning in their classes- moving children on when a concept has been mastered and spending more time when a concept needs embedding further. As this is the case, the strategy has been written to allow deepened understanding in each learning objective. Children should practise skills and apply them in a range of situations to ensure that their understanding is deep and thorough. Not every week of the school year has been planned for, weeks have been left for teacher judgement. Teachers may wish to revisit objectives to consolidate or deepen understanding in other objectives.

Key focus objectives are underlined. These are essential objectives that children will require before moving on to the next year group.

This is the minimum mathematical entitled for the children in Clarendon Infants School and Clarendon Junior School. The maths curriculum should be enriched through other subjects to ensure that learning is thorough and well-established. Children should be given opportunities to apply skills in topic work and especially in science.

Teachers should use this document alongside the Calculation Policy to ensure that a consistent approach to maths is used across the school.

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EYFS

In EYFS, the mathematical teaching is lead through the Mastering Number programme and knowledge is reinforces and embedded in the continuous provision following the daily session.

Term 1	Term 2	Term 3
Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison. **Pupils will:** • identify when a set can be subitised and when counting is needed • subitise different arrangements, both unstructured and structured, including using the Hungarian number frame • make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills • spot smaller numbers 'hiding' inside larger numbers	Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals. **Pupils will:** • continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals • begin to identify missing parts for numbers within 5 • explore the structure of the numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame • focus on equal and unequal groups when comparing numbers	Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice. **Pupils will:** • continue to develop their counting skills, counting larger sets as well as counting actions and sounds • explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame • compare quantities and numbers, including sets of objects which have different attributes • continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2

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• connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers • hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number • develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds • compare sets of objects by matching • begin to develop the language of 'whole' when talking about objects which have parts	• understand that two equal groups can be called a 'double' and connect this to finger patterns • sort odd and even numbers according to their 'shape' • continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern • order numbers and play track games • join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers	• begin to generalise about 'one more than' and 'one less than' numbers within 10 • continue to identify when sets can be subitised and when counting is necessary • develop conceptual subitising skills including when using a rekenrek

This programme lasts for 31 weeks and provides time for the teachers to consolidate any learning objectives needed and address the objectives in the curriculum that are not addressed through this programme.

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Lessons in KS1 and KS2

The learning pathway that each step of learning outlined in the White Rose guidance will take can take more than one day to deliver as some concepts require more time to teach and embed the learning. Teachers will move onto the next stage in the learning pathway once the majority (above 85%) have become fluent. Those who require more support will have a separate 'keep up' intervention to maintain the learning. For those children who are working below the age expectation for their year group, further support and tailored lessons for precision teaching will be led.

Clarendon Federation			Unit:	Year: Class:	Date: Term: Week:	
White Rose Unit: Small Step:						
Learning Pathway:	Starter: Basic Skills What do the children need to know before they start this step?	Stage 1: Using Manipulatives How will the children see what is happening?	Stage 2: Pictorial Representation How will the children represent the skill in pictures? How can the manipulatives be represented pictorially?	Stage 3: Abstract Representation How will the skill look in numbers? What method are they using?	Stage 4: Variation Questions in context that develop one variable at a time.	Stage 5: Problem solving Questions that encourage children to record how and why.

Each stage of learning builds on the previous and will always begin with the pre-requisite skills needed to achieve the step. Manipulatives are a stage in the learning pathway for all learners and are available for all learners in the class throughout all of the lessons. There are a range of manipulatives on offer to the children and these are outlined in the Calculation Policy.

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KS1

In Years 1 and 2, each Maths lesson begins with Flashback Four (a programme from White Rose) that revisits learning from the last lesson, last week, last month and last term. This will be completed either verbally or on whiteboards by the children and the responses discussed through as a class.

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Maths Teaching Strategy: Year 1 Autumn Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
4 Weeks	Number: Place Value (within 10)	**read and write numbers from 1 to 10 in digits and words** spell accurately numbers from one to ten **given a number, identify one more and one less** understand the language of more and less know what 1 represents use objects to represent one more or one less use counting skills to identify one more or one less **represent and use number bond and related subtraction facts** compose numbers to 10 from 2 parts partition numbers to 10	**identify and represent numbers using objects and pictorial representations including the number line** draw pictorial representations of numbers sort objects to show numbers show where numbers are on a marked/tracked number line **read and write numbers from 1 to 10 in digits and words** spell accurately numbers from one to ten **Count within 100, forwards and backwards, starting with any number**	**sequence events in chronological order using language (for example; before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening)** **recognise and use language relating to date, including days of the week, weeks, month and years.**
5 Weeks	Addition and Subtraction (within 10)	**identify and represent numbers using objects and pictorial representations including the number line** draw pictorial representations of numbers sort objects to show numbers show where numbers are on a marked/tracked number line **add and subtract one-digit and two-digit numbers to 10, including zero** understand the value of zero use objects and pictures to add and take away to ten use a marked/tracked number line to add and take away to ten	**solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations** know key words relating to addition know key words relating to subtraction solve word problems using pictures or objects **Reason about the location of numbers to 20 within the linear number system, comparing using < > and =**	
1 Week	Geometry: Shape	**recognise and name common 2D shapes** recognise and name rectangles, circles and triangles know that a square is a type of rectangle use counting skills to describe properties of shape **recognise and name common 3D shapes** recognise 2D shapes in given 3D shapes find 3D shapes in the environment talk about 3D shapes in the environment build structures using 3D shapes	**Compose 2d and 3d shapes from smaller shapes to match an example**	
2 Weeks	Number: Place Value (within 20)	**read and write numbers from 1 to 20 in digits and words** spell accurately numbers from one to twenty **given a number, identify one more and one less** understand the language of more and less know what 1 represents use objects to represent one more or one less use counting skills to identify one more or one less	**identify and represent numbers using objects and pictorial representations including the number line** draw pictorial representations of numbers sort objects to show numbers show where numbers are on a marked/tracked number line **read and write numbers from 1 to 20 in digits and words** spell accurately numbers from one to ten	

Maths Teaching Strategy: Year 1 Spring Term

Time Scale	Key Focus	Objectives to Cover	On-going Objectives
2 Weeks	Place Value (within 50)	**read and write numbers from 1 to 20 in digits and words** spell accurately numbers from one to ten **given a number, identify one more and one less** understand the language of more and less know what 1 represents use objects to represent one more or one less use counting skills to identify one more or one less **identify and represent numbers using objects and pictorial representations including the number line** draw pictorial representations of numbers sort objects to show numbers show where numbers are on a marked/tracked number line **read and write numbers from 1 to 50 in digits and words** spell accurately numbers from one to ten	**Count in multiples of 2s, 5s and 10s** Count to 10s to 100 recognise patterns for counting know how 2s relates to odd/even **know number bonds to 20**
2 Weeks	Addition and Subtraction (within 20)	**identify and represent numbers using objects and pictorial representations including the number line** draw pictorial representations of numbers sort objects to show numbers show where numbers are on a marked/tracked number line **add and subtract one-digit and two-digit numbers to 20, including zero** understand the value of zero use objects and pictures to add and take away to ten use a marked/tracked number line to add and take away to ten **solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations** know key words relating to addition know key words relating to subtraction solve word problems using pictures or objects **read, write and interpret mathematical statements involving addition, subtraction and equals signs** know and name the symbols understand other vocabulary relating to + - = record own number sentences	
1 Week	Measurement: length and height	**compare, describe and solve practical problems for: lengths & heights** relate measures vocabulary to common objects understand and use relevant vocabulary begin to solve problems using comparing, ordering and vocabulary **measure and begin to record the following: lengths & heights** understand use of standard/non-standard measures decide what to use to measure something know that numbers can be used for measuring as well as counting use the language of equal to, more than and less than to measure	
1 Week	Measurement: Weight and Volume	**measure and begin to record the following: mass/weight, capacity & volume** understand use of standard/non-standard measures decide what to use to measure something know that numbers can be used for measuring as well as counting use the language of equal to, more than and less than to measure **measure and record lengths and heights** use standard units **compare, describe and solve practical problems for: mass/weight, capacity & volume** relate measures vocabulary to common objects understand and use relevant vocabulary begin to solve problems using comparing, ordering and vocabulary	

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1 Week	Multiplication and Division	**solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher** Count in 2s, 5s and 10s draw pictorial representations of 2s, 5s, 10s (arrays) group small quantities understand the concept of doubling understand multiplication as less to make more understand division as more to make less		
2 Weeks	Fractions and 2D and 3D shapes	**recognise, find and name a half as one of two equal parts of an object, shape or quantity** understand what a half is (fair sharing) fold shapes and cut objects into halves recombine halves to make wholes find half of even numbers **recognise, find and name a quarter as one of four equal parts of an object, shape or quantity** understand the vocabulary of a quarter know that a quarter is half of a half	**recognise and name common 2d and 3D shapes** recognise 2d shapes in given 3D shapes find 3D shapes in the environment talk about 3D shapes in the environment build structures using 3D shapes	

Please note, the strategy should not take the full spring term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

Maths Teaching Strategy: Year 1 Summer Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
2 Weeks	Multiplication and Division	**count, read and write to 100 in numerals** read one-digit numbers read two-digit numbers represent numbers with numerals to 100 **count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number** counting past 100 counting forwards counting backwards	**given a number, identify one more and one less** understand the language of more and less know what 1 represents use objects to represent one more or one less use counting skills to identify one more or one less	**Count in multiples of 2s, 5s and 10s** Count to 10s to 100 recognise patterns for counting know how 2s relates to odd/even **know number bonds to 20**
2 Weeks	Fractions	**recognise, find and name a half as one of two equal parts of an object, shape or quantity** find half of shapes find half of even numbers **recognise, find and name a quarter as one of four equal parts of an object, shape or quantity** find quarter or shapes find quarters of numbers that are multiples of 4	**doubling and halving** learn the doubles for numbers from 1 to 10 learn that half is the inverse of double use doubling as a mental strategy (eg 8+9 will be close to 16)	
1 Week	Geometry, Shape and Direction	**describe position, directions and movements, including half, quarter and 3 quarter turns** understand the language of position follow given directions using number skills relate half and quarter turns to fractions	**Recognise and name common 2D and 3D shapes** use counting skills to describe properties of shape name 2D and 3D shapes	
1 Week	Multiplication and Division	**solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher** count in 2s, 5s and 10s draw pictorial representations of 2s, 5s and 10s (arrays) group small quantities understand the concept of doubling understand multiplication as less to make more understand division as more to make less	**Count forwards and backwards in multiples of 2, 5 and 10**	

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2 Week	Addition, subtraction and Calculating	**add and subtract one digit and two-digit numbers to 20, including zero** begin to add and subtract beyond 20 understand change as subtraction understand total as addition **solve simple one-step problems that involve addition and subtractions and missing number problems** solve a range of puzzles and problems apply calculating skills accurately solve problems that involve measures	**solve simple one-step problems that involve multiplication and division** solve a range of puzzles and problems apply times table knowledge and skills accurately solve problems that involve measures	
1 Week	Measurement: Money	**recognise and know the value of different coins and notes** recognise coins to 20p combine coins to make different amounts		
1 Week	Measurement: Time	**tell the time to the hour and half past the hour and draw hands on a clock face to show these times** know what the hands on a clock represent tell the time to the hour understand what half of a clock is know what it means when the minute hand is half way around	**compare, describe and solve practical problems for time** use language such as quicker, slower, earlier, later	

Please note, the strategy should not take the full summer term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

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Notes for Year 1:

• Some objectives may only appear once as they have a strong presence within other objectives.

• Sequencing events and using language relating to dates should be a part of ongoing classroom practice and so is only taught once in the strategy (autumn term) – this should be evidenced in the classroom environment.

• Red objectives are key objectives for the year. Children's understanding in these objectives is essential – no child should move to Year 2 without a secure understanding in these objectives.

• Using place value and number facts to solve problems is ongoing.

Objectives to be covered through cross curricular opportunities:

• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables

• understand different ways that data can be sorted

• collect information

• represent information in different ways

• Ask and answer simple questions by counting the number of objects in each category and sorting categories by quantity

• Ask and answer questions about totalling and comparing categorical data.

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Maths Teaching Strategy: Year 2 Autumn Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
3 Weeks	Number and place Value	**read and write numbers to at least 100 in numerals and words** count in 10s to 50 spell accurately each of the tens (twenty, thirty, forty, etc) spell accurately all numbers to 50 **recognise the place value of each digit in a two-digit number** understand vocabulary of ones and tens partition two-digit numbers represent both parts of a number with objects/pictures **count in steps of 2, 3 and 5 from 0, and in tens from any number forward and backwards**	**compare and order numbers from 0 to 100, using < > and =** use language or greater than, less than and equal to group near numbers using place value order numbers using place value start to calculate differences between near numbers **identify, represent and estimate numbers using different representations, including the number line** place numbers on a numbered/tracked number line place numbers on an unmarked number line discuss their placements reason about the placement of numbers within the linear number system	
5 Weeks	Addition and Subtraction	**add and subtract numbers using concrete objects, pictorial representations, and mentally** use the number line add two-digit numbers and ones add two-digit numbers and tens add three one-digit numbers understand how place value helps when adding numbers **recall and use addition and subtraction facts to 20 fluently, and derive related facts up to 100** **read, write and interpret mathematical statements involving addition +, subtraction – and equals signs =** **secure fluency in addition and subtraction facts within 10 through continued practice** **recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".**	**show that addition of two numbers can be done in any order and subtraction of one number from another cannot** know to start with the larger number develop understanding of the commutative law **recognise and use the inverse relationship between addition and subtraction and use this to check calculations** use the inverse to check an answer **solve problems with addition and subtraction** write the calculation a problem is asking for use the number line to solve puzzles and problems **add and subtract across 10** **add and subtract within 100 by applying related one digit addition and subtraction facts: add and subtract any 2 two digit numbers.**	
2 Weeks	Measurement: Money	**recognise and use symbols for pounds (£) and pence (p) and combine amounts to make particular values** recognise the value of all coins and notes combine coins to make values write using money symbols **find different combinations of coins that equal the same amounts of money** understand that numbers can be partitioned in different ways use coin values to make the same amount in different ways	**solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change**	

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1 Weeks	Multiplication and Division	**calculate mathematical statements for multiplication and division within the multiplication tables and use x, ÷ and =** understand the concept of multiplication and division multiply using repeated addition divide by grouping write mathematical statements for calculations	**recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables**	

Please note, the strategy should not take the full autumn term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

Maths Teaching Strategy: Year 2 Spring Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
2 Weeks	Fractions and time	**recognise, find, name and write fractions of 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity** understand the concept of a quarter know that fractions show equal parts understand what the numerator and denominator represent split shapes and objects into quarters	**tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times** divide a clock into quarters know when the time reads past and to use 5x table knowledge to tell the time around the clock	**count in steps of 2s, 3s and 5s from 0 and 10s from any number forwards and backwards** **number bonds** **place value knowledge**
2 Weeks	Multiplication and division	**calculate mathematical statements for multiplication and division within the multiplication tables and use x, ÷ and =** understand the concept of multiplication and division multiply using repeated addition divide by grouping write mathematical statements for calculations **recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers**	**show that multiplication of two numbers can be done in any order and division of one number by another cannot** use times tables knowledge to understand the commutative law understand why division cannot be done in any order **solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts** write the calculation a problem is asking for use repeated addition, repeated subtraction to solve problems use times tables knowledge to solve problems	
3 Weeks	2D shapes, 3D shapes and Data	**identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line** know names of shapes based on the amount of sides recognise if a shape has a vertical line of symmetry compare and sort shapes based on properties **identify and describe the properties of 3D shapes, including the number of edges, vertices and faces** discuss properties of 3D shapes compare and sort 3D shapes by properties identify 2D shapes within 3D shapes **identify 2d shapes on the surface of 3-D shapes** **compare and sort common 2D and 3D shapes and everyday objects**	**ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity** **interpret and construct simple pictograms, tally charts, block diagrams and simple tables** Make tally charts draw simple pictograms interpret simple pictograms **ask and answer questions about totalling and comparing categorical data.**	
2 Weeks	Addition, subtraction and money	**add and subtract numbers using concrete objects, pictorial representations and mentally** use the column method to add two two-digit numbers add numbers mentally using partitioning and the number line use the column method to subtract two two-digit numbers subtract numbers mentally using partitioning and the number line **solve problems with addition and subtraction** decide whether to calculate using mental or written methods write calculations out from puzzles/problems use written methods to solve puzzles/problems	**solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change** use mental/written methods to add/subtract money know what total means know what difference means understand subtraction as a way of finding change **recognise and use the inverse relationship between addition and subtraction and use this to check calculations** use the inverse to check an answer	

Maths Teaching Strategy: Year 2 Summer Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
2 Weeks	Multiplication, Division and Fractions	**calculate mathematical statements for multiplication and division within the multiplication tables and use x, ÷ and =** multiply and divide using methods taught and knowledge of tables understand concepts of multiplying and dividing	**recognise, find, name and write fractions of 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity** understand the fraction concept (including numerator/denominator) divide shapes, lengths and objects into parts **write simple fractions and recognise equivalence of ½ and ¼** understand finding a fraction as the division of a quantity record their calculation e.g. ½ of 6 = 3 understand why ½ and ¼ are the same	**count in steps of 2s, 3s and 5s from 0 and 10s from any number forwards and backwards** **number bonds** **place value knowledge**
3 Weeks	Measurement and Data	**compare and order lengths, mass, volume/capacity and record the results using >, < and =** understand less than, greater than and equal to use knowledge of place value to compare and order **choose and use appropriate standard units to estimate and measure length/height, mass, temperature and capacity** use rulers, scales, thermometers and measuring vessels use m/cm, ˚C, l/ml measure to the nearest unit measure in any direction	**interpret and construct simple pictograms, tally charts, block diagrams and simple tables** answer questions about data using calculations **ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity** **ask and answer questions about totalling and comparing categorical data**	
1 Week	Geometry: position and direction	**order and arrange combinations of mathematical objects in patterns and sequences** understand what a pattern is continue repeating patterns fill in missing shapes in repeating patterns start to look at and describe number patterns	**use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)** identify and recognise right angles turn/rotate in right angles write and follow directions use knowledge of clocks to distinguish between cw and acw	
2 Weeks	Calculations	**add and subtract numbers using concrete objects, pictorial representations and mentally** know methods for addition and subtraction add and subtract accurately **Solve problems with addition and subtraction**	**calculate mathematical statements for multiplication and division within the multiplication tables** know methods for multiplication and division multiply and divide accurately **Solve problems involving multiplication and division**	

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2 Weeks	Time	**know the number of minutes in an hour and the number of hours in a day** **compare and sequence intervals of times** begin to order different times recognise times represented in hours and hours and minutes	**tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times** divide a clock into quarters know when the time reads past and to use 5x table knowledge to tell the time around the clock	

Please note, the strategy should not take the full summer term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

Year 2 Notes

• Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward or backward does not appear in the strategy should be an on-going objective.

• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 should be an on-going objective.

• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers should be an on-going objective.

• Use place value and number facts to solve problems is ongoing.

• Some objectives may only appear once as they have a strong presence within other objectives.

• Objectives in red are key objectives for the year. Children's understanding in these objectives is essential – no child should move to Year 3 without a secure understanding in these objectives.

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KS2

Each day, each KS2 class will have a times table fact of the day. This will be based on the focus times table for the year group. As each child answers the register in the morning and the afternoon, they say the times table fact complete with the answer. e.g- "Good morning, 3 x 2 = 6". The fact will be displayed on the class whiteboard all day and will just be the calculation without the answer, encouraging fact recall.

Year 3 will focus on 2, 5, 10, 3, 4, 6 and 8. Year 4 will focus on 7, 9, 11 and 12 in the first instance and move to a recall of all facts up to x12. Years 5 and 6 will focus on recalling a mix of the facts up to x 12.

In Years 3-6, each Maths lesson begins with Fluent in Five (an arithmetic programme from Third Space Learning) that revisits key arithmetic methods for each year group using mental and written methods. These are completed in 5 minutes (Years 3 and 4 on whiteboards and Years 5 and 6 on paper worksheets that replicate a KS2 arithmetic paper) and then reviewed, discussed and marked as a class.

In a separate session in the afternoon, all classes complete a Times Table Rockstar sheet focusing on quick autonomous fact recall. The children are given 3 minutes to answer up to 60 questions based on a focused times table or a mix of ones learnt so far.

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Maths Teaching Strategy: Year 3 Autumn Term

Time Scale	Key Focus	Objectives to Cover		On-going objectives
3 weeks	Place Value	**recognise the place value of each digit in a three-digit number.** understand HTU partition 3 digit numbers use pictorial representations of 3 digit numbers **read and write numbers to 1000 in figures and words.** spell hundred correctly read any 3 digit number spell 3 digit numbers accurately **know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10**	**order and compare numbers up to 1000.** use knowledge of place value to compare numbers order a set of three digit numbers order a mixed set of numbers **identify, represent and estimate numbers using different representations.** estimate where a number is on a number line (e.g. from 200 to 300) represent numbers to 1000 in figures represent numbers to 1000 in words **apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140, 140 – 60 = 80**	
5 weeks	addition and subtraction	**add and subtract with up to 3 digits using column methods.** use place value to line numbers up demonstrate place value understanding know the Big Maths principle of irrelevant matter use addition facts to add two 3 digit numbers together use subtraction facts to subtract one number from another solve subtraction problems where borrowing isn't required **estimate and use inverse operations to check answers to a calculation** **Calculate complements to 100, for example: 46 + ? = 100**	**solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.** understand vocabulary presented in word problems for x and ÷ use knowledge of inverses to solve missing number problems solve problems where one number is directly related to another **add and subtract numbers mentally** **secure fluency in addition and subtraction facts that bridge 10, through continued practice** **Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related prop**	
4 weeks	Multiplication and division	**progress to formal written methods for multiplying two digits by a single digit.** use place value to partition two digit numbers set multiplications out in a grid use smile multiplication accurately use knowledge of multiplication facts to solve divisions begin to chunk for division **solve division problems using knowledge of multiplication.** **recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number**	**recognise and use the inverse relationship between multiplication and division to check calculations.** **recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables** **divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts**	

Please note, the strategy should not take the full autumn term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

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Maths Teaching Strategy: Year 3 Spring Term

Time Scale	Key Focus	Objectives to Cover		On-Going Objectives
1 Week	Place Value and Calculation Methods	**recognise the place value of each digit in a three-digit number** partition three-digit numbers into hundreds, tens and units **estimate the answer to a calculation and use inverse operations to check answers** round two digit and three-digit numbers to the nearest ten round three-digit numbers to the nearest hundred use PIM to make estimations before completing a calculation **add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction** use place value to line numbers up demonstrate place value understanding know the Big Maths principle of irrelevant matter use addition facts to add two 3-digit numbers together use subtraction facts to subtract one number from another solve subtraction problems where borrowing isn't required	**write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including two-digit numbers by one-digit numbers, using mental and progressing to formal written methods** use place value to partition two-digit numbers set multiplications out in a grid use smile multiplication accurately use knowledge of multiplication facts to solve divisions chunk for division	**Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more of less than a given number** **Count in multiples of 6, 7, 9, 25 and 1000 does not appear in the strategy** **Recall multiplication and division facts for multiplication tables up to 12x12**
2 Weeks	Multiplication and Division	**progress to formal written methods for multiplying two digits by a single digit.** use place value to partition two-digit numbers set multiplications out in a grid use smile multiplication accurately use knowledge of multiplication facts to solve divisions **solve division problems using knowledge of multiplication.**	**recognise and use the inverse relationship between multiplication and division to check calculations.** **recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables** **solve problems, including missing number problems, involving multiplication and division, including positive integer problems and correspondence problems in which n objects are connected to m objects**	
2 Weeks	Roman Numerals and Time	**tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12 hour and 24-hour clocks** understand how Roman numerals work combine letters to show Roman numerals tell the time from an analogue clock to the minute start to convert from digital time to analogue time **estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of second, minutes, hours and o'clock; use vocabulary such as AM/PM, morning, afternoon, noon and midnight**	**know the number of seconds in a minute and the number of days in each month, year and leap year** know by heart key time facts learn a mnemonic for days in each month use knowledge of fractions to understand leap years **compare durations of events, for example to calculate the time taken by particular events or tasks** time events using a clock or a stopwatch compare tasks using longer than, shorter than and the same as calculate totals and differences with time	
1 Week	Statistics	**interpret and present data using bar charts, pictograms and tables** know how to read different diagrams read scales that go up in amounts other than one draw own charts, deciding on appropriate scales read numbers between two scales	**solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.** identify which data is needed know how to find differences know how to find totals apply calculation methods	

3 Weeks	Fractions	**recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** recognise a half and quarter find a third equivalents **compare and order unit fractions** **interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts**	**recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators** **recognise and show, using diagrams, equivalent fractions with small denominators** **reason about the location of any fraction within 1 in the linear number system**	

Please note, the strategy should not take the full spring term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

Maths Teaching Strategy: Year 3 Summer Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
3 Weeks	Calculating and Problem Solving	**estimate the answer to a calculation and use inverse operations to check answers** round two digit and three-digit numbers to the nearest ten round three-digit numbers to the nearest hundred use PIM to make estimations before completing a calculation **add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction** **add and subtract amounts of money to give change, using both £ and p in practical contexts**	**write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including two-digit numbers by one-digit numbers, using mental and progressing to formal written methods** **solve problems including missing number problems, using number facts, place value, and more complex addition and subtraction** **solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects**	**Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more of less than a given number** **Count in multiples of 6, 7, 9, 25 and 1000 does not appear in the strategy** **Recall multiplication and division facts for multiplication tables up to 12x12**
2 Weeks	Fractions	**recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.** know what a fraction represents find fractions where any number is the numerator **count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10**	**add and subtract fractions with the same denominator within the whole** use addition and subtraction facts demonstrate understanding using visual representations **solve problems that involve Y3 fraction objectives**	
3 Weeks	Geometry	**identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle** **recognise 3D shapes in different orientations and describe them** **recognise angles as a property of shape or a description of a turn** **measure the perimeter of simple 2D shapes**	**draw 2D shapes and make 3D shapes using modelling materials** understand the properties of different 2D shapes count sides to name shapes know which 2D shapes appear on 3D shapes recognise 3D shapes in different orientations **identify horizontal and vertical lines and pairs of perpendicular and parallel lines** know the difference between vertical, horizontal and diagonal understand perpendicular as 'making a right angle' understand what is meant by parallel identify perpendicular and parallel lines in given shapes	
2 Weeks	Measurement and line properties	**choose and use appropriate standard units to estimate and measure mass, temperature, volume and capacity** use m/cm/mm for length use kg/g for mass use l/ml for volume and capacity know which tools to use for each measure calculate with different measures **measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)**	**compare and order lengths, mass, volume/capacity and record the results using >, < and =** understand less than, greater than and equal to use knowledge of place value to compare and order	

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Year 3 Notes:

• Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more of less than a given number does not appear in the strategy – this should be an on-going focus in mental warm ups.

• Count in multiples of 6, 7, 9, 25 and 1000 does not appear in the strategy – this should be an on-going focus in mental warm ups.

• Solve numbers and practical problems involving number and place value ideas is ongoing.

• Recall multiplication and division facts for multiplication tables up to 12x12 does not appear in the strategy – this should be an on-going focus in mental warm ups.

• Some objectives may only appear once as they have a strong presence within other objectives.

• Red objectives are non-negotiable objectives and children must be secure in these.

Maths Teaching Strategy: Year 4 Autumn Term

Time Scale	Key Focus	Objectives to Cover		On-going objectives
4 weeks	Place Value	**recognise the place value of each digit in a four-digit number.** understand the value of Th H T and U partition numbers use knowledge of place value to add numbers mentally **read and write numbers beyond 1000.** **know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100** **round any number to the nearest 10, 100 or 1000.** understand the value of each digit in a four-digit number round up or down as necessary know why rounding is useful **count backwards through zero to include negative numbers.**	**order and compare numbers beyond 1000.** understand the value of each digit in a four-digit number compare individual digits that are in the same column put a set of numbers in order use the less than (<), greater than (>) and equal to (=) signs **identify, represent and estimate numbers using different representations** estimate where a number is on a number line (e.g. from 200 to 300) represent numbers to 10,000 in figures represent numbers to 10,000 in words **find 1000 more and less than a given number** **reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each**	**count in multiples of 6, 7, 9, 25 and 1000**
3 weeks	addition and subtraction	**add and subtract with up to 4 digits using column methods.** set numbers out in a column using knowledge of place value add numbers where the total of a column is more than ten **apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example: 8 + 6 = 14, 80 + 60 = 140**	**estimate and use inverse operations to check answers to a calculation.** round numbers, as necessary, to the nearest 10, 100 or 1000 use mental calculation strategies give an estimate **solve two-step addition and subtraction problems by deciding which operations and methods to use and why.**	
2 weeks	Measurement: Length and Perimeter	**measure and calculate the perimeter of a rectilinear figure in centimetres and metres.** understand what is meant by perimeter know why finding the perimeter is useful find the perimeter of different rectangles, including squares use rulers find perimeters when measures given (2 sides) use cm, m and km	**convert between different units of measure (eg km to m)** know how many m in km, cm in m, mm in cm and m know how many g in kg, mg in g know how many ml in l know how many seconds in a minute and minute in an hour	
3 weeks	Multiplication and Division	**use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers** **multiply two-digit and three-digit numbers by a one-digit number using formal written layout** **multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size**	**recall multiplication and division facts for multiplication tables up to 12 × 12** **divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts** **solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately**	

Maths Teaching Strategy: Year 4 Spring Term				
Time Scale	**Key Focus**	**Objectives to Cover**		**On-Going Objectives**
1 Week	Addition, Subtraction and 2 Step Problems	**add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** use the column method for addition, including carrying use the column subtraction method where borrowing isn't needed understand the value of each number in a 4 digit number **estimate and use inverse operations to check answers to a calculation** check an answer using the inverse know the inverse rules, including those for subtraction	**solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why** write the calculation needed from a word problem make an estimate by rounding complete the calculations using an appropriate method use the inverse to check answer in the context of the problem	**count in multiples of 6, 7, 9, 25 and 1000**
2 Weeks	Shape	**compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes** know the names of shapes to decagon understand that there are different quadrilaterals classify quadrilaterals based on angles and parallel sides **identify acute and obtuse angles and compare and order angles up to two right angles by size** identify when an angle is less that a right angle know that a right angle is 90° use acute and obtuse to describe angles order angles by size	**identify lines of symmetry in 2D shapes presented in different orientations** know what symmetry is draw a line of symmetry on a 2D shape recognise when shapes have more than one line of symmetry **complete a symmetric figure with respect to a specific line of symmetry** know what symmetry is use mirrors to develop understanding complete shapes and patterns over a mirror line use mirror lines that are vertical, horizontal and diagonal	
2 Weeks	Multiplication and Division	**use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; multiplying together three numbers** use knowledge of x10 and 100 to multiply two tens or hundreds understand what happens when multiplying by 0 and 1 have a secure understanding of 'smile multiplication' **multiply two-digit and three-digit numbers by a one-digit number using the formal written layout** know how to set out column multiplication use multiplication facts understand what happens when the answer is 10 or more	**recognise and use factor pairs and commutatively in mental calculations** know what a factor is understand that factors come in pairs know that square numbers are when a factor is its own pair use knowledge of factor pairs to mentally divide	

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3 Weeks	Fractions	**count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten** Count in tenths **recognise and show, using diagrams, families of common equivalent fractions.** know why fractions can be equivalent use pictures/objects to represent common equivalent fractions **convert mixed numbers to improper fractions and vice versa**	**add and subtract fractions with the same denominator.** know how to add and subtract fractions represent adding/subtracting fractions visually **solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number** **reason about the location of mixed numbers in the linear number system**	
2 Weeks	Decimals	**recognise and write decimal equivalents of any number of tenths or hundredths.** write tenths and hundredths as fractions know how to quickly convert tenths and hundredths into decimals write decimals with tenths and hundredths in figures and words **recognise and write decimal equivalents to ¼, ½, ¾** **round decimals with one decimal place to the nearest whole number** **compare numbers with the same number of decimal places up to two decimal places**	**find the effect of dividing a one- or two-digit number by 10 and 100, using language of tenths and hundredths.** know what happens when you x or ÷ a number by 10 or 100 understand how the value of numbers changes solve x/÷ by 10/100 problems when the answer crosses the decimal **solve simple measure and money problems involving fractions and decimals to two decimal places**	

Maths Teaching Strategy: Year 4 Summer Term

Time Scale	Key Focus	Objectives to Cover		On-going Objectives
1 Week	Number	**order and compare numbers beyond 1000** understand the value of each digit in a four digit number compare individual digits that are in the same column put a set of numbers in order use the less than (<), greater than (>) and equal to (=) signs **round any number to the nearest 10, 100 or 1000** understand the value of each digit in a four digit number round up or down as necessary know why rounding is useful	**count backwards through zero to include negative numbers** understand that numbers are infinite know the negative (-) sign and use this to write negative numbers use a vertical number line to understand negative numbers compare negative numbers with other negative numbers compare negative numbers with positive numbers use the less than (<), greater than (>) and equal to (=) signs **solve number and practical problems that involve all of the above and with increasingly large positive numbers**	**count in multiples of 6, 7, 9, 25 and 1000**
1 Week	Measurement: Money	**solve simple measure and money problems involving fractions and decimals to two decimal places.** **estimate, compare and calculate different measures, including money in pounds and pence**		
2 Weeks	Measurement: Time and Roman Numerals	**read, write and convert time between analogue and digital clocks.** read analogue time to the minute understand AM/PM and convert between the 12 and 24 hour clock represent the time using analogue, digital and words **solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.** solve problems finding the difference between two times solve problems finding the total of given times convert between different time periods have a secure knowledge of the above conversions	**read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value**	
2 Weeks	Calculating and Problem Solving	**add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** **multiply two-digit and three-digit numbers by a one-digit number using formal written methods** **solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why** write the calculation needed from a word problem make an estimate by rounding complete the calculations using an appropriate method use the inverse to check answer in the context of the problem	**solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects** **solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number**	

2 Weeks	Position, Direction and Interpreting Data	**describe positions on a 2D grid as coordinates in the first quadrant** know how to read coordinates use positional language to compare different points on a grid **describe movements between positions as translations of a given unit to the left/right and up/down** describe one position in relation to another} give directions on a grid **plot specified points and draw sides to complete a given polygon**	**solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs** become familiar with a range of different ways to present data understand data presented in charts, tables and other diagrams understand how to total different pieces of data know how to find the difference between different pieces of data answer a range of questions confidently and competently	
2 Weeks	Measurement	**measure the perimeter of simple 2D shapes in cm and m** understand the term 'perimeter' use addition strategies to add side lengths together accurately measure the sides on shapes **find the area of rectilinear shapes by counting squares**	**convert between different units of measure (e.g. km to m; hour to minute)** **estimate, compare and calculate different measures, including money in pounds and pence**	
2 Weeks	Geometry: Position and Direction	**describe positions on a 2D grid as coordinates in the first quadrant.** know how to read coordinates use positional language to compare different points on a grid **describe movements between positions as translations of a given unit to the left/right and up/down.** describe one position in relation to another} give directions on a grid	**plots specified points in the first quadrant and complete to draw a given polygon.** **draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant**	

Please note, the strategy should not take the full summer term to complete. The time remaining is for teacher judgement. You may want to recover objectives you feel the class does not have a strong understanding of and you should be deepening the skills that have been taught – applying them in different contexts and subjects.

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Year 4 Notes

• Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more of less than a given number does not appear in the strategy – this should be an on-going focus in mental warm ups.

• Count in multiples of 6, 7, 9, 25 and 1000 does not appear in the strategy – this should be an on-going focus in mental warm ups.

• Recall and use multiplication and division facts for the 3, 4 and 8 times tables does not appear in the strategy – this should be an on-going focus in times table fact of the day.

• Solve numbers and practical problems involving number and place value ideas is ongoing.

• Recall multiplication and division facts for multiplication tables up to 12x12 does not appear in the strategy – this should be an on-going focus in MTC prep sessions using Mathsframe and times table fact of the day.

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Maths Teaching Strategy: Year 5 Autumn Term

Time Scale	Key Focus	Objectives to Cover		Deepening
3 Weeks	Number: Place Value	**read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit** write numbers with up to six digits in figures and words read numbers with up to six digits partition numbers with up to six digits use < > and = to compare numbers **round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000** understand why rounding is useful know the rules for rounding	**count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000** **use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.** **Solve number and practical problems that involve all of above**	
2 Weeks	Number: Addition and Subtraction	**add and subtract whole numbers with more than 4 digits, including using formal written methods** **solve problems involving addition, subtraction, multiplication and division and a combination of these, including understand the meaning of the equals sign** solve multi-step problems answer in the context of the question explain the process and the methods used	**interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero** know why we use negative numbers count into negative numbers begin to find the difference between two negative numbers **add and subtract mentally with increasingly large numbers**	
1 Week	Statistics	**solve comparison, sum and difference problems using information presented in a line graph** interpret charts comparison, sum and difference draw line graphs	**complete, read and interpret information in tables, including timetables** Read and interpret tables two-way tables Reading timetables	
3 Weeks	Numbers: Multiplication and Division	**identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** know what multiples and factors are find factor pairs find common factors use knowledge of factors to help with mental division **know and use the vocabulary of prime numbers, prime factors and composite numbers** know that a prime number is when a number only has two factors use vocabulary accurately **establish whether a number up to 100 is a prime number and recall prime numbers to 19.** **Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000**	**recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)** **find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors** **multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers** **divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret the remainders appropriately for the context** **Solve problems involving all of the above**	

3 Weeks	Fractions	**identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** What is a fraction? Equivalent fractions **compare and order fractions whose denominators are all multiples of the same number** **recognise mixed numbers and improper fractions and convert from one to the other and write mathematical statements > 1** **Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates**	**add and subtract fractions with the same denominator and multiples of the same number** understand what happens when adding/subtracting fractions find equivalences when the calculation has different denominators **multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams** develop understanding of multiplying fractions use pictures to show what happens when a fraction is multiplied partition mixed numbers to multiply them **find non-unit fractions of quantities**	

Maths Teaching Strategy: Year 5 Spring Term				
Time Scale	**Key Focus**	**Objectives to Cover**		**Deepening**
1 Week	Calculation and problem solving	add and subtract whole numbers with more than 4 digits, including using formal written methods multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for two digit numbers divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret the remainders appropriately for the context	**solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why** solve multi-step problems answer in the context of the question explain the process and the methods used **solve problems involving addition, subtraction, multiplication and division and a combination of these, including understand the meaning of the equals sign** solve multi-step problems answer in the context of the question explain the process and the methods used	
2 Weeks	Decimals	**read, write, order and compare numbers with up to three decimal places** **round decimals with two decimal places to the nearest whole number and to one decimal place** **solve problems involving numbers with up to three decimal places** add and subtract with decimals add and subtract with mixed decimals, using 0 as a place holder reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each	recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth) **read and write decimal numbers as fractions (0.71 = 71/100)** know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01	
2 Weeks	Percentages	**solve problems which require knowing percentage and decimal equivalents of 2 1, 4 1, 5 1, 5 2, 5 4 and those fractions with a denominator of a multiple of 10 or 25** **recognise the percent symbol and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator hundred, and as a decimal fraction** know what percent means convert percentages to their decimal equivalences find basic percentages of numbers that are multiples of 100	**recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents**	

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3 Weeks	Shape and Measure	**convert between different units of metric measure** convert between km, m, cm and mm convert between kg, g, mg convert between l, cl and ml **measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** know what perimeter is use a ruler to measure work perimeter out when lengths are given work perimeter out when there are some missing lengths **calculate and compare the area of squares and rectangles using standard units, square centimetres and square metres and estimate the area of irregular shapes** improve their understanding of area know the formula for area of rectangles estimate the area of one shape in comparison to another	**identify 3D shapes, including cubes and other cuboids, from 2D representations** understand what makes a shape three dimensional recognise a range of 3D shapes, including prisms and pyramids use properties such as faces, edges and vertices and 2D shapes **estimate volume and capacity** understand what a cm cubed is estimate volume of 3D shapes **use the properties of rectangles to deduce related facts and find missing lengths and angles** **distinguish between regular and irregular polygons based on reasoning about equal sides and angles**	
2 Weeks	Time and Data	**solve problems involving converting between units of time** solve word problems involving time convert between hours and minutes convert between days and hours solve difference and total problems **complete, read and interpret information in tables, including timetables** know how to read different tables answer questions about information presented in tables use vocabulary of rows and columns	**solve comparison, sum and difference problems using information presented in a line graph** understand that a line graph shows how something changes use calculation methods accurately	

Maths Teaching Strategy: Year 5 Summer Term

Time Scale	Key Focus	Objectives to Cover		Deepening
2 Weeks	Measurement: Converting Units	**convert between different units of metric measure** convert between km, m, cm and mm convert between kg, g, mg convert between l, cl and ml convert between p and £ **convert between units of measure, including using common decimals and fractions**	**understand and use equivalences between metric units and common imperial units such as inches, pounds and pints** **solve problems involving converting units of time**	
1 Week	Measurement: Volume	**estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]** What is volume? Compare Volume Estimate Capacity	**use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling**	
2 Weeks	Problem Solving with Measures	**add and subtract whole numbers with more than 4 digits, including using formal written methods** **multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for two digit numbers** **divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret the remainders appropriately for the context**	**convert between different units of metric measure** convert between km, m, cm and mm convert between kg, g, mg convert between l, cl and ml convert between p and £ **use all four operations to solve problems involving measure using decimal notation including scaling** use addition, subtraction, multiplication and division accurately understand that you can convert to make calculations easier answer in the context of the question	
2 Weeks	Fractions and Percentages	**compare and order fractions whose denominators are all multiples of the same number** compare fractions with the same denominator using < > and = know how to change fractions to an equivalent put a set of fractions in order convert back to the original fraction when giving the answer **round decimals with two decimal places to the nearest whole number and to one decimal place** understand how to round decimals round decimals to make estimations	**recognise the percent symbol and understand that percent relates to 'number of parts per hundred', and write percentages as a fraction with denominator hundred, and as a decimal fraction** know what percent means convert percentages to their decimal equivalences find basic percentages of numbers that are multiples of 100 **solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 3/5, 4/5 and those with a denominator of a multiple of 10 or 25**	

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2 Weeks	Geometry: Position and Direction	**distinguish between regular and irregular shapes based on reasoning about equal sides and angles** estimate and calculate angles in shapes determine whether a shape is regular or irregular	**identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed** use positional language translate and reflect shapes use coordinates in the first quadrant	
2 Weeks	Geometry: Properties of Shape	**identify angles at a point and one whole turn, angles at a point on a straight line and half a turn and other multiples of 90** know how many degrees are in the different quarters of turns use knowledge of angles around a point to work out missing angles use knowledge of angles on a line to work out missing angles **identify 3-D shapes, including cubes and other cuboids, from 2-D representations**	**know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles** **draw given angles, and measure them in degrees** estimate angles measure angles using a protractor draw angles using a protractor **use the properties of rectangles to deduce related facts and find missing lengths and angles**	

Year 5 Notes

- Some objectives may only appear once as they have a strong presence within other objectives.

Maths Teaching Strategy: Year 6 Autumn Term

Time Scale	Key Focus	Objectives to Cover	Deepening
2 Weeks	Number: Place Value	**read, write, order and compare numbers up to 10 000 000 and determine the value of each digit** use <, > and = write numbers in figures and words use commas in larger numbers partition numbers with 7 digits **use negative numbers in context, and calculate intervals across zero** understand the concept of negative numbers describe different contexts in which negatives are used calculate differences **round any whole number to a required degree of accuracy** know the value of each digit in a number know which numbers determine know which numbers change understand why rounding is useful use rounding to estimate **solve number and practical problems that involve all of the above** **reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts**	
5 Weeks	Number: Addition, Subtraction, Multiplication and Division	**solve problems involving addition, subtraction, multiplication and division** review formal methods apply formal methods to a variety of problems check results **solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** know the column methods write calculations from given problems solve problems and answer in context check results **multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication** use multiplication facts use smile multiplication set out multiplication accurately solve problems in context **understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number)** **use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding** **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** use multiplication facts understand different ways to interpret remainders write times tables down solve division by 2 digits using **short** division **divide numbers up to 4 digits by a two-digit number using the formal written method of short division** **identify common factors, common multiples and prime numbers** know what factors are know what multiples are know all prime numbers to 20 know how to find out if a number is prime **use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy** **divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts** **understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000)**	

4 Weeks	Fractions	**compare and order fractions, including fractions >1** simplify fractions make two fractions have the same denominator compare fractions **recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.** recall key fraction to decimal to percentage equivalents order and compare fractions, decimals and percentages compare fractions that have different denominators **recognise when fractions can be simplified, and use common factors to simplify fractions** **express fractions in a common denomination and use this to compare fractions that are similar in value**	**add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions** find equivalents know how to add and subtract fractions convert between improper fractions and mixed numbers **multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 4 1 × 2 1 = 8 1]** **use common factors to simplify fractions** **divide proper fractions by whole numbers**	
1 Week	Geometry: Direction and Position	**describe positions on the full coordinate grid (all four quadrants)**	**draw and translate simple shapes on the coordinate plane, and reflect them in the axes**	

Maths Teaching Strategy: Year 6 Spring Term			
Time Scale	**Key Focus**	**Objectives to Cover**	**Deepening**
1 Week	Calculation	**multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication** **solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** **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** **solve problems involving addition, subtraction, multiplication and division**	
2 Weeks	Number: Decimals	**identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places** multiply and divide by 10, 100 and 1000 describe the effect **associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 8 3]** **solve problems which require answers to be rounded to specified degrees of accuracy** **multiply one-digit numbers with up to two decimal places by whole numbers** know how to set out short multiplication with decimals use multiplication facts solve problems in context **use written division methods in cases where the answer has up to two decimals places**	
2 Weeks	Number: Percentages	**recall and use equivalences between simple fractions, decimals and percentages, including in different contexts** **use written division methods in cases where the answer has up to two decimal places** **solve problems involving the calculation of percentages such as 15% of 360 and the use of percentages for comparison** find key percentages combine key percentages solve puzzles and problems involving percentages **Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.**	

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3 Weeks	Shape and Measures	**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 to up to three decimal places** know the key conversions estimate lengths, masses and volumes measure different things use decimals to 3 places **identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places** multiply and divide by 10, 100 and 1000 describe the effect **draw 2-D shapes using given dimensions and angles** use a protractor to draw angles know all 2D shapes up to decagon measure and draw lines to the millimetre	**solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate** solve puzzles and problems involving measures use written calculation methods answer in context **calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3.** understand what volume is find volume practically understand that different shapes can have the same volume relate volume to area **compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons** describe properties of shapes and use them to compare sort shapes using different diagrams find angles in shapes and generalise about the sum of angles	
1 Week	Algebra	**use simple formulae** **generate and describe linear number sequences** **solve problems with 2 unknowns**	**express missing number problems algebraically** **find pairs of numbers that satisfy an equation with two unknowns** **enumerate possibilities of combinations of two variables.**	
2 Weeks	Measurement: Perimeter, area and Volume	**recognise when it is possible to use formulae for area and volume of shapes** know the formula for rectangles and parallelograms know the formula for the volume of a cuboid find area using formula **recognise that shapes with the same areas can have different perimeters and vice versa** know how to find perimeter and area find perimeter and area of compound shapes find the area of shapes that have the same perimeter investigate the relationship between area and perimeter **recognise when it is possible to use formulae for area and volume of shapes** know the formula for rectangles and parallelograms know the formula for the volume of a cuboid find area using formula	**calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3.** understand what volume is find volume practically understand that different shapes can have the same volume relate volume to area **calculate the area and perimeter of parallelograms and triangles**	

2 Weeks	Number: Ratio	**solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts** **solve problems involving similar shapes where the scale factor is known or can be found** **solve problems involving ratio relationships**	**solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.** **solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison**	

Maths Teaching Strategy: Year 6 Summer Term				
Time Scale	**Key Focus**	**Objectives to Cover**		**Deepening**
1 Week	Measurement: Converting Units	**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 to up to three decimal places** know the key conversions estimate lengths, masses and volumes measure different things use decimals to 3 places	**convert between miles and kilometres** **solve problems involving the calculation and conversion of units of measure, using decimal notation up to the three decimal places where appropriate**	
1 Week	Properties of Shape	**compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons** describe properties of shapes and use them to compare sort shapes using different diagrams find angles in shapes and generalise about the sum of angles	**recognise, describe and build simple 3d shapes, including making nets** **illustrates and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius** **recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles**	
1 Week	Statistics	**interpret and construct pie charts and line graphs and use these to solve problems**	**calculate and interpret the mean as an average**	

Year 6 do not have a strategy for the summer term. It is to be determined by the Year 6 teacher what the children need based on previous learning and the remaining objectives.

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Planning

Both KS1 and KS2 plan using the Clarendon Federation Maths Learning Pathway planning format. A plan is made for each step of learning outlined in White Rose. Planning is completed for each year group and this is consistent structure for each teacher to build their slides and resources from. This allows consistency and ability to adapt lessons and learning to suit the needs to each class. Resources used to plan include White Rose, I See Reasoning and I See Problem Solving and are supplemented with other resources as required.

Planning includes: key visual representations to be used, key questions that the children will answer and is set out using I do, We do and You do. Reasoning questions are used throughout the learning pathway to deepen and embed the learning- this can be verbally or written. A reasoning question is used at the end of stage 2 and 3 to ensure children are ready to move on.

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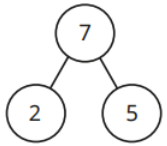
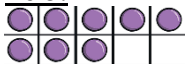
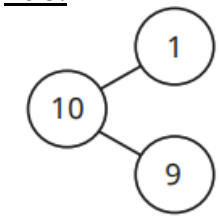
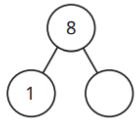
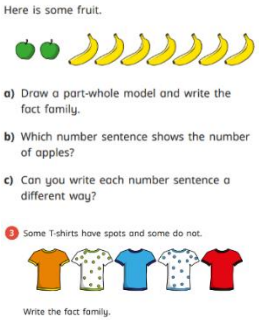
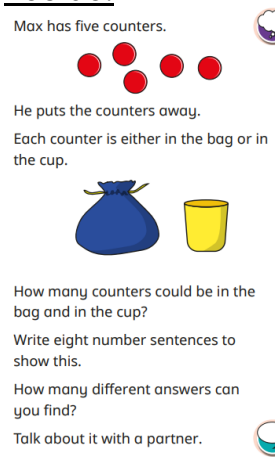
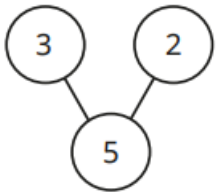
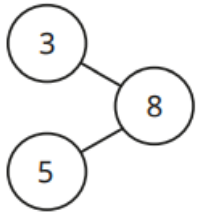
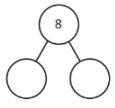
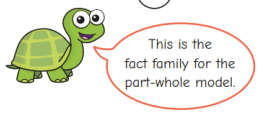
Example from Year 1:

Clarendon Federation	**Unit: Addition and Subtraction (Within 10)**	**Year: 1** **Class: Squirrels**	**Date:** **Term: 2** **Week:**	

White Rose Unit: Addition and Subtraction (Within 10)
Small Step: 13- Fact Families

Learning Pathway:	**Starter:** Basic Skills What do the children need to know before they start this step?	**Stage 1:** Using Manipulatives How will the children see what is happening?	**Stage 2:** Pictorial Representation How will the children represent the skill in pictures? How can the manipulatives be represented pictorially?	**Stage 3:** Abstract Representation How will the skill look in numbers? What method are they using?	**Stage 4:** Variation Questions in context that develop one variable at a time.	**Stage 5:** Problem solving Questions that encourage children to record ho and why.
To find the fact families	**We do:** How do part whole models work? What can we say about this part whole model?  	**I do:**  Reverse one counter **We do:** Chant: _____is a part, _____is a part and_____ is the whole. Reverse another counter.	**I do:**  _____is a part, _____is a part and_____ is the whole. ____ + ____ = ____ ____ + ____ = ____ ____ − ____ = ____ ____ − ____ = ____ **We do:**	**I do:**  5 + __ = 8 __ + 2 = 8 **We do:** _____is a part, _____is a part and_____ is the whole.	**You do:**  Here is some fruit. a) Draw a part-whole model and write the fact family. b) Which number sentence shows the number of apples? c) Can you write each number sentence a different way? 3 Some T-shirts have spots and some do not. Write the fact family.	**You do:**  Max has five counters. He puts the counters away. Each counter is either in the bag or in the cup. How many counters could be in the bag and in the cup? Write eight number sentences to show this. How many different answers can you find? Talk about it with a partner.

		Repeat the chant. Repeat through all of the counters.	 _____is a part, _____is a part and_____ is the whole. _____ + _____ = _____ _____ + _____ = _____ _____ – _____ = _____ _____ – _____ = _____			
			You do:  Write the fact family for the part whole model. _____ + _____ = _____ _____ + _____ = _____ _____ – _____ = _____ _____ – _____ = _____	**You do:** 3 + __ = 8 4 + __ = 8 __ + 6 = 8 __ + 1 = 8 **Reasoning Challenge:**		

			There are 8 animals in a field.  Complete the part-whole model and the fact family.  8 □ + □ = 8 □ + □ = 8 8 − □ = □ 8 − □ = □ **Reasoning Challenge:** Write the fact family to match the picture.  ____ + ____ = ____ ____ = ____ + ____ ____ + ____ = ____ ____ = ____ + ____ ____ − ____ = ____ ____ = ____ − ____ ____ − ____ = ____ ____ = ____ − ____	Here is a part-whole model.  2 7 5  This is the fact family for the part-whole model. 5 + 2 = 7 7 = 5 + 2 2 + 5 = 7 7 = 2 + 5 7 − 2 = 5 7 = 5 − 2 7 − 5 = 2 7 = 2 − 5 Has Tiny made any mistakes?		

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Example from Year 6:

<table>
<tr><td colspan="2">Clarendon Federation</td><td>Unit: Algebra</td><td>Year: 6
Class: Orcas and Leopards</td><td colspan="2">Date: 23.4.25
Term: Summer 1
Week: 1</td></tr>
<tr><td colspan="6">White Rose Unit: Algebra
White Rose Small Step: To form algebraic expressions</td></tr>
<tr><td>Learning Pathway:</td><td>Starter: Basic Skills

What do the children need to know before they start this step?</td><td>Stage 1: Using Manipulatives

How will the children see what is happening?</td><td>Stage 2: Pictorial Representation

How will the children represent the skill in pictures? How can the manipulatives be represented pictorially?</td><td>Stage 3: Abstract Representation

How will the skill look in numbers?
What method are they using?</td><td>Stage 4: Variation

Questions in context that develop one variable at a time.</td><td>Stage 5: Problem solving

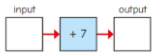
Questions that encourage children to record how and why.</td></tr>
<tr><td>Activities:
Input
Key questions
Guided Practice
Stem Sentences
Reasoning
Questions

Resourcing:
1:1 support for NP/JH, and DW/ZE- support in methods, reading the questions, practical resources to reinforce as needed.
Questions to be read aloud as requested by anyone.</td><td><u>You do:</u>
Pink for Think:
 

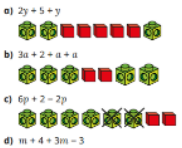
 

Review function machines before moving to adding inputs and creating expressions.</td><td colspan="3"><u>I do/We do:</u>
Using multi-link as the input and place value ones as add on components, complete the questions alongside the abstract and pictorial.
 

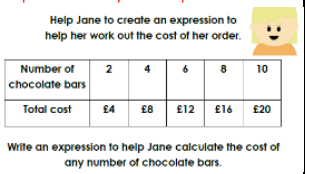
What is the function of this machine?
If I put 2 as my input, what would the output be?
If the input is ____, then the output would be ___.
I know this because...
If I put a cube in as the input, what would the output be?
What would it look like physically?
As a diagram?
With c to represent a cube?

Repeat with:
 

<u>I do/We do:</u>
What would these diagrams be as an expression?</td><td><u>You do:</u>
Simplify these expressions:
 

Hamza draws a function machine to represent the rule: 3a. What does Hamza's function machine look like?
Draw her function machine in your book.
Draw the expression as a diagram using cubes.

Zac draws a function machine to represent the rule:
(a – 6) ÷ 2.
What does Zac's function machine look</td><td><u>You do:</u>
<u>Stage 5:</u>
Explain how your expression
 

works.

Alfie writes the expression 2a + 4. Fatima writes the expression 4 + 2a. Alfie says, "Our two expressions are the same!"
Is Alfie correct? Explain your answer using an example to help you explain your reasoning.

True or False? If false, explain how you know it is incorrect.
a) A function machine with two steps, plus one and divide by 4 can be written as a + 1 ÷ 4.</td></tr>
</table>

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		 **You do: Variation:** Create these expressions with your cubes: x = a multi-link cube, small cube = 1 3x + 2 4 + 5x **You do:** Write as algebraic expressions using x to represent the multi-link cubes and 1 for the red cubes. a)  $2x + 3$ b)  c)  d)  e)  **Reasoning Challenge: Review as a We do:**  Jack says "This diagram repesents the expression **3 + x + 3 + x + 1 + 2x + 2.** Do you agree with Jack? Explain why or why not. **EXT: Tomorrow's peek:** Have a think... Tomorrow we will be substituting values into expressions... If x = 5, what would the answer be to this expression? 3x + 7 Explain why you think this.			like? Draw her function machine in your book. Draw the expression as a diagram using cubes.	b) The expression 9*a* means the same as 9 + *a*. c) The expression 16 – 2*a* will give the same answer as 2*a* – 16. d) A function machine where the input is doubled and then decreased by 10 can be written as 2*a* – 10.
Focus Children:			As needed after guided practice.		As needed after guided practice.	
Evaluation:						

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