



Year 5 - Maths - Medium Term Planning 2020/2021

Year Group 5	Term 4	Teacher Mr Duffy/Mrs Wreford	
<p>National Curriculum Coverage</p> <ul style="list-style-type: none"> • Multiply two-digit and three digit numbers by a one-digit number using formal written layout. • 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. • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example: $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$] • Add and subtract fractions with the same denominator and denominators that are multiples of the same number. • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. • Read and write decimal numbers as fractions [for example, $0.71 = 71/100$]. <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</p> <ul style="list-style-type: none"> • 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. • Add and subtract fractions with the same denominator. • Recognise and write decimal equivalents of any number of tenths or hundredths. • Recognise and write decimal equivalents to $1/4, 1/2, 3/4$. 		<p>Key Vocabulary: Multiply, multiplication, regrouping, zero as a place holder, 1 digit, 2 digit, divide, divided by, share equally, remainders, divisor, quotient, bus shelter, place value, fractions, numerator, denominator, integer, add, subtract, mixed number, improper fraction, simplify, top heavy, lowest form, array, equivalent, fractions of amounts, fractions of numbers, decimals, decimal points, parts of, whole, 1 whole, 2 decimal places, decimal equivalents, tenths, hundredths, thousandths, ones, tens, hundreds, thousands</p> <p>Each lesson will contain at least 5 minutes of working based on multiplication facts up to 12x12 including the use of the inverse to promote fluency and quick recall for application.</p> <p><i>Please note: planning may be adjusted based on misconceptions experienced within lessons to ensure that pupils have a secure conceptual understanding prior to moving on to the next topic.</i></p>	
Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)	Resources
1	<p>MONDAY</p> <p>LI: To identify fractions</p> <p>ALL MUST explain what a fraction is</p> <p>MOST SHOULD identify fractions in relation to numerator/denominators</p> <p>SOME COULD apply understanding to solve deep level problems</p> <p>KQ: How many squares are red?</p>	<p>Starter</p> <p>TRUE/FALSE – If a quarter turn is 90 degrees then a whole turn is 270 degrees? Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils a range of representations on IWB and discuss what they noticed about them - Introduce the term “unit fraction” and define the role of the numerator and denominator - Explore a range of fractions through writing and verbalisation including reasoning 	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - reasoning examples



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	<u>LA</u> Shade in the provided fractions	<u>MA</u> Identify and write the fractions shown	<u>HA</u> Draw a range of fractions to show and explain through reasoning	
	<p>Plenary – Look at an example of a fraction. Discuss whether this fraction is correct and reason why/why not.</p>			
<p>TUESDAY</p> <p>LI: To explore equivalent fractions ALL MUST explain what a fraction is MOST SHOULD identify the link between equivalent fraction SOME COULD apply understanding to solve deep level problems</p> <p>KQ: What fraction of the sections are red?</p>	<p>Starter A regular octagon has sides 30cm long. What is the perimeter of the octagon in CM and M</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab- Ask pupils to fold pieces of paper to find equivalents of halves, quarters and eighths - Show a visual representation of an equivalent fractions and model how to convert using an abstract method - Allow a pupil to demonstrate the process through shared teaching on IWB - Introduce a fraction wall as a secondary visual component 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - reasoning examples
	<u>LA</u> Identify the fractions match to find the equivalent fractions	<u>MA</u> Use a fraction to identify the equivalent fractions	<u>HA</u> Problem solving and reasoning tasks (WR)	
	<p>Plenary – Leida doubles the denominator to find an equivalent fraction. Is she correct? (CS)</p>			
<p>WEDNESDAY</p> <p>LI: To identify fractions greater than 1 ALL MUST explain the role of the numerator and denominator MOST SHOULD identify when a fraction is equivalent to 1 whole SOME COULD apply understanding to solve deep level problems</p>	<p>Starter The area of a square is 121m squared. What is the length of it's sides in M and CM?</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Look at a range of fraction and consolidate based on prior knowledge - Introduce a bar model to show the relationship between wholes and unit fractions - Unit a part whole model to demonstate fractions greater than 1 and use bar model to consolidate 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - reasoning examples



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	<p>KQ: How many chocolate bars have we got in total?</p>	<p><u>LA</u></p> <p>Shade in the fractions to show the correct value</p>	<p><u>MA</u></p> <p>Draw and write fractions to show the fractions greater than 1</p>	<p><u>HA</u></p> <p>Problem solving and reasoning tasks (WR)</p>	
		<p>Plenary – Discuss whether the fractions shown are greater/less than and reasoning why/why not.</p>			
	<p>THURSDAY</p> <p>LI: To identify equivalent fractions ALL MUST know what a fraction is MOST SHOULD identify the numerator/denominator SOME COULD apply an understand to problem solving</p> <p>KQ: What is a fraction? Give an example</p>	<p>Starter A train leaves Cheltenham Spa at 15.37 and arrives in London Paddington at 18.05. How long was the journey?</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab- Ask pupils to fold pieces of paper to find equivalents of halves, quarters and eighths - Show a visual representation of an equivalent fractions and model how to convert using an abstract method - Allow a pupil to demonstrate the process through shared teaching on IWB - Introduce a fraction wall as a secondary visual component 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - reasoning examples
		<p><u>LA</u></p> <p>Identify the fractions match to find the equivalent fractions</p>	<p><u>MA</u></p> <p>Use a fraction to identify the equivalent fractions</p>	<p><u>HA</u></p> <p>Problem solving and reasoning tasks (WR)</p>	
		<p>Plenary – Leida doubles the denominator to find an equivalent fraction. Is she correct? (CS)</p>			
	<p>FRIDAY</p> <p>LI: To calculate with accuracy ALL MUST identify the correct calculation MOST SHOULD choose an efficient method of calculation SOME COULD use a range of methods to check accuracy</p>	<p>Starter: Multiplication challenge</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Recap on relevant and efficient methods of calculation relevant to addition, subtraction, multiplication and division. - Model the method and discuss alternative methods that could be used for efficiency. 			<ul style="list-style-type: none"> - place value counters - base 10 - reasoning examples - multiplication grids



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		<ul style="list-style-type: none"> - Allow pupils to demonstrate their understanding through “teach the class” and model using the inverse, where relevant - Pupils to work through calculation based questions, as found on arithmetic papers. 	
	<u>LA</u> Year 2/3 calculation paper	<u>MA</u> Year 5 calculation paper	<u>HA</u> Year 5/6 calculation paper
	Plenary – Apply process to a problem solving/reasoning question		

Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)	Resources						
2	<p>MONDAY</p> <p>LI: To convert improper fractions to mixed numbers</p> <p>ALL MUST define an improper fraction/mixed number</p> <p>MOST SHOULD use manipulatives/pictures to represent improper fractions/mixed numbers</p> <p>SOME COULD convert improper fractions to mixed numbers using an abstract method</p> <p>KQ: Are you these fractions equivalent? Explain.</p>	<p>Starter</p> <p>How many hours are there in the month of May?</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show an improper fraction a mixed number visually using wholes/fifths - With 11 cubes, allow pupils to practise using an improper fraction into a mixed number through grouping using different denominators - Explain the task to pupils prior to independent working 	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication grids - reasoning examples 						
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"><u>LA</u></td> <td style="text-align: center;"><u>MA</u></td> <td style="text-align: center;"><u>HA</u></td> </tr> <tr> <td style="text-align: center;">Colour the shapes to show an improper fraction/mixed number</td> <td style="text-align: center;">Use pictorial/abstract method to convert improper fraction to mixed numbers.</td> <td style="text-align: center;">Problem solving and reasoning tasks (WR)</td> </tr> </table>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Colour the shapes to show an improper fraction/mixed number	Use pictorial/abstract method to convert improper fraction to mixed numbers.	Problem solving and reasoning tasks (WR)	
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Colour the shapes to show an improper fraction/mixed number	Use pictorial/abstract method to convert improper fraction to mixed numbers.	Problem solving and reasoning tasks (WR)							
		Plenary – Find and correct the mistake (CS)							
	<p>TUESDAY</p> <p>LI: To convert mixed numbers to improper fractions</p> <p>ALL MUST define an improper fraction/mixed number</p>	<p>Starter</p> <p>TRUE/FALSE – $0.63 > 0.8$ – Prove it</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab 	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations 						



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	<p>MOST SHOULD use manipulatives/pictures to represent improper fractions/mixed numbers SOME COULD convert mixed numbers to improper fractions using an abstract method</p> <p>KQ: What are improper fractions and mixed numbers?</p>	<ul style="list-style-type: none"> - Show the equivalent of fifths and wholes visually on IWB - Model converting mixed numbers to improper fractions and look at visual examples - Model converting using an abstract method to identify the improper fractional value - Explain the task to pupils prior to independent working <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;"><u>LA</u></th> <th style="width: 33%;"><u>MA</u></th> <th style="width: 33%;"><u>HA</u></th> </tr> </thead> <tbody> <tr> <td>Add pizza slices and convert to improper fraction</td> <td>Add pizza slices and convert to improper fraction</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </tbody> </table> <p>Plenary – Use the clues to find the missing improper fraction (CS)</p>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Add pizza slices and convert to improper fraction	Add pizza slices and convert to improper fraction	Problem solving and reasoning tasks (WR)	<ul style="list-style-type: none"> - multiplication grids - reasoning examples
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Add pizza slices and convert to improper fraction	Add pizza slices and convert to improper fraction	Problem solving and reasoning tasks (WR)							
	<p>WEDNESDAY</p> <p>LI: To identify number sequences ALL MUST count in fractional intervals MOST SHOULD identify how much the fractions are increasing/decreasing by SOME COULD sequence a mixture of mixed numbers/improper fractions</p> <p>KQ: What is the missing numerator and why?</p>	<p>Starter I can use doubling to mentally calculate 43×8. Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show a fraction sequence and ask pupils to discuss what they notice - Look a true/false sequence example and attempt to reasoning using the information given - Look a examples of sequences that involve different denominators/improper fractions and mixed numbers - Explain the task to pupils prior to independent working <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;"><u>LA</u></th> <th style="width: 33%;"><u>MA</u></th> <th style="width: 33%;"><u>HA</u></th> </tr> </thead> <tbody> <tr> <td>Cut and stick the fractions in order</td> <td>Order the fractions on the number line in sequence.</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </tbody> </table> <p>Plenary – True/false is the sequence is increasing in eighths? Explain and justify.</p>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Cut and stick the fractions in order	Order the fractions on the number line in sequence.	Problem solving and reasoning tasks (WR)	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication grids - reasoning examples
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Cut and stick the fractions in order	Order the fractions on the number line in sequence.	Problem solving and reasoning tasks (WR)							
	<p>THURSDAY</p> <p>LI: To compare fractions ALL MUST identify the numerator/denominator MOST SHOULD order fractions with the same denominator SOME COULD order improper fractions/mixed numbers</p>	<p>Starter TRUE/FALSE – The largest remainder possible when dividing by 8 is 7? Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Look at 2 fractions with different but common denominators and discuss which is bigger. <p>Model showing this visually using the bar model.</p>	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - fraction walls - multiplication grids 						



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	KQ: Which fraction is larger and why?	<ul style="list-style-type: none"> - Repeat the process and allow a pupils to model the process. - Look at a TRUE/FLASE example and discuss - Explain the task to pupils and start independent working 	- reasoning examples					
	<table style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="width: 33%; border: 1px solid black; padding: 5px;"><u>LA</u></td> <td style="width: 33%; border: 1px solid black; padding: 5px;"><u>MA</u></td> <td style="width: 33%; border: 1px solid black; padding: 5px;"><u>LA</u></td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">Compare fractions using pictorial representations</td> <td style="border: 1px solid black; padding: 5px;">Compare fractions with different denominators</td> <td style="border: 1px solid black; padding: 5px;">Compare fractions using pictorial representations</td> </tr> </table>	<u>LA</u>	<u>MA</u>	<u>LA</u>	Compare fractions using pictorial representations	Compare fractions with different denominators	Compare fractions using pictorial representations	Plenary – Ron is making fractions using cubes. Are his fractions equal? (WR)
<u>LA</u>	<u>MA</u>	<u>LA</u>						
Compare fractions using pictorial representations	Compare fractions with different denominators	Compare fractions using pictorial representations						
FRIDAY LI: To calculate with accuracy ALL MUST identify the correct calculation MOST SHOULD choose an efficient method of calculation SOME COULD use a range of methods to check accuracy	Starter: Multiplication challenge Main Teaching: <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Recap on relevant and efficient methods of calculation relevant to addition, subtraction, multiplication and division. - Model the method and discuss alternative methods that could be used for efficiency. - Allow pupils to demonstrate their understanding through “teach the class” and model using the inverse, where relevant - Pupils to work through calculation based questions, as found on arithmetic papers. 	- place value counters - base 10 - reasoning examples - multiplication grids						
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<u>LA</u>	<u>MA</u>	<u>HA</u>						
Year 2/3 calculation paper	Year 5 calculation paper	Year 5/6 calculation paper						

Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)	Resources
3	MONDAY LI: To compare and order mixed numbers ALL MUST identify the numerator/denominator MOST SHOULD order fractions with the same denominator	Starter TRUE/FALSE – $26 \times 5 = 13 \times 10$. Prove it Main Teaching: <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Play the PowerPoint and work through the slides 	- multilink cubes - fraction cards - visual representations - multiplication grids



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	<p>SOME COULD order improper fractions/mixed numbers</p> <p>KQ: Which fraction is the largest and why?</p>	<ul style="list-style-type: none"> - Allow pupils to explain their understanding and reasoning at different stages - Explain the task to pupils and start independent working <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;"><u>LA</u></th> <th style="width: 33%;"><u>MA</u></th> <th style="width: 33%;"><u>HA</u></th> </tr> </thead> <tbody> <tr> <td>Compare/order fractions using pictorial representations</td> <td>Order fractions with different denominators</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </tbody> </table> <p>Plenary – Find the mistake in the table and explain the reason why.</p>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Compare/order fractions using pictorial representations	Order fractions with different denominators	Problem solving and reasoning tasks (WR)	<ul style="list-style-type: none"> - reasoning examples
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Compare/order fractions using pictorial representations	Order fractions with different denominators	Problem solving and reasoning tasks (WR)							
	<p>TUESDAY</p> <p>LI: To add fractions within 1</p> <p>ALL MUST identify the role of the numerator/denominator when adding</p> <p>MOST SHOULD add/subtract fractions with the same denominator</p> <p>SOME COULD add/subtract fractions with different denominators</p> <p>KQ: Why doesn't the numerator change when adding/subtracting fractions?</p>	<p>Starter</p> <p>I can use halving to mentally calculate 144 divided by 8. Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Model adding fractions with different denominators. Use a bar model to visualise finding a common denominator - Play PowerPoint and reinforce the strategies shown - Explain the task to pupils and start independent working <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;"><u>LA</u></th> <th style="width: 33%;"><u>MA</u></th> <th style="width: 33%;"><u>HA</u></th> </tr> </thead> <tbody> <tr> <td>Identify the numerators to make a whole</td> <td>Find the path through the maze by identifying calculations that total 1</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </tbody> </table> <p>Plenary – Look at the model that represents 2 fractions which add to make a fraction within 1. What could the 2 fractions be and why? (CS)</p>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Identify the numerators to make a whole	Find the path through the maze by identifying calculations that total 1	Problem solving and reasoning tasks (WR)	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication grids - reasoning examples
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Identify the numerators to make a whole	Find the path through the maze by identifying calculations that total 1	Problem solving and reasoning tasks (WR)							
	<p>WEDNESDAY</p> <p>LI: To add mixed numbers</p> <p>ALL MUST explain what a mixed number is</p> <p>MOST SHOULD add mixed numbers with the same denominator</p> <p>SOME COULD add mixed numbers with different denominators</p>	<p>Starter</p> <p>Show why 16 is a square number and 8 is not.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils a range of improper fractions and convert to mixed numbers. Can they spot any errors? 	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication grids 						



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	<p>KQ: What fraction should be added to make 1 whole? Explain</p>	<ul style="list-style-type: none"> - Model adding mixed numbers together by adding the wholes and then the fractions. Recap on how to find equivalent fractions using common denominators. - Challenge pupils to find missing values based on what they have been shown previously. Discuss the reasons why. - Introduce the task and explain how to record/set out <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;">LA</td> <td style="width: 33%;">MA</td> <td style="width: 33%;">HA</td> </tr> <tr> <td>Varied fluency</td> <td>Multiply as improper fractions and convert to mixed numbers</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </table> <p>Plenary – Identify the missing numbers in the addition calculation and justify with reasoning.</p>	LA	MA	HA	Varied fluency	Multiply as improper fractions and convert to mixed numbers	Problem solving and reasoning tasks (WR)	<p>- reasoning examples</p>
LA	MA	HA							
Varied fluency	Multiply as improper fractions and convert to mixed numbers	Problem solving and reasoning tasks (WR)							
	<p>THURSDAY</p> <p>LI: To subtract mixed numbers ALL MUST explain what a mixed number is MOST SHOULD subtract mixed numbers with the same denominator SOME COULD subtract mixed numbers with different denominators</p> <p>KQ: What is the missing fraction?</p>	<p>Starter TRUE/FALSE – These are all prime numbers: 2,3,7,13,15,19</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils a subtraction calculation with different denominators. Model changing thirds in sixths pictorial using a gird. Model the abstract version of this and subtract accordingly - Model finding the common denominator to subtraction and work through examples. - Look at a problem solving task and use the bar method to visually represent - Explain the task to pupils and start independent working <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;">LA</td> <td style="width: 33%;">MA</td> <td style="width: 33%;">HA</td> </tr> <tr> <td>Varied fluency</td> <td>Find fractions of amounts where the numerator is greater than 1</td> <td>Problem solving and reasoning tasks (WR)</td> </tr> </table> <p>Plenary – Amir is trying to subtract mixed numbers. Is his working accurate. Explain and justify.</p>	LA	MA	HA	Varied fluency	Find fractions of amounts where the numerator is greater than 1	Problem solving and reasoning tasks (WR)	<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication girds - reasoning examples
LA	MA	HA							
Varied fluency	Find fractions of amounts where the numerator is greater than 1	Problem solving and reasoning tasks (WR)							
	<p>FRIDAY</p> <p>LI: To calculate with accuracy ALL MUST identify the correct calculation</p>	<p>Starter: Multiplication challenge</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab 	<ul style="list-style-type: none"> - place value counters - base 10 						



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	<p>MOST SHOULD choose an efficient method of calculation</p> <p>SOME COULD use a range of methods to check accuracy</p>	<ul style="list-style-type: none"> - Recap on relevant and efficient methods of calculation relevant to addition, subtraction, multiplication and division. - Model the method and discuss alternative methods that could be used for efficiency. - Allow pupils to demonstrate their understanding through “teach the class” and model using the inverse, where relevant - Pupils to work through calculation based questions, as found on arithmetic papers. 			<ul style="list-style-type: none"> - reasoning examples - multiplication grids
	<u>LA</u>	<u>MA</u>	<u>HA</u>		
	Year 2/3 calculation paper	Year 5 calculation paper	Year 5/6 calculation paper		
		<p>Plenary – Apply process to a problem solving/reasoning question</p>			

Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)			Resources
4	<p>MONDAY</p> <p>LI: To multiply by an integer</p> <p style="color: #27ae60;">ALL MUST using repeated addition to multiply</p> <p style="color: #e67e22;">MOST SHOULD draw visual diagrams to demonstrate multiplication of fractions</p> <p style="color: #e67e22;">SOME COULD apply an understanding to problem solving and reasoning</p> <p>KQ: Is this calculation correct? Explain.</p>	<p>Starter TRUE/FALSE – These are all square numbers: 4,12,16,36</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils how to multiply a fractions using individual bars, explaining that the denominator doesn’t change - Model this again using a single bar and then explain the abstract method of multiplying the numerator. Ensure pupils understand that the denominator does not change. - Look at a visualised representation of a calculation and create the correct answer - Explain the task to pupils and start independent working 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - visual representations - multiplication grids - reasoning examples
		<u>LA</u>	<u>MA</u>	<u>HA</u>	
		Colour the flowers and write as an improper fraction	Colour the flowers and write as an improper fraction	Colour the flowers and write as an improper fraction	
		<p>Plenary – Amir has made a mistake. Can you explain his error?</p>			
TUESDAY		<p>Starter</p>			- multilink cubes



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	<p>LI: To multiply by an integer ALL MUST using repeated addition to multiply MOST SHOULD draw visual diagrams to demonstrate multiplication of fractions SOME COULD apply an understanding to problem solving and reasoning</p> <p>KQ: Explain why the denominator doesn't change when multiplying fractions.</p>	<p>I can recall all the prime numbers up to 19. Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils how to multiply a fractions using individual bars, explaining that the denominator doesn't change - Model this again using a single bar and then explain the abstract method of multiplying the numerator. Ensure pupils understand that the denominator does not change. <p>Play PowerPoint if necessary</p> <ul style="list-style-type: none"> - Look at an example of class 5E and reason who is correct and why. - Explain the task to pupils and start independent working 	<ul style="list-style-type: none"> - fraction cards - visual representations - multiplication girds - reasoning examples 	
	<p>WEDNESDAY</p> <p>LI: To find fractions of quantity ALL MUST identify and explain the numerator/denominator MOST SHOULD divide by the numerator to find a fraction of an amount SOME COULD use visual representations</p> <p>KQ: Would you rather a half or a quarter of this pizza? Explain.</p>	<p>Starter What are the common factors for 20 and 36? Prove it.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Model finding a fraction of an amount with the numerator as 1 using cointers and sharing into a bar. - Re-model when the numerator is greater than 1 and discuss how the first example can help us with the 2nd example - Look at an example of a bar model and discuss what the bar and calculation represent and why - Explain the task to pupils and start independent working 	<ul style="list-style-type: none"> - multilink cubes - counters - fraction cards - visual representations- - multiplication girds - reasoning examples 	
		<p>LA</p> <p>Multiply the fractions and write as improper fractions</p>	<p>MA</p> <p>Varied fluency.</p>	<p>HA</p> <p>Problem solving and reasoning tasks (WR)</p>
		<p>Plenary – Look at Whitney's calculation and discuss her accuracy.</p>		
		<p>LA</p> <p>Use counters to find fractions of amounts with 1 numerator</p>	<p>MA</p> <p>Calculate quantities of amounts with numerator 1</p>	<p>HA</p> <p>Draw diagrams to show varied fractions of amounts</p>



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	<p>THURSDAY</p> <p>LI: To find fractions of an amount</p> <p>ALL MUST identify and explain the numerator/denominator</p> <p>MOST SHOULD divide by the numerator to find a fraction of an amount</p> <p>SOME COULD use visual representations</p>	<p>Plenary – Show a diagram and discuss why this doesn't show a fraction of an amount</p>	<ul style="list-style-type: none"> - multilink cubes - counters - fraction cards - visual representations- - multiplication grids - reasoning examples
	<p>FRIDAY</p> <p>LI: To calculate with accuracy</p> <p>ALL MUST identify the correct calculation</p> <p>MOST SHOULD choose an efficient method of calculation</p> <p>SOME COULD use a range of methods to check accuracy</p>	<p>Starter – Multiplication challenge</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Recap on relevant and efficient methods of calculation relevant to addition, subtraction, multiplication and division. - Model the method and discuss alternative methods that could be used for efficiency. - Allow pupils to demonstrate their understanding through “teach the class” and model using the inverse, where relevant - Pupils to work through calculation based questions, as found on arithmetic papers. 	

Starter
Find all the factor pairs for 52. Prove it.

Main Teaching:

- Introduce LI and highlight/discuss key vocab
- Model finding a fraction of an amount with the numerator as 1 using counters and sharing into a bar.
- Re-model when the numerator is greater than 1 and discuss how the first example can help us with the 2nd example
- Look at an example of a bar model and discuss what the bar and calculation represent and why
- Explain the task to pupils and start independent working

HA	MA	HA
Problem solving and reasoning tasks (WR)	Colour the flowers and write solutions as mixed number	Problem solving and reasoning tasks (WR)

Plenary – What fraction of the class are girls based on the fractions provided? (WR)

LA	MA	HA
Year 2/3 calculation paper	Year 5 calculation paper	Year 5/6 calculation paper

Plenary – Apply process to a problem solving/reasoning question



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Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)			Resources
5	<p>MONDAY</p> <p>LI: To identify decimals numbers (2 D.P) ALL MUST identify the role of a decimal point MOST SHOULD partition and identify the value of digits SOME COULD reason and justify errors in calculations</p> <p>KQ: What is the role of a decimal point?</p>	<p>Starter Find 2 ways of inserting (x divide =) into the number sentence $132 \div 12 = 11$</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils a place value grid (2DP) and create various numbers using place value counters. - Repeat the process of build fluency and confidence - Related concepts to a part whole model and identify the missing number through partitioning. Discuss how else the number could be partitioned using knowledge of addition and number bonds - Explain the task to pupils and start independent learning 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - fraction walls - decimal walls - visual representations - multiplication grids - reasoning examples
		<p>LA</p> <p>Find and list the decimal numbers from given statements</p>	<p>MA</p> <p>Use a carroll diagram to sort the decimal numbers based on given criteria</p>	<p>HA</p> <p>Problem solving and reasoning tasks (WR)</p>	
		<p>Plenary – Spot the odd one out and explain why. (CS)</p>			
	<p>TUESDAY</p> <p>LI: To identify decimal numbers as fractions ALL MUST identify the role of a decimal point MOST SHOULD partition and identify the value of digits SOME COULD compare decimal and fraction equivalents</p> <p>KQ: What are the values of the underlined digits?</p>	<p>Starter TRUE/FALSE – If I count forwards in multiples of 3, every fourth numbers will be a multiple of 12</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils a hundred grid and discuss the shaded in value as a decimal number and fraction - Display a 100 piece bead string and related the previous concept to finding a decimal and fraction equivalent - Show pupils a part whole mode consisting of a decimal and fraction value. Discuss what the missing value is and why. Convert a range of fractions to decimals and vice versa for fluency 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - fraction walls - decimal walls - visual representations - multiplication grids - reasoning examples



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		- Explain the task to pupils and start independent learning			
		<u>LA</u> Convert simple fractions into decimals and sort into a Venn diagram	<u>MA</u> Convert decimals (2DP) to fractions and vice versa, Sort into a Venn diagram	<u>HA</u> Use 2/3 step part-whole models to partition fractions/decimals	
		Plenary – Seth and Letitia reasoning problem. Who is correct and why? Prove it.			
	<p>WEDNESDAY</p> <p>LI: To identify decimal numbers as fractions</p> <p>ALL MUST identify the role of a decimal point</p> <p>MOST SHOULD partition and identify the value of digits</p> <p>SOME COULD find write decimals as mixed numbers</p> <p>KQ: Are these fractions to decimal equivalents correct? Explain why</p>	<p>Starter</p> <p>Calculate $34.71 + 26.19$ and use the inverse to prove its accuracy.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show a range of 100 squares and identify the decimal/fraction equivalents through discussion. - Ensure pupils have a secure understanding of the role of the denominator - Model converting a range of decimals into fractions and fractions into decimals using expanded methods - Explain the task to pupils and start independent learning 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - fraction walls - decimal walls - visual representations - multiplication grids - reasoning examples
		<u>LA</u> Complete a basic fluency table	<u>MA</u> Complete a fluency table of converting decimals to fractions including expanded forms of decimals and fractions	<u>HA</u> Application of concepts through problem solving/reasoning (WR)	
		Plenary – Spot the odd one out and explain the reasons			
	<p>THURSDAY</p> <p>LI: To explore thousandths</p> <p>ALL MUST identify the role of a decimal point</p> <p>MOST SHOULD partition and identify the value of digits</p> <p>SOME COULD reason and justify errors in calculations</p>	<p>Starter</p> <p>Calculate $56.3 - 32.07$ and use the inverse to prove its accuracy.</p> <p>Main Teaching:</p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Show pupils visual representations of a whole, tenth, hundredth and thousandth and ensure they understand each part is getting smaller in size/value. 			<ul style="list-style-type: none"> - multilink cubes - fraction cards - fraction walls - decimal walls - visual representations



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	<p>KQ: Look at these expanded forms. What numbers do they represent? :</p>	<ul style="list-style-type: none"> - Model recording the number displayed and explain the role of decimal point - Discuss how many tenths = 1, tenths=hundredths and hundredths=thousandths alongside visual representation for reinforcement - Show a 1000 grid and challenge pupils to apply this to identify how many hundredths=thousandths and tenths=thousandths - Explain the task to pupils and start independent learning 	<ul style="list-style-type: none"> - multiplication grids - reasoning examples 						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center; padding: 5px;"><u>LA</u></td> <td style="width: 33%; text-align: center; padding: 5px;"><u>MA</u></td> <td style="width: 33%; text-align: center; padding: 5px;"><u>HA</u></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Match the decimals to the fractions</td> <td style="text-align: center; padding: 5px;">Convert the fractions and then order them</td> <td style="text-align: center; padding: 5px;">Insert the decimal numbers vertically/horizontally to make 1 whole</td> </tr> </table>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Match the decimals to the fractions	Convert the fractions and then order them	Insert the decimal numbers vertically/horizontally to make 1 whole	<p>Plenary – Match Jaden, Oscar and Bella to their numbers and explain why.</p>	
	<u>LA</u>	<u>MA</u>	<u>HA</u>						
Match the decimals to the fractions	Convert the fractions and then order them	Insert the decimal numbers vertically/horizontally to make 1 whole							
<p>FRIDAY</p> <p><u>LI: To explore thousandths as decimals</u></p> <p>ALL MUST identify the role of a decimal point</p> <p>MOST SHOULD identify a decimal number as a fraction equivalent</p> <p>SOME COULD add fractions and express answers as a decimal</p> <p>KQ: Explain the difference between tenths, hundredths and thousandths</p>	<p><u>Starter</u></p> <p><u>Main Teaching:</u></p> <ul style="list-style-type: none"> - Introduce LI and highlight/discuss key vocab - Display a place value grid (3DP) and model making numbers using place value counters - Discuss whether the example question is TRUE/FALSE and explain why. - Display a number line and discuss which box shows 9.409 and why. Ensure pupils can explain that we use a small decimal place when partitioning in a smaller parts - Display a number line with missing number and discuss what the missing numbers are and why - Explain the task to pupils and start independent learning 	<ul style="list-style-type: none"> - multilink cubes - fraction cards - fraction walls - decimal walls - visual representations - multiplication grids - reasoning examples 							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center; padding: 5px;"><u>LA</u></td> <td style="width: 33%; text-align: center; padding: 5px;"><u>MA</u></td> <td style="width: 33%; text-align: center; padding: 5px;"><u>HA</u></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Partition and identify values using a counter/place value grids</td> <td style="text-align: center; padding: 5px;">Partition and record digits including missing numbers</td> <td style="text-align: center; padding: 5px;">Problem solving task using missing symbols</td> </tr> </table>	<u>LA</u>	<u>MA</u>	<u>HA</u>	Partition and identify values using a counter/place value grids	Partition and record digits including missing numbers	Problem solving task using missing symbols	<p>Plenary – Zeke/Zahida – who is correct and why?</p>		
<u>LA</u>	<u>MA</u>	<u>HA</u>							
Partition and identify values using a counter/place value grids	Partition and record digits including missing numbers	Problem solving task using missing symbols							

Week No.	Key Learning Objectives Linked to National curriculum (differentiated)	Activities & Teaching & Learning strategies (including assessment opportunities)	Resources
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6	MONDAY PIXL ASSESSMENT – Paper 1 – Arithmetic LA pupils to work with a TA for reading support.
	TUESDAY PIXL ASSESSMENT – Paper 2 – Problem solving and reasoning LA pupils to work with a TA for reading support.
	WEDNESDAY PIXL ASSESSMENT – Paper 3 – Problem solving and reasoning LA pupils to work with a TA for reading support.