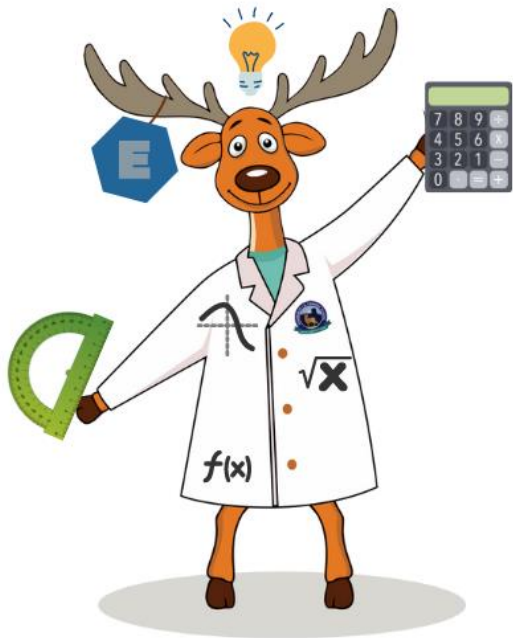




Staindrop CE Primary School Mathematics Curriculum



We want all children at Staindrop CE Primary to...

GO PLACES, MEET PEOPLE & MAKE THINGS HAPPEN:

Enjoy & Appreciate the power of Maths in the real world

KNOW MORE

Knowledge

Develop a deep understanding of **mathematical concepts**, make **connections and spot patterns** across key areas in Maths and relate this to **real life contexts**.

DO MORE

Skills

Learn how to **solve problems** and calculations, **reason mathematically** and **justify** those solutions with mathematical vocabulary and increased confidence.

REMEMBER MORE

Fluency

Become **fluent** in the fundamentals of Mathematics so that they can **instantly recall number facts** and **apply** them with automaticity when solving problems.

Barriers to Mathematical learning for Staindrop CE pupils:

- Socio-economic divide (bridging gap for ALL)
- Above national average for PP in some cohorts
- Above national average for SEND in some cohorts
- Lack of independence (applying knowledge and skills to approach problems/calculations)
 - Children struggle to retain facts and recall them with automaticity

THROUGH GOD'S LOVE, WE ARE THE RICH SOIL WHERE ROOTS GROW AND SEEDS FLOURISH (Luke 8: 4-15)

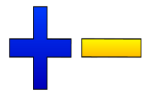
Key Areas in Mathematics:

Number

Place Value

Thousands	Hundreds	Tens	Ones
Th	H	T	O
4	5	2	8

Addition & Subtraction



Multiplication & Division



Fractions, Decimals & Percentages



Measurement

Money



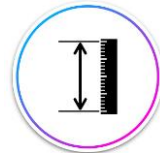
Mass & Capacity



Time



Length, Height



Perimeter & Area



Ratio



Geometry

Shape



Position & Direction



Statistics

Statistics



Long Term Plans



Our Maths curriculum is underpinned by the Mastery Approach.



Progressive units of work

Small, coherent learning steps

CPA Representations

Varied fluency and practice

Frequent opportunity for PS & Reasoning

High-level Mathematical vocabulary/stem sentences modelled

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Place Value (within 10)	Addition/Subtraction	Place value within 20	PV cont...	Multiplication & Division	PV (100)
			Addition & Subtraction within 20	Length & Height		Money
	Addition & Subtraction (within 10)	Shape	Place Value within 50	Mass & Volume	Fractions	Time
Year 2	Place Value	Addition & Subtraction cont..	Money	Length & Height	Fractions	Statistics
	Addition & Subtraction	Shape	Multiplication & Division	Mass, Capacity & Temperature	Time	Position & Direction
Year 3	Place Value	Addition & Subtraction cont..	Multiplication & Division...	Fractions	Fractions	Shape
			Length & Perimeter			
	Addition & Subtraction	Multiplication & Division	Fractions			
Year 4	Place Value	Area	Multiplication & Division	Fractions	Decimals	Properties of Shape
			Addition & Subtraction	Multiplication & Division	Length & Perimeter	Decimals
	Statistics					
Year 5	Place Value	Multiplication & Division	Multiplication & Division	Decimals & Percentages	Properties of Shape	Decimals/Negative Number
						Addition & Subtraction
	Perimeter & Area	Statistics	Volume			
Year 6	Place Value	Fractions A	Ratio	Fractions, percentages & Dec	Properties of Shape	Themed projects, consolidation and problem solving
		Fractions B	Algebra	Perimeter, Area & Volume		
	Addition & Subtraction, Multiplication and division	Converting Units	Decimals	Statistics		

EYFS

WR Maths

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Getting to know you		Match, sort and compare FREE TRIAL VIEW	Talk about measure and patterns VIEW	It's me 1, 2, 3 VIEW				Circles and triangles VIEW	1, 2, 3, 4, 5 VIEW		Shapes with 4 sides VIEW
Spring term	Alive in 5 VIEW	Mass and capacity VIEW	Growing 6, 7, 8 VIEW	Length, height and time VIEW	Building 9 and 10 VIEW		Explore 3-D shapes VIEW					
Summer term	To 20 and beyond VIEW	How many now? VIEW	Manipulate, compose and decompose VIEW	Sharing and grouping VIEW	Visualise, build and map VIEW		Make connections VIEW	Consolidation				

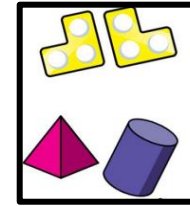
- Number
- Shape, Space and Measure
- Spatial Reasoning

Adult-led focused teaching

Enhanced areas in learning provision

Digging Deeper

Phase 2 - Book List
12 3 at the Zoo - Eric Carle
1m Number One - Michael Rosen
One Bear at Bedtime - Mick Inkpen
The Little Bear and the Wish Fish - Debi Glori
Pink Tara Cookies for Three - Maria Dismordy
Number Farm - Stephen Holmes
Circle/Triangle - Mac Barnett and Jon Klassen
The Mr Men Stories - Roger Hargreaves



Guided Practice

Key Questions



Mastering Number

- Subitising
- Cardinality, Ordinality and counting
- Composition
- Comparison

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<ul style="list-style-type: none"> -Subitise 3 and 4 -Counting sequences/ 1-1 correspondence -Composition of number 4 -All numbers are made of 1s -Compare sets by looking and language more than/fewer than 	<ul style="list-style-type: none"> -Subitise 5 -Explore cardinality of 5 - Begin to count beyond 5 -Explore concept of wholes and parts -Composition of 5 -Compare sets by looking/subitising and matching 	<ul style="list-style-type: none"> -Subitise 5 cont.. Explore patterns of number beyond 5 -Develop verbal counting, 20 and beyond Use fingers to represent quantities between 5-10 -Composition of 5/ hidden/missing parts -Compare sets and explore equal/unequal 	<ul style="list-style-type: none"> -Explore un/symmetrical patterns -Consolidate cardinality within 10 -Familiarise pattern to 20 -Explore composition of odd and even numbers -Even numbers/doubles -Composition of numbers within 10 -Reason with 'howmanyess' of numbers 	<ul style="list-style-type: none"> -Subitise numbers in different patterns -Subitise structured/unstructured within 10 -Appropriate to count/subitise -Develop verbal counting, 20 and beyond -Composition of 10 -Order sets of objects - understand ordinal system 	<ul style="list-style-type: none"> Consolidation of all concepts with a variety of contexts

PROGRESSION EYFS – YEAR 1

	Nursery	EYFS	Year 1 (<i>Autumn Term within 10</i>)
Number (<i>Subitising, counting, cardinality, ordinality</i>)	<ul style="list-style-type: none"> Subitise within 3 Recite numbers beyond 5 (abstract) Say one number for each item in order, e.g 1, 2, 3 Know the last number reached in a group is the total Link numeral and amounts, up to 5. 	<ul style="list-style-type: none"> Subitise numbers to 5 (explore structured and unstructured subitising within 10) Count verbally to 20 and beyond... Represent the cardinality of numbers within 10 and beyond (teen numbers) Understand concept of one more/less 	<ul style="list-style-type: none"> count to and across 100, forwards and backwards from any given number count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s given a number, identify 1 more and 1 less identify and represent numbers using objects and pictorial representations and use the language of: equal to, more/less than read and write numbers from 1 to 20 in numerals and words
Number (<i>composition and comparison</i>)	<ul style="list-style-type: none"> Discuss verbally numbers inside numbers e.g “I am 3. 2 and 1 are a part of me” Compare quantities e.g more than/fewer than 	<ul style="list-style-type: none"> Explore concept of wholes and parts Composition of numbers to 5 and then within and to 10 (bonds) Explore composition of odd and even numbers Understand composition through doubles Explore composition through hidden/missing parts Reason around ‘howmanyness’ of numbers Compare/order numbers using language equal/unequal/smallest/greatest 	<ul style="list-style-type: none"> read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs represent and use number bonds and related subtraction facts within 20 add and subtract 1 and 2-digit numbers to 20, including 0 solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$ <p>Number: Multiplication, Division and Fractions</p>
Geometry (<i>Patterns, colour, sorting</i>)	<ul style="list-style-type: none"> Recognise and name colours (matching) Identify patterns around them, e.g stripes, spots Creates own patterns using some organisation/regularity Sorting objects by given attributes e.g colour, size, shape Recognise and follow an AB pattern e.g red, blue, red... 	<ul style="list-style-type: none"> Continue, copy and create repeated patterns (AB, ABB, ABBC) To match and sort objects in various ways e.g pairs, colour, shape, sharing, equal, Compose and decompose shapes, identifying new shapes made and shapes within shapes 	<p>Geometry/Position & Direction</p> <ul style="list-style-type: none"> Recognise and name common 2D/3D shapes inc triangle, circle, square, cube, cuboid etc Patterns with 2D & 3D shapes (ABBCBBA) describe position, direction and movement, including whole, half, quarter and three-quarter turns
Shape & Space (<i>shapes, positional language</i>)	<ul style="list-style-type: none"> Explore 2D and 3D shape using informal language e.g corners, curved, round, straight Ordering events in the day e.g next, after, before Understand position through words e.g below, under, down Select shapes appropriately for building e.g flat top/ triangle for a roof etc 	<ul style="list-style-type: none"> Name some 2D shapes e.g circle, triangle, square and rectangle and describe basic properties Explore 3D shape Select, rotate and manipulate shapes to develop spatial reasoning skills Compose and decompose shapes, noticing which shapes make other shapes and making models of increasing complexity Continue to develop positional language, creating own stories/journeys 	<p>Measurement</p> <ul style="list-style-type: none"> compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half].. mass/weight [for example, heavy/light, heavier than, lighter than]...capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] measure and begin to record the following: <ul style="list-style-type: none"> lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes
Measurement (<i>Weight, capacity, length & height</i>)	<ul style="list-style-type: none"> Explore language around size e.g big/little/smaller/bigger Compare length and height using language taller, shorter Identify items that may be heavy, make links between ‘seesaw’ balance scales Explore capacity using language full, half full, empty 	<ul style="list-style-type: none"> Explore language around length, height and breadth (indirect comparisons using blocks) Compare and order objects of different size, mass and capacity using increasingly more complex language Becomes familiar with measuring tools through play/provision 	<ul style="list-style-type: none"> Recognise and use language relating to dates, weeks months etc Sequence events in chronological order using before, after language and solve problems using language such as quicker/slower Read the clock to the o’clock and half past the hour and draw hands on the clock face to show these times
		<ul style="list-style-type: none"> Begin to measure time in simple ways e.g how many sleeps/use of calendars Increasingly confident in sequencing events in the day, describe events that have happened or that they are looking forward to 	

Year 1

Autumn Term					
Place Value (within 10)		Addition & Subtraction (within 10)		Shape	
Spring Term					
Place Value (within 20) Addition & Subtraction (within 20)	Addition & Subtraction (within 20)		Place value (within 50)	Length & Height	Mass & Volume
Summer Term					
Multiplication & Division	Fractions	Position & Direction	Place Value (within 100)	Money (1 week)	Time (2 weeks)

Number

Measurement

Geometry

Statistics

Year 2

Autumn Term			
Place Value	Addition & Subtraction		Properties of Shape
Spring Term			
Money	Multiplication & Division	Length & height	Mass, Capacity and temperature
Summer Term			
Fractions	Time	Statistics	Position and Direction

Number

Measurement

Geometry

Statistics

Year 3

Autumn Term				
Place Value	Addition & Subtraction		Multiplication & Division	
Spring Term				
Multiplication & Division	Length & Perimeter	Fractions		Mass & Capacity
Summer Term				
Fractions	Money	Time	Shape	Statistics

Number

Measurement

Geometry

Statistics

Year 4

Autumn Term					
Place Value	Addition & Subtraction		Area	Multiplication & Division	
Spring Term					
Multiplication & Division	Length & Perimeter	Fractions		Decimals	
Summer Term					
Decimals	Money	Time	Shape	Statistics	Position & Direction

Number

Measurement

Geometry

Statistics

Year 5

Autumn Term					
Place Value	Addition & Subtraction	Multiplication & Division	Fractions A		
Spring Term					
Multiplication & Division	Fractions B	Decimals & Percentages	Perimeter & Area	Statistics	
Summer Term					
Shape	Position & Direction	Decimals	Negative Number	Converting Units	Volume

Number

Measurement

Geometry

Statistics

Year 6

Autumn Term

Place Value

Addition, Subtraction, Multiplication & Division

Fractions A

Fractions B

Converting Units

Spring Term

Ratio

Algebra

Decimals

Fractions, Percentages & Decimals

Area, Perimeter and Volume

Statistics

Summer Term

Properties of Shape

Position & Direction

Themed projects, consolidation and problem solving

Number

Measurement

Geometry

Statistics

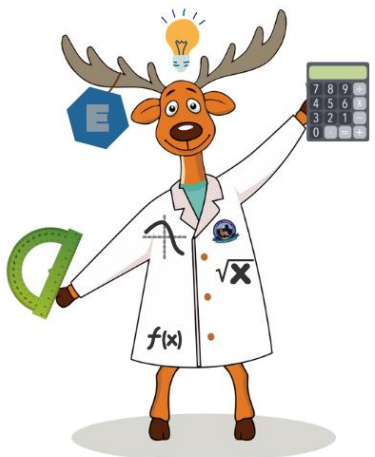


Maths Fluency

Mastering Number

Key Instant Recall Facts

Fluency focus sessions



Mastering Number – Year 1

The Mastering Number programme aims to develop firm foundations in children's number sense. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

- Subitising
- Cardinality, Ordinality and counting
- Composition
- Comparison
- Addition, subtraction and number facts

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>revisit subitising within 5 using perceptual subitising</p> <p>practise conceptual subitising of bigger numbers as they become more familiar with patterns made by the numbers 5–10.</p> <p>explore the linear number system within 10, looking at a range of ordinal representations explore the link between the 'staircase' pattern and a number track.</p> <p>Composition of numbers within 10 - 5 and a bit structure</p> <p>5 & 6 in depth Understand odd and even numbers</p> <p>Although children will not look at facts expressed as equations, their work on composition of numbers within 10 develops their knowledge of number bonds</p>	<p>continue to practise conceptually subitising numbers they have already explored the composition of.</p> <p>Composition of 7-9 in depth</p> <p>Systematic approach to bonds to 10</p> <p>Revisit what is meant by comparing and know that quantities can be compared according to the numerosity</p> <p>.....</p>	<p>Revisiting</p> <p>review the linear number system to 10 as they compare numbers.</p> <p>Link composition of numbers within 10 to the part-whole representation</p> <p>Recall missing parts for numbers within 10</p> <p>Compare nums within 10 using inequality symbols 'greater than/ less than'</p> <p>Reason about inequalities using true or false</p> <p>develop their recall of number bonds within 10, through the use of exercises which use written numerals but not the symbols +, -, or =.</p>	<p>Revisiting</p> <p>review the linear number system to 10, looking at a range of representations, including a number line explore the use of 'midpoints' to enable them to identify the location of other numbers.</p> <p>Review composition of nums linking to odd and even</p> <p>Develop knowledge of composition of numbers 11-19 using '10 and a bit'</p> <p>continue to develop their recall of bonds within 10, through the use of exercises which do NOT involve written equations, such as $4 + 3 = ?$</p> <p>identify doubles and near doubles through visual representations of odd and even numbers.</p>	<p>conceptually subitise numbers within 20 as they become more familiar with the composition of numbers within 20.</p> <p>review the linear number system to 20, looking at a range of representations, including a number line explore the use of 'midpoints' to enable them to identify the location of other numbers.</p> <p>Continue to explore representations of composition of nums to 20</p> <p>BEGIN to compare numbers within 20 using $< > =$</p> <p>develop their fluency in additive relationships within 10, using a range of activities and games</p> <p>draw on their knowledge of the composition of numbers to complete written equations revisit strategies for addition and subtraction within 10 and apply these to a range of questions, including written equations.</p>	<p>continue to use conceptual subitising, especially when using a rekenrek.</p> <p>Cont..</p> <p>Continue to compare numbers within 20 using inequality symbol and comparative language</p> <p>continue to practise recalling additive facts within 20, applying their knowledge of the composition of numbers within 20 and strategies within 10.</p>

Mastering Number – Year 2

The Mastering Number programme aims to develop firm foundations in children's number sense. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

- Subitising
- Cardinality, Ordinality and counting
- Composition
- Comparison
- Addition, subtraction and number facts

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Continue to conceptually subitise numbers and patterns within 10.</p> <p>Continue to subitise using a rekenrek</p> <p>Explore the linear number system within 10.</p> <p>Explore number tracks and lines and use midpoints to locate numbers</p> <p>Composition of numbers within 10: 6,7,8,9 using '5 and a bit' .. 5 and 6 in depth</p> <p>Odd and even numbers</p> <p>link their growing understanding of the composition of numbers within 10 to the related additive facts, including adding 2 to an odd or even number</p> <p>practise recalling facts in a variety of ways, simple problems/missing nums</p>	<p>Continue to conceptually subitise numbers they have already been exposed to</p> <p>Review the linear number system to compare numbers</p> <p>Continue to explore composition 7-9 in depth – links to odd/even numbers</p> <p>Compare numbers within 10 using inequality symbols and language 'greater/less than'</p> <p>Draw on knowledge of bonds to answer true/false comparisons</p> <p>Continue to practise additive recall</p>	<p>Continue to conceptually subitise numbers they have already been exposed to, inc teen numbers using 'ten and a bit'.</p> <p>Composition of 11 and 19 using 'ten and a bit'</p> <p>Continue to develop recall of facts within 10, using the part-whole model and relating missing parts to subtraction equations</p> <p>Review strategies to adding 1 and 2 to odd and even numbers</p> <p>Composition of 11-19 to answer equations where 10 is a part</p> <p>Apply learning to facts with 3 addends</p>	<p>Revisit</p> <p>Revisit the structure of the linear number system within 20, making links between the midpoints of 5 and 10, and 15.</p> <p>Odd and even numbers – doubles and near doubles</p> <p>Continue to compare nums within 20</p> <p>Draw on knowledge of the linear number system to answer 1 more/less questions and spot pairs of numbers with a difference of 1</p> <p>Find doubles and near doubles</p> <p>Apply known facts to near facts e.g $5 + 2 = 7$ so $15 + 2 = 17$ $25 + 2 = 27$</p>	<p>Revisit previous activities</p> <p>Review the linear number system to 100, applying their knowledge of midpoints to place numbers on a structured number line – they will identify the multiples of 10 that come before and after a given number.</p> <p>Revisit composition of numbers between 10 and 20</p> <p>Reason around comparisons and inequality equations</p> <p>become fluent in a range of strategies involving calculations within 20, using 'make 10' strategies to add, and subtracting through the tens boundary</p> <p>practise recalling number bonds through a range of activities and games which will encourage them to reason about sums and differences.</p>	<p>Revisit</p> <p>Revisit</p> <p>Revisit</p> <p>Continue to reason around comparisons and inequality equations</p> <p>develop their fluency in additive relationships within 20, using a range of activities and games and revisiting previously taught strategies where necessary.</p>

KIRF Yearly Overview:

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	I know the number names in order to 5. I can subitise numbers up to 5.		I know the number names in in order to 10.		I know number bonds for each number up to 5.	
Y1	I know number bonds for each number to 10.		I know doubles and halves of numbers to 10.		I can count forward and backward in steps of 2, 5 and 10.	
Y2	I know number bonds to 10 and 20.	I know the multiplication and division facts for the 10 times table.	I know the multiplication and division facts for the 5 times table.		I know the multiplication and division facts for the 2 times table.	
Y3	I know the multiplication and division facts for the 4 times table.		I know the multiplication and division facts for the 8 times table.		I know the multiplication and division facts for the 3 times table.	
Y4	I know the multiplication and division facts for the 6 times table.		I know the multiplication and division facts for the 9 , 11 and 7 times tables.		I know the multiplication and division facts for all times tables up to 12×12	
Y5	I can recognise decimal equivalentents of fractions.	I know decimal number bonds to 1.	I can recall square numbers up to 12^2 and their square roots.	I can identify prime numbers up to 50.	I know doubles and halves of -All numbers to 100 -All multiples of 10 to 10,000 -All multiples of 100 to 10,000.	
Y6	I can identify common factors of a pair of numbers. *Divisibility rules*		I can convert between decimals, fractions and percentages.		I can use x table facts to multiply and divide decimals	Consolidation
Y6 - Consolidation of all KIRFS using regular arithmetic practice.						

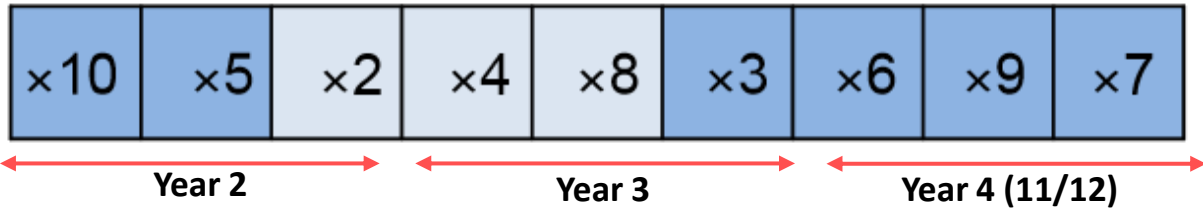
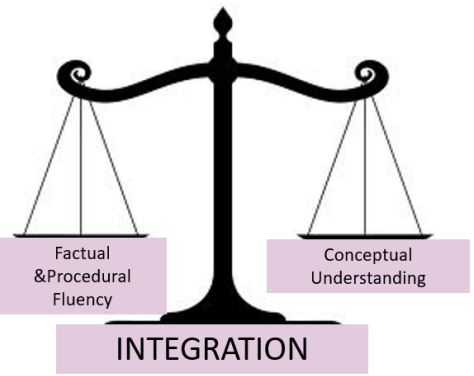
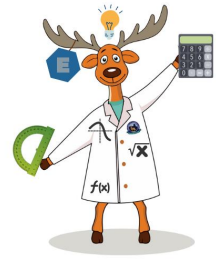
Fluency Session Focuses:

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception		<ul style="list-style-type: none"> -Counting fwd bckwd to 5 -Subitising numbers 1-5 -Days of the week 	<ul style="list-style-type: none"> -Counting fwd bckwd to 5 -Subitising/Representing numbers 1-5 -Days of the week 	<ul style="list-style-type: none"> -Counting fwd bckwd to 10 - Subitising/Representing numbers 1-5 -1 more/1 less within 5 	<ul style="list-style-type: none"> -Counting fwd bckwd to 10 - Subitising/Representing numbers 1-10 -1 more/1 less within 10 -Bonds to 3 	<ul style="list-style-type: none"> -Counting fwd beyond 10 -Odd and even nums to 10 -1 more/1 less within 10 -Bonds to 5
Y1	<ul style="list-style-type: none"> -Counting fwd/bkwd to 10 -Bonds to 5 -1 more/1 less within 10 -Counting fwd in 10s 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 20 -1 more/1 less numbers to 10. -Bonds to 6/7/8/9 -Bonds to 10 -Counting bckwd in 10s. 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 20 -1 more/1 less to 20 -Bonds within 10 -Counting fwd/back in 10s -Doubles to 5 	<ul style="list-style-type: none"> -Counting fwd to 50 -1 more/1 less to 20 -Bonds within 10 -Doubles to 10 -Counting in 5s 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 50 -1 more/1 less to 50 -Doubles to 10 -Counting in 5s fwd/bkwd -Odd and even numbers 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 100 -1 more/1 less to 100 -Doubles/bonds to 10 -Counting in 2s fwd/bkwd -Odd and even numbers
Y2	<ul style="list-style-type: none"> -Counting fwd/bkwd to 100 -Doubles/bonds to 10 -Counting 2/5/10s -Bonds to 20 using 10s -1 more/less to 100 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 100 -Doubles/bonds to 10 -Counting 2/5/10s -Bonds to 20 using 10s 10 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd to 100 -Doubles/bonds to 10/20 -10 x table facts -5 x table facts -Bonds to 100 (tens) -Partitioning numbers 	<ul style="list-style-type: none"> -Counting 10 more/10 less than any number -Doubles/bonds to 10/20 -5 x table facts -bonds to 100 tens -Partitioning numbers diff ways 	<ul style="list-style-type: none"> -Counting 10 more/less than given number -bonds to 100 tens -Partitioning numbers diff ways -Bonds to 100 tens and ones -5 and 2 x table facts 	<ul style="list-style-type: none"> -Counting 10 more/less than given number -bonds to 100 tens -Partitioning numbers diff ways -Bonds to 100 tens and ones -5 and 2 x table facts
Y3	<ul style="list-style-type: none"> -Counting 10 or 1 more/less than given number to 100 -bonds to 100 tens -Partitioning numbers diff ways -Bonds to 100 tens and ones -2 x table facts (relate to 4) 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 200 -10/more/less within 200 -Count in 50s -bonds to 100 inc tens and ones -2/5/10 x table facts -4 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 500 -10 or 1 more/less within 500 -Count in 50s to 500 -bonds to 100 inc tens and ones -10,5,2 and 4x table facts -8 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 1,000 -10 or 1 more/less within 1,000 -Count in 50s to 1,000 -bonds to 100 inc tens and ones -10,5,2 and 4x table facts -8 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 1,000 -1, 10 or 100 more/less within 1,000 -bonds to 1,000 multiples of 100 -10,5,2, 4, 8 x table facts -3 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 1,000 -1, 10 or 100 more/less within 1,000 -bonds to 1,000 multiples of 100 -10,5,2, 4, 8 x table facts -3 x table facts

Fluency Session Focuses:

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y4	<ul style="list-style-type: none"> -Counting fwd/bkwd within 1,000 -1, 10 or 100 more/less within 1,000 -bonds to 1,000 multiples of 100 -10,5,2, 4, 8 x table facts -3 x table facts -6 x table 	<ul style="list-style-type: none"> -Counting fwd/bkwd within 1,000 -1, 10 or 100 more/less within 1,000 -Counting in 25s -Rounding to nearest 10/100 -10,5,2, 4, 8 x table facts -3 x table facts -6 x table 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 10,000 -Find 1, 10, 100 or 1,000 more or less up to 10,000 -Counting in 25s -Rounding to nearest 10/100 or 1,000 within 10,000 -X tables facts previously learnt -7 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 10,000 -Find 1, 10, 100 or 1,000 more or less up to 10,000 -Rounding to nearest 10/100 or 1,000 within 10,000 -X tables facts previously learnt -7 x table facts -9/11 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 10,000 -Rounding to nearest 10/100 or 1,000 within 10,000 -X tables facts previously learnt -Multiplying by 10,100,1,000 -7 x table facts -9/11 x table facts 12 x table facts 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 10,000 -Rounding to nearest 10/100 or 1,000 within 10,000 -X tables facts previously learnt -Multiplying by 10,100,1,000 -7 x table facts -9/11 x table facts 12 x table facts
Y5	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 10,000 -1/10/100 more or less -Rounding to nearest 10/100 or 1,000 within 10,000 -All x table facts -Multiplying by 10,100,1,000 *Decimal equivalents 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 1,000,000 -1/10/100/1,000 more or less than -Rounding to nearest 10, 100, 1,000 or 10,000 to 100,000 -All x table facts *Decimal equivalents *Decimal bonds 	<ul style="list-style-type: none"> -Rounding to nearest 10, 100, 1,000 or 10,000, 100,000 to 1 million -All x table facts *Decimal equivalents *Square Numbers *Common factors 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 1,000,000 -Rounding to nearest 10, 100, 1,000 or 10,000, 100,000 to 1 million -All x table facts *Square Numbers *Common factors *Prime Numbers to 50 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 1,000,000 -Rounding to nearest 10, 100, 1,000 or 10,000, 100,000 to 1 million -All x table facts *Prime Numbers to 50 *Doubles and halves 	<ul style="list-style-type: none"> -Counting fwd/bkwd any number up to 1,000,000 -Rounding to nearest 10, 100, 1,000 or 10,000, 100,000 to 1 million -All x table facts *Prime Numbers to 50 *Doubles and halves
Y6	<ul style="list-style-type: none"> -Rounding to nearest 10 - 1,000,000 -Doubles and halves (Y5) -All x table facts *Prime/Squared Numbers to 50 *Common factor pairs 	<ul style="list-style-type: none"> -Doubles and halves (Y5) -All x table facts *Prime/Squared Numbers to 100 *Common factor pairs *Divisibility rules (2, 3, 5, 9, 10) 	<ul style="list-style-type: none"> -All x table facts *Prime/Squared Numbers to 100 -Common factor pairs - Converting between decimals → fractions & percentages 	<ul style="list-style-type: none"> -All x table facts *Prime/Squared Numbers to 100 -Common factor pairs - Converting between decimals → fractions & percentages 	<ul style="list-style-type: none"> -All x table facts -Common factor pairs - Converting between decimals → fractions & percentages - Doubles/halves of 1 and 2-digit decimals 	<p>CONDSOLIDATION</p>

TEACHING OF TIMES TABLES - WHOLE SCHOOL APPROACH



Consolidation in Year 5/6

TEACH

Systematic Approach

- X table facts are broken down into manageable chunks 1st half, 2nd half (max 4 facts at a time)
- Introduce facts using flash cards, focusing on sound pattern and using shortest 'way to say'
- Identify new facts/known facts through discussion
- Little & often (retrieval)
- Reinforce commutative law and division relationships

PRACTICE

Practice booklets

- 22 checks
- Interleaved practice— first half, 2nd half, all and then new and old
- Regular retrieval practice (3 times a week)
- Motivational/Personal best



1		2	
8 x 6 =	8 x 2 =	5 x 8 =	32 ÷ 8 =
32 ÷ 8 =	5 x 8 =	2 x 8 =	5 x 8 =
3 x 8 =	8 x 6 =	8 x 4 =	8 x 2 =
2 x 8 =	16 ÷ 8 =	16 ÷ 8 =	4 x 8 =
24 ÷ 3 =	6 x 8 =	8 x 3 =	40 ÷ 8 =
8 x 4 =	32 ÷ 4 =	6 x 8 =	8 x 3 =
8 x 6 =	2 x 8 =	8 x 5 =	8 x 6 =
8 x 4 =	8 x 2 =	24 ÷ 3 =	8 x 2 =
5 x 8 =	24 ÷ 8 =	8 x 4 =	48 ÷ 6 =
6 x 8 =	8 x 4 =	8 x 3 =	6 x 8 =
16 ÷ 2 =	8 x 3 =	40 ÷ 5 =	2 x 8 =
6 x 8 =	4 x 8 =	8 x 2 =	3 x 8 =
3 x 8 =	4 x 8 =	8 x 3 =	8 x 4 =
8 x 2 =	40 ÷ 5 =	8 x 5 =	4 x 8 =
2 x 8 =	8 x 5 =	2 x 8 =	6 x 8 =
40 ÷ 8 =	8 x 5 =	32 ÷ 4 =	16 ÷ 2 =
8 x 4 =	5 x 8 =	8 x 5 =	8 x 6 =
3 x 8 =	48 ÷ 8 =	3 x 8 =	24 ÷ 8 =
8 x 3 =	8 x 5 =	8 x 4 =	8 x 6 =
6 x 8 =	8 x 3 =	5 x 8 =	8 x 6 =

First part of 8 times table

Multiplication/Division throughout the curriculum..

Early Years

- Subitising
- Equal & Unequal
- Composition of Odd/Even number

Year 1

- Recognise and make equal/unequal groups
- Make arrays
- Skip count 2/5/10s

Year 2

- Repeated addition – x symbol
- Multiplication & Division Facts – 10/5/2
- Commutativity/Inverse

Year 3

- Multiplication & Division facts 4/8/3
- Related calculations
- Inverse operation

Year 4

- Multiplication & Division facts 6/9/7/11/12
- Factor pairs
- Efficient multiplication

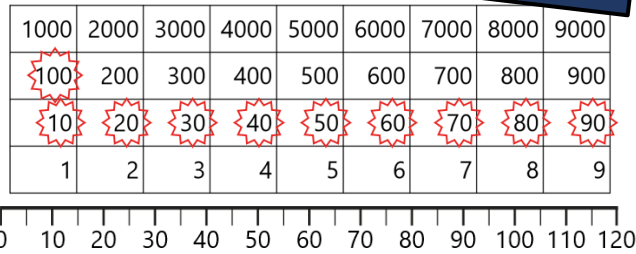
Concrete/Pictorial

Abstract

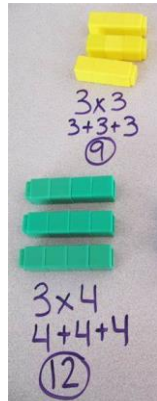
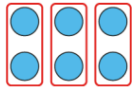
Real life context



Number lines/Charts



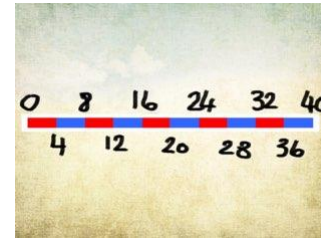
Arrays



Multiplication

x	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

-Rote counting



-Chanting/Songs



Memorable numbers



-Multiplication and division equations

2, 3, 6

$$2 \times 3 = 6$$

$$3 \times 2 = 6$$

$$6 \div 2 = 3$$

$$6 \div 3 = 2$$



Games, battles and speed checks

Supporting pupils with SEND in Maths...



To ensure all pupils have access to HQT

- Mastery Approach (concepts taught in **small steps, guided** → **independent practice, examples/non-examples**)
- **'Maths Talk'** (modelling thinking aloud, clear instruction in small steps, pre-empt misconceptions)
- Vocabulary (**explicitly taught, pre-teaching** if necessary, visual aids, celebrated)
- **Metacognitive strategies** (FB4, KIRFs, questioning, paired thinking/reasoning and problem solving aloud)

To create a positive and inclusive environment for all learners...

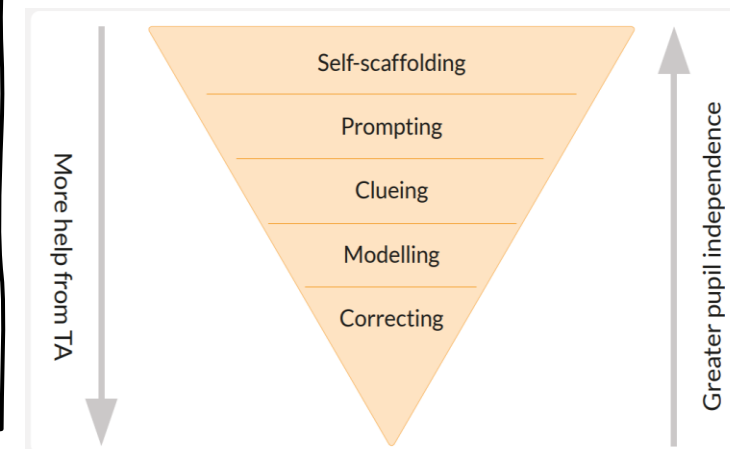
- Mastery Approach (**all children access lesson concept**)
- **Praise** ('wisdom' dojos, Maths award, TT Rockstars certificates)
- Visual Aids (**manipulatives, number lines, Maths working walls**)
- Partner talk, discussions and feedback (reasoning, **TTYP**, non-verbal feedback)

To assess and implement targeted intervention

- Regular marking, AFL strategies/**diagnostic** assessment used to identify cdn for **rapid** intervention
- Access to **high-quality intervention** (Mastering Number, ThirdSpace, Rekenrek)
- Time **ring-fenced** for Maths intervention

To deploy support staff effectively

- TAs aware of **Maths targets**
 - TA models high-level vocabulary/supports and **encourage rich maths discussions**
- **TA focus on understanding** rather than task completion
- Frequent discussions/unit CPD shared between CTs
- Regular **MATHS training** for TAs - WRM



Supporting pupils' oracy in Mathematics...



Teacher modelling

- High expectations for all
 - Concepts taught in small steps, **guided** → **independent practice** where **high quality maths talk** is modelled to all children
- Teachers plan for opportunities to: think out loud, clear instruction in small steps, pre-empt misconceptions)
 - Vocabulary (**explicitly taught**)
- QUACK – All cdn exposed to problem solving and reasoning and how to provide detail answer



QUACK

- Q Question – read it carefully
- U Understand – underline or circle key elements
- A Approximate – think about the size of your answer
- C Calculate
- K Know if the answer is sensible or not



Sentence stems

Teachers plan for and model sentence stems throughout lessons to:

- Support pupils to express key concepts and **scaffold their thinking** e.g “2 tens and 4 ones makes 24”
- **Generalise a key idea** e.g “There are 10 tens in 100*”
- **Structuring ideas and explanations** e.g “I know the answer is ___ because...”
“The answer is true because...”

Repetition/MTYT/Fill in blanks

Possible sentence stems

- ____ has ____ tens and ____ ones.
____ ones + ____ ones = ____ ones,
so ____ + ____ = ____
- To subtract ____ ones, I need to subtract 1 ____ times.

5:2 Rule

- Teacher talk is broken down into small chunks
 - Roughly every 2 minutes of teacher talk, there is 5 minutes of pupil talk/activities
- Teacher/TA support pupil discussions through questioning and prompts

E.G “Tell me more, how did you get to that answer?”

Talk partners/Talk threes

- Opportunities for pupil discussion in 2s or 3s enables all cdn to talk about their ideas in a low stakes manner
 - Less confident pupils listen and learn
- Think/pair share strategy (cdn are given time to think, then discuss in their pair before developing an answer to share)
This supports cdn to structure their thinking aloud.

Progression in Place Value

Thousands	Hundreds	Tens	Ones
Th	H	T	O
4	5	2	8

Place value: Count

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number Count numbers to 100 in numerals; count in multiples of twos, fives and tens 	<ul style="list-style-type: none"> count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward 	<ul style="list-style-type: none"> count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 	<ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 count backwards through zero to include negative numbers 	<ul style="list-style-type: none"> count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 count forwards and backwards with positive and negative whole numbers, including through zero 	
Autumn 1 Spring 1 Spring 3 Summer 4	Autumn 1	Autumn 1 Autumn 3	Autumn 1 Autumn 4	Autumn 1 Summer 4	

Note - In the WRM schemes, negative numbers are introduced in Year 5

Place value: Represent

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">• identify and represent numbers using objects and pictorial representations• read and write numbers to 100 in numerals• read and write numbers from 1 to 20 in numerals and words	<ul style="list-style-type: none">• read and write numbers to at least 100 in numerals and in words• identify, represent and estimate numbers using different representations, including the number line	<ul style="list-style-type: none">• identify, represent and estimate numbers using different representations• read and write numbers up to 1000 in numerals and in words	<ul style="list-style-type: none">• identify, represent and estimate numbers using different representations• 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	<ul style="list-style-type: none">• read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit• read Roman numerals to 1000 (M) and recognise years written in Roman numerals	<ul style="list-style-type: none">• read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit
Autumn 1 Spring 1 Spring 3 Summer 4	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

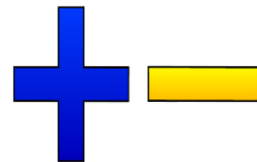
Place value: Use and compare

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">given a number, identify one more and one less	<ul style="list-style-type: none">recognise the place value of each digit in a two-digit number (tens, ones)compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs	<ul style="list-style-type: none">recognise the place value of each digit in a three-digit number (hundreds, tens, ones)compare and order numbers up to 1000	<ul style="list-style-type: none">find 1000 more or less than a given numberrecognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)order and compare numbers beyond 1000	<ul style="list-style-type: none">(read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	<ul style="list-style-type: none">(read, write), order and compare numbers up to 10 000 000 and determine the value of each digit
Autumn 1 Spring 1 Spring 3 Summer 4	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

Place value: Problems/Rounding

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none">use place value and number facts to solve problems	<ul style="list-style-type: none">solve number problems and practical problems involving these ideas	<ul style="list-style-type: none">round any number to the nearest 10, 100 or 1000solve number and practical problems that involve all of the above and with increasingly large positive numbers	<ul style="list-style-type: none">interpret negative numbers in contextround any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000solve number problems and practical problems that involve all of the above	<ul style="list-style-type: none">round any whole number to a required degree of accuracyuse negative numbers in context, and calculate intervals across zerosolve number and practical problems that involve all of the above
	Autumn 1	Autumn 1	Autumn 1	Autumn 1	Autumn 1

Progression in Addition & Subtraction



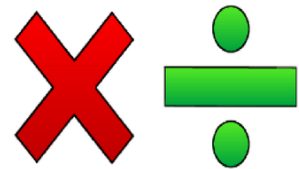
Addition & subtraction: Calculations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> • add and subtract one-digit and two-digit numbers to 20, including zero 	<ul style="list-style-type: none"> • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> ➤ a two-digit number and ones ➤ a two-digit number and tens ➤ two two-digit numbers ➤ adding three one-digit numbers 	<ul style="list-style-type: none"> • add and subtract numbers mentally, including: <ul style="list-style-type: none"> ➤ a three-digit number and ones ➤ a three-digit number and tens ➤ a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 	<ul style="list-style-type: none"> • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 	<ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers 	<ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations
Autumn 2 Spring 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Addition & subtraction: Problems

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$	<ul style="list-style-type: none">• solve problems with addition and subtraction:<ul style="list-style-type: none">➤ using concrete objects and pictorial representations, including those involving numbers, quantities and measures➤ applying their increasing knowledge of mental and written methods	<ul style="list-style-type: none">• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	<ul style="list-style-type: none">• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	<ul style="list-style-type: none">• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	<ul style="list-style-type: none">• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Autumn 2 Spring 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2	Autumn 2

Progression in Multiplication & Division



Multiplication & division: Recall/Use

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> 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 (commutative) and division of one number by another cannot 	<ul style="list-style-type: none"> recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 	<ul style="list-style-type: none"> recall multiplication and division facts for multiplication tables up to 12×12 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 recognise and use factor pairs and commutativity in mental calculations 	<ul style="list-style-type: none"> identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) 	<ul style="list-style-type: none"> identify common factors, common multiples and prime numbers use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
	Spring 2	Autumn 3 Spring 1	Autumn 4 Spring 1	Autumn 3	Autumn 2

Multiplication & division: Calculations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs 	<ul style="list-style-type: none"> write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods 	<ul style="list-style-type: none"> multiply two-digit and three-digit numbers by a one-digit number using formal written layout 	<ul style="list-style-type: none"> 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 multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	<ul style="list-style-type: none"> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication 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 divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context perform mental calculations, including with mixed operations and large numbers
	Spring 2	Autumn 3 Spring 1	Spring 1	Autumn 3 Spring 1	Autumn 2

Multiplication & division: Problems

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<ul style="list-style-type: none"> solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division
Summer 1	Spring 2	Spring 1	Spring 1	Autumn 3 Spring 1	Autumn 2

Year 5	Year 6
<ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> use their knowledge of the order of operations to carry out calculations involving the four operations
Spring 1	Autumn 2

Progression in Fractions, Decimals & Percentages

$$\frac{1}{4} \% \quad 0.5$$

Fractions: Recognise and write

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 	<ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{3}, \frac{1}{4}, \frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity 	<ul style="list-style-type: none"> 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 recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators 	<ul style="list-style-type: none"> count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 	<ul style="list-style-type: none"> 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] 	
Summer 2	Summer 1	Spring 3	Spring 4 Summer 1	Autumn 4	

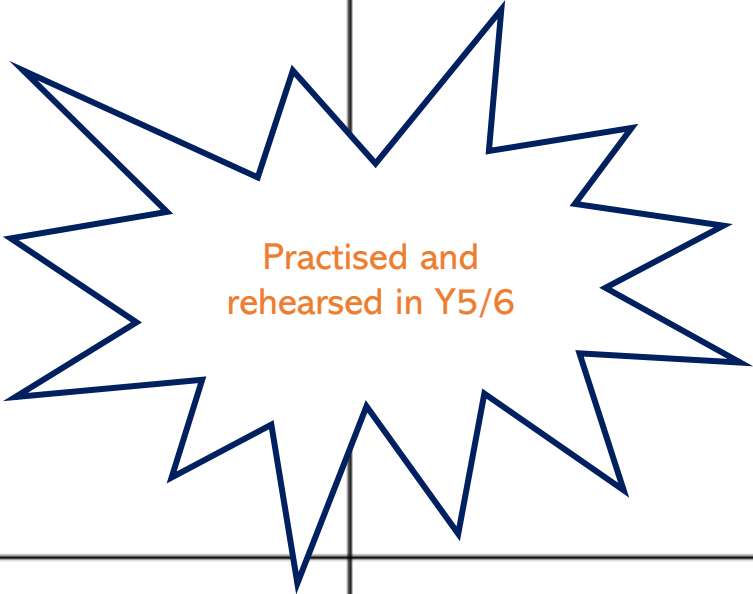
Fractions: Compare

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none">Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	<ul style="list-style-type: none">recognise and show, using diagrams, equivalent fractions with small denominatorscompare and order unit fractions, and fractions with the same denominators	<ul style="list-style-type: none">recognise and show, using diagrams, families of common equivalent fractions	<ul style="list-style-type: none">compare and order fractions whose denominators are all multiples of the same number	<ul style="list-style-type: none">use common factors to simplify fractions; use common multiples to express fractions in the same denominationcompare and order fractions, including fractions > 1
	Summer 1	Spring 3	Spring 3	Autumn 4	Autumn 3

Fractions: Calculations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> write simple fractions for example, $\frac{1}{2}$ of 6 = 3 	<ul style="list-style-type: none"> add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] 	<ul style="list-style-type: none"> add and subtract fractions with the same denominator 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]
	Summer 1	Summer 1	Spring 3	Autumn 4 Spring 2	Autumn 3 Autumn 4

Solve problems

Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none">• solve problems that involve all of the above	<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	 <p>Practised and rehearsed in Y5/6</p>	
	Spring 3 Summer 1	Spring 3		

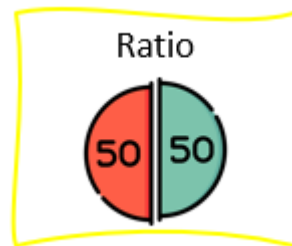
Decimals: Recognise, write, compare

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ 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 	<ul style="list-style-type: none"> read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places 	<ul style="list-style-type: none"> identify the value of each digit in numbers given to three decimal places
			Spring 4 Summer 1	Spring 3 Summer 3	Spring 3

Fractions, decimals and percentages

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			<ul style="list-style-type: none"> • solve simple measure and money problems involving fractions and decimals to two decimal places 	<ul style="list-style-type: none"> • recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
			Spring 3 Spring 4 Summer1	Spring 3	Spring 3 Spring 4

Progression in Ratio and Proportion



Ratio and proportion

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					<ul style="list-style-type: none">• 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 the calculation/use of percentages for comparison• solve problems involving similar shapes where the scale factor is known or can be found• solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
					Spring 1



Progression in Algebra

Algebra

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">• <i>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$</i>	<ul style="list-style-type: none">• <i>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</i>	<ul style="list-style-type: none">• <i>solve problems, including missing number problems</i>			<ul style="list-style-type: none">• use simple formulae• generate and describe linear number sequences• express missing number problems algebraically• find pairs of numbers that satisfy an equation with two unknowns• enumerate possibilities of combinations of two variables
					Spring 2

Please note although algebra is not introduced until Year 6, algebraic thinking starts much earlier as exemplified by the 'missing number' objectives.

Progression in Measurement



Using measures

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> compare, describe and solve practical problems for: <ul style="list-style-type: none"> lengths and heights mass/weight capacity and volume time measure and begin to record the following: <ul style="list-style-type: none"> lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) 	<ul style="list-style-type: none"> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and = 	<ul style="list-style-type: none"> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) 	<ul style="list-style-type: none"> Convert between different units of measure [for example, kilometre to metre; hour to minute] estimate, compare and calculate different measures 	<ul style="list-style-type: none"> convert between different units of metric measure understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling 	<ul style="list-style-type: none"> solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate 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 3 d.p. convert between miles and kilometres
Spring 4 Spring 5 Summer 6	Spring 3 Spring 4	Spring 2 Spring 4	Spring 2 Summer 3	Spring 4 Summer 5 Summer 6	Autumn 5

Money

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">recognise and know the value of different denominations of coins and notes	<ul style="list-style-type: none">recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular valuefind different combinations of coins that equal the same amounts of moneysolve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	<ul style="list-style-type: none">add and subtract amounts of money to give change, using both £ and p in practical contexts	<ul style="list-style-type: none">estimate, compare and calculate different measures, including money in pounds and pence	<ul style="list-style-type: none">use all four operations to solve problems involving measure [for example, money]	
Summer 5	Spring 1	Summer 2	Summer 2	Summer 3	

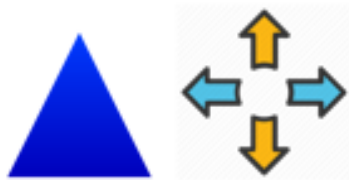
Time

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] recognise and use language relating to dates, including days of the week, weeks, months and years tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> compare and sequence intervals of time 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 know the number of minutes in an hour and the number of hours in a day 	<ul style="list-style-type: none"> tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., 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 compare durations of events [for example to calculate the time taken by particular events or tasks] 	<ul style="list-style-type: none"> read, write and convert time between analogue and digital 12- and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days 	<ul style="list-style-type: none"> solve problems involving converting between units of time 	<ul style="list-style-type: none"> use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa <div data-bbox="1737 782 2051 1102" style="border: 1px solid black; border-radius: 15px; padding: 10px; margin-top: 10px;"> <p>Note – In the WRM schemes, time conversions are covered in Y5; the Y6 block concentrates on metric units.</p> </div>
Summer 6	Summer 2	Summer 3	Summer 3	Summer 5	Autumn 5

Perimeter, area, volume

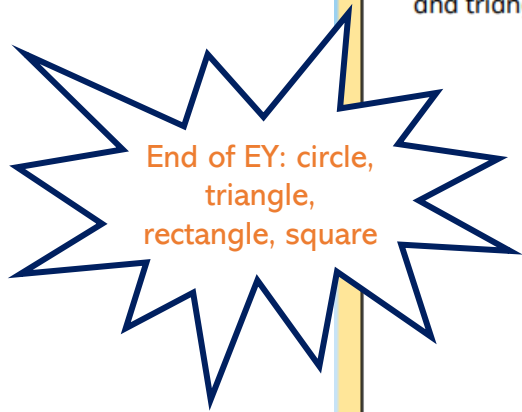
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<ul style="list-style-type: none"> measure the perimeter of simple 2-D shapes 	<ul style="list-style-type: none"> measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares 	<ul style="list-style-type: none"> measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water] 	<ul style="list-style-type: none"> recognise that shapes with the same areas can have different perimeters and vice versa recognise when it is possible to use formulae for area and volume of shapes calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units
		Spring 2	Autumn 3 Spring 2	Spring 4 Summer 6	Spring 5

Progression in Geometry



2-D shapes

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles] 	<ul style="list-style-type: none"> identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D shapes and everyday objects 	<ul style="list-style-type: none"> draw 2-D shapes 	<ul style="list-style-type: none"> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes identify lines of symmetry in 2-D shapes presented in different orientations 	<ul style="list-style-type: none"> distinguish between regular and irregular polygons based on reasoning about equal sides and angles. use the properties of rectangles to deduce related facts and find missing lengths and angles 	<ul style="list-style-type: none"> draw 2-D shapes using given dimensions and angles compare and classify geometric shapes based on their properties and sizes illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Autumn 3	Autumn 3	Summer 4	Summer 4	Summer 1	Summer 1



- Circle
- Triangle
- Square
- Rectangle
- Pentagon
- Hexagon

- Circle
- Triangle
- Square
- Rectangle
- Pentagon
- Hexagon
- Octagon

3-D shapes

End of EY: Spatial reasoning and exploring 3D shape through real-life objects

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<ul style="list-style-type: none"> recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] compare and sort common 3-D shapes and everyday objects 	<ul style="list-style-type: none"> make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them 		<ul style="list-style-type: none"> identify 3-D shapes, including cubes and other cuboids, from 2-D representations 	<ul style="list-style-type: none"> recognise, describe and build simple 3-D shapes, including making nets
Autumn 3	Autumn 3	Summer 4		Summer 1	Summer 1

- Sphere
- Cylinder
- Cube
- Cuboid
- Pyramid
- Cone

- Sphere
- Cylinder
- Cube
- Cuboid
- Cone
- Square-based pyramid
- Triangular-based pyramid
- Triangular prism

Angles and lines

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<ul style="list-style-type: none"> recognise angles as a property of shape or a description of a turn 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 identify horizontal and vertical lines and pairs of perpendicular and parallel lines 	<ul style="list-style-type: none"> identify acute and obtuse angles and compare and order angles up to two right angles by size identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles draw given angles, and measure them in degrees identify: <ul style="list-style-type: none"> angles at a point and one whole turn (total 360°) angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) other multiples of 90° 	<ul style="list-style-type: none"> find unknown angles in any triangles, quadrilaterals, and regular polygons recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
		Summer 4	Summer 4	Summer 2	Summer 1

Position and direction

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">describe position, direction and movement, including whole, half, quarter and three-quarter turns	<ul style="list-style-type: none">order and arrange combinations of mathematical objects in patterns and sequencesuse 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 anti-clockwise)		<ul style="list-style-type: none">describe positions on a 2-D grid as coordinates in the first quadrantdescribe movements between positions as translations of a given unit to the left/right and up/downplot specified points and draw sides to complete a given polygon	<ul style="list-style-type: none">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	<ul style="list-style-type: none">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
Summer 3	Summer 4		Summer 6	Summer 2	Summer 2

Progression in Statistics



Present and interpret data

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and simple tables 	<ul style="list-style-type: none"> interpret and present data using bar charts, pictograms and tables 	<ul style="list-style-type: none"> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs 	<ul style="list-style-type: none"> complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> interpret and construct pie charts and line graphs and use these to solve problems
	Summer 3	Summer 5	Summer 5	Spring 5	Spring 6

Solve statistical problems

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph 	<ul style="list-style-type: none"> calculate and interpret the mean as an average
	Summer 3	Summer 5	Summer 5	Spring 5	Spring 6