Glapton Academy
A L.E.A.D. Academy

Maths Long Term Plan

All mathematics lessons are planned in line with the statutory requirements for the teaching and learning of maths as set out in the National Curriculum Maths document 2014. They are supported by TGA LEAPS and the TGA Progression Document, as well as the White Rose Maths scheme of learning.

This scheme supports our mastery approach to teaching mathematics. Each concept is broken down into small steps, in which time is spent carefully considering each. Through intelligent practice and building up experience of different contexts, gradually children move towards mastery where they are fluent in the unfamiliar and can apply their skills in any new situation. This scheme ensures that students will come back to topics time and time again, both within the study of the same area of mathematics and in other areas so that they will continue to deepen their understanding through this revisiting and interleaving.

This curriculum combines aspects of both 'mastery' and 'spiral' approaches. It follows many of the mastery principles – spending longer on topics to help gain deeper understanding, making connections, keeping the class working together on the same topic and a fundamental belief that, through effort, all pupils are capable of understanding, doing and improving at mathematics. However, it is also recognised that just spending a good chunk of time on a topic doesn't mean that all pupils will 'master' it the first time they see it, and that they need to see it again and again in different contexts and in different years to help them truly develop their understanding on their journey to mastery, therefore the revisiting and reinforcing aspects of a spiral curricula are present too.

We recognise that our children are entitled to five hours of maths teaching each week, this equates to one hour per day.

This document was created to monitor balance and coverage across the whole school.

Year 1	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number and Place Value (within 10) 4 weeks Number and Place Value (within 20) 2 weeks	Number and Place Value (within 50) 3 weeks Number and Place Value (within 100) 2 weeks Addition and Subtraction (within 10) 1 weeks	Addition and Subtraction (within 10) 4 weeks Addition and Subtraction (within 20) 2 weeks	Addition and Subtraction (within 20) 1 week Multiplication and Division 3 weeks Fractions 2 weeks	Geometry: Shape 2 weeks Geometry: Position and Direction 2 weeks Measurement: Money 2 weeks	Measurement: Time 2 weeks Measurement: Length and Height 2 weeks Measurement: Weight and Volume 2 weeks

Year 2	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number and Place Value 3 weeks Addition and Subtraction 3 weeks	Addition and Subtraction 2 weeks Money 2 weeks Multiplication and Division 2 weeks Consolidation 1 week Geometry: Position and Direction (covered through PE – OAA)	Multiplication and Division 4 weeks Statistics 2 weeks Multiplication and division linked to doubling and halving – (covered through PE – OAA)	Geometry: Properties of Shape 3 weeks Fractions 3 weeks	Measurement: Length and Height 2 weeks Measurement: Time 3 weeks Multiplication and Division: Links to doubling and halving 1 week	Consolidation Geometry: Position and Direction (covered through PE – OAA) Consolidation Multiplication and division linked to doubling and halving (covered through PE – OAA) Consolidation of prior units as necessary.

Year 3	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number: Place Value 3 weeks Number: Addition and Subtraction 3 weeks	Number: Addition and Subtraction 2 weeks Number: Multiplication and Division 4 weeks Number: Multiplication and Division – related to doubling and halving 1 week	Number: Multiplication and Division 3 weeks Measurement: Money 1 week Statistics 2 weeks	Measurement: Length and Perimeter 3 weeks Fractions 3 weeks	Fractions 3 weeks Measurement: Time 3 weeks	Geometry: Properties of shape 3 weeks Measurement: Mass and Capacity 3 weeks Reconsolidation as needed 1 week

Year 4	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number: Place Value 4 weeks Number: Addition and Subtraction 2 weeks	Number: Addition and Subtraction 1 weeks Measurement: Length and Perimeter 2 weeks Number: Multiplication and Division 4 weeks	Number: Multiplication and Division 3 weeks Measurement: Area 1 week Fractions 2 weeks	Fractions 2 weeks Number: Decimals 3 weeks Consolidation as needed 1 week	Number: Decimals 2 weeks Measurement: Money 2 weeks Measurement: Time 2 weeks	Statistics 1 week Geometry: Properties of Shape 2 weeks Geometry: Position and Direction 2 weeks Consolidation as needed 2 weeks

Year 5	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number: Place Value 4 weeks Number: Addition and Subtraction 2 weeks	Statistics 2 weeks Number: Multiplication and Division 3 weeks Measurement: Perimeter and Area 2 weeks	Number: Multiplication and Division 3 weeks Number: Fractions 3 weeks	Number: Fractions 3 weeks Number: Decimals and Percentages 2 weeks Consolidation as needed 1 week	Number: Decimals 3 weeks Geometry: Properties of shape 3 weeks	Geometry: Position and Direction 2 weeks Measurement: Converting units 2 weeks Measurement: Volume 1 week Consolidation as needed 1 week

Year 6	Block 1 (6)	Block 2 (7)	Block 3 (6)	Block 4 (6)	Block 5 (6)	Block 6 (7)
	Number: Place Value 2 weeks Number: Four Operations 4 weeks	Number: Four Operations 1 weeks Number: Fractions 5 weeks Geometry: Position and Direction 1 week	Number: Decimals 2 weeks Number: Percentages 2 weeks Number: Algebra 2 weeks	Measurement: Converting units 1 week Measurement: Perimeter, Area and Volume 2 weeks Number: Ratio 2 weeks Consolidation as needed 1 week	Statistics 2 weeks Geometry: Properties of shape 3 weeks Consolidation as needed 1 week	Consolidation projects

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Mathematics		
Block 1: Marvellous Me	**Block 2: Time to Celebrate!**	**Block 3: Superheroes**
Number **LEAPS** I can select the correct numeral to represent 1 to 5 objects. I can recognise some numerals of personal significance. I can select the correct numeral to represent 1 to 10 objects. I know the written symbols for numbers. I can link the number symbol (numeral) with its cardinal number value. I can estimate how many objects I can see (showing understanding of relative size) and check them by counting. I can put numerals in order with increasing confidence (ordinality). I can show awareness that numbers are made up of (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. I can recognise up to 3 objects in a visual formation without having to count them. I can represent groups of objects using mathematical images that are of significance to me. I can place objects in five frames and begin to discuss the relevance of the arrangements. I can provide a visual model to represent number values. I can recognise up to 5 objects in a visual formation without having to count them. I can place objects in ten frames and begin to discuss the relevance of the arrangements. I can recognise up to 7 objects in a visual formation without having to count them. In practical activities, I can add one and subtract one from numbers to 10.	Number **LEAPS** I can select the correct numeral to represent 1 to 5 objects. I can recognise some numerals of personal significance. I can select the correct numeral to represent 1 to 10 objects. I know the written symbols for numbers. I can link the number symbol (numeral) with its cardinal number value. I can estimate how many objects I can see (showing understanding of relative size) and check them by counting. I can put numerals in order with increasing confidence (ordinality). I can show awareness that numbers are made up of (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. I can recognise up to 3 objects in a visual formation without having to count them. I can represent groups of objects using mathematical images that are of significance to me. I can place objects in five frames and begin to discuss the relevance of the arrangements. I can provide a visual model to represent number values. I can recognise up to 5 objects in a visual formation without having to count them. I can place objects in ten frames and begin to discuss the relevance of the arrangements. I can recognise up to 7 objects in a visual formation without having to count them. In practical activities, I can add one and subtract one from numbers to 10.	Number **LEAPS** I can select the correct numeral to represent 1 to 5 objects. I can recognise some numerals of personal significance. I can select the correct numeral to represent 1 to 10 objects. I know the written symbols for numbers. I can link the number symbol (numeral) with its cardinal number value. I can estimate how many objects I can see (showing understanding of relative size) and check them by counting. I can put numerals in order with increasing confidence (ordinality). I can show awareness that numbers are made up of (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. I can represent groups of objects using mathematical images that are of significance to me. I can place objects in five frames and begin to discuss the relevance of the arrangements. I can provide a visual model to represent number values. I can recognise up to 5 objects in a visual formation without having to count them. I can place objects in ten frames and begin to discuss the relevance of the arrangements. I can recognise up to 7 objects in a visual formation without having to count them. I can begin to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees 6 raisins on a plate as 3 and 3.

Vocabulary: numeral, symbol, zero, one, two, three, four, five, six, seven, eight, nine, ten, represent, value, estimate, count, order, partition, add, subtract, one more, one less Numerical Patterns **LEAPS** I can count up to 3 or 4 objects by saying one number name for each item. I am becoming familiar with the language of counting. I can count objects to 10 and begin to count beyond 10. I can count out up to 6 objects from a larger group. I can count back in 1's. I can touch count objects when counting. I can begin to use mathematical vocabulary, e.g. more, less, the most, the least, bigger, smaller. I can find one more or one less from a group of up to 5 objects. I understand the 'one more than' and 'one less than' relationship between consecutive numbers. I can identify repeating patterns and continue them. I can choose familiar objects to create and recreate repeating patterns beyond AB patterns and begin to identify the unit of repeat. I can link the number symbol (numeral) with its cardinal number value. **Vocabulary:** count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, repeat, pattern, symbol, value Shape, Space and Measure **LEAPS** I can identify simple positional language, e.g. under the table.	**Vocabulary:** numeral, symbol, zero, one, two, three, four, five, six, seven, eight, nine, ten, represent, value, estimate, count, order, partition, add, subtract, one more, one less Numerical Patterns **LEAPS** I can count up to 3 or 4 objects by saying one number name for each item. I am becoming familiar with the language of counting. I can count objects to 10 and begin to count beyond 10. I can count out up to 6 objects from a larger group. I can count back in 1's. I can touch count objects when counting. I can begin to use mathematical vocabulary, e.g. more, less, the most, the least, bigger, smaller. I can find one more or one less from a group of up to 5 objects. I understand the 'one more than' and 'one less than' relationship between consecutive numbers. I can link the number symbol (numeral) with its cardinal number value. I can use the language of 'more' and 'fewer' to compare two sets of objects. I can compare numbers. I can use number names and symbols when comparing numbers. **Vocabulary:** count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, compare, more, fewer Shape, Space and Measure **LEAPS**	In practical activities, I can add one and subtract one from numbers to 10. **Vocabulary:** numeral, symbol, zero, one, two, three, four, five, six, seven, eight, nine, ten, represent, value, estimate, count, order, partition, add, subtract, one more, one less, subitise Numerical Patterns **LEAPS** I am becoming familiar with the language of counting. I can count objects to 10 and begin to count beyond 10. I can count out up to 6 objects from a larger group. I can begin to use mathematical vocabulary, e.g. more, less, the most, the least, bigger, smaller. I can find one more or one less from a group of up to 5 objects. I understand the 'one more than' and 'one less than' relationship between consecutive numbers. I can link the number symbol (numeral) with its cardinal number value. I can use the language of 'more' and 'fewer' to compare two sets of objects. I can compare numbers. I can use number names and symbols when comparing numbers. I can count an irregular arrangement of up to 10 objects. I can find one more or one less from a group of up to 10 objects. **Vocabulary:** count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, compare, more, fewer

I am able to order and sequence events using everyday language related to time. **Vocabulary:** under, on, on top, below, beneath, above, next to, left, right, beside, order, sequence, morning, afternoon, evening, night, first, next, then, finally, before, after, today, yesterday, tomorrow	I can make comparisons between objects relating to size, length, weight and capacity. I can sequence objects in order of size. I am becoming familiar with measuring tools in everyday experiences and play. I enjoy tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy. **Vocabulary:** size, big, small, bigger, smaller, length, long, short, longer, shorter, longest, shortest, height, tall, taller, tallest, weight, heavy, light, heavier, lighter, heaviest, lightest, capacity, full, empty, half full, nearly full, nearly empty, sequence, order, ruler, scales, jug, cup, predict, compare	
Block 4: All Creatures Great and Small	**Block 5: Home Sweet Home**	**Block 6: My Wonderful World**
Number **LEAPS** I can recognise some numerals of personal significance. I can select the correct numeral to represent 1 to 10 objects. I know the written symbols for numbers. I can link the number symbol (numeral) with its cardinal number value. I can estimate how many objects I can see (showing understanding of relative size) and check them by counting. I can put numerals in order with increasing confidence (ordinality). I can show awareness that numbers are made up of (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects. I can represent groups of objects using mathematical images that are of significance to me. I can provide a visual model to represent number values.	Number **LEAPS** I can count on from a set amount and not count all individually. I can count objects and give the total number in the group. I can find the total number of items in two groups by counting all of them. I can discuss mathematical calculations and problems using appropriate vocabulary. I know that counting on gives a larger number. I can find the total of two group by counting on. I can begin to use the vocabulary involved in adding and subtracting including counting on and back. I can begin to explore and work out mathematical problems, using signs and strategies of my own choice, including (when appropriate) standard numerals, tallies and + or -	Number **LEAPS** I know that counting back gives a smaller number. I can begin to use the vocabulary involved in adding and subtracting including counting on and back. I can begin to explore and work out mathematical problems, using signs and strategies of my own choice, including (when appropriate) standard numerals, tallies and + or - **Vocabulary:** subtraction, subtract, take away, less, total, equals, remove, symbol, number sentence Numerical Patterns **LEAPS** I am becoming familiar with the language of counting. I can begin to use 'teens' to count beyond 10. I can count in multiples of numbers beyond 10. I can use mathematical vocabulary confidently. I can identify patterns in the number system, e.g. on a 100 square.

I can place objects in ten frames and begin to discuss the relevance of the arrangements. I can begin to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees 6 raisins on a plate as 3 and 3. In practical activities, I can add one and subtract one from numbers to 10. **Vocabulary:** numeral, symbol, zero, one, two, three, four, five, six, seven, eight, nine, ten, represent, value, estimate, count, order, partition, add, subtract, one more, one less, subitise Numerical Patterns **LEAPS** I am becoming familiar with the language of counting. I can count objects to 10 and begin to count beyond 10. I can count back in 1's. I can begin to use mathematical vocabulary, e.g. more, less, the most, the least, bigger, smaller. I can find one more or one less from a group of up to 5 objects. I understand the 'one more than' and 'one less than' relationship between consecutive numbers. I can link the number symbol (numeral) with its cardinal number value. I can use the language of 'more' and 'fewer' to compare two sets of objects. I can compare numbers. I can use number names and symbols when comparing numbers. I can count an irregular arrangement of up to 10 objects. I can find one more or one less from a group of up to 10 objects. I can count out up to 10 objects from a larger group.	**Vocabulary:** addition, add, plus, more, altogether, count on, total, equals, groups, symbol, number sentence Numerical Patterns **LEAPS** I am becoming familiar with the language of counting. I can begin to use 'teens' to count beyond 10. I can count in multiples of numbers beyond 10. I can use mathematical vocabulary confidently. I can sort and classify objects according to self-selected criteria. I can identify patterns in the number system, e.g. on a 100 square. I can sort objects according to given criteria, e.g. 5, 0. I can continue, copy and create repeating patterns in number exploring odds and evens, doubles etc. **Vocabulary:** count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, compare, more, fewer, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, pattern, 100 square, tens, odd, even, double Shape, Space and Measure **LEAPS** I can talk about and explore 2D shapes using informal and mathematical language. I can talk about and explore 3D shapes using informal and mathematical language. I can use informal language and analogies (e.g. heart shaped and hand shaped leaves), as well as mathematical terms to describe shapes. I enjoy composing and decomposing shapes, learning which shapes combine to make other shapes.	I can continue, copy and create repeating patterns in number exploring odds and evens, doubles etc. **Vocabulary:** count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, compare, more, fewer, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, pattern, 100 square, tens, odd, even, double

Vocabulary: count, touch count, number name, backward, less, most, least, bigger, smaller, consecutive, before, after, between, compare, more, fewer **Shape, Space and Measure** **LEAPS** I can use my own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what I will build. **Vocabulary:** model, build, construct, shape, block, problem, plan, design	I can compose and decompose shapes to help me recognise that a shape can have other shapes within it, just like numbers can. I can use my own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what I will build. I am beginning to experience measuring time with timers and calendars. **Vocabulary:** shape, 2D, 3D, flat, solid, square, rectangle, circle, triangle, pentagon, hexagon, octagon, cube, sphere, cuboid, cone, cylinder, sides, vertices, edges, faces, roll, stack, timer, calendar, weeks, days, months, minutes, hours, seconds	

Maths – Year 1		
Block 1 **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Number and Place Value within 10</u>** • Read and write numbers to 10 in numerals. • **Count forwards to and from 10 beginning at zero.** • **Count backwards from any number below 10.** • Read and write numbers to 10 in numerals. • Use the language of: more than, less than (fewer), most, least and equal to. • Use number lines, objects and pictures to represent numbers to 10. • Identify one more or one less than any given number. (To 10) • Identify which numbers are closest to 10. • Compare numbers using > < and = **<u>Number and Place Value within 20</u>** • Read and write numbers to 20 in numerals. • **Count forwards to and from 20 beginning at zero.** • **Count backwards from any number below 20.** • Read and write numbers to 20 in words. • Use the language of: more than, less than (fewer), most, least and equal to. • Use number lines, objects and pictures to represent numbers to 20. • Identify one more or one less than any given number. (To 20) • **Identify which numbers are closest to 20.** • Compare numbers using > < and = • Reason about the location of numbers to 20 in the linear number system •	**Block 2** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Number and Place Value within 50</u>** • **Count forwards to and from 50 beginning at zero.** • **Count backwards from any number below 50.** • Read and write numbers to 50 in numerals. • Use the language of: more than, less than (fewer), most, least and equal to. • Use number lines, objects and pictures to represent numbers to 50. • **Identify one more or one less than any given number. (To 50)** • **Recognise the place value of each digit in a number beyond 20, supported by objects and pictorial representations including a number line.** • Identify which number is closest to 50. • Compare numbers using > < and = • **<u>Number and Place Value within 100</u>** • Count forwards to and across 100 beginning at zero. • Count backwards from any number below 100. • Read and write numbers to 100 in numerals. • Use the language of: more than, less than (fewer), most, least and equal to. • **Use number lines, objects and pictures to identify and represent numbers to 100.** • Identify one more or one less than any given number. (To 100) • Recognise the place value of each digit in a number beyond 20, supported by objects and pictorial representations including a number line. • Identify which number is closest to 100.	**Block 3** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Addition and Subtraction (Within 10)</u>** • Represent and use number bonds and related subtraction facts within 10. • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. • Recognise the inverse relationship between addition and subtraction. • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations if needed. • Solve missing number problems, using objects and pictures if needed. • Develop fluency in addition and subtraction facts within 10 • Compose numbers to 10 from two parts and partition numbers to 10 into parts including odd and even numbers • Relate additive expressions and equations to real life contexts **<u>Addition and Subtraction (Within 20)</u>** • Represent and use number bonds and related subtraction facts within 20. • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. • Recognise the inverse relationship between addition and subtraction. • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations if needed.

Vocabulary:
Forwards, Backwards, numeral, number, more than, less than, equal to, fewer, most and least, representation, one more, one less, tens, ones.
	• Compare numbers using > < and =
	  • **Know 10 ones are equivalent to 1 ten.**
	  • **Know that multiples of 10 are made up from a number of tens**
	
	Vocabulary:
	Forwards, Backwards, numeral, number, more than, less than, equal to, fewer, most and least, representation, one more, one less, tens, ones.
		• Solve missing number problems, using objects and pictures if needed.
		• Add and subtract one digit numbers and two digit numbers to 20 including zero (realising the effect of +/- 0)
		• Related additive expressions and equations to real life contexts
		
		Vocabulary:
		Addition, add, total, altogether, more, subtraction, equals, is the same as, number bonds, missing number.

Block 4 **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Multiplication and Division</u>** • Count forwards and backwards in multiples of two, five and ten up to ten multiples, beginning with any multiple. • **Show an understanding of multiplication by grouping objects.** • **Show an understanding of division by grouping and sharing objects.** • **Solve one-step problems involving ÷ and x using objects, pictures and arrays to help me.** • Recall and use doubles of numbers to 20 and corresponding halves. **<u>Fractions</u>** • Count in steps of $\frac{1}{2}$. • Find half of an object, shape or quantity and explain that halves are two equal parts of a whole. • Find quarter of an object, shape or quantity and explain that a quarter are four equal parts of a whole.	**Block 5** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Shape</u>** • Recognise common 2D and 3D shapes presented in different orientations and know that rectangles, triangles cuboids and pyramids are not always similar to one another • Compose 2D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. • Recognise common 3D shapes presented in different orientations and know that cuboids and pyramids are not always similar to one another • Compose 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. **<u>Geometry</u>**	**Block 6** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Time</u>** • Sequence events in chronological order using language e.g. before, 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. • Compare or describe time e.g. quicker, slower, earlier, later • Measure and begin to record time (hours, minutes, seconds). • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **<u>Length</u>/<u>Height</u>** • Measure and begin to record lengths and heights. • Compare, describe and solve practical problems for: lengths and heights)for example, long/short, longer/shorter, tall/short, double, half)

• **I can explain that halves are two equal parts and quarters are four equal parts of the whole.** **Vocabulary:** **Multiplication**, multiply, multiplied by, multiple. **Division**, dividing, sharing, grouping, array, doubling, halving. **Fractions**, equal part, equal grouping, equal sharing, half, quarter, parts of a whole, one of two equal parts, one of four equal parts.	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns. **Money** • Recognise and know the value of different denominations of coins and notes. Vocabulary: **Shape**, 2D Shape, triangle, circle, square, rectangle. 3D Shape, pyramid, cylinder, cube, cuboid, sphere. **Position**, direction, underneath, centre, journey, quarter turn, three-quarter turn, right, left, up, down. **Money** - Change, cost more, cheap, cost less, cheaper, costs the same as, how much…? how many…? total	**Weight/Volume** • Measure and begin to record mass/weight. • Measure and begin to record capacity and volume. • Compare, describe and solve practical problems for mass/weight (heavy/light, heavier than, lighter than. Compare, describe and solve practical problems for capacity and volume (full/empty, more than/less than, half/half full, quarter full). Vocabulary: **Time** Months of the year, seasons, weekend, month, year, earlier, later, first, midnight, date, how long ago? how long will it be to…? how long will it take to…? how often? always, never, often, sometimes, usually, once, twice, hour, o'clock, half past,, quarter past, quarter to, clock, clock face, watch, hands, hour hand, minute hand, hour, minute **Length and Height**, **Weight and Volume** - Measurement, guess, estimate, roughly, metre, centimetre, length, height, width, depth, ruler, metre stick, kilogram, half kilogram, scales, litre, half litre, capacity, volume, more than, less than, quarter full

Maths – Year 2		
Block 1 **Subject/Conceptual knowledge/skills:** Place Value, addition and subtraction **Place Value:** • **Recognise the place value of each digit in a two-digit number (tens, ones) and use a place value chart.** • **Reason about the location of any 2-digit number in the linear number system.** • **Compose and decompose 2-digit numbers using standard and non-standard partitioning.** • **Identify the previous and next multiple of ten.** • Read and write numbers to at least 100 in numerals and words. • Use < , > and = signs to compare and order numbers to 100. • Find 10 more or less than a given number. • Use place value and number facts to solve problems. • Identify, represent and estimate numbers using different representations, including the number line. • **Round numbers to the nearest 10** • **Know that 10 ones are equivalent to 1 ten, and that 40 (for example) can be composed from 40 ones or 4 tens.** • **Know how many tens there are in multiples of 10 up to 100.** **Addition and Subtraction:** • **Secure fluency in addition and subtraction facts within 10, through continued practise.** • **Add and subtract within 100 by applying related 1-digit addition and subtraction facts.** • Recall and use addition and subtraction facts to 20 fluently and use related facts up to 100.	**Block 2** **Subject/Conceptual knowledge/skills:** Addition and subtraction, money, multiplication and division **Addition and Subtraction:** • **Add and subtract across 10.** • **Recognise the subtraction structure of difference and answer questions of the form 'How many more?'.** • **Add and subtract only ones or only tens to/from a 2-digit number.** • **Add and subtract any two 2-digit numbers.** • Solve problems involving addition and subtraction using concrete and pictorial, including numbers, quantities and measures. • Begin to record addition and subtraction in columns • Use estimation to check answers to calculations are reasonable (e.g. knowing 48 + 35 will be less than 100) • **Use the inverse to solve missing number problems** **Money:** • Recognise and use symbols for pounds (£) and pence (p). • Combine amounts to make a particular value. • Find different combinations of coins that equal the same amount of money. • Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. **Multiplication and Division:** • **Count in multiples of two, five and ten from zero, and in tens from any number forwards and backwards.**	**Block 3** **Subject/Conceptual knowledge/skills:** Multiplication and division and statisitics **Multiplication and Division:** • **Recognise repeated addition contexts, representing them with multiplication equations and calculating the product.** • **Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor and to division equations.** • **Understand division as grouping and sharing quantities and that a division calculation can have a remainder.** • **Calculate products within the 2, 5 and 10 multiplication tables.** (using the correct symbols). • **Use commutativity and inverse relations to develop multiplicative reasoning.** • Find the effect of multiplying a 1 or 2 digit number by 10; identify the value of the digits • Solve problems involving multiplication and division in a context, in different ways. E.g. number line, equipment, arrays **Statistics** • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables • 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 **Multiplication and Division (covered through PE – OAA)** • Double multiples of 10 to 100 and find the corresponding halves

• • Understand that addition can be done in any order (commutative law) but subtraction cannot. • Add three 1-digit numbers. • Recognise that subtraction is the inverse of addition and use for checking calculations **Vocabulary:** Numeral, twenty-one, twenty-two … one hundred, ones, tens, forwards, backwards, equal to, equivalent to, most, least, many, multiple of, half-way between Add, subtract, equals, is the same as, number bonds, missing number ten more, ten less, inverse, commutative, fewer than	• Recall and use multiplication and division facts for 2, 5 and 10, including recognising odd and even numbers. **<u>Geometry (covered through PE – OAA)</u>** • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). **Vocabulary:** Add, subtract, equals, is the same as, number bonds, missing number ten more, ten less, inverse, commutative, fewer than Pence, pounds, change, costs more, costs less, total, equals	• Double multiples of 5 to 50 and find the corresponding halves • Recall and use doubles of numbers to 50. • Recall and use halves of 2-digit even numbers to 50 **Vocabulary:** Multiply, divide, multiple, repeated addition, equal groups, multiplication, division, share between, row, column, inverse, commutative
Block 4 **Subject/Conceptual knowledge/skills:** Shape, fractions **<u>Geometry</u>:** • **Use precise language to describe properties of 2D shapes, and compare shapes by reasoning about similarities and differences in properties**, including the number of sides and line symmetry in a vertical line. • **Use precise language to describe properties of 3D shapes, and compare shapes by reasoning about similarities and differences in properties**, including the number of edges, vertices and faces. • Identify 2-D shapes on the surface of 3-D shapes. E.g. a circle on a cylinder and a triangle on a pyramid. • Compare and sort common 2D shapes and everyday objects	**Block 5** **Subject/Conceptual knowledge/skills:** Measurement (length and height, mass, capacity, temperature, time) **<u>Measurement</u>** • Compare and order lengths, mass, volume/capacity and record the results using >, < • and =. • Read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers and given. • 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.	**Block 6** **Subject/Conceptual knowledge/skills:** Consolidation of prior learning in place value and the four operations. **OAA units** • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). • Double multiples of 10 to 100 and find the corresponding halves • Double multiples of 5 to 50 and find the corresponding halves • Recall and use doubles of numbers to 50. • Recall and use halves of 2-digit even numbers to 50

• Recognise and name common 3-D shapes. • Compare and sort common 3D shapes and everyday objects. • Order and arrange combinations of mathematical objects in patterns and sequences **<u>Fractions</u>:** • Count in fractions up to ten, starting from any number, using the 1/2 and 2/4 equivalence on the number line (for example, 1 1/4 , 1 2/4 (or 1 1/2), 1 3/4 , 2). • Relate division to fractions. • **Recognise the equivalence of 1/2 and 2/4.** • **Recognise, find, name and write fractions 1/3, 1/4, 2/4 (1/2) and 3/4 of a length, shape, set of objects or quantity.** • Compare and order 1/3, 1/4 and ½. • Add and subtract 1/4 and 1/2 from a given number to 10 (link to counting). **Vocabulary:** Equivalent fraction, equal parts, numerator, denominator, two halves, two quarters, three quarters, one third, two thirds, one of three equal parts, unit fractions, non-unit fractions. Surface, line of symmetry, rectangular, circle, circular, triangle, triangular, pentagon, hexagon, octagon , edges, vertices, vertex, properties	• Know the number of minutes in an hour and number of hours in a day • Connect the five timetable to divisions on a clock face. • 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 **Vocabulary:** Length, centimetres, metres, height, mass, kilograms, grams, volume, capacity, litres, millilitres, temperature, degrees, Celsius, unit, measure, ruler, scale, thermometer, compare, order	**Place Value:** • **Recognise the place value of each digit in a two-digit number (tens, ones) and use a place value chart.** • **Reason about the location of any 2-digit number in the linear number system.** • **Compose and decompose 2-digit numbers using standard and non-standard partitioning.** • **Identify the previous and next multiple of ten.** **Addition and subtraction:** • **Secure fluency in addition and subtraction facts within 10, through continued practise.** • **Add and subtract across 10.** • **Recognise the subtraction structure of difference and answer questions of the form 'How many more?'.** • **Add and subtract within 100 by applying related 1-digit addition and subtraction facts.** • **Add and subtract any two 2-digit numbers.** • Begin to record addition and subtraction in columns. **Multiplication and division:** • **Recognise repeated addition contexts, representing them with multiplication equations and calculating the product.** • **Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor and to division equations.** • Use commutativity and inverse relations to develop multiplicative reasoning. • Solve problems involving multiplication and division in a context, in different ways. E.g. number line, equipment, arrays • Calculate mathematical statements for multiplication and division within the multiplication tables you know. (using the correct symbols).

		Vocabulary: Numeral, twenty-one, twenty-two … one hundred, ones, tens, forwards, backwards, equal to, equivalent to, most, least, many, multiple of, half-way between Addition, subtract, equals, is the same as, number bonds, missing number ten more, ten less, inverse, commutative Multiply, divide, multiple, repeated addition, equal groups, multiplication, division, share between, row, column

Maths – Year 3		
Block 1 **Subject/Conceptual knowledge/skills:** Number: Place value; Number: Addition and subtraction LEAPS: **Place Value:** • Read and write numbers to 1,000 in numerals and words • Read and write numbers with one decimal place. • Recognise and understand the place value of each digit in a 3-digit number (hundreds, tens, ones) • Identify, represent and estimate numbers using different representations. • Order and compare numbers up to 1000 • Reason about the location of any 3-digit number in the linear number system • Know that 10 tens are equivalent to 1 hundred and that 100 is 10 times the size of 10 • Apply this to identify and work out how many 10s there are in other 3-digit multiples of 10 • Apply place value knowledge to known additive and multiplicative number facts (scaling facts by 10) • Recognise and understand the place value of each digit in a 3-digit number (hundreds, tens, ones) • Compose and decompose 3-digit numbers using standard and non-standard partitioning • Divide 100 into 2, 4, 5 and 10 equal parts • Read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts • Find 10 or 100 more or less than a given number.	**Block 2** **Subject/Conceptual knowledge/skills:** Number: Addition and subtraction; Number: Multiplication and division LEAPS: **Addition and Subtraction**: • Add and subtract numbers with up to three digits, using columnar methods, including exchanging • Understand the inverse relationship between addition and subtraction and how both relate to the part-part-whole structure. • **Estimate the answer to a calculation and use inverse operations to check answers.** • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Multiplication and Division:** • **Count from zero in multiples of three, four, eight, fifty and one hundred.** • Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive • **Understand that division is the inverse of multiplication and vice-versa.** • Recall multiplication facts and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables • Recognise products in the above multiplication tables as multiples of the corresponding number **Multiplication and Division linked to Doubling and Halving**	**Block 3** **Subject/Conceptual knowledge/skills:** Number: Multiplication and division; Measurement: Money; Statistics LEAPS: **Multiplication and Division:** • Find the effect of multiplying a 1 or 2 digit number by 10 and 100; identify the value of the digits • Derive new facts using known multiplication facts. E.g. 3x2=6 so 30x2=60 • Calculate 2-digit numbers multiplied by a 1-digit number using mental methods and jottings and progressing to formal written methods • Develop understanding of division by solving 2-digit ÷ 1 using mental methods and jottings • Solve missing number problems involving multiplication and division. • Solve problems involving positive integer scaling problems and correspondence problems in which n objects are connected to m objects **Money:** • Add and subtract amounts of money to give change, using both £ and p in practical contexts **Statistics**: • Interpret and present data using bar charts, pictograms and tables • Solve one-step and two-step questions. E.g. 'How many more?' and 'How many fewer?' using

• Identify the previous and next multiple of 100 and 10 • **Round numbers to the nearest 10 or 100** • Read Roman numerals to 12 (XII) (linked to time) • Solve number problems and practical problems involving numbers up to 1000 **<u>Addition and Subtraction</u>**: • Secure fluency in addition and subtraction facts that bridge 10, through continued practise • Calculate complements to 100 • Add and subtract numbers mentally including: 3d + 1s, 3d + 10s and 3d + 100s • Understand and use the commutative property of addition, and understand the related property for subtraction Vocabulary: *Factor of, relationship, Roman numerals, one hundred more, one hundred less, approximate, approximately, round, nearest, round to the nearest ten/ hundred round up, round down , hundreds boundary, One hundred more, one hundred less, tens boundary , exchange.*	• Double multiples of 10 and 100 to 1000 • Develop doubling strategies linked to times-tables • Recall and use doubles of all multiples to 100 and corresponding halves. Vocabulary: *hundreds boundary, One hundred more, one hundred less, tens boundary , exchange, Factor, product, remainder*	information presented in scaled bar charts and pictograms and tables Vocabulary: *Chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis, axes diagram*
Block 4 **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Length and perimeter</u>** • **Measure and compare: lengths (m/cm/mm);** • Add and subtract: lengths (m/cm/mm); • Measure the perimeter of simple 2D shapes	**Block 5** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Fractions</u>** • **Recognise and show, using diagrams, equivalent fractions with small denominators** • Compare and order unit fractions	**Block 6** **Subject/Conceptual knowledge/skills:** LEAPS: **<u>Geometry: Properties of shape</u>** • Draw polygons by joining marked points, and identify parallel and perpendicular sides

Fractions: Reconsolidation from Y2 • Count up and down in tenths and 0.1; recognising that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators **Vocabulary:** Cm Mm M Perimeter	• Compare and order fractions with the same denominator. • Reason about the location of any fraction within 1 in the linear number system • Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts • Find unit fractions of quantities using known division facts and non-unit fractions with small denominators • Add and subtract fractions with the same denominator within 1 whole • Solve problems that involve all of the above **Time** • Know the number of seconds in a minute and the number of days in each month, year and leap year • Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • Estimate and read time with increasing accuracy to the nearest minute • Tell and write the time from 12 and 24 hour clocks • Tell and write the time from an analogue clock, using Roman numerals 1 to X11, and 12 hour & 24 hour clocks • Record and compare time and duration of events in terms of seconds, minutes and hours Vocabulary: *Century, calendar, earliest, latest, a.m., p.m., Roman numerals, 12-hour clock time, 24-hour clock time*	• Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations and know that 2 and 4 right angles make half and a full turn respectively • Identify whether angles are greater or less than a right angle • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. • Draw 2-D shapes • Make 3-D shapes using modelling materials • Recognise 3-D shapes in different orientations and describe them **Measurement: Mass and capacity** • Measure and compare: mass (kg, g); volume and capacity (l/ ml) • Add and subtract: mass (kg, g); volume and capacity (l/ ml) Vocabulary:

Maths – Year 4		
Block 1 **Subject/Conceptual knowledge/skills:** Number and Place Value, Addition and Subtractions LEAPS: **Place Value** • Reason about the location of any 4-digit number in the linear number system • Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100 • Apply this to identify and work out how many 100s there are in other 4-digit multiples of 100 • Apply place value knowledge to known additive and multiplicative number facts (scaling facts by 100) • Read scales/number lines marked in multiples of 1000 with 2, 4, 5 and 10 equal parts • Compose and decompose 4-digit numbers using standard and non-standard partitioning • Identify the previous and next multiple of 1000 and 100 • Round any number to the nearest 100 or 1000 • Count backward through zero to include negative numbers. • Read and write numbers to 10,000 in numerals and words • Order and compare numbers beyond 1000 • Identify, represent and estimate numbers using different representations • Recognise and understand the place value of each digit in a four digit number and to one decimal place.	**Block 2** **Subject/Conceptual knowledge/skills:** Addition and Subtraction, Length and Perimeter, Multiplication and Division LEAPS: **Addition and Subtraction continued** • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. **Length and Perimeter** • Measure and calculate the perimeter of a rectilinear figure • Find the perimeter of regular and irregular polygons. • Estimate, calculate and compare different measures • Use decimal notation to record metric measures. E.g. kilograms, kilometres, metres, litres, pounds and pence • Convert between different units of measure e.g. km to m; m to cm; cm to mm; kg to g; l to ml; hour to min; min to sec; year to month; week to days **Multiplication and Division** • **Count in multiples of six, seven, nine, twenty-five and one thousand**	**Block 3** **Subject/Conceptual knowledge/skills:** Multiplication and Division, Area and Fractions. LEAPS: **Multiplication and Division Continued** • **Recognise and use factor pairs and commutativity in mental calculations** • **Multiply numbers up to 3 digit numbers by a 1 digit number using the formal written method of short multiplication** • Solve division problems, with 2-digit dividends and 1-digid divisors, that involve remainders, and interpret remainders appropriately according to the context • Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. • Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects **Area** • Find the area of a rectilinear shape by counting squares; Relate the area to arrays and multiplication **Fractions**

• Round any number to the nearest 10, 100 or 1000 • Read Roman numbers to 100 (put into historical contexts) • Solve word problems involving all of the above and increasingly large positive number **Addition and Subtraction** • Recall and use addition and subtraction facts to 1000. • Derive and use addition and subtraction facts for 1 and 10, up to 1 decimal place • Add and subtract numbers with up to 4 digits and decimals with up to 2 decimal places using the formal method of columnar addition and subtraction where appropriate, including exchanging. • Estimate and use inverse operations to check answers to a calculation. Vocabulary: Ten thousand, hundred thousand, million, next, consecutive, integer, positive, negative, above/below zero, negative numbers, round to the nearest thousand Inverse, addition, subtraction, decimal place, formal method, column, exchanging, estimate, calculation	• Multiply and divide whole numbers by 10 and 100, and understand this as equivalent to making a number 10 times or 100 times the size, identifying the value of the digits in the answer as ones, tenths and hundredths • Recall and use multiplication and division facts for multiplication tables up to 12 × 12 • Recognise products in multiplication tables as multiples of the corresponding number • Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers • Practise mental methods and extend this to 3-digit numbers to derive facts, such as 2 x 3 = 6 so 600 ÷ 2 = 300 • Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. • Understand and apply the distributive property of multiplication • Multiply numbers up to 3 digit numbers by a 1 digit number using the formal written method of short multiplication • Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts. • Double and halve any 3-digit number by partitioning • Multiply together 3 numbers • Recognise and understand families of facts Vocabulary: Inverse	• Count up and down in hundredths and 0.01; recognise that hundredths arise from dividing an object by one hundred and dividing tenths by ten. • **Use unit fractions as the basis to understand non-unit fractions, improper fractions and mixed numbers, for example: 2/5 is 2 one-fifths** • **Recognise and show, using diagrams, families of common equivalent fractions** • Write an equivalent fraction of a fraction given the denominator or numerator Vocabulary: Inverse, square, squared, cube, cubed, Area, covers, square centimetre (cm2) Hundredths, decimal, decimal fraction, decimal point, decimal place, decimal equivalent,

	Area, covers, square centimetre (cm2) Inverse, square, squared, cube, cubed,	
Block 4 - **Subject/Conceptual knowledge/skills:** Fractions and Decimals LEAPS: **Fractions** • Recognise, find and write fractions of a discrete set of objects, including measures and shapes; unit fractions and non-unit fractions with small denominators • Compare and order unit fractions and fractions with the same denominator • Convert mixed numbers to improper fractions and vice versa • Add and subtract improper and mixed number fractions with the same denominator, including bridging whole numbers • Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number • Reason about the location of mixed numbers in the linear number system **Decimals** • Read and write numbers with two decimal places • Recognise and write decimal equivalents of any number of tenths or hundredths • Connect hundredths and tenths to their place value and decimal measure	**Block 5 -** **Subject/Conceptual knowledge/skills:** Decimals, Money and Time LEAPS: **Decimals continued** • **Compare numbers with the same number of decimal places up to two decimal places** • Double any decimal to 1 decimal place • Derive and use addition and subtraction facts for 1 and 10, up to 1 decimal place • Round decimals with one decimal place to the nearest whole number. **Measure: Money** • Use decimal notation to record metric measures. E.g. pounds and pence • Estimate, compare and calculate different measures, including money in pounds and pence **Measure: Time** • Convert between different units of measure e.g. hour to min; min to sec; year to month; week to days • 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. Vocabulary: Survey, questionnaire, data Justify, make a statement	**Block 6 -** **Subject/Conceptual knowledge/skills:** Statistics and Geometry LEAPS: **Statistics** • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs **Geometry: Properties of shape** • Identify line symmetry in 2D shapes presented in different orientations. • Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry. • Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • Identify acute and obtuse angles and order by size **Position and Direction** • Describe positions on a 2-D grid as coordinates in the first quadrant

• Solve simple measure and money problems involving fractions and decimals to two decimal places • Recognise and write decimal equivalents of 1/2, 1/4 and ¾ • Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 **Vocabulary:** Hundredths, decimal, decimal fraction, decimal point, decimal place, decimal equivalent,		• Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. • Describe movements between positions as translations of a given unit to the left/right and up/down Vocabulary: Line, construct, sketch, centre, angle, right-angled, base, square-based, regular, irregular, 2D, two-dimensional, oblong, rectilinear, equilateral triangle, isosceles triangle, scalene triangle, heptagon, parallelogram, rhombus, trapezium, polygon, 3-D, three-dimensional, spherical, cylindrical, tetrahedron, polyhedron Degree, ruler, angle measurer, compass North-east, north-west, south-east, south-west, NE, NW, SE, SW, translate, translation, rotate, rotation, reflection, reflect

Maths– Year 5

Block 1

Subject/Conceptual knowledge/skills:

Place Value, Addition and Subtraction

LEAPS:

Number: Place Value

- Read and write numbers to at least 1,000,000
- Read and write numbers with up to three decimal places
- Identify, represent and estimate numbers using different representations
- Recognise and understand the place value of each digit in numbers with up to 2 decimal places
- Order and compare numbers to at least 1,000,000
- Reason about the location of any number with up to 2 decimal places in the linear number system
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- Interpret negative numbers in context
- Count forwards and backwards with positive and negative whole numbers, including through zero
- **Round any number up to 1 000 000 to the nearest 10, 100, 1,000, 10,000 and 100,000**
- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
- Solve number and practical problems that involve all of the above

Number: Addition and Subtraction

- **Manipulate additive and multiplicative equations, including applying understanding of the inverse relationship between addition and subtraction and the commutative property of addition and multiplication**

Block 2

Subject/Conceptual knowledge/skills:

Statistics, Multiplication and division, Area and perimeter

LEAPS:

Statistics

- Complete, read and interpret information in tables, including timetables.
- Solve comparison, sum and difference problems using information presented in a line graph.

Number: Multiplication and Division

- **Manipulate additive and multiplicative equations, including applying understanding of the inverse relationship between addition and subtraction and the commutative property of addition and multiplication**
- Use estimation, inverse and rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Secure fluency in multiplication table facts, and corresponding division facts, through continued practice
- Multiply and divide numbers by 10 and 100, and understand this as equivalent to making a number 10 times or 100 times the size, or 1 tenth or 1 hundredth times the size
- Multiply and divide numbers mentally drawing upon known facts
- Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors

Block 3

Subject/Conceptual knowledge/skills:

Multiplication and division and fractions

LEAPS:

Number: Multiplication and Division

- Multiply any whole number with up to 4 digits by any 1-digit number using a formal written method
- Divide a number with up to 4 digits by a 1-digit number using a formal written method, and interpret remainders appropriately for the context
- Interpret remainders appropriately for the context, including fractions and decimals
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

Number: Fractions

- Compare and order fractions whose denominations are all multiples of the same number
- Find equivalent fractions and understand that they have the same value and the same position in the linear number system
- **Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number**
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Vocabulary:

• Add and subtract numbers mentally with increasingly larger numbers. • Add and subtract numbers with more than 4 digits using the formal method of columnar addition and subtraction where appropriate, including regrouping. • Add and subtract decimals with up to 2 decimal places using the formal method of columnar addition and subtraction where appropriate • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Use estimation, inverse and rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Vocabulary: *Digit,numeral,order,compare.sequence,partition,integer,roman,numerals,negative,numbers,represent,* *round to the nearest ten, round to the nearest hundreds, round to the nearest thousand, ascending/descending order,ones boundary, tenths boundary, addition, subtraction, inverse*	• Know and use vocabulary of prime numbers, prime factors and composite (nonprime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19 • Recognise and use square number and cube numbers and the notation for both • Solve problems involving multiplication and division including using their knowledge of factors, multiples, squares and cubes • Develop doubling and halving strategies linked to times-tables **Measurement: Area and perimeter** • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • Compare areas and calculate the area of rectangles (including squares) using standard units • Estimate the area of irregular shapes Vocabulary: *Database, line graph, maximum/minimum value, outcome* *Inverse, square, squared, cube, cubed, multiples, factors, prime, cubed* *Area, square centimetre (cm2), standard units, composite rectilinear shapes, Square metre (m2),* *Multiplication, product* *Factor pair, formula, divisibility,* *x-axis, y-axis, quadrant, coordinate*	*Proper/improper/mixed number fraction, equivalent, reduced to, cancel, thousandths* *Digit, multiplication, division, remainders*
Block 4 **Subject/Conceptual knowledge/skills:** Decimals and percentages	**Block 5** **Subject/Conceptual knowledge/skills:** Decimals and Geometry: properties of shape,	**Block 6** **Subject/Conceptual knowledge/skills:** **Measurement (converting units of measure and volume)**

LEAPS:

Number: Fractions

- Find fractions of numbers, measures and quantities
- Find non-unit fractions of quantities
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- **Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates**

Number: Decimals and Percentages

- Read, write, order and compare numbers with up to three decimal places
- Determine the value of each digit in numbers up to 1,000,000 and to two decimal places
- Read and write decimal numbers as fractions (e.g. 0.71 = 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
- Recognise and write decimal equivalents of any number of tenths or hundredths (e.g. 0.71 = 71/100)
- Recall decimal equivalents for 1/2 , 1/4 , 1/5 and 1/10 and for multiples of these proper fractions
- 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 1/2 , 1/4 , 1/5 , 2/5 , 4/5 and those fractions with a denominator of a multiple of 10 or 25

LEAPS:

Number: Decimals

- Multiply and divide a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths.
- Find 0.1 and 0.01 more or less than a given number
- Derive and use addition and subtraction facts for 1 to 10, up to 1 decimal place.
- Double and halve any decimal to 1 decimal place.
- Solve problems involving numbers up to three decimal places.
- Know that 10 tenths are equivalent to 1 one and that 1 is 10 times the size of 0.1
- Know that 100 hundredths are equivalent to 1 one and that 1 is 100 times the size of 0.01
- Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01
- Apply place value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth)
- Compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning
- Divide 1 into 2, 4, 5 and 10 equal parts
- Identify the previous and next multiple of 1 and 0.1
- Round to the nearest 1 and 0.1

Geometry: Properties of shape

- 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

LEAPS:

Geometry: Position and Direction

- 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.

Measurement: Converting units

- Convert between different units of metric measure, including using common decimals and fractions e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre
- Understand and use approximate equivalences between metric and common imperial units such as inches, pounds and pints
- Use all four operations to solve problems involving measure (for example length, mass, volume) using decimal notation, including scaling
- Solve problems involving converting between units of time
- Read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts

Measurement: Volume

- Estimate volume [for example, using 1cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

Vocabulary:

square millimetre (mm2)

Vocabulary: *Proper/improper fraction, equivalent, reduced to, cancel, thousandths*	• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations • Know angles are measured in degrees: Estimate and compare acute, obtuse and reflex angles using 'degrees' • Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size. • Identify: • - angles at a point and 1 whole turn (total 360°) • - angles at a point on a straight line and half a turn (total 180°) • - other multiples of 90° Vocabulary: *Protractor, reflex, congruent, octahedron, axis of symmetry, reflective symmetry, x-axis, y-axis, quadrant, coordinate* *Axis of symmetry, reflective symmetry, x-axis, y-axis, quadrant, coordinate*	*Re-consolidate vocabulary* - kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre

Maths – Year 6		
Block 1 - Number and Place Value, Four Operations **Subject/Conceptual knowledge/skills:** LEAPS: Place Value • Read and write numbers to at least 10,000,000 • Determine the value of each digit in numbers up to 10,000,000 and to three decimal places • Identify, represent and estimate numbers using different representations • Order and compare numbers to at least 10,000,000 • **Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system** • **Understand the relationship between powers of 10 from 1 hundredth to 10 million and use this to make a given number 10, 100, 100, 1 tenth, 1 hundredth or 1 thousandth times the size.** • **Recognise and understand the place value of each digit in numbers up to 10 million, including decimal fractions** • **Compose and decompose numbers up to 10 million using standard and non-standard partitioning, including decimal fractions** • **Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts** • **Read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts** • Find 0.1, 0.01 and 0.001 more or less than a given number. • **Round any number to a required degree of accuracy, including in contexts**	**Block 2 -** Fractions and Geometry Position and Direction **Subject/Conceptual knowledge/skills:** LEAPS: Four Operations • Use knowledge of the order of operations to carry out calculations which involve the four operations • Use estimation, inverse and rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Identify common factors, common multiples and prime numbers. Fractions • Count forwards and backwards in a range of fractional steps • Relate common factors to finding equivalent fractions • **Recognise when fractions can be simplified, and use common factors to simplify fractions** • **Express fractions in a common denomination and use this to compare fractions that are similar in value** • **Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy** • Generate and describe linear number sequences with fractions • Add and subtract fractions with different denominators using the concept of equivalent fractions, and mixed numbers	**Block 3 -** Decimals, Percentages and Algebra **Subject/Conceptual knowledge/skills:** LEAPS: Decimals • Read and write numbers with up to three decimal places • Multiply whole numbers and those involving decimals by 10, 100 and 1000 giving answers up to three decimal places • Find 0.1, 0.01 and 0.001 more or less than a given number. • Derive and use addition and subtraction facts for 0.1 and also numbers 1 to 10, up to 2 decimal places. • Round decimals with three decimal places to the nearest whole number and to one or two decimal places • Multiply 1-digit numbers with up to 2 decimal places by whole numbers • Divide whole numbers and those involving decimals by 10, 100 and 1000 giving answers up to 3 decimal places Percentages • Solve problems involving the calculation of percentages and the use of percentages for comparison • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Algebra • Use simple formulae to solve problems • Generate and describe linear number sequences

• Find 0.1, 0.01 and 0.001 more or less than a given number. • Use negative numbers in a context and calculate intervals across zero • Solve number and practical problems that involve all of the above Four operations • **Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships** • **Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place value understanding** • Add and subtract numbers with more than 4 digits using the formal method of columnar addition and subtraction where appropriate, including regrouping. • Add and subtract numbers with up to 3 decimal places using the formal method of columnar addition and subtraction where appropriate, including regrouping. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Multiply numbers up to 4-digits by a 2-digit whole number using the formal written method of long multiplication • 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 • Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as	• Multiply simple pairs of proper fractions, writing the answer in its simplest form • Divide proper fractions by whole numbers • Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) Geometry: Position and Direction • 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 Vocabulary: Numerator, Denominator, Equivalent, Simplify, Express Mixed number, Improper, Highest common factor Lowest common denominator, Compare, Order Tenths, Hundredths, Half, Quarter, Third, Fifth Reflection, Rotation , Centre of rotation Translation, Origin, Coordinates x-coordinate, y- coordinate, x-axis, y-axis, axes Quadrant, whole-turn, half-turn, quarter-turn Right, Left, Position, Direction	• Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Enumerate possibilities of combinations of two variables. • **Solve problems with 2 unknowns** Vocabulary: Percentage, Per cent %, Equivalence, Fraction, Decimal Tenth, Hundredth, Thousandth Algebra, Enumerate, Equation, Expression, Formula Formulae, Integer, Linear, Pattern, Rule, Sequence Symbol, Term, Unknown, Variable

whole number remainders, fractions, or by rounding, as appropriate for the context • Use written division methods in cases where the answer has up to two decimal places. • Perform mental calculations, including with mixed operations and large numbers • Develop doubling and halving strategies linked to times-tables • Double and halve any number, including decimals • Solve problems involving addition, subtraction, multiplication and division. Vocabulary: Digit, Value, Order, Compare, Represent, Negative Tenths, Hundredths, Thousandths, Estimate, Decimal place, Decimal point, Nearest, Round, Place-holder Mental method, Accuracy, Calculation, Decimal number Whole number, Place Holder, Estimate, Inverse Operation, Partition, Index, Prime number, Strategy Remainder, Regroup		
Block 4 - Measurement: Converting units; perimeter, area and volume. Ratio **Subject/Conceptual knowledge/skills:** **LEAPS:** Measurement: converting units; Perimeter, Area and Volume • 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	**Block 5 -** Statistics and Properties of shape. **Subject/Conceptual knowledge/skills:** LEAPS: Statistics • Interpret and construct pie charts and line graphs and use these to solve problems • Calculate and interpret the mean as average Geometry: Properties of Shapes	**Block 6 -** Reconsolidation and Investigations **Subject/Conceptual knowledge/skills:**

versa, using decimal notation to up to three decimal places • Convert between miles and kilometres • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • 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 • 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 Ratio • **Solve problems involving ratio relationships** • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • Solve problems involving similar shapes where the scale factor is known or can be found • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Vocabulary:** Conversion, Estimate, Imperial, Metric, Measure,Scale Digital, Analogue, Hour, Minute, Mass, Weight, Height Capacity, Volume, Millimetres, Centimetres, Metres Miles, Kilometres, Gallons, Centilitres , Millilitres	• **Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems** • 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 • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Recognise, describe and build simple 3-D shapes, including making nets Vocabulary: Circumference, Diameter, Radius sector, Segment Polygon, Equilateral, Isosceles, Scalene, Arc Centre, Intersecting, Irregular, Perpendicular Quadrant, Edges, Faces, Apex, Vertices	

Gram, Kilogram, Ounce, Pound, Tonne For every, Proportion, Ratio, Scale, Scale factor Compare, Comparison, Relative size, Increase, Decrease Enlarge, Equivalent, Relationship, Fraction, For every... there are...		