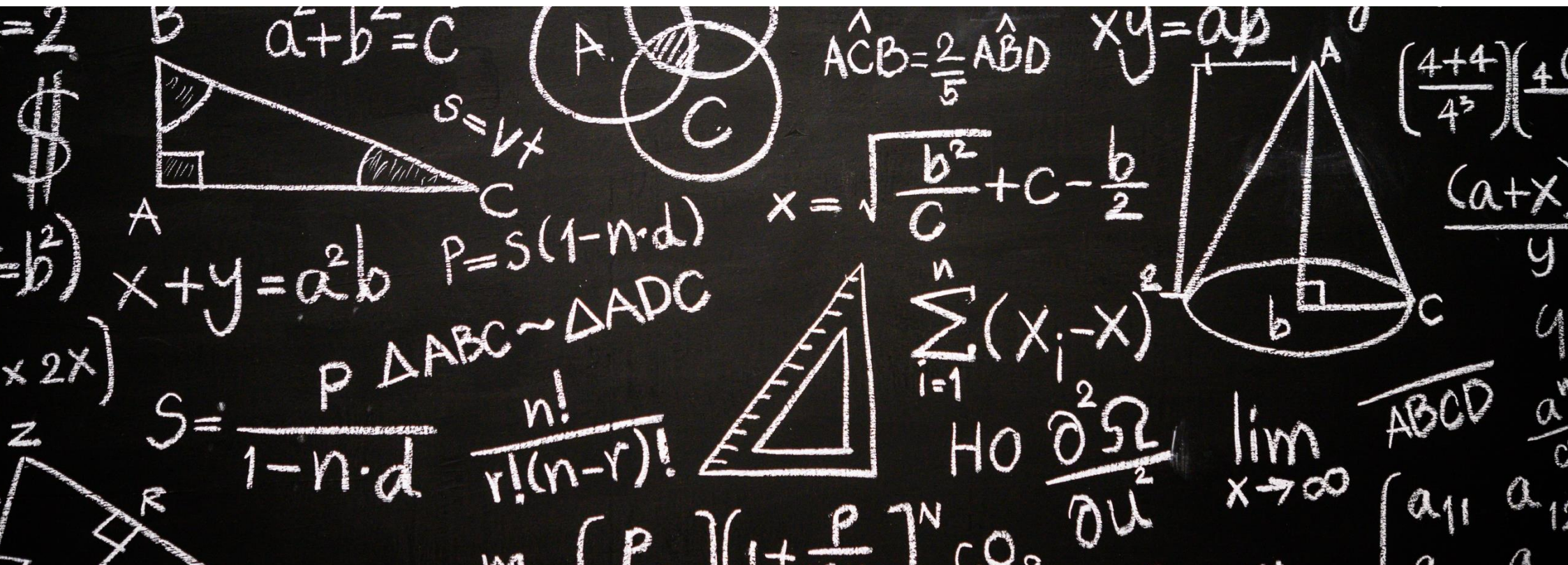# Gateshead Core Curriculum

Year 4

Review of Learning

In order to ensure that the curriculum meets the learning needs of the class, it is vital that there is an accurate picture of previous teaching and coverage. Last year's class teacher and the new teacher (including the maths subject leader or SLT where appropriate/possible) should work together to look at which objectives from the maths curriculum were taught during the previous year and were understood fully. It may be decided that some objectives from the previous year's curriculum may need to be consolidated and so an additional column has been added to the Gateshead Core Curriculum containing the previous year's objectives. These can be highlighted accordingly to indicate if further consolidation is required throughout the next academic year. Following discussion as to how these objectives will need to be consolidated, they can then be inserted into an appropriate place in the new year's curriculum.

Additional objectives have been included in this document. These are the Ready to Progress Criteria from the DfE June 2020 Non-Statutory Guidance for the National Curriculum in England (https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools). For ease of identification, these are in a red font colour.

In some instances, objectives may appear in all three terms. It is not the intention that these objectives are to be taught in each term but for the class teacher to consider the appropriateness of them. It may be that the teacher has taught the objective in the autumn and spring terms and assessment demonstrates that the children have a deep understanding of the objective. In this case, the class teacher may choose not to dedicate a full lesson of teaching but may chose a "lighter touch" to ensure retrieval of this objective is strong. Conversely, the class teacher may choose not to teach an objective in the autumn term due to focusing on other areas. In this case it would be imperative that the objectives were taught fully in the next two terms. Again, class teachers may identify that children require the objectives to be taught in all three terms and further consolidation of learning.

These documents are intended to be flexible and support class teachers in designing a flexible and personalised curriculum for their class.

Reasoning and Problem Solving

There is the expectation that **all** units of mathematics will include elements of reasoning and problem solving. Therefore, the following objectives have been removed from the progression grid as they could be equally applied to all areas of mathematics

- *Explain methods and reasoning orally and in writing, including using diagrams and symbols*
- *Apply understanding to solve routine and non-routine problems and puzzles involving numbers, shapes, money or measure.*
- *Explore and discuss patterns, properties and relationships that arise in the number system using appropriate mathematical vocabulary.*
- *Develop lines of enquiry through conjecturing relationships and generalizations and testing ideas. Identify examples for which a statement is true or false.*
- *Solve problems including using information from a range of tables and charts.*
- *Use all four operations to solve problems including scaling problems involving measure (e.g. length, mass, volume, money) and using decimal notation where appropriate. Information required to solve a problem is often drawn from tables, including timetables, graphs and charts.*
- *Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems. These should include practical problems and might involve construction of shapes or artefacts, often in a cross curricular context.*
- *Make and explain connections between number, measures and shape*

educationGateshead Core Curriculum for Primary Mathematics Progression Grid Year 4

Consolidation from Year 3	Year 4 Autumn	Year 4 Spring	Year 4 Summer
These are the objectives from Year 3. Some of these objectives may need consolidation in Year 4 depending on discussion with sending teacher.	**Understanding and investigating with numbers** **3 weeks**	**Understanding and investigating with numbers** **3 weeks**	**Understanding and investigating with numbers** **3 weeks**
Place value, ordering and rounding	**Place value, ordering and rounding**	**Place value, ordering and rounding**	**Place value, ordering and rounding**
• Continue to count in ones, tens and hundreds *from any number,* using a variety of representations, including those related to measures, to become fluent in the order and place value of numbers to 1000. • **Read and write numbers up to 1000 in numerals and words.** • **Compare and order number s up to 1000.** • *Use the vocabulary of comparing and ordering numbers including use of >, < symbols and = sign.* • **Identify, represent and estimate numbers using different representations.** • **Recognise the place value of each digit in a three-digit number (hundreds, tens and ones).**	• **Count** *forwards and back in steps of* 10, 100 *from any given number.* • *Interpret negative numbers in context and* **count backwards through zero to include negative numbers.** • *Read, write,* **order and compare numbers beyond 1000.** • **Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones).** • **Find 1000 more or less than a given number.** • *Use the vocabulary of comparing and ordering numbers including use of >, < symbols and = sign.* • **Identify, represent and estimate numbers using different**	• **Count** *forwards and back in steps of* 10, 100 *from any given number.* • *Interpret negative numbers in context and* **count backwards through zero to include negative numbers.** • *Read, write,* **order and compare numbers beyond 1000.** • **Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones).** • 4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. • **Find 1000 more or less than a given number.**	• **Count** *forwards and back in steps of* 10, 100 *from any given number.* • *Interpret negative numbers in context and* **count backwards through zero to include negative numbers.** • *Read, write,* **order and compare numbers beyond 1000.** • **Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones).** • 4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning. • **Find 1000 more or less than a given number.** • *Use the vocabulary of comparing and ordering*

• 3NPV–1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10. • Apply partitioning related to place value using varied and increasingly complex problems e.g. 146 = 100 + 40 + 6 and 146 = 130 + 16. • *Understand e.g. 146 as 100 + 40 + 6 and as 1 hundred, 4 tens and 6 ones.* • 3NPV–2 Recognise the place value of each digit in three-digit numbers and compose and decompose three-digit numbers using standard and non-standard partitioning. • *Round any number to nearest 10 or 100.* • 3NPV–3 Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving numbers,*	**representations** including measures. • **Round any number to the nearest 10, 100 or 1000.** • Connect estimation and rounding of numbers to the use of measuring instruments. • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving* **increasingly large positive numbers**, *money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.* .	• *Use the vocabulary of comparing and ordering numbers including use of >, < symbols and = sign.* • **Identify, represent and estimate numbers using different representations** including measures. • **Round any number to the nearest 10, 100 or 1000.** • Connect estimation and rounding of numbers to the use of measuring instruments. • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving* **increasingly large positive numbers**, *money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.*	*numbers including use of >, < symbols and = sign.* • **Identify, represent and estimate numbers using different representations** including measures. • **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.** *Appreciate the difference between the Roman numeral system and our own number system from a place value viewpoint* • **Round any number to the nearest 10, 100 or 1000.** • Connect estimation and rounding of numbers to the use of measuring instruments. • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving* **increasingly large positive numbers**, *money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.*

money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbol. • 3NPV–4 Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.			• 4NPV–3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.
Properties of numbers and number sequences	**Properties of numbers and number sequences**	**Properties of numbers and number sequences**	**Properties of numbers and number sequences**
• Continue to use multiples of 2, 3, 4, 5, 6, 8, 10 and 12. • **Count from 0 in multiples of 2, 3, 4, 5, 6, 8, 10, 12, 50 and 100** • **Find 10 or 100 more or less than a given number** • *Recognise and extend number sequences formed by counting from any number in steps of constant size.* • *Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure.* • *Explore and discuss patterns, properties and relationships that arise in the number system using appropriate mathematical vocabulary.*	• *Continue to* **count in** *and recognise known multiples, extend to* **multiples of 6, 7, 9, 11 25 and 1000.** • *Recognise patterns in sequences of multiples and connections between them e.g. explore patterns on a 12 x 12 multiplication grid.* • *Use the vocabulary of factors and multiples and look for common factors and multiples to support work with fractions.* • *Recognise and extend number sequences formed by counting from any number in steps of constant size, extending beyond zero when counting back.*	• *Continue to* **count in** *and recognise known multiples, extend to* **multiples of 6, 7, 9, 11 25 and 1000.** • *Recognise patterns in sequences of multiples and connections between them e.g. explore patterns on a 12 x 12 multiplication grid.* • *Use the vocabulary of factors and multiples and look for common factors and multiples to support work with fractions.* • 4NPV–4 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.	• *Continue to* **count in** *and recognise known multiples, extend to* **multiples of 6, 7, 9, 11 25 and 1000.** • *Recognise patterns in sequences of multiples and connections between them e.g. explore patterns on a 12 x 12 multiplication grid.* • *Use the vocabulary of factors and multiples and look for common factors and multiples to support work with fractions.*

Fractions decimals and percentages	Fractions decimals and percentages	Fractions decimals and percentages	Fractions decimals and percentages
• Continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity. • 3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. • **Recognize, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.** • Understand the relation between unit fractions as operators (fractions of), and division by integers. • 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency). • **Recognize and use fractions as numbers: unit fractions and non-unit fractions with small denominators.** Use them on a number line and	• Make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. • Understand the relation between non-unit fractions and multiplication and division, with particular emphasis on tenths and hundredths. • *Compare and order fractions.* • Extend use of the number line to connect fractions, numbers and measures. • **Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones , tenths and hundredths.** 4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	• *Compare and order fractions* • **Recognise and show, using diagrams, families of common equivalent fractions.** • Use factors and multiples to recognise equivalent fractions and simplify where appropriate e.g. 6/9 = 2/3 or ¼ = 2/8. • Extend use of the number line to connect fractions, numbers and measures.6 • Count forwards and back using simple fractions and decimals. • 4F–1 Reason about the location of mixed numbers in the linear number system. • **Count up and down in tenths and hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.** • **Recognise and write decimal equivalents to ¼, ½, ¾ .**	• **Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non unit fractions where the answer is a whole number.** • **Add and subtract fractions with the same denominator** practising through increasingly complex problems beyond one whole. • 4F–2 Convert mixed numbers to improper fractions and vice versa. • 4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers • Extend understanding of the number system and decimal place value to tenths and hundredths and relate this to decimal measure. • Understand decimals and fractions are different ways of expressing numbers and proportions.

deduce relations between them such as size and equivalence. Go beyond the 0 – 1 interval, including relating this to measure. • **Compare and order unit fractions, and fractions with the same denominators.** • **Recognise and show, using diagrams, equivalent fractions with small denominators.** • 3F–3 Reason about the location of any fraction within 1 in the linear number system. • **Add and subtract fractions with the same denominator within one whole e.g. 5/7 + 1/7 = 6/7.** • 3F–4 Add and subtract fractions with the same denominator, within 1. • **Count up and down in** *fractions including* **tenths.** • **Recognise that tenths arise from dividing an object into ten equal parts and in dividing one-digit numbers or quantities by 10,** connecting them to place value, decimal	• **Round decimals with one decimal place to the nearest whole number.** • **Compare and** order **numbers and** quantities **with the same number of decimal places up to two decimal places** and represent them in several ways, such as on number lines.	• **Recognise and write decimal equivalents of any number of tenths or hundredths.** • **Solve simple measure and money problems involving fractions and decimals to two decimal places.**	• Extend use of the number line to connect fractions, numbers and measures. • Count forwards and back using simple fractions and decimals. • **Count up and down in** tenths and **hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.** • **Compare and** order **numbers and** quantities **with the same number of decimal places up to two decimal places** and represent them in several ways, such as on number lines. • **Solve simple measure and money problems involving fractions and decimals to two decimal places.**

measures and division by 10. • *Apply understanding of fractions to **solve** routine and non-routine **problems** and puzzles involving numbers, shapes, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.*			
Developing and applying calculation	**Developing and applying calculation**	**Developing and applying calculation**	**Developing and applying calculation**
Addition and Subtraction	**Addition and Subtraction 2 weeks**	**Addition and Subtraction 2 weeks**	**Addition and Subtraction 2 weeks**
• *Continue to practice recall of addition and subtraction facts to 20; use these known facts and understanding of place value to quickly derive sums and differences using two-digit numbers.* • 3NF–1 Secure fluency in addition and subtraction facts that bridge 10, through continued practice. • 3AS–1 Calculate complements to 100, for example: 46 + ? = 100 • **Add and subtract numbers mentally including**	• *Continue to practice using known facts and understanding of place value to quickly derive sums and differences using whole numbers and decimals* • Continue to practice mental methods with increasingly large numbers e.g. *Use place value and known facts to add or subtract one near multiple of 100 from another e.g. 602 – 498 or 535 + 399.* • 4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example:	• *Continue to practice using known facts and understanding of place value to quickly derive sums and differences using whole numbers and decimals* • Continue to practice mental methods with increasingly large numbers e.g. *Use place value and known facts to add or subtract one near multiple of 100 from another e.g. 602 – 498 or 535 + 399.* • *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.*	• *Continue to practice using known facts and understanding of place value to quickly derive sums and differences using whole numbers and decimals* • Continue to practice mental methods with increasingly large numbers e.g. *Use place value and known facts to add or subtract one near multiple of 100 from another e.g. 602 – 498 or 535 + 399.* • *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.*

- **a three-digit number and ones** - **a three-digit number and tens** - **a three-digit number and hundreds** - addition and subtraction of two digit numbers including additions with answers exceeding 100. - *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.* - **Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.** - 3AS–2 Add and subtract up to three-digit numbers using columnar methods. - **Estimate the answer to a calculation and use inverse operations to check answers.** - *Understand and use the principles of the arithmetic laws; commutative and associative.*	8 + 6 = 14 and 14 − 6 = 8 So 800 + 600 = 1,400 1,400 − 600 = 800 - *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.* - **Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.** - **Estimate and use inverse operations to check answers to a calculation.** - *Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive.* - **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.** - Use and explain the equals sign to indicate equivalence, including in missing number	- **Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.** - **Estimate and use inverse operations to check answers to a calculation.** - *Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive.* - **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.** - Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. $13 + 24 = 12 + 25$; $33 = 55 - \Delta$).	- **Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.** - **Add and subtract fractions with the same denominator** practising through increasingly complex problems beyond one whole - **Estimate and use inverse operations to check answers to a calculation.** - *Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive.* - **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.** - Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. $13 + 24 = 12 + 25$; $33 = 55 - \Delta$).

 Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. $6 + 8 = 7 + 7$; $33 = 38 - \Delta$). *Solve calculation problems using information from a range of tables and charts.* *Apply understanding of number operations to solve number puzzles and non-routine problems and explain reasoning.* 3NF–3 Apply place-value knowledge to known additive and multiplicative	problems (e.g. $13 + 24 = 12 + 25$; $33 = 55 - \Delta$).		

number facts (scaling facts by 10), for example: 80 + 60 = 140 140 − 60 = 80			

Multiplication and Division	**Multiplication and Division**	**Multiplication and Division**	**Multiplication and Division**
• **Recall and use multiplication and division facts for the 2, 3, 4, 5, 6, 8, 10 and 12 multiplication tables.** • Continue to practice 2, 3, 4, 5, 6, 8, 10 and 12 tables and connect the 2, 4 and 8 and 3, 6, 12 multiplication tables through doubling. • 3NF−2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number • Develop efficient mental methods for example using commutativity and associativity e.g. 4 x 12 x 5 = 20 x 12 = 240 and multiplication and division facts e.g. using 3 x 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3 = 2 to derive related facts such as	• **Recall multiplication and division facts for multiplication tables up to 12 x 12.** • *Relate multiplication and division to arrays and explore partitioning arrays in different ways to show relationships between number facts.* • **Use place value, known and derived facts to multiply and divide mentally** (e.g. 600 ÷ 3 = 200 can be derived from 2 x 3 = 6) **, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers.** • 4NF−3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example: 3 x 4 = 12 and 12 ÷ 4 = 3 S0 300 x 4 = 1, 200	• **Recall multiplication and division facts for multiplication tables up to 12 x 12.** • **Use place value, known and derived facts to multiply and divide mentally** (e.g. 600 ÷ 3 = 200 can be derived from 2 x 3 = 6) **, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers.** • **Recognise and use factor pairs and commutativity in mental calculations.** • **Multiply two-digit and three-digit numbers by a one-digit number using formal written layout** of short multiplication. • Use the formal written method of short division *for calculations involving two and three digit numbers divided by a single digit* with exact answers. • *Understand and use the relationships between the*	• **Recall multiplication and division facts for multiplication tables up to 12 x 12.** • 4NF−1 Recall multiplication and division facts up to 12 x 12, and recognise products in multiplication tables as multiples of the corresponding number. • **Use place value, known and derived facts to multiply and divide mentally** (e.g. 600 ÷ 3 = 200 can be derived from 2 x 3 = 6) **, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers.** • **Recognise and use factor pairs and commutativity in mental calculations.** • **Multiply two-digit and three-digit numbers by a one-digit number using**

30 x 2 = 60, 60 ÷ 3 = 20 and 20 = 60 ÷ 3.

- 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example:
30 x 4 = 120
20 ÷ 4 - 30
- **Write and calculate mathematical statements for multiplication and division using the multiplication tables that are known, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.**
- *Use informal recording methods such as the grid method, linked to understanding of partitioning arrays to support the development of formal methods as appropriate.*
- **Solve problems, including missing number problems, involving multiplications and division,** including measuring contexts and **positive integer scaling problems** (e.g. four times as high, 8 times as

1,200 ÷ 4 = 300
- **Recognise and use factor pairs and commutativity in mental calculations.**
- **Multiply two-digit and three-digit numbers by a one-digit number using formal written layout of** short multiplication.
- Use the formal written method of short division *for calculations involving two and three digit numbers divided by a single digit* with exact answers.
- *Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive.*
- *Use rounding, estimation and inverse operations to check answers to calculations and determine, in the context of a problem, levels of accuracy.*
- *Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. 2 x 24 = 12 x 4; 33 = 5 x ◊).*

four operations and the principles of the arithmetic laws; commutative, associative and distributive.
- 4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication
- 4MD–3 Understand and apply the distributive property of multiplication.
- *Use rounding, estimation and inverse operations to check answers to calculations and determine, in the context of a problem, levels of accuracy.*

formal written layout of short multiplication.
- Use the formal written method of short division *for calculations involving two and three digit numbers divided by a single digit* with exact answers.
- 4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, for example:
74÷ 9 = 8 r 2
and interpret remainders appropriately according to the context.
- *Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive.*
- Write statements about the equality of expressions e.g. using the distributive law 39 x 7 = 30 x 7 + 9 x 7 and the associative law (2 x 3) x 4 = 2 x (3 x 4). Combine knowledge of number facts and rules of arithmetic to solve mental and written calculations e.g. 2 x 6 x 5 = 10 x 6 = 60.

long) **and correspondence problems in which n objects are connected to m objects** (e.g. 3 hats and 4 coats, how many different outfits, 4 cakes shared equally between 8 children).

- 3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.
- *Use rounding, estimation and inverse operations to check answers to calculations and determine, in the context of a problem, levels of accuracy.*
- *Solve calculation problems using information from a range of tables and charts.*
- *Apply understanding of number operations to solve number puzzles, routine and non –routine problems and explain reasoning.*
- *Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. 2 x 12 = 4 x 6; 30 = 5 x ◊)*

- **Solve** one and two step **problems** in contexts **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** e.g. the number of choices on a menu or three cakes shared equally between 10 children.
- *Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. 2 x 24 = 12 x 4; 33 = 5 x ◊).*

Measurement	Measurement 2 weeks	Measurement 2 weeks	Measurement 2 weeks

• Continue to measure using appropriate tools and units.
 • **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g): volume/ capacity (l/ml),** including
   o comparing and using mixed units e.g. 1kg and 200g
   o simple equivalents of mixed units e.g. 5m = 500cm.
   o comparisons involving simple scaling by integers e.g. a given quantity is twice as long or 5 times as high. This should be connected to multiplication.
 • Continue to become fluent in recognising the value of coins**; add and subtract amounts of money to give change, using both £ and p in practical contexts.** Record £ and p separately.
 • **Measure the perimeter of simple 2D shapes**
 • **Tell and write the time from an analogue clock,**
	• *Continue to use read and write standard metric units and their abbreviations, developing fluency in their relationships.*
	 • *Suggest suitable units and equipment for measuring and read scales to an appropriate degree of accuracy.*
	 • **Measure and calculate the perimeter of a rectilinear figure, including squares, in centimetres and metres.**
	 • **Find the area of rectilinear shapes by counting squares.**
	 • Relate area to arrays and multiplication.
		• **Estimate, compare,** *order* **and calculate different measures, including money in pounds and pence** building on understanding of place value, decimal notation *and knowledge of fractions.*
		 • **Convert between units of measure e.g. kilometre to metre; hour to minute** using multiplication.
		 • *Continue to develop accuracy with telling the time and using the vocabulary of time. Compare durations of events including when expressed in different units e.g. 3.5 hours and 140 minutes.*
		 • **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.**
			• **Convert between units of measure e.g. kilometre to metre; hour to minute** using multiplication.
			 • **Measure and calculate the perimeter of a rectilinear figure, including squares, in centimetres and metres.**
			 • Express perimeter algebraically as 2 (a + b) where a and b are dimensions in the same unit.
			 • **Find the area of rectilinear shapes by counting squares.**
			 • *Continue to develop accuracy with telling the time and using the vocabulary of time. Compare durations of events including when expressed in different units e.g. 3.5 hours and 140 minutes.*
			 • **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.**

including using Roman numerals from I to XII, and the 12-hour and 24-hour clocks. Use the digital 12 hour clock.

- **Know the number of seconds in a minute and the number of days in each month, a year and leap year.**
- **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.**
- **Compare duration of events e.g. the time taken by a particular event or task.**
- *Use all four operations to solve problems including scaling problems involving measure (e.g. length, mass, volume, money). Information required to solve a problem is often drawn from tables, including timetables, graphs and charts.*
- *Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems. These should include*

practical problems and might involve construction of shapes or artefacts, often in a cross curricular context. • *Make and explain connections between number, measures and shape.*			
Geometry	**Geometry 2 weeks**	**Geometry 2 weeks**	**Geometry 2 weeks**
Properties of Shapes	**Properties of Shapes**	**Properties of Shapes**	**Properties of Shapes**
• *Continue to develop use of correct mathematical vocabulary (including parallel and perpendicular)* to describe, *identify, compare and sort* 2-D and 3-D shape Descriptions include length of lines and acute and obtuse angles. • Extend knowledge of the properties of shapes to symmetrical and non-symmetrical polygons and polyhedra. • **Draw 2-D shapes and make 3-D shapes using modelling materials (**connect decimals and rounding to drawing and measuring straight lines in centimetres in a variety of contexts)**; recognise 3-D shapes in different orientations and describe them.**	• *Continue to develop use of correct mathematical vocabulary(including parallel and perpendicular) to identify and describe 2-D and 3-D shapes.* • *Continue to draw and make 2-D and 3-D shapes using a range of materials.* • **Compare and classify geometric shapes, including quadrilaterals** e.g. parallelogram, rhombus, trapezium **and triangles** e.g. isosceles**,** equilateral, scalene**, based on their properties and sizes** • **Identify acute and obtuse angles and compare and order angles up to two right angles by size** in preparation for using a protractor.	• *Continue to develop use of correct mathematical vocabulary(including parallel and perpendicular) to identify and describe 2-D and 3-D shapes.* • Compare lengths and angles to decide if a polygon is regular or irregular. • 4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. • **Identify lines of symmetry in 2-D shapes presented in different orientations.** • **Complete a simple symmetric figure with**	• *Continue to develop use of correct mathematical vocabulary(including parallel and perpendicular) to identify and describe 2-D and 3-D shapes.* • Draw symmetric patterns using a variety of media to become familiar with different orientations of lines symmetry; and recognise line symmetry in a variety of diagrams including where the line of symmetry does not dissect the original shape. • 4G–3 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

• **Recognise angles as a property of shape or a description of 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 or less than a right angle** and use the language of acute and obtuse. • 3G–1 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. • **Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.** • 3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides. • *Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, diagrams, practical materials or dynamic geometry ICT tools.*		**respect to a specific line of symmetry.**	

Position and Direction	**Position and Direction**	**Position and Direction**	**Position and Direction**
• *Continue to use mathematical language to describe position, direction and movement including movement in a straight line and quarter, half, three quarter and full turns both clockwise and anti-clockwise.* • *Recognise and use the four compass directions N, E, S, W.*	• Draw a pair of axes in one quadrant, with equal scales and integer labels. • Read, write and use pairs of coordinates to **describe positions on a 2-D grid as coordinates in the first quadrant.** • Use co-ordinate plotting ICT tools.	• **Describe movements between positions as translations of a given unit to the left/right and up/down.** • **Plot specified points and draw sides to complete given polygon** • 4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant. • *Recognise and use the eight compass directions*	• *Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, diagrams, practical materials or dynamic geometry ICT tools.*
Statistics	**Statistics 1 week**	**Statistics 1 week**	**Statistics 1 week**
Interpreting, Constructing and Presenting Data	**Interpreting, Constructing and Presenting Data**	**Interpreting, Constructing and Presenting Data**	**Interpreting, Constructing and Presenting Data**
• **Interpret and present data using bar charts, pictograms and tables** in different contexts. • Understand and use simple scales e.g. 2, 5, 10 units per cm in pictograms and bar charts with increasing accuracy. • **Solve one and two-step questions e.g. 'How many more?' and 'How many**	• **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.** • *Pose questions that can be answered using information presented in different graphs charts and tables.* • *Understand and use Venn and Carroll diagrams to support*	• **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.**	• Begin to relate the graphical representation of data to recording change over time. • Understand and use a greater range of scales in representations. • **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.**

fewer?' using information presented in scaled bar charts and pictograms and tables. • *Pose their own questions that can be answered using information presented in different bar charts pictograms and tables.* • *Understand and use Venn and Carroll diagrams to support reasoning about numbers or shapes* • *Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematics, sometimes in response to an enquiry of interest to and suggested by pupils.*	*reasoning about numbers or shape.* • *Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematic, sometimes in response to an enquiry of interest to and suggested by pupils.*	• *Pose questions that can be answered using information presented in different graphs charts and tables* • *Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematic, sometimes in response to an enquiry of interest to and suggested by pupils.*	• *Pose questions that can be answered using information presented in different graphs charts and tables* • *Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematic, sometimes in response to an enquiry of interest to and suggested by pupils.*