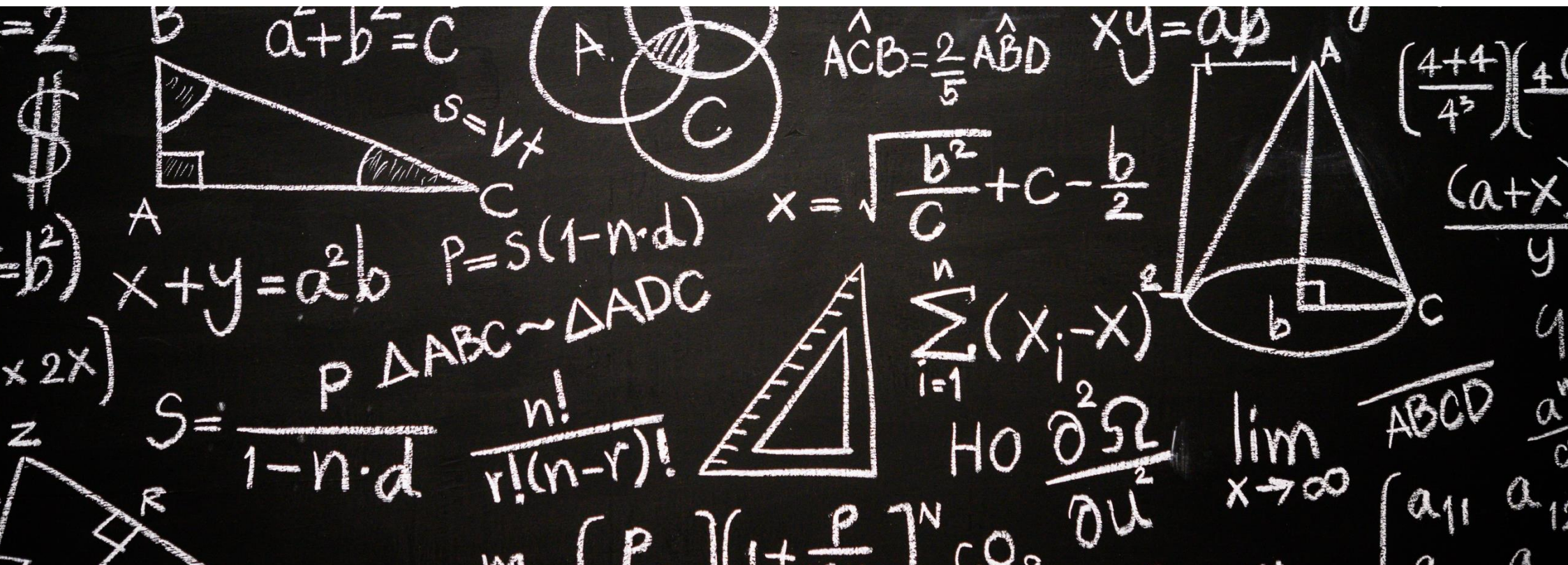education**Gateshead**

raising achievement for all

Gateshead Core Curriculum

Year 3

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

- *Recognise and extend number sequences formed by counting from any number in steps of constant size.*
- *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.*
- *Explain methods and reasoning orally and in writing, including using diagrams and symbols.*
- *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 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*
- *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.*
- *Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, diagrams, practical materials or dynamic geometry ICT tools.*

educationGateshead Core Curriculum for Primary Mathematics Progression Grid Year 3

Consolidation from Year 2	Year 3 Autumn	Year 3 Spring	Year 3 Summer
These are the objectives from Year 2. Some of these objectives may need consolidation in Year 3 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 forwards and backwards in ones and tens from any number to 100 and beyond to establish fluency, especially across boundaries of 10s and 100s.* • **Read and write numbers to at least 100 in numerals and words.** • **Compare and order numbers from 0 up to 100; use >, < and = signs.** • **Identify, represent and estimate numbers using different representations, including the number line** and spatial representations. • **Recognise the place value of each digit in a two-digit number (tens, ones).**	• 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.* • **Recognise the place value of each digit in a three-digit number (hundreds, tens and ones).**	• 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.**	• 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 • **Identify, represent and estimate numbers using different representations.** • *Round any number to nearest 10 or 100.* • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving numbers, money or measures. Explain methods and reasoning orally and in writing,*

• Partition numbers in different ways e.g. 23 = 20 + 3 and 23 = 10 + 13 to support subtraction. • *Understand e.g. 23 as 20 + 3 and as 2 tens and 3 ones.* • 2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning • Begin to understand zero as a place holder. • 2NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. • **Use place value and number facts to solve problems** • *Apply understanding of the number system to solve problems and puzzles involving numbers, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbol.*	• 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.* • *Apply understanding of the number system to* **solve number and practical problems** *and puzzles involving numbers, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbol.*	• **Recognise the place value of each digit in a three-digit number (hundreds, tens and ones).** • 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.* • *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, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbol.*	*including using diagrams and symbol.* • 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. • 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.
Properties of numbers and number sequences	**Properties of numbers and number sequences**	**Properties of numbers and number sequences**	**Properties of numbers and number sequences**

• **Count in steps of 2, 3, 4, 8 5 and 10 from 0 and in tens from any number, forward and back.** Counting in steps of three will support later understanding of a third. • Recognize patterns in numbers to and beyond 100. • **Find 10 more or 10 less than any given number.** • *Develop lines of enquiry through conjecturing relationships and generalisations and testing ideas. Identify examples for which a statement is true or false.* • *Recognise and extend number sequences formed by counting from any number in steps of constant size* • *Explore and discuss patterns, properties and relationships that arise in the number system using appropriate mathematical vocabulary.* • *Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure.*	• Continue to use multiples of 2, 3, 4, 5, 8, and 10 • **Find 10 or 100 more or less than a given number.** • Continue to practice 2, 3, 4, 5, 6, 8, 10 tables and connect the 2, 4 and 8 tables through doubling	• Continue to use multiples of 2, 3, 4, 5, 6, 8, and 10 • **Count from 0 in multiples of 2 , 3, 6, 4, 8, 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.* • Continue to practice 2, 3, 4, 5, 6, 8, 10 and 12 tables and connect the 2, 4 and 8 and 3, 6 tables through doubling	• Continue to use multiples of 2, 3, 4, 5, 6, 8, 10 and 12 • **Count from 0 in multiples of 2 , 3, 6, 4, 8, 10, 12 50 and 100** • **Find 10 or 100 more or less than a given number** • **Find 10 or 100 more or less than a given number** • *Recognise patterns in sequences of multiples and connections between them e.g. explore patterns on a 12 x 12 multiplication grid.* • 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. • Continue to practice 2, 3, 4, 5, 6, 8, 10 and 12 tables and connect the 2, 4 and 8 and 3, 6 and 12 tables through doubling
Fractions and decimals	**Fractions and decimals**	**Fractions and decimals**	**Fractions and decimals**

• **Recognise, find, name and write fractions 1/3 , ¼, 2/4, and ¾ of a length, shape and set of objects or quantity.** • **Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of 2/4 and ½** • Use fractions as 'fractions of' discrete (e.*g. countables*) and continuous (*e.g. liquid*) quantities by solving problems using shapes, objects and quantities. • Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects and shapes. • Count in fractions up to 10 starting at any number and using the ½ and 2/4 equivalence on the number line e.g. 1 ¼ , 1 2/4, (or 1 ½) 1 ¾ , 2. Reinforce the concept of fractions as numbers and that they can add up to more than one. • *Apply understanding of fractions to solve routine and non-routine problems and puzzles involving numbers, shapes, money or measures. Explain methods and reasoning*	• 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.	• 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. • **Recognize, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.** • 3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency). • Understand the relation between unit fractions as operators (fractions of), and division by integers. • **Recognize and use fractions as numbers: unit fractions and non-unit fractions with small denominators.** Use them on a number line and deduce relations between them such as size and equivalence. Go beyond the 0 – 1 interval, including relating this to measure. • 3F–3 Reason about the location of any fraction within 1 in the linear number system	• **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. • **Recognize and use fractions as numbers: unit fractions and non-unit fractions with small denominators.** Use them on a number line and deduce relations between them such as size and equivalence. Go beyond the 0 – 1 interval, including relating this to measure. • **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 measures and division by 10.

orally and in writing, including using diagrams and symbols.		• **Compare and order unit fractions, and fractions with the same denominators.** • **Recognise and show, using diagrams, equivalent fractions with small denominators.**	
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**
• 2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice. • **Recall and use addition and subtraction facts to 20 fluently and derive and use related facts to 100** e.g. use 3 + 7 = 10; 10 -7 = 3 and 7 = 10 – 3 to calculate 30 + 70 = 100; 100 – 70 = 30 and 70 = 100 – 30. • 2AS–1 Add and subtract across 10, for example: 8 + 5 = 13 13 – 5 = 8 • **Add and subtract numbers using concrete objects, pictorial representations and mentally, including:** • **a two-digit number and ones**	• *Continue to practise 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. • **Add and subtract numbers mentally including** • **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	• *Continue to practise 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.* • 3AS–1 Calculate complements to 100, for example: 46 + ? = 100 • **Add and subtract numbers mentally including** • **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	• **Add and subtract numbers mentally including** • **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**

Column 1 (grey):

- **a two-digit number and tens**
- **two two-digit numbers**
- **adding three one-digit numbers**
- 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.
- 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two digit numbers.
- **Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.**
- 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".
- Check calculations e.g. by adding to check subtraction and adding numbers in a different order to check addition e.g. 5 + 2 +1 = 1 +

Column 2 (orange):

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.*
- **Estimate the answer to a calculation and use the inverse operation to check answers.**
- *Understand and use the principles of the arithmetic laws; commutative and associative.*
- **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 - Δ).

Column 3 (teal):

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.*
- **Estimate the answer to a calculation and use inverse operation to check answers.**
- *Understand and use the principles of the arithmetic laws; commutative and associative.*
- **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 - Δ).
- 3NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example:
  80 + 60 = 140
  140 – 60 = 80

Column 4 (pink):

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 operation to check answers.**
- *Understand and use the principles of the arithmetic laws; commutative and associative.*
- **Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.**
- 3AS–3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.
- Use and explain the equals sign to indicate equivalence, including in missing number

5 + 2 = 1 + 2 + 5. This establishes commutativity and associativity of addition.

- **Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.**
- *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.*
- *Solve calculation problems using information from a range of pictograms, tally charts, block diagrams and simple tables.*
- Continue to extend understanding of language of addition and subtraction to include sum and difference
- **Solve problems with addition and subtraction**
- **Using concrete objects and pictorial representations, including those involving numbers, quantities and measures.**

problems (e.g. $6 + 8 = 7 + 7$; $33 = 38 - \Delta$).

• **Applying increasing knowledge of mental and written methods.** • *Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.* • *Solve calculation problems using information from a range of pictograms, tally charts, block diagrams and simple tables* • *Apply understanding of number operations to solve number puzzles and non-routine problems and explain reasoning.*			
Multiplication and Division	**Multiplication and Division 2 weeks**	**Multiplication and Division 2 weeks**	**Multiplication and Division 2 weeks**
• **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognizing odd and even numbers.** • 2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the	• **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.** Continue to practise 2, 5 and 10 tables and connect the 2, 4 and 8 multiplication tables through doubling. • *Apply understanding of number operations to solve number puzzles, routine and*	• **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.** Continue to practise 2, 5 and 10 tables and connect the 2, 4 and 8 multiplication tables through doubling. • Develop efficient mental methods for example using commutativity and	• **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.** Continue to practise 2, 5 and 10 tables and connect the 2, 4 and 8 multiplication tables through doubling. • 3NF–2 Recall multiplication facts, and corresponding division facts, in the 10, 5,

product, within the 2, 5 and 10 multiplication tables. • *Continue to recognise doubles and corresponding halves* • Connect the 2, 5 and 10 multiplication tables to each other. Connect the 10 multiplication table to place value and the 5 multiplication table to the divisions on a clock face. • Connect unit fractions to equal sharing and grouping, to numbers when they can be calculated and to measures, finding fractions of lengths, quantities, sets of objects and shapes. • **Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.** • **Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.** • 2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a	*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 ◊)*	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 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.** • **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 long) **and correspondence problems in which n objects are**	2,3,6, 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 30 x 2 = 60, 60 ÷ 3 = 20 and 20 = 60 ÷ 3. • **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.*

missing factor, and to division equations (quotitive division). • **Solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.** • Work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition. Relate these to fractions and measures. • Use a variety of language to describe multiplication and division.		**connected to m objects** (e.g. 3 hats and 4 coats, how many different outfits, 4 cakes shared equally between 8 children). • *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 12 = 4 x 6; 30 = 5 x ◊)*	• **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 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.* • *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 ◊)*

Measurement	Measurement 2 weeks	Measurement 2 weeks	Measurement 2 weeks

• **Choose and use appropriate standard units to estimate and measure,** with increasing accuracy, **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.**
 • Use appropriate language for measuring and record using standard abbreviations.
 • **Compare and order lengths, mass, volume/capacity and record the results using >, < and =.**
 • Compare using simple multiples such as 'half as high', 'twice as wide'.
 • Become fluent in counting and recognizing coins *and notes*. Read and say amounts of money confidently.
 • **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 amounts of money.**
	• 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
	 • 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.
	 • **Tell and write the time from an analogue clock, 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.**
	 • **Compare duration of events e.g. the time taken by a particular event or task.**
		• 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.
		 • **Measure the perimeter of simple 2-D shapes.**
		 • **Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and the 12-hour and 24-hour clocks.** Use the digital 12 hour clock.
		 • **Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of**
			• 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.
			 • **Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and the 12-hour and 24-hour clocks.** Use the digital 12 hour clock.
			 • **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**

• **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.** • **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.** • **Know the number of minutes in an hour and the number of hours in a day.** • *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, 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*		**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.**	**o'clock, a.m./ p.m., morning, afternoon, noon and midnight.**

Geometry	Geometry 2 weeks	Geometry 2 weeks	Geometry 2 weeks
Properties of Shapes	**Properties of Shapes**	**Properties of Shapes**	**Properties of Shapes**
Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. **Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.** **Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].** **Compare and sort common 2-D and 3-D shapes and everyday objects** on the basis of their properties and use vocabulary precisely. - Read and write names of shapes appropriate to their word reading and spelling. 2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties. - Draw lines and shapes using a straight edge	*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. **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.** **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.	*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.** **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**	*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.** **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.

• *Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, drawings or practical materials.*	• **Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.**	**angle** and use the language of acute and obtuse. • **Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.** • 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.	• 3G–2 Draw polygons by joining marked points, and identify parallel and perpendicular sides
Position and Direction	**Position and Direction**	**Position and Direction**	**Position and Direction**
• **Order and arrange combinations of mathematical objects in patterns and sequences** including the use of shapes in different orientations. • **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).** • Use the language of angles in practical contexts e.g. pupils moving in turns, instructing others to do so and programming	• *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.*	• *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.*	• *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.*

robots using instructions given in right angles			
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 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.** • *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.* • Use many-to-one correspondence in pictograms with simple ratios 2, 5, 10. • *Pose their own questions that can be answered using information presented in different pictograms, tally*	• **Interpret and present data using bar charts, pictograms and tables** in different contexts. • **Solve one and two-step questions e.g. 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.**	• **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 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*	• **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 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*

| *charts, block diagrams and simple tables*
 • *Understand and use Venn and Carroll diagrams to support reasoning about numbers or shapes* | | | |