Redcastle Family School

"To give every child the skills and self-belief to succeed."

RFS- Planning & Progression: Maths

RFS Curriculum

Mathematics is a fundamental element that helps us to understand and change the world that we live in. We want all pupils at Redcastle Family School to experience the beauty, empowerment and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. At Redcastle Family School, we foster positive 'can do' attitudes and we promote the fact that 'We can all do maths!' This works alongside our school vision of, 'To give every child the skills and self-belief to succeed.'

We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems.

At our school, the majority of children will be taught the content from their year group only, with learning objectives being the knowledge needed for the specific year group. Where necessary, intervention groups are used to fill gaps in children's learning. We ensure that the children have a secure understanding of each skill before moving on. This is achieved through assessment for learning and daily interventions are used when necessary. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.

We have organised our curriculum in a way that enables us to use the summer term to re-visit prior learning and develop this even further to deepen the children's learning and understanding of the concept. Our curriculum involves us focusing on predominantly number during the Autumn Term. We have decided on this because number underpins the fundamental understanding of mathematics and therefore, by grasping this concept it will enable the children to apply this within a range of different concepts. The key threads of maths that will be evident throughout the curriculum are **number and place value**, **shape, space and measure, problem solving and reasoning. Arithmetic skills** are a key thread throughout the school, with a fluent in 5 starter at the beginning of every lesson. This will ensure that children develop a secure mathematical understanding. These threads will then be built upon in each year group to meet the needs of the National Curriculum.

We aim for all pupils to:

· become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

· be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.

· reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

· have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Why do we teach this: **How does it build upon prior learning:**	**Why do we teach this:** Place value is a vital skill in order for children to develop their mathematical understanding. Children need to understand the structure of number and how they can be represented in different ways as well as knowing how to count forwards and backwards across 100. The children need to develop fluency in addition and subtraction facts within 10. Children need to use number bonds to and within 10. The children need to know that a multiple of 10 is made up of a number of tens, such as 50 being made up of five tens. The children need to know how to use manipulatives in order to support them to solve multiplication problems. **How does it build upon prior learning:**	**Why do we teach this:** Place value underpins the mathematical concept for the Year 2 curriculum. Children need to develop their fluency at being able to count on in steps of 2, 3 and 5 from any number following on from counting on in ones. The children need to know how to add and subtract numbers across ten. The children need to recognise the subtraction structure of 'difference' and answer questions of 'how many more?' They need to know how to add and subtract within 100. Children need to have knowledge of mathematical vocabulary such as 'commutative' and to know that this applies to addition and not subtraction. The children need to recognise the link between repeated addition and multiplication using the 25 and 10 times tables and understand that these concepts are commutative. They need to know how to recognise if a number is odd or even. The children need to recall division facts for 2,5 and 10 times tables and recognise that division is not commutative.	**Why do we teach this:** Children need to recognise and understand the value of each digit within a three-digit number. They also need to identify the next multiples of ten and one hundred. They will divide 100 into 2, 4, 5 and 10 equal parts in order to read scales on number lines. Children need to be secure in their fluency of addition and subtraction facts that bridge 10. Children need to understand the place value of each number to help them use the column method for adding and subtracting up to three-digit numbers. Children need to know how to apply the inverse operation when adding and subtracting. They need to develop their reasoning skills to be able to solve missing number problems. Children need to recall multiplication and division facts of 2,3,4, 5,8 and 10 times tables and understand the corresponding facts. The children need to begin to know how to use formal written methods for multiplication (two-digit by one-digit). **How does it build upon prior learning:**	**Why do we teach this:** Children need to recognise and understand the value of each digit within a four-digit number. They also need to have an understanding of negative numbers and to be able to count backwards through zero. Roman Numerals will be taught to be linked in with The Romans topic. Children need to develop an awareness of how to round any given number to the nearest 10, 100 or 1000. Children need to be able to use known facts (scaling) in order to solve addition and subtraction calculations. They need to consolidate their understanding of using the column method using four-digit numbers. They need to develop their ability to estimate in order to check answers. Children need to recall all of the multiplication and division facts up to 12 x 12. They need to be able to apply factor pairs mentally. The children need to understand that you can make a number 10 or 100 times greater or smaller by multiplying or dividing it by 10 or 100. Children will need to be secure in using formal methods for multiplication and division. They need to solve multiplication problems using their taught methods.	**Why do we teach this:** Children need to develop their knowledge of place value by extending this to the value of numbers up to 1 000 000. They will also need to count forwards and backwards through zero. Children need to have knowledge of Roman Numerals to 1000 as this will be the last time that it is covered at Redcastle Family School. Children need to apply place value knowledge to known additive and multiplicative number facts (scaling facts by one tenth or one hundredth). They need to select the appropriate operation to apply to multi-step word problems and check their answers through rounding. The children need to have secure fluency in multiplication facts. They need to know how to make numbers one tenth greater or smaller or one hundredth greater or smaller. They need to know how to find factors and multiples of whole numbers. They need to have secure written methods to know how to multiply a four-digit number by a one-digit number. This then needs to progress to multiplying decimals. They need to know how to recognise and use squared and cubed numbers. They need to understand the make-up of a prime number and be familiar with the vocabulary of prime-	**Why do we teach this:** Children need to know the value of each digit in numbers up to 10 000 000 as well as being able to order and compare them. By having this understanding, will enable the children to have the capacity to access further elements of knowledge in the Year 6 curriculum. The children will use their knowledge that they have acquired and apply these skills to problems within a context. The children need to understand that two numbers can be related additively or multiplicatively and quantify additive and multiplicative relationships. They need to be able to complete calculations using arithmetic properties. They need to have a secure understanding of the order of operations and how to apply this within calculations. They need to be secure at solving calculations mentally. The children need to know how to multiply and divide a four-digit number by a two digit number and apply this to multi-step problems within a context. **How does it build upon prior learning:** Children have developed their knowledge of the place value of numbers up to 1 000 000, they are

How does it build upon prior learning: Place value in Year 2 builds by children being able to understand how to partition a number and know the value of each digit. Children will be able to compare other numbers using < > =. Using the fluency that has been developed of addition and subtraction number facts within 10. Using their knowledge of number bonds within ten. To develop their understanding of portioning of two digit numbers. The children will have knowledge of counting in multiples of 2, 5 and 10 and use these in everyday contexts.	This builds upon the children's knowledge of two digit numbers to extend it to three digit numbers. To build upon their knowledge of number bonds to 9 and 10. The children will have experienced the commutative property of addition and have written the equation in different ways. The children will have knowledge of the 2, 5 and 10 times tables to be able solve calculations.	**How does it build upon prior learning:** Children will have knowledge of using three-digit numbers and they will have identified the previous and next multiples of 10 and 100. Children will have experienced using the column method with three-digit numbers in Year 3. Children will have experienced applying place value knowledge for scaling facts by 10. The children will know how to multiply numbers by ten and divide numbers that are multiples of ten by ten.	factors and composite numbers. They need to solve multi-step multiplication and division problems by applying their taught methods. **How does it build upon prior learning:** Children will have knowledge of using and understanding the place value of four digit numbers. Children know how to count backwards through zero. Children will have knowledge of Roman Numerals to 100. Children will have experienced using known facts (scaling by 100). They will know how to round any number to the nearest 10, 100 or 1000. The children will know how to recall all multiplication and division facts up to 12 x 12. They will have experienced multiplying and dividing whole numbers by 10 and 100.	able to round any given number to the nearest 10, 100, 1000, 10000 and 100000. The children will be fluent in all additive and multiplicative number facts. The children will have a secure understanding of multiplying a four-digit by one-digit number using formal written methods.

Autumn Term	Autumn Term	Autumn Term	Autumn Term	Autumn Term	Autumn Term	Autumn Term
	Place Value: Counting To know how to count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number To know how to count numbers to 100 in numerals; count in multiples of twos, fives and tens **Place Value: Represent** To know how to identify and represent numbers using objects and pictorial representations. To know how to read and write numbers to 100 in numerals To know how to read and write numbers from 1 to 20 in numerals and words **Place Value: Problems and Rounding** To know how to identify one more and one less of a given number. **Addition & Subtraction: Recall, Represent, Use**	**Place Value: Counting** To know how to count in steps of 2, 3 and 5 from 0, and in tens from any given number, forward and backward **Place Value: Represent** To know how to read and write numbers to at least 100 in numerals and in words To know how to identify, represent and estimate numbers using different representations, including the number line **Place Value: Use PV and Compare** To know how to recognise the place value of each digit in a two-digit number (tens, ones) To know how to compare and order numbers from 0 up to 100; use <, > and = signs **Place Value: Problems and Rounding** To know how to use place value and number facts to solve problems	**Place Value: Counting** To know how to count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number **Place Value: Represent** To know how to identify, represent and estimate numbers using different representations To know how to read and write numbers up to 1000 in numerals and in words **Place Value: Use PV and Compare** To know how to recognise the place value of each digit in a three-digit number (hundreds, tens, ones) To know how to compare and order numbers up to 1 000 **Place Value: Problems and Rounding** To know how to solve number problems and practical problems involving these ideas	**Place Value: Counting** To know how to count in multiples of 6, 7, 9, 25 and 1 000 To know how to count backwards through zero to include negative numbers **Place Value: Represent** To know how to identify, represent and estimate numbers using different representations To know how to 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 **Place Value: Use PV and Compare** To know how to find 1 000 more or less than a given number To know how to recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	**Place Value: Counting** To know how to count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 To know how to count forwards and backwards with positive and negative whole numbers, including through zero **Place Value: Represent** To know how to read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit To know how to read Roman numerals to 1 000 (M) and recognise years written in Roman numerals **Place Value: Use PV and Compare** To know how to read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit **Place Value: Problems and Rounding**	**Place Value: Represent** To know how to read, write, order and compare numbers up to 10 000 000 and determine the value of each digit **Place Value: Use PV and Compare** To know how to read, write, order and compare numbers up to 10 000 000 and determine the value of each digit **Place Value: Problems and Rounding** To know how to round any whole number to a required degree of accuracy To know how to use negative numbers in context, and calculate intervals across zero To know how to solve number and practical problems that involve all of the above **Addition and Subtraction: Calculations**

To know how to read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs To know how to represent and use number bonds and related subtraction facts within 20 **Addition and Subtraction: Calculations** To know how to add and subtract one-digit and two-digit numbers to 20, including zero **Addition and Subtraction: Solve Problems** To know how to solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ⬚ - 9 **Multiplication & Division: Solve Problems** To know how to solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**Addition & Subtraction: Recall, Represent, Use** To know how to recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot To know how to recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **Addition and Subtraction: Calculations** To know how to add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers adding three one-digit numbers **Addition and Subtraction: Solve Problems** To know how to solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods **Multiplication and Division: Recall, Represent, Use** To know how to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers To know how to show that multiplication of two numbers can be done in any order	**Addition & Subtraction: Recall, Represent, Use** To know how to estimate the answer to a calculation and use inverse operations to check answers **Addition and Subtraction: Calculations** To know how to add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds To know how to add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction **Addition and Subtraction: Solve Problems** To know how to solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction **Multiplication and Division: Recall, Represent, Use** To know how to recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables **Multiplication and Division: Calculations** To know how to write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods **Multiplication & Division: Solve Problems** To know how to solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and	To know how to order and compare numbers beyond 1 000 **Place Value: Problems and Rounding** To know how to round any number to the nearest 10, 100 or 1 000 To know how to solve number and practical problems that involve all of the above and with increasingly large positive numbers **Addition & Subtraction: Recall, Represent, Use** To know how to estimate and use inverse operations to check answers to a calculation **Addition and Subtraction: Calculations** To know how to add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate **Addition and Subtraction: Solve Problems** To know how to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why **Multiplication and Division: Recall, Represent, Use** To know how to recall multiplication and division facts for multiplication tables up to 12 × 12 To know how to use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers To know how to recognise and use factor pairs and commutativity in mental calculations	To know how to interpret negative numbers in context To know how to round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 To know how to solve number problems and practical problems that involve all of the above **Addition & Subtraction: Recall, Represent, Use** To know how to use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy **Addition and Subtraction: Calculations** To know how to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) To know how to add and subtract numbers mentally with increasingly large numbers **Addition and Subtraction: Solve Problems** To know how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why To know how to solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **Multiplication and Division: Recall, Represent, Use** To know how to identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	To know how to perform mental calculations, including with mixed operations and large numbers To know how to use their knowledge of the order of operations to carry out calculations involving the four operations **Addition and Subtraction: Solve Problems** To know how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why **Multiplication and Division: Recall, Represent, Use** To know how to identify common factors, common multiples and prime numbers To know how to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy **Multiplication and Division: Calculations** To know how to multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication To know how to divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context To know how to divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context

(commutative) and division of one number by another cannot **Multiplication and Division: Calculations** To know how to calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs **Multiplication & Division: Solve Problems** To know how to solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	correspondence problems in which n objects are connected to m objects	**Multiplication and Division: Calculations** To know how to multiply two-digit and three-digit numbers by a one-digit number using formal written layout **Multiplication & Division: Solve Problems** To know how to solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as 'n' objects are connected to 'm' objects	To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers To know how to establish whether a number up to 100 is prime and recall prime numbers up to 19 To know how to recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) **Multiplication and Division: Calculations** To know how to multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers To know how to multiply and divide numbers mentally drawing upon known facts To know how to divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context To know how to multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 **Multiplication & Division: Solve Problems** To know how to solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes To know how to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates **Multiplication and Division: Combined Operations** To know how to solve problems involving addition, subtraction,	To know how to perform mental calculations, including with mixed operations and large numbers **Multiplication & Division: Solve Problems** To know how to solve problems involving addition, subtraction, multiplication and division **Multiplication and Division: Combined Operations** To know how to use their knowledge of the order of operations to carry out calculations involving the four operations **Fractions: Compare** To know how to use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions >1 **Fractions: Calculations** To know how to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions To know how to multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$) To know how to divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$) **Decimals: Recognise and Write** To know how to identify the value of each digit in numbers given to three decimal places **Decimals: Calculations & Problems** To know how to multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places To know how to multiply one-digit numbers with up to two decimal places by whole numbers

					multiplication and division and a combination of these, including understanding the meaning of the equals sign	To know how to use written division methods in cases where the answer has up to two decimal places
						To know how to solve problems which require answers to be rounded to specified degrees of accuracy
						Fractions, Decimals and Percentages To know how to associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)
						To know how to recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Spring Term	**Spring Term**	**Spring Term**	**Spring Term**	**Spring Term**	**Spring Term**	**Spring Term**
Why do we teach this: **How does it build upon prior learning:**	**Why do we teach this:** Children need to have knowledge of halves and quarters in everyday life. The children need to know how to solve missing number problems by using concrete resources. They need to know how to make comparisons with measures and identify the different denominations of money. The children need to develop events sequentially using **How does it build upon prior learning:**	**Why do we teach this:** Children need to know how to recognise, write and compare fractions such as ¼, ½ and 1/3. The children need to know the inverse relationships of addition and subtraction to be able to find unknown values. The children need to build on their learning of measure in Year 1, by selecting the appropriate standard units to estimate and measure. They need to know how to make combinations of amounts. The children need to know how to tell the time to 5 minute intervals. **How does it build upon prior learning:** The children will know fractions of halves and quarters from learning it in Year 1. The children will have compared measures and will be able to recognise different values of money. The children in Year 1, will know how to tell the time to the hour.	**Why do we teach this:** Children need to know how to count in ten equal parts to represent tenths. They need to be able to represent unit and non-unit fractions and to know how to add and subtract fractions with the same denominator. The children need to know how to solve missing number problems building upon using the inverse in Year 2. The children need to be able to give change from an amount of money. They will be introduced to the perimeter of 2D shapes. In Year 3, the children need to develop their understanding of time by using 24 hour clocks and using Roman Numerals from I to XII. **How does it build upon prior learning:** The children will know how to recognise, write and compare fractions such as ¼, ½ and 1/3. The children will have been able to make different combinations of amounts of money. The children will	**Why do we teach this:** Children need to know how to count in one hundred equal parts to represent hundredths. Children need to know how to reason about the location of mixed numbers in the linear number system. They need to know how to convert mixed numbers and improper fractions and add and subtract improper and mixed fractions. In Year 4, children will be introduced to decimals and will need to be able to compare numbers with the same number of decimal places with up to 2 decimal places. They will also need to round decimals (1dp) to the nearest whole number. The children will need to convert the time from 12 hour to 24 hour clocks and calculate the perimeter of a rectilinear figure. **How does it build upon prior learning:** The children will know how to identify unit and non-unit fractions and will know how to add and subtract fractions with the same denominator. The children will know how to read times from 12 hour and 24 hour clocks	**Why do we teach this:** Children need to know how to find non unit fractions of quantities and to find equivalent fractions, understanding that they have the same value and position in the linear number system. They also need to be able to recall decimal fraction equivalents ½, 1/4, 1/5, 1/10 and for multiples of these proper fractions. They need to apply their knowledge of fractions to decimals and to know how to round decimals with 2dp to 1dp. The children need to know how to measure and calculate the perimeter of rectilinear shapes and how to estimate volume. **How does it build upon prior learning:** The children will be able to recall multiplication and division facts up to 12 x 12. They will be able to reason about the location of fractions in the linear number system and divide powers of 10 into 2, 4, 5 and 10 equal parts. The children would have learnt how to round decimals with 1dp to the	**Why do we teach this:** The children need to know how to solve problems involving two relative sizes by applying multiplication and division facts. This builds on from the Autumn Term. In Year 6, the children need to develop their understanding of using formulae. They need to apply reasoning to find unknown angles within shapes, calculate the area of parallelograms and triangles and calculate and compare the volume of cubes and cuboids. The children need to be able to make nets and construct pie charts. **How does it build upon prior learning:** In Year 5, the children will know how to identify 3D shapes from their 2D representations. They will know how to calculate and compare the area of squares and rectangles using standard measurements. They will know how to estimate the volume of shapes. The children will know how to solve comparisons and sum and difference using line graphs.

Redcastle Family School

"To give every child the skills and self-belief to succeed."

		know how to sequence intervals of times.	from Year 3. They will also know how to calculate the area of simple 2D shapes.	nearest whole number and compared decimals with 2dp. The children will have learnt in Year 4 how to calculate the perimeter of rectilinear shapes by counting squares.	

Fractions: Recognise and Write To know how to recognise, find and name a half as one of two equal parts of an object, shape or quantity To know how to recognise, find and name a quarter as one of four equal parts of an object, shape or quantity **Algebra** To know how to solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ **Measurement: Using Measures** To know how to compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] time [e.g. quicker, slower, earlier, later] **Measurement: Money** To know how to recognise and know the value of different denominations of coins and notes **Measurement: Time** To know how to sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	**Fractions: Recognise and Write** To know how to recognise, find, name and write fractions $^1/_3$, $^1/_4$, $^2/_4$ and $^3/_4$ of a length, shape, set of objects or quantity **Fractions: Compare** To know how to recognise the equivalence of $^2/_4$ and $^1/_2$. **Fractions: Calculations** To know how to write simple fractions e.g. $^1/_2$ of 6 = 3 **Algebra** To know how to recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. **Measurement: Using Measures** To know how to 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 To know how to compare and order lengths, mass, volume/capacity and record the results using >, < and = **Measurement: Money** To know how to recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value To know how to find different combinations of coins that equal the same amounts of money To know how to solve simple problems in a practical context	**Fractions: Recognise and Write** To know how to count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10 To know how to recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators To know how to recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators **Fractions: Compare** To know how to recognise and show, using diagrams, equivalent fractions with small denominators To know how to compare and order unit fractions, and fractions with the same denominators **Fractions: Calculations** To know how to add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$) **Fractions: Solve Problems** To know how to solve problems that involve all of the above **Algebra** To know how to solve problems, including missing number problems. **Measurement: Using Measures** To know how to measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	**Fractions: Recognise and Write** To know how to count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten **Fractions: Compare** To know how to recognise and show, using diagrams, families of common equivalent fractions **Fractions: Calculations** To know how to add and subtract fractions with the same denominator **Fractions: Solve Problems** To know how to 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 **Decimals: Recognise and Write** To know how to recognise and write decimal equivalents of any number of tenths or hundredths To know how to recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$ **Decimals: Compare** To know how to round decimals with one decimal place to the nearest whole number To know how to compare numbers with the same number of decimal places up to two decimal places **Decimals: Calculations & Problems** To know how to 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	**Fractions: Recognise and Write** To know how to identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths To know how to recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$) **Fractions: Compare** To know how to compare and order fractions whose denominators are all multiples of the same number **Fractions: Calculations** To know how to add and subtract fractions with the same denominator and multiples of the same number To know how to multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **Decimals: Recognise and Write** To know how to read and write decimal numbers as fractions (e.g. $0.71 = ^{71}/_{100}$) To know how to recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents **Decimals: Compare** To know how to round decimals with two decimal places to the nearest whole number and to one decimal place	**Ratio and Proportion** To know how to solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts To know how to solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison To know how to solve problems involving similar shapes where the scale factor is known or can be found To know how to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Algebra** To know how to use simple formulae To know how to generate and describe linear number sequences To know how to express missing number problems algebraically To know how to find pairs of numbers that satisfy number sentences involving two unknowns To know how to enumerate all possibilities of combinations of two variables **Measurement: Using Measures** To know how to solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

To know how to recognise and use language relating to dates, including days of the week, weeks, months and years To know how to tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	involving addition and subtraction of money of the same unit, including giving change **Measurement: Time** To know how to compare and sequence intervals of time To know how to 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. To know the number of minutes in an hour and the number of hours in a day. (appears also in Converting)	**Measurement: Money** To know how to add and subtract amounts of money to give change, using both £ and p in practical contexts **Measurement: Time** To know how to tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks To know how to estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight To know how to know the number of seconds in a minute and the number of days in each month, year and leap year To know how to compare durations of events, for example to calculate the time taken by particular events or tasks **Measurement: Perimeter, Area, Volume** To know how to measure the perimeter of simple 2-D shapes	**Fractions, Decimals and Percentages** To know how to solve simple measure and money problems involving fractions and decimals to two decimal places. **Measurement: Using Measures** To know how to convert between different units of measure (e.g. kilometre to metre; hour to minute) To know how to estimate, compare and calculate different measures **Measurement: Money** To know how to estimate, compare and calculate different measures, including money in pounds and pence **Measurement: Time** To know how to read, write and convert time between analogue and digital 12 and 24-hour clocks To know how to solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days **Measurement: Perimeter, Area, Volume** To know how to measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres To know how to find the area of rectilinear shapes by counting squares	To know how to read, write, order and compare numbers with up to three decimal places **Decimals: Calculations & Problems** To know how to solve problems involving numbers up to three decimal places **Fractions, Decimals and Percentages** To know how to recognise the percent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal To know how to solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25. **Measurement: Using Measures** To know how to convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) To know how to understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints To know how to use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling **Measurement: Money** To know how to use all four operations to solve problems involving measure **Measurement: Time** To know how to solve problems involving converting between units of time	To know how to use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places To know how to convert between miles and kilometres **Measurement: Time** To know how to use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **Measurement: Perimeter, Area, Volume** To know how to recognise that shapes with the same areas can have different perimeters and vice versa To know how to recognise when it is possible to use formulae for area and volume of shapes To know how to calculate the area of parallelograms and triangles To know how to calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3] **Geometry: 2-D Shapes** To know how to draw 2-D shapes using given dimensions and angles To know how to compare and classify geometric shapes based on their properties and sizes To know how to illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

Commented [1]:

					Measurement: Perimeter, Area, Volume To know how to measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres To know how to calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes To know how to estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water)	**Geometry: 3-D Shape** To know how to recognise, describe and build simple 3-D shapes, including making nets **Geometry: Angles and Lines** To know how to find unknown angles in any triangles, quadrilaterals, and regular polygons To know how to recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Geometry: Position and Direction** To know how to describe positions on the full coordinate grid (all four quadrants) To know how to draw and translate simple shapes on the coordinate plane, and reflect them in the axes **Statistics: Present and Interpret** To know how to interpret and construct pie charts and line graphs and use these to solve problems **Statistics: Solve Problems** To know how to calculate and interpret the mean as an average
Summer Term	Summer Term	Summer Term	Summer Term	Summer Term	Summer Term	Summer Term
Why do we teach this: **How does it build upon prior learning:**	**Why do we teach this:** The children need to recognise 2D and 3D shapes as well as having knowledge of positional language. This term gives the class teacher the opportunity to revisit aspects of the curriculum that have been identified through monitoring and assessment as a need to deepen their knowledge in order for the children to be secure with the Year 1 curriculum and ready to progress to the Year 2 curriculum. **How does it build upon prior learning:**	**Why do we teach this:** Following on from recognising 2D and 3D shapes, the children need to be familiar with their properties and be able to identify lines of symmetry as well as being able to sort common 2D and 3D shapes. The children need to be able to use mathematical vocabulary to describe position and direction. This term gives the class teacher the opportunity to revisit aspects of the curriculum that have been identified through monitoring and assessment as a need to deepen their knowledge in	**Why do we teach this:** The children need to be able to use their knowledge of 2D and 3D shapes to be able to gain the knowledge of drawing 2D shapes and making representations of the 3D shapes. The children need to build upon their knowledge of positional vocabulary to understand that these can be represented as angles. They need to know how to solve multi-step problems by reading, interpreting bar charts and pictograms, using vocabulary such as 'how many more' and 'how many less' which the	**Why do we teach this:** This builds upon the children's knowledge of classifying and knowing properties of shape by combining these elements. The children need to develop their mathematical vocabulary when describing angles and transfer their knowledge of position and direction to co-ordinates. They need to apply their knowledge of interpreting data, to knowing how to read continuous data. This term gives the class teacher the opportunity to revisit aspects of the curriculum that have been identified	**Why do we teach this:** These elements of knowledge are taught this term because the children need to have an understanding of irregular polygons and describe the difference between those and regular polygons. The children need to know properties of rectangles in order to deduce unknown values. They need to know what 3D shapes look like in their 2D net format. They need to develop their vocabulary when describing the position of shapes. The children need to be able to compare two sets of data that are presented in a line graph.	**Why do we teach this:** This provides the children with the opportunity to fulfil our mathematical intent that we have at Redcastle Family School, to help us to understand and change the world that we live in. We want all pupils to experience the beauty, empowerment and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. **How does it build upon prior learning:** This builds upon the children's previous learning as they will need to use and apply all of the mathematical

		order for the children to be secure with the Key Stage 1 curriculum and ready to progress to the Year 3 curriculum. **How does it build upon prior learning:** In Year 1, the children will have knowledge of what 2D and 3d shapes are and will be able to recognise them.	children should have knowledge of through addition and subtraction. This term gives the class teacher the opportunity to revisit aspects of the curriculum that have been identified through monitoring and assessment as a need to deepen their knowledge in order for the children to be secure with the Year 3 curriculum and ready to progress to the Year 4 curriculum. **How does it build upon prior learning:** During Key Stage 1, the children will know how to identify and describe the properties of 2D shapes in order to help them to be able to draw them in Year 3. For 3D shapes, this is built on by the children being able to make 3D shapes, after recognising and naming them in Year 2. The children will have asked questions about interpreting data in Year 2, to now know how to answer one-step and two-step problems.	through monitoring and assessment as a need to deepen their knowledge in order for the children to be secure with the Year 4 curriculum and ready to progress to the Year 5 curriculum. **How does it build upon prior learning:** In Year 3, the children will know how to recognise the different types of angles and are aware of these being used to describe the properties of a shape. The children will have knowledge in Year 3 of interpreting data and answering one-step and two-step problems relating to it.	This term gives the class teacher the opportunity to revisit aspects of the curriculum that have been identified through monitoring and assessment as a need to deepen their knowledge in order for the children to be secure with the Year 5 curriculum and ready to progress to the Year 6 curriculum. **How does it build upon prior learning:** The children know how to compare and classify geometric shapes based on their properties. They will know how to draw regular polygons that have been plotted and can apply this to the irregular polygons. The children will know how to compare two sets of data on pictograms, bar charts and tables.	skills that they have developed throughout their time at Redcastle Family School and apply them to real-life contexts.
	Geometry: 2-D Shapes To know how to recognise and name common 2-D shapes (including circles, squares, triangles and rectangles) **Geometry: 3-D Shapes** To know how to recognise and name common 3-D shapes, (including cubes, pyramids and spheres) **Geometry: Position and Direction** To know how to describe position, direction and movement, including half, quarter and three-quarter turns. **Re-visit and consolidate.**	**Geometry: 2-D Shapes** To know how to identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line To know how to identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] To know how to compare and sort common 2-D shapes and everyday objects **Geometry: 3-D Shapes** To know how to recognise and name common 3-D shapes, (including cubes, pyramids and spheres) compare and sort common 3-D shapes and everyday objects **Geometry: Position and Direction** To know how to order and arrange combinations of mathematical objects in patterns and sequences	**Geometry: 2-D Shapes** To know how to draw 2-D shapes **Geometry: 3-D Shapes** To know how to make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them **Geometry: Angles and Lines** To know how to recognise angles as a property of shape or a description of a turn To know how to identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle To know how to identify horizontal and vertical lines and pairs of perpendicular and parallel lines **Statistics: Present and Interpret**	**Geometry: 2-D Shapes** To know how to compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes To know how to identify lines of symmetry in 2-D shapes presented in different orientations **Geometry: Angles and Lines** To know how to identify acute and obtuse angles and compare and order angles up to two right angles by size To know how to identify lines of symmetry in 2-D shapes presented in different orientations To know how to complete a simple symmetric figure with respect to a specific line of symmetry **Geometry: Position and Direction** To know how to describe positions on a 2-D grid as coordinates in the first quadrant	**Geometry: 2-D Shapes** To know how to distinguish between regular and irregular polygons based on reasoning about equal sides and angles To know how to use the properties of rectangles to deduce related facts and find missing lengths and angles **Geometry: 3-D Shapes** To know how to identify 3-D shapes, including cubes and other cuboids, from 2-D representations **Geometry: Angles and Lines** To know how to know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles To know how to draw given angles, and measure them in degrees ($^\circ$) identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	**Revision and consolidate.** **Investigations**

To know how to 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) **Statistics: Present and Interpret** To know how to interpret and construct simple pictograms, tally charts, block diagrams and simple tables **Statistics: Solve Problems** To know how to ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity To know how to ask and answer questions about totalling and comparing categorical data **Re-visit and consolidate.**	To know how to interpret and present data using bar charts, pictograms and tables **Statistics: Solve Problems** To know how to solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables **Re-visit and consolidate.**	To know how to describe movements between positions as translations of a given unit to the left/right and up/down To know how to plot specified points and draw sides to complete a given polygon **Statistics: Present and Interpret** To know how to interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs **Statistics: Solve Problems** To know how to solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs **Re-visit and consolidate.**	**Geometry: Position and Direction** To know how to 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 **Statistics: Present and Interpret** To know how to complete, read and interpret information in tables, including timetables **Statistics: Solve Problems** To know how to solve comparison, sum and difference problems using information presented in a line graph **Re-visit and consolidate.**

Maths in Early Years and Foundation Stage

Mathematical Vocabulary		
Three and Four-Year-Olds/Range 5	Communication and Language	• Use a wider range of vocabulary. • Understand 'why' questions, like: "why do you think the caterpillar is so fat?" • Questions why things happen and gives explanations. Asks e.g. who, what, when, how
Reception/ Range 6	Communication and Language	• Learn new vocabulary. • Use new vocabulary throughout the day. • ● Uses talk to organise, sequence and clarify thinking, ideas, feelings and events

ELG	Communication and Language	Speaking	• Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

Number and Place Value

Counting

Three and Four-Year-Olds/Range 5	Mathematics		• Recite numbers past 5. • Say one number name for each item in order: 1, 2, 3, 4, 5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • • May enjoy counting verbally as far as they can go • • Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. • • Uses some number names and number language within play, and may show fascination with large numbers • • Begin to recognise numerals 0 to 10
Reception/ Range 6	Mathematics		• Count objects, actions and sounds. • Count beyond ten. • • Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0 • • Increasingly confident at putting numerals in order 0 to 10 (ordinality)
ELG	Mathematics	Numerical Patterns	• Verbally count beyond 20, recognising the pattern of the counting system.

Identifying, Representing and Estimating Numbers

Three and Four-Year-Olds/Range 5	Mathematics		• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Engages in subitising numbers to four and maybe five • • Counts out up to 10 objects from a larger group • • Matches the numeral with a group of items to show how many there are (up to 10)
Reception/ Range 6	Mathematics		• Subitise. • Link the number symbol (numeral) with its cardinal number value.

ELG	Mathematics	Number	• Subitise (recognising quantities without counting) up to 5.

Reading and Writing Numbers			
Three and Four-Year-Olds/Range 5	Mathematics		• Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • • Explores using a range of their own marks and signs to which they ascribe mathematical meanings
Reception/Range 6	Mathematics		• Link the number symbol (numeral) with its cardinal number value. • • Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"

Compare and Order Numbers			
Three and Four-Year-Olds/Range 5	Mathematics		• Compare quantities using language: 'more than', 'fewer than'. **• Creates their own spatial patterns showing some organisation or regularity** • Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers • • Beginning to use understanding of number to solve practical problems in play and meaningful activities • • Beginning to recognise that each counting number is one more than the one before • • In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items
Reception/Range 6	Mathematics		• Compare numbers. • Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects
ELG	Mathematics	Numerical Patterns	• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.

Understanding Place Value			

Reception/ Range 6	Mathematics		• Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • • In practical activities, adds one and subtracts one with numbers to 10
ELG	Mathematics	Number	• Have a deep understanding of numbers to 10, including the composition of each number.

Solve Problems

Three and Four-Year-Olds/Range 5	Mathematics		• Solve real world mathematical problems with numbers up to 5. • • Attempts to create arches and enclosures when building, using trial and improvement to select blocks • • Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers • • Beginning to use understanding of number to solve practical problems in play and meaningful activities

Addition and Subtraction

Mental Calculations

Reception/ Range 6	Mathematics		• Automatically recall number bonds for numbers 0-5 and some to 10. • In practical activities, adds one and subtracts one with numbers to 10 • • Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"
ELG	Mathematics	Number	• Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Solve Problems

ELG	Mathematics	Numerical Patterns	• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly.

Measurement

Describe, Measure, Compare and Solve (All Strands)

Three and Four-Year-Olds/Range 5	Mathematics	• Make comparisons between objects relating to size, length, weight and capacity. • In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items • Recalls a sequence of events in everyday life and stories
Reception/ Range 6	Mathematics	• Compare length, weight and capacity. • Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy • Becomes familiar with measuring tools in everyday experiences and play • Is increasingly able to order and sequence events using everyday language related to time • Beginning to experience measuring time with timers and calendars

Telling the Time

Three and Four-Year-Olds/Range 5	Mathematics	• Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then…' • • Recalls a sequence of events in everyday life and stories

Properties of Shapes

Recognise 2D and 3D Shapes and their Properties

Three and Four-Year-Olds/Range 5	Mathematics	• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'. • Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc. • Chooses items based on their shape which are appropriate for the child's purpose • • Responds to both informal language and common shape names • • Shows awareness of shape similarities and differences between objects • • Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes • • Attempts to create arches and enclosures when building, using trial and improvement to select blocks
Reception/ Range 6	Mathematics	• Select, rotate and manipulate shapes in order to develop spatial reasoning skills. • Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes • Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build

Compare and Classify Shapes

Reception/ Range 6	Mathematics	• Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can. • Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes

Redcastle Family School

"To give every child the skills and self-belief to succeed."

Position and Direction

Position, Direction and Movement

Three and Four-Year-Olds/Range 5	Mathematics	• Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. • Responds to and uses language of position and direction • Predicts, moves and rotates objects to fit the space or create the shape they would like
Reception/ Range 6	Understanding the World	• Draw information from a simple map. • Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints • • Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning) • • May enjoy making simple maps of familiar and imaginative environments, with landmarks

Patterns

Three and Four-Year-Olds/Range 5	Mathematics	• Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Creates their own spatial patterns showing some organisation or regularity • Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC) • Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next
Reception/ Range 6	Mathematics	• Continue, copy and create repeating patterns. • • Spots patterns in the environment, beginning to identify the pattern "rule" • • Chooses familiar objects to create and recreate repeating patterns beyond AB patterns and begins to identify the unit of repeat

Statistics

Record, Present and Interpret Data

Three and Four-Year-Olds/Range 5	Mathematics	• Experiment with their own symbols and marks, as well as numerals.