PROGRESSION OF KNOWLEDGE AND SKILLS – CURRICULUM 2022

SUBJECT:	MATHS

SUBJECT AREA	ASPECT	EYFS AOL: Maths	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
NUMBER – PLACE VALUE	NUMBERS TO 10	Numbers follow a sequence. Each number is one more than the previous number. The last number reached when counting tells you how many there are in total. Count objects actions and sounds, up to 10 forwards and backwards, beginning at zero, one or any given number and link numerals with its cardinal number value.	Sort objects into groups by characteristics The last number counted of a group is the total. Begin to count objects that have been sorted into groups from one to 10. Count objects that have been sorted into groups from one to 10. One object can be represented by another. Identify and represent numbers using concrete objects and pictorial representations. Zero comes before one. Find consecutive and non-consecutive missing numbers in sequences counting forwards. One more is the number after. Identify one more than a given number within 10. One less is the number before. Identify one less than a given number within 10.					

			Match one object with another. Equal means the same in amount. Size or number. More than means greater in amount or size. Less than means smaller in amount or size. Most means the biggest number or amount of something. Least means the smallest number or amount of something. Compare groups of objects using the language of equal to, more, more than, greater than, less, less than and fewer. The less than sign (<) shows that the value to the left of it is lower than value to the right of it. The greater than sign (>) shows that the value to the left of it is higher than the value to the right of it. Use <, > and = signs to compare numbers within 10. Compare numbers using the language 'greatest, largest, smallest, more than, less than, least, most' and 'equal to' Justify the order of numbers using their counting, sorting and grouping knowledge. Order three groups of objects and use the language 'greatest and smallest' Know that, when comparing numbers,					

			they should compare the highest place value column first (tens), then move onto the ones if the tens are equal. Order number within 10 using the language 'greatest, largest, smallest, more that, less than, least, most' and 'equal to'. Justify the order of numbers using their place value knowledge. Ordinal numbers give the position on a list 1st, 2nd, 3rd and so on. Use ordinal numbers to compare position. Use a number line to 10 to 'count to 10*' (*see one more/one less, greater than/less than, order numbers statements)					
	NUMBERS TO 20	Find one more or one less than numbers to 10 Numbers to 10 can be made in different ways, but the total is the same each time. Explore addition and subtraction with numbers to 10, using concrete objects, pictorial representations and number lines. Numbers to 10 can be made in different ways but the total is the same each time. Explore the composition of numbers to 10 and compare numbers. There are different ways of separating numbers	Find consecutive and non-consecutive missing numbers in sequences, counting forwards and backwards, including numbers 11 to 20. Represent numbers 11 to 20 in different ways. Read and write numbers to 20 in numerals and words. 10 and 20 have just 10s and no ones. 11 to 19 have one ten and some ones. Partition number 11 to 19 into a 10 and ones. One more is one more one, not one more 10.	Consolidate finding consecutive and non-consecutive missing numbers in sequences, counting forwards and backwards, including numbers 11 to 20. 10 and 20 have just 10s and no ones. 11 to 19 have one ten and some ones. Consolidate partitioning number 11 to 19 into a 10 and ones.				

		into two groups but the total is still the same. Recall number bonds to five and explore different ways that groups of 6-10 objects can be represented. Examples include, three and four together make seven, and seven take away four leaves three.	Identify one more and one less than a given number within 20. Use vocabulary of comparison such as greater than, less than and equal to compare groups of objects including those greater than 10. The less than sign (<) shows that the value to the left of it is lower than the value to the right of it. The greater than sign (>) shows that the value to the left of it is higher than the value to the right of it. Use <,> and = signs to compare numbers within 20. Order up to three groups of objects within 20. Order up to three abstract digits from 0 to 20.					
	NUMBERS BEYOND 20	Numbers have an order and a pattern that they follow. Recite numbers, in order to 20 and beyond. However a group of objects is displayed, the total is still the same. Identify and represent up to five objects, without counting, using concrete objects and pictorial representation. The same as means that both quantities match. More than is a bigger amount. Less than is a smaller amount.	Count to 50, beginning with 0 or 1, or from any given number. Count forwards and backwards to and from 50 from any given number. Know that one 10 is equal to 10 ones. Represent numbers to 50 and partition a two-digit number into 10s and ones. Identify one more or less than a given number using numbers to 50.	Consolidate counting to 50, beginning with zero or one, or from any given number. Know that one 10 is equal to 10 ones. Consolidate representing numbers to 50 and partition a two digit number into 10s and ones. Consolidate using <, > and = signs to compare numbers within 50. Read and write numbers to at least 100 in numerals and words.	Consolidate, using base 10 concrete and pictorial representations, including place value grids, the understanding of how hundreds are bigger than 10s and how 10s are bigger than ones. Three digit numbers are made up of 10s, hundreds and ones. Consolidate reading and writing three digits numbers on a place value grid. Consolidate estimating working out and writing	Consolidate representing numbers to 10,000 using a range of concrete materials. Represent numbers to 10,000, adding and subtracting 10, 100 and 1000 and discussing what happens to the place value columns. Rounding to the nearest 10 is adjusting the digits in a number either up or down to the nearest 10. For two or more digit numbers, if the number to the right of the place value number that you are rounding is equal to or greater than five, round up. If the number	Consolidate representing numbers to 10,000 using a range of concrete materials. Represent numbers to 10,000, adding and subtracting 10, 100 and 1000 and discussing what happens to the place value columns. Rounding to the nearest 10 is adjusting the digits in a number either up or down to the nearest 10. For two or more digit numbers, if the number to the right of the place value number that you are rounding is equal to or greater than five, round up. If the number	Consolidate representing numbers to 10,000, adding and subtracting 10, 100 and 1000 and discussing what happens to the place value columns. Consolidate representing numbers on a place value grid to 100,000 and use a number line to find numbers between two points. Place a number and estimate where larger numbers will be. Consolidate reading, writing and representing numbers to 1,000,000.

		Use and understand language related to adding and subtracting, including 'more than, less than' and 'the same as'	Equal means the same in amount, size or number. More than means greater in amount or size. Less than means smaller in amount or size. Most means the biggest number or amount of something. Least means the smallest number or amount of something. Use the language of equal to, more than, less than (fewer), most and least in various mathematical contexts. The less than sign (<) shows that the value to the left of it is lower than the value to the right of it, The greater tan sign (>) shows that the value to the left of it is higher than the value to the right of it. Use <, > and = signs to compare numbers within 50. Know that, when comparing numbers, they should compare the highest place value column first (10s), then move onto the ones of the tens are equal. Order numbers within 50 using the language 'largest, smallest, more than, less than, least, most' and 'equal to', and justify the order to numbers using their place value knowledge. Count in multiples of two from 20 to 50. Count in multiples of five from 20 to 50.	Place value refers to the amount a digit is worth due to its position in a number. For example, the digit 2 is worth 20 in the number 25. Recognise the place value of each digit in a two-digit number (ones and tens). Partition numbers in a variety of ways, not just as 10s and ones. For example, 58 is made up of five 10s and eight ones or four 10s and 18 ones, or two 10s and 38 ones. Explore how 10s and ones can be partitioned and recombined to make a total. Use concrete, pictorial and abstract representations correctly in a place value chart. Identify and find the position of numbers on number lines. Estimate the position of numbers on number lines and the value of a given position on a number line. The less than sign (<) shows that the value to the left of it is lower than the value to the right of t. The greater than sign (>) shows that the value to the left of it is higher than the value to the right of it. Compare a variety of groups of objects using the language 'equal to, more than, greater than,	numbers on a number line to 1000. Rounding to the nearest 10 is adjusting the digits in a number, either up or down, to the nearest 10. Fortwo or more digit numbers, if the number to the right of the place value number that you are rounding is equal to greater than five, round up. If the number to the right of the place value number that you are rounding is less than five, round down. This means, when rounding to the nearest 10, look at the ones digit. Round any three digit number to the nearest 10. Rounding to the nearest hundred is adjusting the digits in a number either up or down to the nearest hundred. For two or more digit numbers, if the number to the right of the pace value number that you are rounding is equal to or greater than five, round up. If the number to the right of the place value number that you are rounding to is less than five, round down. This means, when rounding to the nearest 100, look at the tens digit. Round any three digit number to the nearest hundred. 1000 is made up of 10 hundreds. Explore 1000.	to the right of the place value number that you are rounding is less than five, round down. This means, when rounding to the nearest 10, look at the ones digit. Consolidate rounding any three digit number to the nearest 10. Rounding to the nearest 100 is adjusting the digits in a number either up or down to the nearest hundred. For two or more digit numbers, if the number to the right o the palce value number that you are rounding is equal to or greater than five, round up. If the number to the right of the place value that you are rounding to is less than five, round down. This means, when rounding to the nearest 100, look at the 10s digit. Consolidate rounding any three digit number to the nearest 100. Round any four digit number to the nearest 10, hundred or thousand. Represent numbers on a place value girds to 100,000 and use a number line to find numbers between two points. Place a number and estimate where larger numbers will be. Find numbers 10/100/1000/10000/100000 more or less than a given number.	to the right of the place value number that you are rounding is less than five, round down. This means, when rounding to the nearest 10, look at the ones digit. Consolidate rounding any three digit number to the nearest 10. Rounding to the nearest 100 is adjusting the digits in a number either up or down to the nearest hundred. For two or more digit numbers, if the number to the right of the place value number that you are rounding is equal to or greater than five, round up. If the number to the right of the place value number that you are rounding is less than five, round down. This means, when rounding to the nearest 100, look at the 10s digit. Consolidate rounding any three digit number to the nearest 100. Round any four digit number to the nearest 10, hundred or thousand. Represent numbers on a place value grid to 100,000 and use a number line to find numbers between two points. Place a number and estimate where larger numbers will be. Find numbers 10/100/1,000/10,000/100,000 more or less than a given number.	Read, write and represent numbers to ten million in different ways. Multiplying or dividing by 10 twice has the same effect as multiplying or dividing by 100 and multiplying or dividing by 10 three times has the same effect as multiplying or dividing by 1,000. Use place value knowledge to identify integers 10, 100, 1,000 times the size, one-tenth, one-hundredth, or one-thousandth the size of other integers. Explore the number line to 10,000,000. Compare and order numbers, presented in different ways, up to ten million. Consolidate rounding any four digit number to the nearest 10, hundred or thousand. Round any whole number to 10,000,000.

			Count to 100, beginning with zero or one, of from any given number. Group in 10s to identify how may 10s and ones are within numbers up to 100. Use <, > and = signs and language to begin comparing numbers up to 100. When comparing three or more numbers, inequality symbols, such as < and >, should not be used. Compare numbers and amounts using <, > and = signs and language 'more than, less than' and 'equal to'. Order sets of objects and numbers from smallest to largest and largest to smallest, using the language 'most, bigger, biggest, larger, largest, smaller, smallest' and 'least'. Identify one more or less than a given number using numbers to 100. Identify one more or less than a given number, using numbers to 100.	less, less than, fewer' and symbols <, > and =. Use the <, > and = signs to write number sentences. Compare and order numbers from zero up to 100. Consolidate counting on multiples of two. Consolidate counting in multiples of five. Consolidate counting in multiples of ten. Count in multiples of three.	Explore numbers beyond 1000, up to 10,000. 1000 is made up of 10 hundreds. Represent numbers to 10,000 using a range of concrete materials. Partition numbers in a variety of ways, not just as thousands, hundreds, 10s and ones. For example, 5000+300+20+9 is equal to 4000+1300+10+19 Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) Estimate, work out and write numbers on a number line to 10,000 Consolidate finding 10 and 100 more or less than a given number. Find 1000 more or less than a given number. Compare and order numbers beyond 1000, up to 10,000. Rounding to the nearest thousand is adjusting the digits in a number either up or down to the nearest thousand. For two or more digit numbers, if the number to the right of the place value number that you are rounding to is equal to or greater than five, round up. If the number to the right of the place vale number that you are rounding is less than five, round down. This means, when rounding	Partition numbers to 1,000,000 in the standard way (thousands, hundreds, tens and ones) as well as in more flexible ways, for example 15,875= 14,875 +1,000 and 1,785 +13,475 +2,400. Explore number lines up to 1,000,000 Compare and order number up to 100,000. Round any number to 100,000 using understanding of multiples of10, 100, 1000 and 10,000. Read, write and represent numbers to 1,000,000. The term to term rule allows you to find the next number in a sequence of you know the previous term or terms. Complete number sequences using counting forwards and backwards in powers of 10 up to 1,000,000. Focus on the higher place value when comparing numbers. Use < , > and = signs and language to compare and order numbers up to 1,000,000. Round numbers to six digits including rounding to the nearest 100,000 and explain where rounding in context is different than expected.	Partition numbers to 1,000,000 in the standard way (thousands, hundreds, tens and ones) as well as in more flexible ways, for example 15,875 = 14,875 + 1,000 and 15,875 = 13,475 + 2,400. Explore number lines up to 1,000,000. Compare and order numbers up to 100,000. Round any number to 100,000 using understanding of multiples of 10, 100, 1000 and 10,000. Read, write and represent numbers to 1,000,000. The term to term rule allows you to find the next number in a sequence if you know the previous term or terms. Complete number sequences using counting forwards and backwards in powers of 10 up to 1,000,000. Focus on the highest place value when comparing numbers. Use <, > and = signs and language to compare and order numbers up to 1,000,000. Round numbers to six digits, including rounding to the nearest 100,000, and explain where rounding in	

					to the nearest thousand, look at the hundreds digit. Round any four digit number to the nearest 1000. Round any number to the nearest 10, 100 or 1000. There are two 25s in 50 and four 25s in 100. Use number facts to count in 25s.		context is different than expected.	
	NEGATIVE NUMBERS					The numbers below zero, negative numbers, have a '-' sign in front of them. Count backwards through zero to include negative numbers.	Explore negative numbers and their position on a number line. Count back through zero and use negative numbers in context, such as temperature.	Understand negative numbers through counting forwards and backwards through zero. Find intervals across zero in relevant contexts.
	ROMAN NUMERALS					In Roman numerals, I=1, V=5, X=10, L=50 and C=100. All numbers between one and 100 can be written using a combination of these numerals. If a lower value numeral is placed after a higher value numeral, it indicates that they should be added together. For example, VI=6 (5+1). If a lower value is placed before a higher value numeral, it should be subtracted from the higher value. For example, IX=9 (10–1). Explore Roman numerals up to 100 (I to C).	In Roman numerals, I=1, V=5, X=10, L=50, C=100, D=500 and M=1000. All numbers can be written using a combination of these. Years are sometimes written in Roman numerals. For example, 2020 is MMXX. Read Roman numerals up to 1000 (M) and recognise years written in Roman numerals.	
NUMBER – ADDITION AND SUBTRACTION	ADDITION		Whole is all of something. Parts or groups are amounts which, when added together, makes up the whole of something.	Demonstrate knowledge of all number bonds to 10. Identify multiples of 10 bonds to 100,	Recall all the number bonds to and within 10 in a variety of contexts, and consolidate using number bonds to 10 to			

			Separate a whole number of items into two parts (groups). Count the items in two parts or groups to make a whole. Altogether is when everything, every item in a part or group, is added together. Separate a whole number of items into two parts (groups) and count the items in two parts to demonstrate hoe many there are altogether. A number can be partitioned into two or more parts. Count the items in two parts to find how many there are altogether. '+' represents add or plus and '=' represents 'is equal to' (equals). Create a number sentence using + and =. Adding two numbers in a different order gives the same answer. Add two numbers within 10 and recognise that addition is commutative. Break numbers into different parts. Break numbers into different parts. Partition numbers into parts systematically. Explore number bonds to 10 through a variety	recognising the link between single digit bonds and 10s bonds. Consolidate adding numbers within 20 using knowledge of number bonds. Consolidate using number bonds to 10 to find number bonds to 20. Find number bonds to 100 with tens and ones. Add three one digit numbers, using commutativity to increase efficiency.	recall number bonds to 100. Consolidate adding two digits and one digit, including crossing ten. Find complements to 100.			

			of representation, including fingers. Compare number bonds using the =, < and > symbols. Adding part together gives a total. Use + and = accurately when solving simple additions within 10. Know that they are adding to what they already have and should not include their start number when counting on. Add by counting on. Find all number bonds of numbers within 10. Count on from a given part to the whole to find the missing part. Consolidate exploring number bonds to 10 through a variety of representations, including fingers. Use number bonds to 10 to find number bonds to 20. Add numbers within 20 using knowledge of number bonds.					
	SUBTRACTION		When nothing is taken away, the whole remains the same. Use the language of subtraction in real life contexts. The – symbol represents taking away. When nothing is taken away, the whole remains the same.	Consolidate using the strategy or partitioning to make ten to support subtraction crossing 10.	Consolidate subtracting one digit from two digits, including crossing 10.			

			Complete subtraction number sentences using the – symbol. Break apart a number into two parts, using concreate and pictorial representations to support. Count backwards to subtract by 'putting the start number in our head and counting backwards'. Find the different by counting back, counting on or making both amounts to visually show how many more/less. Know that when nothing is taken away, the start number remains the same, or when the whole group is taken away, there will be nothing left. Recognise and use the subtraction symbol within 20, not crossing 10. Use the strategy of partitioning to make ten to support subtraction crossing 10. 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 are one digit numbers. One digit numbers are made up of one digit or one number. Two digit numbers are made up of two digits, such as 12 or 20. Subtract one digit and two digit numbers within 20, crossing 10.					

	ADDITION AND SUBTRACTION	Adding means making a group larger and can be represented by the + symbol. Subtraction means making a group smaller and can be represented by the – symbol. Understand and use language and concepts relating to addition and subtraction. Be aware of the symbols related to addition and subtraction.	Complete addition and subtraction using a number line. Addition (+) is putting two or more numbers or objects together to give a larger number (the total). Subtraction (-) is removing or taking away numbers of objects. What is left is the different between the two numbers. The equals sign (=) shows that things on both sides of it have the same value. Read, write and interpret simple mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Use concrete manipulatives and drawn images to complete inequality and 'equal to' statements, involving comparing a simple statement to an integer. Compare two calculations, both addition and subtraction, using the symbols <, > and =. Addition and subtraction are inverse operations. Addition is commutative but subtraction is not. Explore addition and subtraction fact families for numbers within 20. The less than sign (<) shows that the value to the left of it is lower than to the right of it. The greater than sign (>)	Identify, using +, - and = symbols, number facts within 20. Addition is the opposite of subtraction. Discuss and share strategies, including using the inverse to check addition and subtraction calculations. Use <, > and = sign to compare number sentences. Find missing values in number sentences with familiar number within 20 using structure and spotting patterns. Use related number facts of 10s and ones to solve addition and subtraction calculations Recognise the pattern of digits when add and subtract one. Explore, on a100 square, where the 10s digit changes when the ones digit stays the same. Add and subtract 10s from a given number within 100.	Apply prior understanding of adding and subtracting ones and 10s to adding and subtracting multiples of 100. Consolidate recognising the pattern of digits when adding and subtracting one. Add and subtract three digit and one digit numbers, not crossing 10. Observe and explore what happens when a multiple of 10 is added or subtracted from a three digit number. Add and subtract 100s. Focus on the position of numbers and place value to add and subtract two digit and three digit numbers.	Add and subtract 1000s.	Add and subtract numbers using mental strategies with increasingly large numbers.	Add and subtract integers with any number of digits using the formal column method or mental strategies, applying their understanding of place value.

			shows that the value to the left of it is higher than the value to the right of it. The greater than sign (>) shows that the value to the left of it is higher than the value to the right of it. Use <,> and = signs to compare numbers within 20.					
	PROBLEMS (ADDITION AND SUBTRACTION)		Solve simple age-appropriate problems with addition and subtraction, using concrete objects, pictorial representations, and missing number problems.	Apply their increasing knowledge of mental and written methods to solve simple problems with addition and subtraction, using concrete objects and pictorial representations, including those involving numbers, quantities and measures.	Predict answers and develop number sense by looking for patterns between calculations. Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.		Solve addition and subtraction multistep problems in different contexts.	Consolidation of solving addition and subtraction multistep problems in different contexts. Solve addition and subtraction multistep problems in different contexts, deciding which operations and methods to use and explaining their choices.
	ADDITION METHODS			10 ones is the same as one 10. Add two digits and one digit including crossing 10. Add the ones first when using column method. Add two digit numbers not crossing 10, including column method.	Add three digit and two digit numbers, including crossing 10. Adding a 10 can change the 10s and hundreds columns. Add multiples of 10 to a three digit number with an exchange. Consolidate adding two digit numbers crossing 10, using partitioning and exchange. Add two digit and three digit numbers, including exchanging in more than one column. Add two three digit numbers with no exchange. Add two three digit numbers with an exchange.	Consolidate adding two three digit numbers with no exchange. Add two four digit numbers with no exchange. Consolidate adding two three digit numbers with an exchange. Add two four digit numbers with an exchange. Add two four digit numbers with more than one exchange.	Consolidate adding two four digit numbers with an exchange. Consolidate adding two four digit numbers with more than one exchange. Add numbers with more than four digits, using place value to line the numbers up correctly for column addition.	Consolidate adding numbers with more than four digits, using place value to line the numbers up correctly for column addition.

	SUBTRACTION METHODS			Add two digit numbers crossing 10, using partitioning and exchange.	Subtract one digit from three digits, including crossing 10. Subtract multiples of 10 from a three digit number, with an exchange. Consolidate subtracting a two digit number from a two digit number, crossing 10. Focus on the position of numbers and place value to subtract two digits from three digits using the column method. Subtract three digits from three digits, including the use of column subtraction. Subtract three digits from three digits including exchanging in more than one column.	Consolidate subtracting three digits from three digits, including the use of column subtraction. Subtract two four digit numbers with no exchange. Consolidate subtracting three digits from three digits, including exchanging in more than one column. Subtract two four digit numbers with one exchange. Subtract two 4-digit numbers with more than one exchange. Find the most efficient methods for subtractions by comparing column subtraction and mental methods.	Consolidate subtracting two four digit numbers with one exchange. Consolidate subtracting two four digit numbers with more than one exchange. Subtract numbers with more than four digits, including exchange using the formal column method.	Consolidate subtracting numbers with more than four digits, including exchange using the formal column method.
	ESTIMATING AND CHECKING			10 ones is the same as one 10. Subtract one digit from two digits, including crossing ten. Subtract a two digit number from a two digit number, without crossing ten. Subtract a two digit number from a two digit number crossing ten.	Estimate means to quickly find, with some thought of the calculation, an approximate value close to the right answer. Estimate the answer to a calculation and use inverse operations to check answers. Inverse operations are opposites that reverse the effect of the other operation. Addition and subtraction are inverse operations. Use inverse operations to check answers.	Round to the nearest 10, 100 and 1000 to estimate answers. Use inverse operations to check answers, working with increasingly large numbers.	Round numbers to support estimating answers for calculations using the term approximate. Adding two numbers in a different order gives the same answer - commutative. Addition is commutative, subtraction is not. Use inverse operations to check addition and subtraction answers.	Adding two numbers in a different order gives the same answer - commutative. Addition is commutative, subtraction is not. Consolidate using inverse operations to check addition and subtraction answers.
NUMBER – MULITPLICATION AND DIVSION	TIMES TABLES		Revise counting in multiples of two, up to 50.	Mentally calculate mathematical statements for multiplication within the two times tables.	Consolidate identifying multiples of 2, 5 and 10, showing fluency with the facts in the 2,5 and 10 times-tables.	Ten times bigger' is the same as 'multiply by 10'. Mentally calculate mathematical	Consolidate mentally calculating mathematical statements for	

			Revise counting in multiples of five, up to 50. Count in multiples of 10.	Mentally calculate mathematical statements for multiplication within the five times table. Mentally calculate mathematical statements for multiplication within the 10 times tables.	Consolidate mentally calculating mathematical statements for multiplication within the two times tables. Consolidate mentally calculating mathematical statements for multiplication within the five times tables. Explore problems involving multiplying by three using knowledge of counting in threes. Mentally calculate mathematical statements for multiplication within the three times tables. Mentally calculate mathematical statements for division within the three times tables. Doubling and doubling again is the same as multiplying by four. Mentally calculate mathematical statements for multiplication within the four times tables. Halving and halving again is the same as dividing by four. Mentally calculate mathematical statements for division within the four times tables. Each multiple of eight is double its equivalent multiple of four.	statements for multiplication within the 10 times tables. Explore problems involving multiplying by three, using knowledge of counting in threes and consolidate mentally calculating mathematical statements for division within the three times tables. Consolidate mentally calculating mathematical statements for multiplication within the three times tables. Each multiple of six is double its equivalent multiple of three. Mentally calculate mathematical statements for multiplication and division within the six times tables. Each multiple of nine is one less than the equivalent multiple of 10. Mentally calculate mathematical statements for multiplication and division within the nine times tables. Explore the 11 times-table. Explore the 12 times-table. Recall and use multiplication and division facts for all	multiplication within the 10 times tables.	

					Mentally calculate mathematical statements for multiplication within the eight times tables. Mentally calculate mathematical statements for division within the eight times tables. Consolidate mentally calculating mathematical statements for multiplication within the two, four and eight times tables.	times tables up to 12 (12x12).		
	MULTIPLICATION	Doubling is adding the same number to itself. Sharing something evenly means that each group has the same amount. Only even numbers can be shared equally between two sets. Double quantities within 10 and explore how to share amounts evenly using concrete resources.	Explore equal groups and write statements, such as 'there are… groups of..' Add equal groups to find a total, counting equal groups of two, five and 10, and explore this within 50. In an array, a row is across and a column is down. Make arrays. Double is two groups of a number or amount. Doubling is adding the same number to itself. Double small quantities, using concrete objects and pictorial representations.	Make equal groups and write statements, such as 'there are… groups of…' Redistribute from unequal to equal groups. Consolidate adding equal groups to find a total counting equal groups of two, five and 10, and explore this within 50. In an array, a row is across and a column is down. Consolidate making arrays. Make equal groups. Add equal groups, connecting this to repeated addition. Know and recognise the multiplication symbol and that multiplication is repeated addition. Link repeated addition and multiplication together.	Recognise, add and make equal groups. Consolidate linking repeated addition and multiplication together. Consolidate using arrays to see that multiplication facts are commutative.	Multiply by 100, exploring the links with multiplying by 10 and what is happening to the value of the digits. Multiply by one and zero exploring the results. Multiply together three numbers. The 'Associative Law' is that, in addition and multiplication, it does not matter how the numbers are grouped. Change the order of numbers in multiplication to group them more efficiently through an understanding of commutativity and the 'Associative Law' A factor is a whole number that multiplies by another number to make a product, such as 3×5=15, factor × factor = product. Factor pairs are two numbers that multiply together to make a particular	Find multiples of whole numbers. Factors are the whole numbers that you multiply together to get another whole number (factor × factor = product). Factors come in pairs. Use arrays to show the relationship between multiplication and division. Numbers have the same factors these are called common factors. Find the common factors of two numbers, compare with arrays and display results in a Venn diagram. Prime numbers have exactly two factors, one and itself. One is not a prime number because it does not have exactly two factors (it only has one factor). Establish if a number up to 100 is prime and recall all prime numbers	Consolidate using arrays to show the relationship between multiplication and division. Find the common factors of two numbers, using mental methods and knowledge of multiples and display results in Venn diagrams and tables. Find common multiples of numbers. Numbers that are not prime numbers are called composite numbers. Find the prime factors of numbers. Develop the understanding of square and cube numbers.

				Use the multiplication symbol and work out the total from pictures. Interpret a multiplication word problem by drawing images to help solve it. An array is an arrangement of objects, numbers or pictures in columns and rows. See, using arrays, that multiplication facts are commutative Double is two groups of a number or amount. Doubling is adding the same number to itself. Consolidate doubling small quantities, using concrete objects and pictorial representations. Consolidate making groups of an equal amount from a given total.		number. For example, 2x4=8, so two and four are a factor pair of eight. Demonstrate an understanding of factor pairs using concrete resources. Use partitioning of two digit numbers into 10s and ones, or into factor pairs, in order to multiply one and two digit numbers.	up to 19 (2, 3, 5, 7, 11, 13, 17 & 19). Square numbers have an odd number of factors and are the result of multiplying a whole number by itself. The notation for squared is ^{2}. Establish if a number is a square number using arrays. A cube number is the result of multiplying a whole number by itself three times. The notation for squared is ^{3}. Establish if a number is a cube number. Consolidate multiplying by 100, exploring the links with multiplying by 10 and what is happening to the value of the digits. Multiply by 1000, explaining the number of places to the left on a place value grid. Digits move when multiplied by different multiples of 10. Use understanding of multiples of zero, 100 and 1000 to answer related questions.	
	DIVISION	Sharing something evenly means that each group has the same amount. Only even numbers can be shared equally between two sets. Explore how to share amounts evenly using concrete resources.	Make groups of an equal amount from a given total. Share concrete objects into equal groups, observe that sometimes the numbers of objects cannot be shared equally.	Consolidate sharing concrete objects into equal groups, observe that sometime the number of objects cannot be shared equally. Know and recognise the division symbol. Divide by sharing objects into equal groups with concrete	Know and recognise the division symbol. Consolidate dividing by sharing objects into equal groups with concrete objects and pictorial representations. Consolidate dividing by making equal groups, then count on to find	Divide by 10, with whole number answers, exploring what is happening to the value of the digits. Divide by 100, with whole number answers. Demonstrate how both the sharing and grouping structures of division can be used to	Consolidate dividing by 10, with whole number answers, exploring what is happening to the value of the digits. Consolidate dividing by 100, with whole number answers Divide by 10, 100 and 1000 explaining the number of places to the right on a place value	Explore divisibility strategies, for example, by looking for patterns in times tables or using knowledge of factors and repeated division. The dividend is the number being divided. The divisor is the number that the dividend is being divided by.

				objects then pictorial representations. Know and recognise the division symbol. Divide by making equal groups, then count on to find the total number of groups. Use grouping and sharing to be able to solve simple division problems. Explore odd and even numbers and their structure using concrete manipulatives. Division is the opposite of multiplication. Use grouping or sharing to answer questions and use the five times table to support division by five. Grouping and counting in 10s is more efficient than sharing into 10 equal groups. Use grouping and sharing, depending on the context of the problem, to divide by 10.	the total number of groups. A remainder is the whole number left over after a division calculation when one number does not divide exactly into another. Consolidate using grouping and sharing to be able to solve simple division problems.	divide a number by one or itself.	grid. Digits move when dividing by different powers of 10.	Use knowledge of factors to explain the relationship between dividend and divisor.
	MULTIPLICATION METHODS				Multiply two digits by one digit using the formal method of column multiplication with no exchange. Multiply two digits by one digit using the formal method of column multiplication with exchange.	Use a variety of informal written methods to multiply a two digit and a one digit number, understanding when to use a mental method to multiply and when to represent thinking by showing working. Consolidate multiplying two digits by one digit using the formal method of column multiplication with no exchange.	Consolidate applying knowledge of exchanging 10 ones for one 10 in addition in multiplication, including exchanging multiple groups of 10s in moving towards the formal short multiplication method. Consolidate multiplying two digit and three digit numbers by any one digit number, using a formal written method.	Consolidate multiplying numbers with up to four digits by a one-digit numbers, using a formal written method. Consolidate using the area model of multiplication. Consolidate multiplying two digits by two digits using a formal written method. Consolidate multiplying three digits by two digits

						Apply knowledge of exchanging 10 ones for one 10 in multiplication, including exchanging multiple groups of 10s in moving towards the formal short multiplication method. Multiply two digit and three digit numbers by any one digit number, using a formal written method.	Multiply numbers with up to four digits by one digit numbers, using a formal written method. Use the area model of multiplication. Multiply two digits by two digits using a formal written method. Multiply three digits by two digits using a formal written method. Multiply four digits by two digits using a formal written method.	using a formal written method. Multiply numbers with up to four digits by a two-digit number using the formal written method of long multiplication.
	DIVISION METHODS				Divide two digit numbers by a one digit number by partitioning into 10s and ones and sharing into equal groups, using numbers that do not involve exchange or remainders. Divide two digit numbers by a digit number by partitioning into 10s and ones and sharing into equal groups, using numbers that involve exchanging between the 10s and ones. The answers do not have remainders. Divide 100 into two, four, five and 10 equal parts. A remainder is the whole number left over after a division calculation when one number does not divide exactly into another. Explore division with remainders using concrete objects, pictorial representations and arrays.	Consolidate dividing two digit numbers by a one digit number by partitioning into 10s and ones and sharing into equal groups. Divide numbers that involve exchanging between the 10s and ones. The answers do not have remainders. Divide two digit numbers by a one digit number by sharing into equal groups where the 10s and ones are divisible by the divisor. Divide numbers that involve exchanging between the 10s and ones. A remainder is the whole number left over after a division calculation when one number does not divide exactly into another. Use place counters to divide two digit numbers by one digit numbers involving remainders.	Consolidate dividing two digit numbers by a one digit number by sharing into equal groups where the 10s and ones are divisible by the divisor. Divide numbers that involve exchanging between the tens and ones. Consolidate using place counters to divide two digit numbers by one digit numbers involving remainders. Consolidate using place counters to divide three digit numbers by one digit numbers with and without remainders. Divide up to four digit numbers by a one digit number. Use place counters to partition and then group numbers to develop short division method with remainders.	Consolidate dividing up to four digit numbers by a one digit number. Consolidate using place counters to partition and then group numbers to develop short division method with remainders. Divide up to four digit numbers by up to two digit numbers using the short division method. Divide three digit numbers by a two digit number without remainders, starting with a more expanded method (with multiples shown), before progressing to the more formal long division method. Divide four digit numbers by two digit numbers using the long division method. Divide using long division method where answers have remainders, checking

					Divide two digit numbers by a one digit number by partitioning into 10s and ones and sharing into equal groups, using numbers that involve exchanging between the 10s and ones and give answers with remainders.	Use place counters to divide three digit numbers by one digit numbers with and without remainders.		that the remainder is smaller than the divisor. Divide four digit numbers using long division method where answers have remainders, interpreting the remainder as appropriate or not applicable depending on context.
	PROBLEMS (MULTIPLICATION AND DIVISION)				Multiplication is the opposite of division. Consolidate using grouping or sharing to answer questions and use the five times table to support division by five. Grouping and counting in 10s is more efficient than sharing into 10 equal groups. Consolidate using grouping and sharing, depending on the context of the problem to divide by 10. Compare multiplication and division facts using inequality symbols. One number in the calculation, 10 times bigger, will result in the answer being 10 times bigger. Solve multiplication problems using known multiplication facts. Solve simple scaling problems using the vocabulary 'times as many'. List systematically, then calculate without listing, the possible combinations resulting	Solve multiply and divide by 6 problems using knowledge of equal groups, with concrete and pictorial supporting methods. Solve multiply and divide by 9 problems. Multiplication and division are inverse operations. Solve multiply and divide by seven problems, exploring commutativity. Apply multiplication facts, including the seven times table, to solve problems. A remainder is the whole number left over after a division calculation when one number does not divide exactly into another. Consolidate solving division problems linking division with repeated subtraction. Include problems with a remainder. Scaling involves multiplying or dividing measures or integers to increase or decrease a measurement or quantity.		Solve multiplication problems in different contexts. Solve division problems in different contexts. In mixed operation calculations, calculations are not carried out from left to right. No operation sign means multiply. 4(2+1) means 4x(2+1). Complete mixed operation calculations. Select the appropriate mental strategy over computational methods to improve efficiency. Determine, by using known facts from one calculation and an understanding of commutativity and inverse operations, the answer of similar calculation without starting afresh. Use mental strategies and estimation to check answers to calculations.

					from two groups of objects.	Solve increasingly challenging integer scaling and correspondence problems, in which n objects are connected to m objects.		
NUMBER - FRACTIONS	RECOGNISING, FIDNING AND MAKING FRACTIONS		Make a half. Make a whole. A half is one of two equal parts of a whole object or shape. Recognise, find and name a half as one of two equal parts of an object or shape. A half is one of two equal parts of a quantity. A quarter is one of four equal parts of a whole object or shape. Recognise, find and name a quarter as one of four equal parts of an object or shape. A quarter is one of four equal parts of a quantity. Recognise, find and name a quarter as one of four equal parts of a quantity.	A whole is one object or one quantity. A fraction is part of an object, shape or quantity that has been split into equal parts or groups. Recognise equal and unequal parts of real life objects and pictorial representations of a variety of shapes and quantities Halving is splitting a whole into two equal parts. The numerator of a fraction is the top number and shows how many parts of a whole there are. The denominator of a fraction is the bottom number and shows into how many equal parts the item or number is divided. Explore halves in different contexts and use the ½ notation alongside half or halves. Halving is the same as dividing by two. Find half of a set of objects or quantity. One quarter is equal to one part out of four equal parts. Recognised a quarter, explore splitting wholes in quarters and see that a quarter is half of a half. Find quarters of shapes. Objects and quantities.	A whole is one object or one quantity. A fraction is part of an object, shape or quantity that has been split into equal parts or groups. Consolidate recognition of equal and unequal parts of real life objects and pictorial representations of a variety of shapes and quantities. Halving is splitting a whole into two equal parts. The numerator of a fraction is the top number, and shows how many parts of a whole there are. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Consolidate exploring halves in different contexts, and use the ½ notation alongside half or halves. Halving is the same as dividing by 2. Consolidate finding half of a set of objects or quantity. One quarter is equal to one part out of four equal parts. Consolidate recognition of a quarter, explore	The numerator of a fraction is the top number, and shows how many parts of a whole there are. Unit fractions have a numerator of one. Non-unit fractions have a numerator greater than one. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Consolidate recognition of unit and non-unit fractions and fractions with denominators other than two, three and four. The numerator of a fraction is the top number, and shows how many parts of a whole there are. Unit fractions have a numerator of one. Non-unit fractions have a numerator greater than one. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Explore fractions of shapes, quantities and a number line. A tenth is one divided by 10 (1/10). A tenth is one of 10 equal parts of an object, shape or quantity and is written	The numerator of a fraction is the top number, and shows how many parts of a whole there are. Unit fractions have a numerator of one. Non-unit fractions have a numerator greater than one. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Consolidate exploring fractions of shapes, quantities and fractions of a number line.	Use number lines to count backwards and forwards in fractions and to find equivalent fractions.

				One third is equal to one part out of three equal parts. Recognise a third, explore splitting wholes into thirds. Find thirds of shapes objects and quantities. The numerator if a fraction is the top number and shows how many parts of a whole there are. Unit fractions have a numerator of 1. The denominator of a fraction is the bottom number and shows into how many equal parts the item or number is divided. Recognise a unit fraction as one equal part of a whole. The numerator and the denominator are the same when the fraction is equivalent to one whole. Non-unit fractions have a numerator greater than 1. Recognise 2/3 and ¾ as non-unit fractions. See fractions where the whole is shaded and how these fractions are written. A fraction is part of an object, shape or quantity that has been split into equal parts or groups. The top number of a fraction shows the number of parts we are dealing with and the bottom number shows the number of equal parts into which something has been split. A quarter)1/4) is	splitting wholes into quarters and see that a quarter is half of a half. Consolidate finding quarters of shapes, objects and quantities. One third is equal to one part out of three equal parts. Consolidate recognition of a third, explore splitting wholes into thirds. Consolidate finding thirds of shapes, objects and quantities. The numerator of a fraction is the top number, and shows how many parts of a whole there are. Unit fractions have a numerator of one. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Consolidate recognition of a unit fraction as one equal part of a whole. The numerator and the denominator are the same when the fraction is equivalent to one whole. Non-unit fractions have a numerator greater than one. Consolidate the recognition of ⅔ and ¾ as non-unit fractions. See fractions where the whole is shaded and how these fractions are written.	as 1/10. Tenths are calculated by dividing an object into ten equal parts or dividing a quantity by 10. For example, one tenth of 50 is 50÷10=5. The number system extends to the right of the decimal point into the tenths column. Consolidate counting up and down in tenths, recognising that tenths arise from dividing an object into 10 equal parts and in dividing one digit numbers or quantities by 10.		

				one of four equal parts of a whole object, shape or quantity. A half (1/2) is one of two equal parts. Two-quarters (2/4) is two of four equal parts. A third (1/3) is one of three equal parts. Recognise, find ,name and write the fractions ¼, 1/2, 2/4, ¾, and 1/3 of a length, shape set of objects or quantity.	A fraction is part of an object, shape or quantity that has been split into equal parts or groups. The top number of a fraction shows the number of parts that we are dealing with, and the bottom number shows the number of equal parts into which something has been split. A quarter (¼) is one of four equal parts of a whole object, shape or quantity. A half (½) is one of two equal parts. Two quarters (²⁄₄) is two of four equal parts. A third (⅓) is one of three equal parts. Consolidate recognising, finding, naming and writing the fractions ¼, ½, ²⁄₄, ¾ and ⅓ of a length, shape, set of objects or quantity. The numerator of a fraction is the top number, and shows how many parts of a whole there are. Unit fractions have a numerator of one. Non-unit fractions have a numerator greater than one. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Recognise unit and non-unit fractions and fractions with denominators other than two, three and four.			
	EQUIVALENCE			Explore the equivalence of two quarters and one half of the same whole and demonstrate that they are the same.	Explore the equivalence of two quarters and one half of the same whole, and demonstrate that they are the same.	Equivalence means of equal (the same) value. Equivalent fractions are fractions that have the same value. For	A family of equivalent fractions is a group of fractions that all have the same value but are written differently. For	Consolidate the identification, naming and writing of equivalent fractions of a given fraction,

					Equivalence means of equal (the same) value. Equivalent fractions are fractions that have the same value. For example, ½ and ¼, ⅓ and $^{2}/_{6}$ or ¾ and $^{9}/_{12}$. The numerator of a fraction is the top number, and shows how many parts of the whole there are. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Recognise and show, using diagrams, equivalent fractions with small denominators. Recognise how a number line divided into different amounts can represent equivalent fractions. Use proportional reasoning to link pictorial images with abstract methods to find equivalent fractions. Find patterns and missing numerators and denominators when exploring equivalent fractions. Dividing something into more equal parts makes each part smaller. Compare unit fractions or fractions with the same denominator. Order unit fractions or fractions with the same denominator.	example, ½ and ¼, ⅓ and $^{2}/_{6}$ or ¾ and $^{9}/_{12}$. The numerator of a fraction is the top number, and shows how many parts of the whole there are. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Recognise and show, using diagrams, equivalent fractions with small denominators. Recognise how a number line divided into different amounts can represent equivalent fractions. A family of equivalent fractions is a group of fractions that all have the same value but are written differently. For example, 1/2, 2/4, 4/8 and 3/6 are a family, and 3/4, 6/8 and 9/12 are a family. Recognise and show, using diagrams, families of common equivalent fractions. Find equivalent fractions using the method of multiplying the numerators and denominators by the same number. Demonstrate that the number of equal parts that make a whole is dependent on the number of equal parts altogether. The numerator of a fraction is the top	example, 1/2, 2/4, 4/8 and 3/6 are a family, and 3/4, 6/8 and 9/12 are a family. Recognise and show, using diagrams, families of common equivalent fractions. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Consolidate demonstrating that the number of equal parts that make a whole is dependent on the number of equal parts altogether. A proper fraction has a numerator less than the denominator. An improper fraction has a numerator equal to or greater than the denominator. A mixed number is the combination a whole number (integer) and a proper fraction. Convert improper fractions to mixed numbers. A proper fraction has a numerator less than the denominator. An improper fraction has a numerator equal to or greater than the denominator. A mixed number is the combination a whole number (integer) and a proper fraction. Convert mixed numbers to improper fractions	represented visually, including tenths and hundredths. Simplify fractions through an understanding of the highest common factor. Consolidate converting improper fractions to mixed numbers. Consolidate converting mixed numbers to improper fractions using concrete and pictorial methods. Compare and order fractions with the same denominator or denominators that are multiples of the same number and find the difference between fractions using a number line. If the denominators are the same, the larger the numerator, the larger the fraction. Compare and order fractions where denominators are not multiples of the same number. Find the lowest common multiple of the denominators in order to find equivalent fractions with the same denominators, then compare the numerators to find the larger or smaller fraction. If the numerators are the same, the larger the denominator, the smaller the fraction.

						number, and shows how many parts of a whole there are. The denominator of a fraction is the bottom number, and shows into how many equal parts the item or number is divided. Unit fractions have a numerator of one. Non-unit fractions have a numerator greater than one. Compare and order unit fractions or non-unit fractions with the same denominators.	using concrete and pictorial methods. When the denominator or numerator of two or more fractions is the same, it is called a common denominator or common numerator. Compare and order fractions less than one, where the denominators are multiples of the same number. Find common denominators and common numerators. Compare and order fractions greater than one, including improper fractions and mixed numbers.	Compare and order fractions by finding a common numerator, then compare the denominators to find the larger or smaller fraction.
	COUNTING AND CALCULATING WITH FRACTIONS			Find three quarters of a quantity. Count up in halves, thirds and quarters from any number up to 10. Solve simple problems involving fractions.	Solve problems involving Y3 fractions skills, such as adding and subtracting fractions with the same denominator within one whole. Recognise, find and write fractions of a discrete set of objects, using unit fractions with small denominators. Recognise, find and write fractions of a discrete set of objects, using unit and non-unit fractions with small denominators.	A proper fraction has a numerator less than the denominator. An improper fraction has a numerator equal to or greater than the denominator. A mixed number is the combination a whole number (integer) and a proper fraction. Count in fractions greater than one on a number line, and link to improper fractions and mixed numbers. Consolidate recognising, finding and writing fractions of a discrete set of objects, using unit and non-unit fractions with small denominators. Find non-unit fractions of a quantity.	Count up and down in a given fraction and find missing fractions in a sequence. Consolidate finding non-unit fractions of a quantity. Solve problems involving Y5 fractions skills.	Solve problems that involve adding and subtracting fractions and mixed numbers. Solve problems that combine the four operations and fractions using understanding of the order of operations. The denominator is the number of parts that the amount is being divided into, and the numerator is the amount of those parts that we need to know about. Calculate fractions of an amount. Find the whole amount from the known value of a fraction.

						Solve problems involving increasingly challenging fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.		
	ADDITION WITH FRACTIONS				When adding fractions with the same denominator, only the numerator is added. The denominators stay the same. Add two or more fractions with the same denominator, where the total is less than one, using practical equipment and pictorial representations	When adding fractions, only the numerators are added. The denominators stay the same. Consolidate adding fractions with the same denominator within one whole ($\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$). When adding fractions, only the numerators are added. The denominators stay the same. Add 2 or more fractions.	Add fractions where one denominator is a multiple of the other. Add more than 2 fractions where two denominators are a multiple of the other. Use pictorial methods to explore adding two or more proper fractions where the total is greater than one. Add two fractions where one or both are mixed numbers or improper fractions.	Consolidate adding two fractions where one or both are mixed numbers or improper fractions. Add mixed numbers and fractions with any denominators, simplifying answers and converting between improper fractions and whole numbers when calculating.
	SUBTRACTION WITH FRACTIONS				When subtracting fractions with the same denominator, only the numerators are subtracted. Subtract fractions with the same denominator where the total is less than one, using practical equipment and pictorial representations	When subtracting fractions, only the numerators are subtracted. The denominators stay the same. Consolidate subtracting fractions with the same denominator within one whole ($\frac{5}{7} - \frac{1}{7} = \frac{4}{7}$). When subtracting fractions, only the numerators are subtracted. The denominators stay the same. Subtract 2 or more fractions. Subtract fractions from whole amounts.	Subtract fractions where one denominator is a multiple of the other. Subtract proper fractions from mixed numbers. Subtract two fractions where one is a mixed number, and you need to break one of the wholes up. Use different strategies to subtract two mixed numbers.	Consolidate subtracting proper fractions from mixed numbers. Use different strategies to subtract mixed numbers, including exchanging wholes for fractions and subtracting the wholes and fractions separately and converting the mixed number to an improper fraction.
	THE FOUR OPERATIONS WITH FRACTIONS						Add and subtract fractions with the same denominator.	Add and subtract fractions within 1 where the denominators are

							When multiplying fractions, the denominator remains the same, whilst the numerator is multiplied by the integer. Multiply unit fractions by whole numbers, supported by materials and diagrams. Multiply non-unit fractions by whole numbers, supported by materials and diagrams. Multiply mixed numbers by whole numbers. The order of a multiplication can change when using integers or fractions without changing the product. Improve calculation efficiency by changing the order of fractions and whole numbers when multiplying them.	multiples of the same number. Add and subtract fractions where the denominators are not multiples of the same number, finding equivalent fractions to find a common denominator. Multiply fractions and mixed numbers by integers. Multiply simple pairs of proper fractions, writing the answer in its simplest form. Divide fractions where the numerator is a multiple of the integer dividing by. Divide fractions where the numerator is not a multiple of the integer dividing by.
MEASUREMENT – MEASURING AND CALCULATING	LENGTH AND HEIGHT	Items can be measured to show how long, tall or heavy they are. Use language in their play, including heavy, light, heavier, lighter, long, short, longer, shorter, tall, taller, full and empty. Items can be measured using non standard units to show how long or tall they are. Compare and order the length and height of two to three objects and use and understand the language tall, taller, tallest, long, longer,	Length is a measure of how long something is from end to end. Height is a measure of how high something is from head to foot or top to base. Compare, describe and solve practical problems for lengths and heights (long or short; longer and shorter; tall or short and double or half) Length is a measure of how long something is from end to end. Height is a measure of how high something is from head to foot or top to base. Measure and begin to record lengths	Length is a measure of how long something is from end to end. Height is a measure of how high something is from head to foot or top to base. Consolidate comparing, describing and solving practical problems for lengths and heights (long or short; longer or shorter; tall or short and double or half). Length is a measure of how long something is from end to end. Height is a measure of how high something is from head to foot or top to base. Non-standard	Recognise millimetres and build on their understanding of centimetres and metres using different measuring equipment including rulers, tape measures, metre sticks and trundle wheels. Consolidate measuring larger objects using metres. Consolidate comparing lengths in the same unit of objects using comparison language, such as longer than, shorter than, taller than, longest, shortest and tallest and symbols.	Consolidate subtracting lengths by taking away and finding the difference.		

		longest, short, shorter, shortest.	and heights, using pictorial representations, numbers or words. Measure and begin to record lengths and heights, using a ruler.	units used must be of equal length. Consolidate measuring and recording lengths and heights, using pictorial representations, numbers or words. Consolidate measuring and recording lengths and heights, suing a ruler. Measure from zero rather than the end of the ruler or tape measure. Measure both length and height to the nearest cm with a ruler and tape measure. Measure larger objects using metres. Compare lengths in the same unit of objects using comparison language (such as longer than, shorter than, taller than, longest, shortest and tallest) and symbols. Order given lengths, as well as ordering objects by measuring each length using the language 'shorter, shortest, longer and longest' to describe the order.	Subtract lengths by taking away and finding the difference.			
	PROBLEMS (MEASUREMENT)	Items can be measured to show how long, tall or heavy they are. Capacity shows how much a container holds. Compare quantities and objects to solve problems.	Solve simple problems that involve all Y1 elements of measurement, using concrete objects, pictorial representations and number lines.	Solve one-step and two-step problems relating to length. Solve problems involving mass. Solve problems involving volume.	Solve problems involving time. Compare mixed measurements using the inequality symbols. Add and subtract mass using a range of mental and written methods. Add and subtract volumes and capacities,	Solve simple problems with money, involving all four operations.	Use timetables to retrieve information and solve problems, convert between different units of time where necessary and create timetables.	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Write and use formulae when calculating area and perimeter of rectilinear shapes.

					using a range of mental and written methods depending on the context.			
	VOLUME AND CAPACITY	The capacity of an object is how much it can hold. Compare and order the capacity of two to three items in sand and water play and use and understand the language full and empty.	Compare the volume in a container by describing whether it is full, nearly full, empty or nearly empty. Capacity is how much a container can hold. Volume is the space that water takes up in a container. Measure and begin to record capacities and volumes, using pictorial representations, numbers or words. Compare capacity using non-standard units of measure including the vocabulary of more, less and equal to, and the symbols <, > and =	Consolidate comparing the volume in a container by describing whether it is full, nearly full, empty or nearly empty. Capacity is how much a container can hold. Volume is the space that water takes up in a container. Consolidate measuring and recording capacities and volumes, using pictorial representations, numbers or words. Capacity is how much a container can hold. Volume is the space that water takes up in a container. Compare the volume of containers using < , > and =, including the use of language: quarter, half and three quarters full. Measure and estimate the volume of containers using millimetres (ml). Capacity and volume can be measured in litres (l) or millimetres (ml). There are 1000ml in 1l. Recognise the difference between measuring in millimetres and litres and when it is more efficient to use litres to measure liquid rather than millimetres.	Capacity and volume can be measured in litres (l) or millilitres (ml). There are 1000 ml in 1 l. Recognise the difference between measuring in millilitres and litres and when it is more efficient to use litres to measure liquid rather than millilitres. Capacity is how much a container can hold. Volume is the space that water takes up in a container. Consolidate comparing the volume of containers, using <, > and =, including the use of the language quarter, half and three quarters full. The capacity is the amount of liquid a container can hold and the volume is how much liquid is in the container. Explore capacity in litres or millilitres. Explore capacity in litres and millilitres. Record measurements as '__L' and '__ml'. For example, '5L' and '500ml'. Compare actual numerical measures of capacity, including mixed measurements, using the inequality symbols.		Volume is the amount of solid space that something takes up, while capacity is the amount that a container can hold. Investigate how volume is different from capacity. Compare and order different solids that are made of cubes. Estimate volume and capacity of different solids and objects. Containers can be different shapes but still hold the same capacity. The word capacity, rather than volume, is often used when referring to liquid Estimate capacity using practical equipment.	Volume is the amount of solid space that something takes up, while capacity is the amount that a container can hold. Consolidate, through further investigation, how volume is different from capacity. Count cubic units (1 cm^3) to find the volume of 3-D shapes, then use cubes to build models and describe their volume. The volume of cubes and cuboids can be calculated by multiplying the length, width and height. This is the same as calculating the area of the base and multiplying it by the height. Standard units of volume are cubic centimetres or centimetres cubed (cm^3) and cubic metres or metres cubed (m^3). Demonstrate the link between counting cubes and the formula (*l*×*w*×*h*) for calculating the volume of cuboids.

	TIME	Events can be sequenced using everyday words, such as first, then, next, morning and afternoon. Order and sequence familiar events, such as everyday routines. There are seven days in the week. School days are Monday to Friday. Saturday and Sunday are the weekend. Know the order of the days of the week. Use simple timers to measure periods of time.	Events can be sequenced using these words: before, after, now, next, first, morning, afternoon and evening. Describe, sort and order events using sequencing language, such as before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. There are seven days in a week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. There are twelve months: January, February, March, April, May, June, July, August, September, October, November and December. The past refers to events that have already happened, the present refers to events that are happening now and the future refers to events that haven't happened yet. Recognise and use language relating to dates, including days of the week, weeks, months and years and talk about events using today, yesterday and tomorrow. The hour hand is the shorter hand on a clock, and the minute hand is the longer. On an analogue clock, the minute hand points to 12 when it is an o'clock time. Tell the time to the hour using an analogue clock.	The hour hand is the shorter hand on a clock and the minute hand is the longer hand. On an analogue clock, the minute hand points to 12 when it is an o'clock time. Consolidate telling the time to the hour using an analogue clock. At half past the hour, the minute hand has travelled half way around the clock and is pointing at the six. While the hour hand is half way between the hours. Consolidate telling the time, to the half hour using an analogue clock, understanding the language 'half past' Read and write times using o'clock and half past, from analogue clocks. The hour hand moves along with the minute hand. Therefore, when the time is quarter past the hour, the hour hand will be just past the hour hand and when the time is quarter to, the hour hand will be just before the hour. Read and draw the times 'quarter to' and 'quarter past'. An analogue clock face can be divided into 60 minutes, using the numbers from one to 12 on the face. Once the minute hand gets past six, the time is described as 'to' the next hour,	Consolidate reading and writing times, o'clock and half past, from analogue clocks. The hour hand moves along with the minute hand. Therefore, when the time is quarter past the hour, the hour hand will be just past the hour, and when the time is quarter to, the hour hand will be just before the hour. Consolidate reading and drawing the times 'quarter to' and 'quarter past'. There are 365 days in a year and 366 in a leap year, which occurs every fourth year. The twelve months of the year are January (31 days), February (28 or 29 days), March (31 days), April (30 days), May (31 days), June (30 days), July (31 days), August (31 days), September (30 days), October (31 days), November (30 days) and December (31 days). Investigate the concept of years and months. There are 24 hours in a day. Explore language around day and the difference between day-time and day. In Roman numerals, I=1, II=2, III=3, IV=4, V=5, VI=6, VII=7, VIII=8 IX=9, X=10, XI=11 and XII=12. Tell the time to the nearest five minutes on	Consolidate telling the time to the nearest five minutes on an analogue clock, using past and to. In Roman numerals, I=1, II=2, III=3, IV=4, V=5, VI=6, VII=7, VIII=8 IX=9, X=10, XI=11 and XII=12. Consolidate telling the time to the nearest minutes on an analogue clock using past and to. Read Roman numerals up to 12 (I to XII). Consolidate the use of the language morning, afternoon, am and pm to describe the time of day. Consolidate comparing analogue and digital clocks.		

			At half past the hour, the minute hand has travelled half way around the clock and is pointing at the six, while the hour hand is half way between the hours. Tell the time, to the half hour, using an analogue clock, understanding the language 'half past' Time can be measured using hours, minutes and seconds. Measure and begin to record time (hours, minutes and seconds), using pictorial representations, numbers or words. When someone wins a race, the length of time will be shorter. If someone takes longer, the length of time will be larger. Compare amounts of time using the language faster, slower, earlier and later.	rather than 'past' the hour. A clock face often shows five minute intervals as well. Read and show analogue time to five minute intervals. Consolidate measuring and recoding time (hour, minutes, seconds) using pictorial representations, numbers or words. There are 24 hours is a day and 60 minutes in an hour. Use clocks to convert minutes to hours and minutes. Duration is how long something lasts. Identify the start and end time of an event and use the times to work out the duration.	an analogue clock using past and to, including reading Roman numerals up to 12 (I to XII). An analogue clock face can be divided into five minute intervals using the numbers 1 to 12, with 1 denoting 5 minutes past the hour and 11 denoting 5 minutes to the next hour. Tell the time to the nearest minutes on an analogue clock using past and to. Use language morning, afternoon, am and pm to describe the time of day. Compare analogue and digital clocks. Find the durations of events using both analogue and digital clocks. Compare durations of time using analogue and digital clocks. Find start and end times to the nearest minute using both analogue and digital times. There are 60 seconds in a minute. Measure and compare durations of time in seconds. Write durations of time in different ways e.g. 80 seconds is the same as 1 minute and 20 seconds.			

	WEIGHT AND MASS	Items can be measured to show how long, tall or heavy they are. Use language in their play, including heavy, light, heavier, lighter, long, short, longer shorter. Tall, taller, full and empty. Items can be measured using non-standard units to show how long or tall they are. Compare and order the weight of two to three items and use and understand the language heavy, heaviest, heavier, light, lighter, lightest.	Mass or weight is the measure of the amount of something and how heavy it is. Hold and describe objects using vocabulary such as heavy, light, heaver than, lighter than, then use scales to check. Investigate to see if larger objects are always heavier than smaller objects. Mass or weight is the measure of the amount of something and how heavy it is. Measure and begin to record masses or weight, using pictorial representations, numbers or words. When using non-standard units of measure the units must stay the same. Use non-standard units and balance scales to weigh objects and compare whether they are heavier or lighter.	Mass, or weight, is the measure of the amount of something and how heavy it is. Consolidate holding and describing objects using vocabulary, such as heavy, light, heavier than and lighter than, then use scales to check. Investigate to see if larger objects are always heavier than smaller objects. Mass or weight is the measure of the amount of something and how heavy it is. Consolidate measuring and recording masses or weights, using pictorial representations, numbers or words. Compare mass using < and > and order objects based on their masses. Feel the mass of gram weights and use grams when reading weighing scales. Mass can be measured in kilograms)kg) or grams (g). There are 1000g in 1kg. Feel the mass of a 1kg weight and use kilograms when reading weighing scales.	Consolidate comparing mass using < and >, and order objects based on their masses. Consolidate feeling the mass of gram weights and use grams when reading weighing scales. Read a range of scales, in kilograms or grams, to measure mass, including scales with missing intervals. Measure the mass of objects and record them as a mixed measurement in kilograms and grams.			
	MONEY	There are different types of coins. Each coin is worth a different amount. Use money, including coins, in role play situations.	Recognise and know the value of different denominations of coins, including 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2. Recognise and know the value of different denominations of notes.	Consolidate the recognition of different denominations of coins, including 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2 and know their value. Consolidate the recognition of different denominations of notes and know their value.	Consolidate counting in 1p, 2p, 5p and 10p coins. Consolidate counting in £1 and £2 coins and £5, £10 and £20 notes. Money can be recorded using mixed units (£ and p). Pounds and pence are recorded with a	Convert between different units of money using decimal notation. Compare and order amounts of money. Round amounts of money written in decimal notation to the nearest pound.		

			Begin to count in 1p, 2p, 5p and 10p coins	Count in 1p, 2p, 5p and 10p coins. Count in £1 and £2 coins and £5 , £10 and £20 notes. Count in pounds and pence. Select coins to make an amount. Find different combinations of coins that equal the same amounts of money. Add money using different methods such as, count on, partitioning and regrouping. Find the difference between two amounts of money including the use of the strategies of counting on and counting back. Change is the money returned to someone, when they have paid for an item with an amount that is greater than the price. 100p=£1 Find change from a given amount converting £1 into 100p when necessary. Solve simple problems in a practical context, involving addition and subtraction of money of the same unit and giving change.	decimal point between them. When an amount of money is recorded in this way, the pence sign (p) is usually omitted. For example £5.00, £7.25 or £10.01 Add and subtract amounts of money to give change, using both £ and pence, in practical contexts, including using formal written methods. Add two amounts of money using pictorial representations to support them. Use different methods to subtract money. Use a number line and a part-whole model to subtract to find change.	Estimate totals with more than two amounts, discussing over and under estimation. Consolidate adding two amounts of money, using pictorial representations to support them. Consolidate using different methods to subtract money. Consolidate using a number line and a part-whole model to subtract to find change.		
	TEMPERATURE			The temperature is higher when it is warmer. A thermometer measures temperature is measured in degree	The temperature is higher when it is warmer. A thermometer measures temperature and temperature is			

				Celsius (0°C). 0°C is the freezing point of water and 1000°C is the boiling point of water. Read temperature on different thermometer scales.	measured in degrees Celsius or Centigrade (°C). 0°C is the freezing point of water and 100°C is the boiling point of water. Consolidate reading temperature on different thermometer scales.			
	CONVERTING UNITS				£1 is 100p. Convert between pounds and pence. 100cm is equivalent to 1m. Convert multiples of 100cm into metres and vice versa. Partition lengths not in multiples of 100 into metres and centimetres. 10mm is equivalent to 1cm. Convert multiples of 10 mm into centimetres and vice versa. Partition lengths not in multiples of 10 into centimetres and millimetres. Convert, compare and order lengths based on measurements in mm, cm and m. Add lengths given in different units of measurement, converting to the same unit of length to improve efficiency.	100cm is equivalent to 1m. Consolidate converting multiples of 100cm into metres and vice versa. Partition lengths not in multiples of 100 into metres and centimetres. 10mm is equivalent to 1cm. Consolidate converting multiples of 10mm into centimetres and vice versa. Partition lengths not in multiples of 10 into centimetres and millimetres. 1000m is equal to 1km. Multiply and divide by 1000 to convert between kilometres and metres and find two lengths that add to a whole number of kilometres. Consolidate adding lengths given in different units of measurement, converting to the same unit of length to improve efficiency. £1 is 100p.	The prefix kilo means 1000. Consolidate multiplying and dividing by 1000 to convert between kilometres and metres and find two lengths that add to a whole number of kilometres. The prefix kilo means 1000. Convert from metres to kilometres (km), grams to kilograms (kg) and vice versa. The prefix milli means $\frac{1}{1000}$ Convert from metres to millimetres (mm), litres to millilitres (ml) and vice versa. Divide by different multiples of 10 to convert between the different measurements. Convert between different units of length and choose the appropriate unit for measurement. Imperial units of measurement were used in Britain from the 1820s to the 1960s, when the metric system,	Capacity is the amount an object can contain. Volume is the amount actually in an object. Read, write and recognise all metric measures for length, mass and capacity. Convert between units of length, mass and capacity using skills of multiplying and dividing by 10, 100 and 1000. Know that 5 miles is approximately equal to 8 km. Find approximate conversions from miles to km and from km to miles. Imperial measure * 1 foot is equal to 12 inches * 1 pound is equal to 16 ounces * 1 stone is equal to 14 pounds * 1 gallon is equal to 8 pints * 1 inch is approximately 2.5 cm Use knowledge of imperial and metric measurements to perform related conversions, both within imperial measures and between imperial and metric.

						Consolidate converting between pounds and pence. 60 minutes in an hour and 60 seconds in a minute. Convert between units of time, such as hours to minutes. 365 days in a year and 364 in a leap year, which occurs every fourth year. Twelve months in a year. Approximately 52 weeks in a year and 4 weeks in a month. 7 days in a week. Convert between units of time, such as years, months, weeks and days. Digital time is written in 4-digit format e.g. 09:30 am not 9:30. Convert between analogue and digital times, using a format up to 12 hours, using am and pm to distinguish between times in the morning and afternoon. Convert between analogue and digital times using a 24 hour clock.	using multiples of 10, was adopted. * 1 inch=2.5cm * 1 foot=12 inches=30cm (approximately) * 1 yard=3 feet=914cm (approximately 1m) * 1 mile=1760 yards=1.6km * 1 ounce=28g * 1 pound=16 ounces=454g (approximately 1/2kg. 1 kg is sometimes seen as approximating to 2.2 lbs) * 1 stone=14 pounds=6.4kg * 1 pint=568ml (approximately 1/2L) * 1 gallon=8 pints=4.5L Use approximate equivalences between metric units and common imperial units, such as inches, pounds (lbs) and pints. Time is not decimal, so some methods may not be effective for conversions. Convert between different units of time, including years, months, weeks, days, hours, minutes and seconds.	
	PERIMETER				The perimeter is the total distance around the edge of a shape. The perimeter can be found by counting squares or measuring with a ruler. Measure and compare the perimeter of simple 2-D shapes. Calculate the perimeter of simple 2-D shapes.	The perimeter is the total distance around the edge of a shape. The perimeter can be found by counting squares or measuring with a ruler. Consolidate measuring and comparing the perimeter of simple 2-D shapes.	Measure the perimeter of rectilinear shapes from diagrams without grids. A rectilinear shape is a 2-D shape whose sides all meet at right angles. Consolidate calculating the perimeter of rectilinear shapes by	

						A rectilinear shape is a 2-D shape whose sides all meet at right angles. Calculate the perimeter of rectilinear shapes by counting squares on a grid. A rectilinear shape is a 2-D shape whose sides all meet at right angles. Explore different ways of how to calculate perimeter and find missing lengths. Calculate perimeter of rectilinear shapes, without using squared paper, using addition and subtraction to calculate the missing sides.	counting squares on a grid. Consolidate calculating perimeter of rectangles (including squares) that are not on a squared grid. Consolidate calculating perimeter of rectilinear shapes, without using squared paper, using addition and subtraction to calculate the missing sides. Find the perimeter of shapes with and without grids and unknown side lengths.	
	AREA					Area is the amount of space taken up by a 2D shape or surface. Demonstrate how different shapes can have the same area. Area is the amount of space taken up by a 2D shape or surface, and some ways are better than others for finding the area of a shape or surface. Explain what the term 'area' means and explore different ways of finding the area of a shape, realising that some ways are better than others, for example, by counting squares. A rectilinear shape is a 2-D shape whose sides all meet at right angles.	A rectilinear shape is a 2-D shape whose sides all meet at right angles. Consolidate counting the number of squares in a shape to measure and compare the areas of rectilinear shapes. Find the area of a rectangle by counting squares and using a formula. A compound or composite shape is made of two or more rectilinear shapes. Calculate the area of compound shapes by splitting into smaller shapes. Find the approximate area of irregular shapes by counting squares using knowledge of	Draw rectilinear shapes that have the same area, and use knowledge of factors to draw rectangles with different areas, recognising the connections between side lengths and factors. Approximate and estimate the area of a triangle by counting squares, seeing the link between the area of a triangle and the area of a rectangle or square. A right-angled triangle with the same length and perpendicular height as a rectangle will have an area half the size. Find the area of a rectangle then halve it to find the area of a triangle.

						Count the number of squares in a shape to measure and compare the areas of rectilinear shapes. A rectilinear shape is a 2-D shape whose sides all meet at right angles. Make rectilinear shapes using a given number of squares. Compare and order shapes by the size of area using < and >.	fractions to combine part-covered squares.	Use the formula, base *x* perpendicular height÷2 to calculate the area of a variety of triangles where different side lengths are given and where more than one triangle makes up a shape. Investigate the link between the area of a rectangle and parallelogram by cutting a parallelogram so that it can be rearranged into a rectangle. Find the area of a parallelogram using knowledge of finding the area of a rectangle.
GEOMETRY – SHAPE, POSITION AND DIRECTION	SHAPE	3-D shapes are solid shapes. They have a different number of faces and edges. The faces are made up of different 2-D shapes. Use mathematical names for common 3-D shapes and use 3-D shapes in their play. 2-D shapes are flat. They have a different number of sides and angles. 2-D shapes can be folded and cut into different 2-D shapes. They can also be put together to make other 2-D shapes. Use mathematical names for common 2-D shapes and explore in their play.	Common 3-D shapes are cuboids, cubes, cylinders, pyramids, cones and spheres. Recognise and name common 3-D shapes, including cuboids, cubes, cylinders, pyramids, cones and spheres, in different orientations and sizes, and relate them to everyday objects. Sort and group 3-d shapes according to simple properties, including type, size and colour. Common 2-D shapes are squares, rectangles, circles, triangles, pentagons, hexagons and octagons. Recognise and name common 2-D shapes, including rectangles, squares, circles and triangles, in different orientations and sizes,	Know that 2-D shapes are actually flat. Recognise and name 2-D and 3-D shapes in different orientations and proportions and differentiate between them. Count sides of 2-D shapes by marking each side as they count. Know that a vertex is where two lines meet at a point and that more than one vertex are called vertices. The word vertex should be used in place of the word corner. Identify and count vertices of 2-D shapes. Draw 2-D shapes. A shape has symmetry in a vertical line if a line can be drawn down the middle of it and the left side is a mirror image of the right. Explore shapes being halved along their	Recognise, describe and draw 2-D shapes accurately. A curved surface is not a face. A cylinder has 2 circular faces and a curved surface. Recognise and describe 3-D shapes in different orientations, using properties, such as the number of faces, edges, vertices and curved surfaces. Make 3-D shapes (cubes, cuboids, prisms, cylinders, pyramids, cones and spheres) using construction materials.	Consolidate recognising, describing and drawing 2-D shapes accurately. A polygon is any 2-D shape with straight sides. 'Tri' is derived from Latin and Greek, meaning three. An equilateral triangle has three equal sides and angles and three lines of symmetry. An isosceles triangle has two equal sides and angles. A scalene triangle has no equal sides and no equal angles. A right-angled triangle has a 90° angle. The angles in any triangle add up to 180°. Compare and classify triangles using the names isosceles, scalene and equilateral. A quadrilateral is a four-sided shape. 'Quad' is derived from the Latin word for four, and lateral is related to sides. A square has four equal sides, four right	A polygon is any 2-D shape with straight sides. 'Tri' is derived from Latin and Greek, meaning three. An equilateral triangle has three equal sides and angles and three lines of symmetry. An isosceles triangle has two equal sides and angles. A scalene triangle has no equal sides and no equal angles. A right-angled triangle has a 90° angle. The angles in any triangle add up to 180°. Consolidate comparing and classifying triangles, using the names isosceles, scalene and equilateral. A quadrilateral is a four-sided shape. 'Quad' is derived from the Latin word for four, and lateral is related to sides. A square has four equal sides, four right angles (90°) and four lines of symmetry. A rectangle or oblong has	Draw shapes accurately, using learned knowledge, on different grids, such as squared and dotted paper, and using a protractor on plain paper. Identify and create a 3-D shape from its net. Draw nets of shapes accurately.

			and relate them to everyday objects. Sort and group 2-D shapes according to simple properties, including type size and colour.	vertical line of symmetry. Recognise and sort 2-D shapes, including a circle, square, triangle, rectangle, pentagon, hexagon and octagon, using a range of different orientations. Create patterns with 2-D shapes. A three-dimensional (3-D) shape has three measurements and can be held. These are common 3-D shapes: cuboids, cubes, spheres, cones, cylinders, pyramids, triangular-based pyramid, square-based pyramid and triangular prism. The flat surface of a 3-D shape is called a face, The faces of a cuboid can be rectangles and squares. The faces on a cube are squares. Two of the faces on a cylinder are circles. One of the faces an a pyramid nay be a circle, square or rectangle. Identify and describe 2-D shapes of faces on 3-D shapes. An edge is where two faces meet or where a face and a curved surface meet. Identify edges on 3-D shapes. A vertex is where two or more edges meet. Identify vertices on 3-D shapes. 3-D shapes can be sorted in different ways e.g. faces, shapes of		angles (90°) and four lines of symmetry. A rectangle or oblong has two sets of two equal sides, four right angles (90°) and two lines of symmetry. A parallelogram has two sets of two equal sides, two sets of two equal angles and usually no lines of symmetry. A rhombus has four equal sides, two sets of two equal angles and two lines of symmetry. A trapezium has two parallel sides and can have pairs of equal angles and a line of symmetry. Name and describe properties of quadrilaterals, including a square, rectangle, rhombus, parallelogram and trapezium.	two sets of two equal sides, four right angles (90°) and two lines of symmetry. A parallelogram has two sets of two equal sides, two sets of two equal angles and usually no lines of symmetry. A rhombus has four equal sides, two sets of two equal angles and two lines of symmetry. A trapezium has two parallel sides and can have pairs of equal angles and a line of symmetry. Consolidate naming and describing properties of quadrilaterals including a square, rectangle, rhombus, parallelogram and trapezium. Regular means that all of the sides and angles in a shape are equal. An equilateral triangle and a square are regular, but a rectangle with unequal sides and an isosceles triangle are irregular polygons. Distinguish between regular and irregular polygons. Identify 3-D shapes, including cubes and cuboids, from their 2-D nets.	

				faces, edges, vertices, if they roll, if they stack… Compare and sort 3-D shapes and everyday objects.				
	PATTERN AND SYMMETRY	Continue, copy and create repeating patterns using a variety of objects.	Complete and make simple patterns with 2-D and 3-D shapes.	Create patterns with 3-D shapes.	Horizontal lines go across. Vertical lines go up and down. Identify horizontal and vertical lines of symmetry in shapes and symbols.	Horizontal lines go across. Vertical lines go up and down. Consolidate identifying horizontal and vertical lines of symmetry in shapes and symbols. A shape may be symmetrical, but if the pattern on the shape isn't symmetrical then the diagram isn't symmetrical. Identify lines of symmetry within 2-D shapes using mirrors, tracing paper and paper folding activities. A shape may be symmetrical, but if the pattern on the shape isn't symmetrical then the diagram isn't symmetrical. Complete 2-D shapes and patterns using knowledge of symmetry and equipment, such as squared paper, mirrors or tracing paper, to help them to accurately complete figures.	A shape may be symmetrical, but if the pattern on the shape isn't symmetrical then the diagram isn't symmetrical. Consolidate identifying lines of symmetry within 2-D shapes using mirrors, tracing paper and paper folding activities. A shape may be symmetrical, but if the pattern on the shape isn't symmetrical then the diagram isn't symmetrical. Consolidate completing 2-D shapes and patterns using knowledge of symmetry and equipment, such as squared paper, mirrors or tracing paper, to help them to accurately complete figures.	
	POSITION, DIRECTION AND COORDINATES	Positional language includes under, over, next to, behind, in front, above and through. Use and understand language that describes where objects are in relation to each other.	Position and movement can be described using these words: top, middle, bottom, on top of, in front of, above, between, around, near, close, far, up, down and turn. Describe position and movement, including	Direction can be described using these words: forwards, backwards, left and right. Consolidate describing direction and movement including forwards, backwards, left and right.		Read the *x*-axis first, then the *y*-axis. Read, write and use pairs of coordinates in the first quadrant, reading the axes in the correct order. Plot given coordinates on a 2-D grid and read,	Read the *x*-axis first then the *y*-axis. Consolidate reading, writing and using pairs of coordinates in the first quadrant, reading the axes in the correct order. Consolidate plotting given coordinates on a	Both the *x* and *y* coordinates are positive in the first quadrant. Read and plot coordinates in the first quadrant. A full coordinate grid has four quadrants (first, second, third and

			whole, half, quarter and three quarter turns. Direction can be described using these words: forwards, backwards, left and right. Describe direction and movement, including, forwards, backwards, left and right. Position can be described using these words: top, in between, bottom, above and below. Describe position, including top, in between, bottom above and below.	Position can be described using these words: top, in between, bottom, above and below. Consolidate describing position, including top, in between, bottom, above and below. Solve problems involving position. Direction can be described using these words: forwards, backwards, up, down, left and right. Give and then write directions for routes, including recording routes on 2-D grids. Describe turns using the language full, half, quarter, three quarter turns, clockwise and anticlockwise. Describe and record directions involving movement and turns. Describe and create patterns that involve direction and turns using the language clockwise, anticlockwise, quarter, half and three quarters.		write and use pairs of coordinates. Move shapes and points on a coordinate grid following specific directions using language such as left/right and up/down. In shape translation, when vertex A on the object translates to vertex A on the image, these are corresponding vertices. Describe the movement of shapes and points on a coordinate grid using specific language, such as left/right and up/down.	2-D grid and read, write and use pairs of coordinates. The origin on a coordinates grid is (0,0). The first number represents the *x*-coordinate and the second number represents the *y*-coordinate. Coordinates are fixed whereas, a point can be plotted as different coordinates. Read coordinates in the first quadrant. Shapes do not change size nor orientation when translated. Translate shapes on a grid. Translate and describe translations of coordinates. Reflect objects using lines that are parallel to the axes, using a 2-D grid and coordinates in the first quadrant Record the coordinates of the vertices of objects and its reflected image.	fourth). The first quadrant is the top right, the second is the top left, the third is the bottom left and the fourth is the bottom right. Read and plot coordinates in all four quadrants. Draw and translate simple shapes in all four quadrants of a coordinates grid and describe the translations using directional language. Reflect shapes in both the *x*-axis and *y*-axis.
	ANGLES				An angle is created when two straight lines meet at a point. Recognise angles as a measure of a turn. Practice making ½, ¼, ¾ and whole turns from different starting points, in both clockwise and anticlockwise directions, in practical contexts. A right angle is a quarter turn, two right angles	An angle is created when two straight lines meet at a point. Consolidate recognising angles as a measure of a turn, and practise making ½, ¼, ¾ and whole turns from different starting points in both clockwise and anticlockwise directions in practical contexts.	An acute angle is more than zero degrees and less than 90 degrees, a right angle is exactly 90 degrees and an obtuse angle is more than 90 degrees but less than 180 degrees. Consolidate comparing acute and obtuse angles with a right angle. Consolidate comparing and ordering angles in	Use a protractor to measure angles given in different orientations, identifying which side of the scale to read. Consolidate using a protractor to draw angles of a given size. There are two right angles on a straight line and four right angles around a point.

					make a half turn, three right angles make three quarters of a turn and four right angles make a complete turn. Explore right angles and define with respect to turn. An acute angle is less than a right angle and an obtuse angle is greater than a right angle. Identify whether an angle is greater than or less than a right angle in shapes and turns Measure and draw straight lines accurately in centimetres and millimetres. Perpendicular lines are lines that form a right angle where they meet. Parallel lines never meet or cross, they are always the same distance apart. Identify and find parallel and perpendicular lines in a range of practical contexts. Use the arrow notation to represent parallel lines and the right angle notation for perpendicular lines.	A right angle is a quarter turn. Two right angles make a half turn, three right angles make three quarters of a turn and four right angles make a complete turn. Consolidate exploring right angles and define with respect to turn. An acute angle is less than a right angle and an obtuse angle is greater than a right angle. Consolidate identifying whether an angle is greater than or less than a right angle in shapes and turns An acute angle is more than 0 degrees and less than 90 degrees, a right angle is exactly 90 degrees and an obtuse angle is more than 90 degrees but less than 180 degrees. Compare acute and obtuse angles with a right angle. Compare and order angles in ascending and descending order.	A full turn is 360 degrees, a half turn is 180 degrees and a quarter turn (or right angle) is 90 degrees. A reflex angle is greater than 180 degrees. Recognise and define angles in terms of degrees and as fractions of a full turn. Use a protractor to measure acute angles. Use a protractor to measure obtuse angles. Use a protractor to draw angles of a given size. A straight line is a half of a turn. Two right angles, 180 degrees, are equivalent to a straight line. The angles on a straight line add up to 180 degrees. Calculate missing angles on a straight line. A full turn is equivalent to 360 degrees. Calculate missing angles and know when to measure an angle and when to calculate from given facts. Identify right angles in squares and rectangles on a grid.	Make links between right angles and turns, and apply these links in different contexts, such as time and on a compass. A straight line is a half of a turn. Two right angles, 180 degrees, are equivalent to a straight line. The angles on a straight line add up to 180 degrees. Consolidate calculating missing angles on a straight line. A full turn is equivalent to 360 degrees. Consolidate calculating missing angles and know when to measure an angle and when to calculate from given facts. Calculate unknown angles. Vertically opposite angles, angles opposite each other when two lines cross, share a vertex and are always equal. Explore vertically opposite angles. The interior angles of a triangle will add up to 180 degrees. Explore interior angles of a triangle. Hatch marks are used to notate equal lengths. Calculate unknown angles in triangles using known properties including length of sides.

								Solve missing angle problems. The interior angles of any quadrilaterals will add up to 360 degrees. Explore interior angles of quadrilaterals, including a parallelogram, rhombus and trapezium. Partition shapes into triangles from a single vertex to work out the sum of the angles in polygons. Calculate exterior angles using knowledge of angles on a straight line summing to 180 degrees.
STATISTICS	CONSTRUCT, READ AND INTERPRET	Data can be recorded in tables, pictograms and charts. Record data in simple tables, pictograms or block charts.		Information, also known as data, can be recorded in tally charts. These charts make information easier for others to read and understand. A tally chart is a method of collecting information quickly and uses lines, called tally marks, to represent information. Tally marks are written in groups of five. Construct simple tally charts. Information, also known as data, can be recorded in pictograms. These charts make information easier for others to read and understand. A pictogram uses pictures or symbols to show information. Construct simple pictograms. Interpret simple pictograms. Ask and	Information, also known as data, can be recorded in tally charts. These charts make information easier for others to read and understand. A tally chart is a method of collecting information quickly and uses lines, called tally marks, to represent information. Tally marks are written in groups of five. Consolidate constructing simple tally charts. Consolidate constructing more complex pictograms where part symbols are used. Consolidate interpreting simple pictograms. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.	Discrete data can only be shown in integers, such as the number of children in a class. Discrete data can be counted and cannot be shown in decimals. Interpret and present discrete data in bar charts, pictograms and tables including data gathered using tally charts. Use an appropriate scale when drawing bar charts. Read a time line graph accurately and create their own line graphs to represent continuous data.	Discrete data can only be shown in integers, for example, the number of children in a class. Discrete data can be counted and cannot be shown in decimals. Consolidate interpreting and presenting discrete data in bar charts, pictograms and tables including data gathered using tally charts. Use an appropriate scale when drawing bar charts. Consolidate reading a time line graph accurately and create their own line graphs to represent continuous data. Read horizontal and vertical axes of a line graph, including estimating the values between intervals.	Line graphs represent continuous data not discrete data. Use knowledge of scale to read line graphs accurately. Read and interpret line graphs, including those that show more than one set of data. Draw line graphs selecting the most appropriate scales and intervals to use. Read, interpret and draw lines graphs. Use line graphs to solve problems.

				answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Construct more complex pictograms where part symbols are used. Interpret more complex pictograms.	Interpret data from bar charts, pictograms and tables.		Represent data in a line graph, drawing axes with appropriate scale. Read tables to extract information and answer questions. Two-way tables show two different sets of data which are displayed horizontally and vertically. Read, answer questions on and complete two-way tables. Read timetables to extract information and answer questions.	
	PROBLEMS (STATISTICS)					Solve comparison, sum and difference problems using discrete data, including gathered data, with a range of scales. Solve comparison, sum and difference problems using continuous data with a range of scales. Ask and answer questions relating to collected data.	Consolidate solving comparison, sum and difference problems using discrete data, including gathered data, with a range of scales. A line graph is used to display information that is connected in some way, such as change over time. Solve comparison, sum and difference problems using information presented in a line graph.	The mean is a type of average. It is the total of the numbers divided by how many numbers there are. Mean = total ÷ number of items. Calculate and interpret the mean as an average.
	PIE CHARTS							A circle is a 2-D shape. A circle's perimeter (the total distance around the edge of a shape) is called the circumference. The diameter of a circle is the straight line that passes through the centre. The radius is a straight line from the centre to the circumference of a circle and is half of the diameter.

								Illustrate and name the parts of a circle, including the radius, diameter and circumference, and know that the radius is half of the diameter. Calculate fractions of amounts to interpret simple pie charts, and use a clear understanding what the whole of the pie chart represents when solving problems. The whole of a pie chart totals 100%. Calculate percentages of amounts to interpret pie charts, recognising fractions in order to read the pie chart more efficiently. Angles around a point total 360 degrees. This represents 100% of the data within a pie chart. Draw pie charts using a protractor.
NUMBER – DECIMALS AND PERCENTAGES	FRACTIONS, DECIMALS AND PERCENTAGES				A tenth is one divided by 10 (1⁄10). A tenth is one of 10 equal parts of an object, shape or quantity, and is written as 1/10. Tenths are calculated by dividing an object into ten equal parts or dividing a quantity by 10. For example, one tenth of 50 is 50 ÷ 10 =5. The number system extends to the right of the decimal point, into the tenths column. Count up and down in tenths, recognising that tenths arise from	A tenth is one divided by 10 (1/10). A tenth is one of 10 equal parts of an object, shape or quantity, and is written as 1/10. Tenths are calculated by dividing an object into ten equal parts or dividing a a=quantity by 10. For example, one tenth of 50 is 50/10 = 5. The number system extends to the right of the decimal point into the tenths column. Consolidate counting up and down in tenths arise from dividing an object	Convert fractions to decimals and explore their relationship. Represent more complex decimal numbers and fractions as fractions and decimals. Explore the links between tenths, hundredths and thousandths in both decimal and fraction form. % is the symbol for percent, which is the	Explore the links between tenths, hundredths and thousandths. Consider decimal and mixed number equivalences. Convert decimals to fractions and explore their relationship and simplify fractions to help show patterns. Know common fractions, such as thirds, quarters, fifths and eighths, as decimals. Explore how finding an

					dividing an object into 10 equal parts and in dividing one digit numbers or quantities by 10.	into 10 equal parts and in dividing one digit numbers or quantities by 10. Ten hundredths are equivalent to one tenth. Recognise tenths or hundredths using a hundreds square. Use a part-whole model to partition a fraction into tenths and hundredths. A tenth as part of a whole split into 10 equal parts. Recognise the relationship between 1/10 and 0.1. Write any number of tenths as a decimal and represent then using concrete and pictorial representations. A hundredth is one divided by 100 (1/100), A hundredth is one of 100 equal parts of an object, shape or quantity, and is written as 1/100. Hundredths are calculated by dividing an object into 100 equal parts or dividing a quantity by 100. Count up and down in hundredths, recognising that hundredths arise when dividing an object or number by 100 and dividing by 10. Write hundredths as decimals and as fractions. Write ½, ¼ and ¾ as decimals linking to hundredths	number of parts per hundred. Recognise the percent symbol (%), knowing that percent relates to 'number of parts per hundred'. Write percentages as a fraction with the denominator 100 and as a decimal. Recall the fraction and decimal equivalents of 50%, 25%, 20%, 40% and 80%.	equivalent fraction where the denominator is 10, 100 or 1000 makes it easier to convert from a fraction to a decimal. Find fractions as decimals by dividing the numerator by the denominator. % is the symbol for percent, which is the number of parts per hundred. Consolidate the recognition of the percent symbol (%), knowing that percent relates to 'number of parts per hundred'. Percent' means 'out of 100'. Convert fractions to equivalent fractions where the denominator is 100 in order to find the percentage equivalent. 0.1 is 10%, 0.01 is 1%. Use knowledge of common equivalent fractions and decimals to find the equivalent percentage. Convert between fractions, decimals and percentages to order and compare them. 50% = ½, 25% = ¼, 10% = 1/10 and 1% = $^{100}/_{1000}$ Use known fractional equivalences, such as 50%, 25%, 10% and 1%, to find percentages of amounts.

								Explore different methods of finding certain percentages. Find 20% by dividing by 10 and multiplying by 2 or by dividing by 5. Find 5% by finding half of 10%. Using these methods, build up to find other percentages, such as 35%. Use their understanding of percentages to find the missing whole or a missing percentage when the other values are given
	RECOGNISE, ORDER AND COMPARE DECIMALS					The tenths column is to the right of the decimal. Read and represent tenths on a place value grid. Read and represent tenths on a number line and link this to measurement, looking at measuring in cm and mm. When dividing by 10, the number is being split into 10 equal parts and is 10 times smaller. Moving digits is an effective way of dividing by 10. Demonstrate on a lace value chart how the digits move when dividing by 10, and the importance of zero as a place holder. Moving digits is an effective way of dividing by 10. Demonstrate how two digit numbers move on a place value chart when dividing by 10.	Use place value counters and a place value grid to make numbers with up to two decimal places, reading and writing the decimal numbers and explaining the value of each digit. The thousandths column is to the right of the decimal point, the tenths and the hundredths columns. Read and represent thousandths on a place value grid. Round decimals with two decimal places to the nearest whole number and to one decimal place (380.64 →380.6; 34.65 → 34.7; 1456.54 → 1457. Read, write, order and compare numbers with up to three decimal places. The word term is used to describe an unknown number in a sequence. Create simple rules for	Consolidate using place value counters and a place value grid to make numbers with up to two decimal places, reading and writing the decimal numbers and explaining the value of each digit. Consolidate reading and represent thousandths on a place value grid. Digits move to the left when they are multiplying, and zero is used as a place holder. The decimal point does not move. Identify the value of each digit in numbers given to three decimal places and multiply the numbers by 10, 100 and 1000, giving answers up to three decimal places. Know that, for example, 2.4 and 2.40 are the same. Similarly, 12 and 12.0 are equivalent. Identify the value of each digit in numbers given to three decimal

						The hundredths column is to the right of the decimal point and the tenths column. Read and represent hundredths on a place value grid. Moving digits is an effective way of dividing by 100. Demonstrate how two digit numbers move on a place value chart when dividing by 100. Revise number bonds to 10 and 100. Make a whole from any number of tenths and hundredths. Read and write numbers with up to two decimal places and understand the value of each digit. Compare numbers with up to two decimal places. Order numbers with up to two decimal places Look at the digit in the tenths column to understand whether to round a number up or not. If a number is exactly halfway, then by convention, we round up to the next integer. Round numbers with one decimal place to the nearest whole number.	given decimal sequences. All digits move to the left when multiplying by 10, 100 and 1000. Multiply numbers with decimals by 10, 100 and 1000. All digits move to the right when dividing by 10, 100 and 1000. Divide numbers with decimals by 10, 100 and 1000.	places and divide the numbers by 10, 100 and 1000, giving answers up to three decimal places. Use concrete resources to multiply decimals, explore what happens when exchanges take place. Make links to money and measures. Use correct resources to divide decimals. Explore what happens when exchanges take place.
	ADDITION WITH DECIMALS						Add decimals within one whole. A complement is something that you add	

							to make a defined whole. Find the complements which sum to make one. Add decimals crossing the whole, using complements. Add numbers greater than one with the same number of decimal places. Add numbers with different numbers of decimals places.	
	SUBTRACTION WITH DECIMALS						Subtract decimals within one whole. Subtract numbers with the same number of decimal places Subtract decimals with different numbers of decimal places.	
	PROBLEMS (DECIMALS AND PERCENTAGES)						Solve problems involving adding and subtracting decimals with the same number of decimal places. Solve problems involving adding and subtracting decimals with a different number of decimal places. Add and subtract numbers with decimals from whole numbers.	Use understanding of division to solve problems where the answer has up to two decimal places.
NUMBER - RATIO	RATIO							Ratio shows the relationship between two values and can describe how one is related to another. Make simple comparisons between two different quantities.

								Use objects and diagrams to compare ratios and fractions. Recognise the colon notation as relating to the order to parts. Use the language 'for every… there are…' and read ratios such as 3:5 as three to five. Draw bar models to represent problems clearly labelling the information given and what is to be calculated. The term 'scale factor' relates to enlarging shapes to make then two, three or more times bigger. Draw 2-D shapes on a grid to a given scale factor and be able to use vocabulary, such as 'Shape A is three times as big as shape B' Similar shape in mathematics means that one shape is an exact enlargement of the other, not just that they have some common properties. Use multiplication and division fact to calculate missing information and scale factors. Apply learned ratio skills and knowledge to a wide range of problems in different contexts.
NUMBER - ALGEBRA	ALGEBRA							Explore one-step function machines, giving an output to an input, and work backwards to give an input from an output.

								Explore two-step function machines, recording inputs and outputs in the form of a table. Know simple algebraic conventions, such as y x 4 as 4y. Use simple algebraic inputs, such as y to form expressions. Such as y +4 The same expression can have different values depending on what has been substituted. Substitute into simple expressions to find a particular value. Substitute into familiar formulae such as those for area and volume and use simple formulae to work out values of everyday activities such as the cost of a taxi or the amount of medicine to take given a person's age. Expressions like x + 5 can take different values depending on the value of x, but an equation like x + 5 =11.2 x is a specific known value. Use algebraic notation to form one step equations. Solve simple one-step equations involving the four operations. Solve two-step equations involving the four operations. Find pairs of numbers that satisfy an equation

								involving two unknowns such as 2p +q = 12. Find possible solutions to equations which involve multiples of one or more unknown.