Maths Number - Medium Term Overview

National Curriculum Year 1

Small Steps

Number: Number and Place value **I can identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.** **I read and write numbers from 1 to 20 in numerals and words.** **I can count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.** **I can count, read and write numbers to 100 in numerals: count in multiples of 2,5 and 10.**	**Counting, recognising and comparing numbers 0 - 10** • Counting forwards and backwards within 10 • Counting objects within ten • Counting different groups • Representing counting songs • Anything can be counted • Subitising numbers to five • Conservation • Using numerals • Introducing zero • Ordinal numbers • Ordering numbers to 10 • More than and fewer than • One more with manipulatives and counting • One less with manipulatives and counting • Finding the missing numbers	**Counting to and from 20** • Counting to and from 20 • Counting on • Counting back from 20 • Counting forward to 20 and back from 20 • Comparing numbers to 20 • Ordering numbers 11- 20 practically • Comparing and ordering numbers 0-20 practically • Finding one more and one less using representations • Finding one more and one less with manipulatives and images • Finding the missing number from 0 to 20	**Counting in tens - decade numbers** • Counting forwards and backwards in 10s to 50 • Counting forwards and backwards in 10s to 100 • Composition of decade numbers to 100: making groups of 10 • Count groups of 10 in decade numbers • Order and compare decade numbers on number tracks	**Pattern in counting from 20 to 100** • Counting patterns within a decade • Crossing the tens boundary counting forwards • Crossing the tens boundary counting backwards • Crossing the tens boundary counting forwards and backwards • Find missing numbers between 20 and 100	**Composition of numbers 11 to 19** • Explain that the digits in the numbers 11 to 19 express quantity • Explain that the digits in the numbers 11 to 19 express position on a number line • Identify the quantity shown in a representation of numbers 11 to 19 • Use knowledge of 10 and a bit to solve problems • Solve problems using knowledge of 10 and a bit in different contexts • Explore odd and even numbers within 20 • Double the numbers 6 to 9 and halve the result explaining what doubling and halving is • Use knowledge of addition facts within 10 to add within 20 • Use knowledge of subtraction facts within 10 to subtract within 20 • Use knowledge of addition and subtraction facts within 10 to add and subtract within 20
Number: Addition and Subtraction **Given a number, I can identify one more and one less.** **I can add and subtract one digit and two digit numbers to 20, including 0.** **I represent and use number bonds and related subtraction facts within 20.** **I can read, write and interpret mathematical statements involving addition and subtraction signs.**	**Composition of numbers 0 to 5** • Explain that numbers can represent how many objects there are in a set • Explain that ordinal numbers show a position and not a set of objects • Partition numbers one to five in different ways • Partition the numbers one to five in a systematic way • Find a missing part when one part and the whole is known • Solve problems finding a missing part when one part and the whole is known • Show one more and one less than a number using representations • Show one more and one less than a number using representations and describe this accurately	**Composition of numbers 6 to 10** • Count a set of objects and match the spoken number to the written numeral and number name • Represent the numbers 6 to 10 using a five and a bit structure • Compare two numbers and say which is larger or smaller • Identify the whole and parts of the numbers 6 to 10 using the five and a bit structure • Explore the numbers 6 to 10 using the part whole model • Explain where 6, 7, 8 and 9 lie on a number line • Estimate where 6, 7, 8 and 9 lie on an unmarked number line • Order and sort base-ten number boards into odd and even sets • Skip count in odds and evens	**Additive structures: addition** • Combine two or more parts to make a whole • Explain that addends can be represented in any order • Explain that the = sign can be used to show that the whole and the sum of the parts are equal • Add parts to find the value of the whole and write the equation • Solve problems by adding parts to find the value of the whole and write the equation • Find the missing addend in an equation • Solve problems by finding the missing addend in an equation • Represent first then now stories with addition equations • Solve problems by representing first then now stories with addition equations	**Additive structures: addition and subtraction** • Partition a whole into two parts and express this with a subtraction equation • Solve problems by partitioning a whole into two parts and express this with a subtraction equation • Represent first then now stories with subtraction equations • Solve problems by representing first then now stories with subtraction equations • Represent different types of stories with subtraction calculations • Make addition and subtraction stories writing equations to match • Work out the missing part of an addition story and equation if the other two parts are known	**Addition and subtraction facts within 10** • Explain that addition is commutative • Find pairs of numbers to 10 • Solve problems by finding pairs of numbers to 10 • Add and subtract 1 from any number • Explain what the difference is between consecutive numbers using addition and subtraction • Explain what happens when 2 is added to or subtracted from odd and even numbers • Explain what the difference is between consecutive odd and even numbers • Explain what happens when zero is added to or subtracted from a number

Use skills ladders for assessment

Maths Number - Medium Term Overview

I can solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7=?-9	• Use a bar model to represent a whole partitioned into two parts • Solve problems using a bar model to represent a whole partitioned into two parts	• Explain what odd and even numbers are and the difference between them • Explain how even and odd numbers can be partitioned • Partition numbers 6 to 10 in different ways • Partition the numbers 6 to 10 in a systematic way • Identify a missing part when a whole is partitioned into two parts	• Make addition stories and write equations to match	• Work out the missing part of a subtraction story and equation if the other two parts are known • Explain that addition and subtraction are inverse operations • Use additive structures to think about addition and subtraction equations in different ways	• Explain what happens when a number is added to or subtracted from itself • Double numbers and explain what doubling means • Halve numbers and explain what halving means • Use knowledge of doubles and halves to calculate near doubles and halves • Addition and subtraction facts within 10 • Use knowledge and strategies to add 5 and 3 and 6 and 3
<u>Number: Multiplication and division</u> **I can solve one step problems that involve multiplication and division, using concrete objects and pictorial representations, with the support of the teacher.** **I can solve one step problems that involve multiplication and division, using concrete objects and pictorial representations, with the support of the teacher.**	**<u>Multiplication and division</u>** • Count efficiently in groups of two • Count efficiently in groups of ten • Count efficiently in groups of five • Count efficiently by counting in groups of two five and ten • Make equal groups • Add equal groups • Make arrays • Make doubles • Make equal groups – grouping • Make equal groups - sharing				
<u>Number: Fractions</u> **I can recognise, find and name a half as one of two equal parts of an object, shape or quantity.** **I can recognise, find and name a quarter as one of four equal parts of an object, shape or quantity**	**<u>Recognising Fractions</u>** • Halving shapes or object • Halving a quantity • Find a quarter of a shape or object • Find a quarter of a quantity				
Key Vocab					
Equal to, more than, less than (fewer), most, least. Forward, backward. Numeral. **More, less. Addition and Subtraction. Number bond. Multiply. Divide. Fraction. Halve, quarter.**					

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Maths Number - Medium Term Overview

National Curriculum Year 2						
Number: Number and Place value **I can count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.** **I recognise the place value of each digit in a two-digit number (tens and ones).** **I can identify, represent and estimate numbers using different representations, including the number line.** **I can compare and order numbers from 0 up to 100; use < > and = signs.** **I read and write numbers to at least 100 in numerals and words.** **I use place value and number facts to solve problems.**	**Composition of multiples of 10** • Explain that one ten is equivalent to ten ones • Represent multiples of ten using their numerals • Represent multiples of ten using their numerals and names • Represent multiples of ten in an expression or an equation • Estimate the position of multiples of ten on a 0 - 100 number line • Explain what happens when you add and subtract ten to a multiple of ten • Use knowledge of facts and unitising to add and subtract multiples of ten • Add and subtract multiples of ten • Solve problems involving multiples of ten • Solve problems involving multiples of ten in a range of contexts	**Counting and representing the numbers 20 to 99** • Review and explore the counting sequence for counting to 100 and beyond • Count a large group of objects by counting groups of tens and the extra ones • Count a large group of objects by using knowledge of unitising by counting tens and ones • Represent a number from 20 - 99 in different ways • Explain and mark the position of numbers 20 - 99 on a number line including the context of measure	**Comparing, ordering and partitioning 2-digit numbers** • Compare two 2-digit numbers • Partition 2-digit numbers into tens and ones using place value resources • Partition 2-digit numbers into tens and ones and record in different ways • Add two 2-digit numbers by partitioning into tens and ones • Solve problems by adding two 2-digit numbers by partitioning into tens and ones			
Number: Addition and Subtraction **I solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures.** **I solve problems with addition and subtraction applying my increasing knowledge of mental and written methods.** **I recall and use addition and subtraction facts to 20 fluently,**	**Secure fluency of addition and subtraction facts within 10** • Represent addition and subtraction facts within 10 • Recall known addition and subtraction facts within 10 • Recall doubles within 10 • Use near doubles within 10 • Use known addition and subtraction facts within 10 to solve problems	**Calculating within 20** • Add three addends • Use a 'First, then, then, now' story to add three addends • Explain that the addends can be added in any order • Add three addends efficiently • Add three addends efficiently by finding two addends that total 10 • Add two numbers that bridge through 10 • Subtract two numbers that bridge through 10 • Compare numbers and describe how	**Adding and subtracting ones and tens to and from 2-digit numbers** • Add and subtract one to and from a 2-digit number • Add and subtract one to and from a 2-digit number that crosses a tens boundary • Use number facts to add a 1-digit number to a 2-digit number • Use number facts to subtract a 1-digit number from a 2-digit number • Use number bonds to 10 to add and subtract a 1-digit to and from a 2-digit number	**Addition and subtraction of two 2-digit numbers** • Explain different strategies used to add • Add multiples of 10 and 1-digit numbers • Add a 2-digit number to a 2-digit number when not crossing ten • Add a 2-digit number to a 2-digit number when not crossing ten in different contexts • Add a 2-digit number to a 2-digit number when crossing ten • Add a 2-digit number to a 2-digit number		

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Maths Number - Medium Term Overview

and derive and use related facts up to 100.		many more or less there are in each set • Calculate the difference • Calculate the difference in different contexts • Explain what the difference is between consecutive numbers • Calculate the difference when information is presented in a pictogram • Calculate the difference when information is presented in a bar chart • Use knowledge of subtraction to solve problems in a range of contexts • Use knowledge of addition and subtraction to solve problems in a range of contexts problems in a range of contexts	• Use 'make 10' to add and subtract a 1-digit number to and from a 2-digit number • Find ten more or less than a 2-digit number • Add and subtract ten to and from a 2-digit number and explain the patterns • Use number facts to add or subtract a multiple of ten to and from a 2-digit number • Use knowledge of adding and subtracting multiples of ten to solve problems	when crossing ten in different contexts • Explain different strategies used to subtract • Subtract a 2-digit number from a 2-digit number • Partition the subtrahend to help with subtraction • Subtract a 2-digit number from a 2-digit number not crossing ten • Subtract a 2-digit number from a 2-digit number not crossing ten I different contexts • Subtract a 2-digit number from a 2-digit number crossing ten • Subtract a 2-digit number from a 2-digit number crossing ten in different contexts • Use knowledge of 2-digit number to subtract efficiently • Add and subtract efficiently in a range of contexts		
<u>Number: Multiplication and division</u> **I recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.** **I can calculate mathematical statements for multiplication and division within the multiplication tables and write them using multiplication (x), division (/) and equals (=) signs.** **I can show that multiplication of two numbers can be done in any order (commutative) and**	**<u>Grouping objects in different ways and relating to multiplication</u>** • Explain that objects can be grouped in different ways • Describe how objects have been grouped • Represent equal groups as repeated addition • Represent equal groups as repeated addition and multiplication • Represent equal groups as multiplication • Explain and represent multiplication when a group contains zero or one items	**<u>Representing counting in 2s and 10s as the 2 and 10 times tables</u>** • Represent the 2 times table in different ways • Use knowledge of the 2 times table to solve problems • Explain the relationship between adjacent multiples of 2 • Explain that factor pairs can be written in any order • Represent counting in tens as the 10 times table • Represent the 10 times table in different ways	**<u>Representing counting in 5s as the 5 times table and link to the 10 times tables</u>** • Explain how groups of five and ten are related • Explain the relationship between multiples of five and ten • Use knowledge of the relationships between the 5 and 10 times tables to solve problems • Explain how a factor of zero or one affect the product • Represent multiplication	**<u>Multiplying by 2, doubling and halving (factors and products)</u>** • Double 2-digit numbers and record as multiplications where one of the factors is 2 • Explain how doubling and halving are related • Explain the relationship between factors and products • Halve 2-digit numbers • Use knowledge of doubling, halving and the 2 times table to solve problems	**<u>Introduction to division structures</u>** • Explain that objects can be grouped equally • Identify and explain when objects cannot be grouped equally • Explain the relationship between division expressions and division stories • Calculate the number of equal groups in a division story • Use knowledge of skip counting and division to solve problems relating to measure • Skip count using the divisor to find the quotient	**<u>Doubling, halving, quotative and partitive division</u>** • Identify the patterns and relationships between the 5 and 10 times tables • Identify and explain relationships between the 5 and 10 times tables • Use knowledge of the 5 and 10 times tables to solve problems • Use knowledge of the 5 and 10 times tables to solve problems in a range of contexts • Explain how times table facts can help to find the quotient (10 times table)

Use skills ladders for assessment

Maths Number - Medium Term Overview

division of one number by another cannot. **I solve problems involving multiplication and division, using material, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.**	• Identify and explain each part of a multiplication equation • Use knowledge of multiplication to calcuate the product • Use knowledge of multiplication to solve problems • Use knowledge of multiplication to solve problems in a range of contexts	• Explain the relationship between adjacent multiples of 10 • Represent counting in fives as the 5 times table • Represent the 5 times table in different ways • Explain the relationship between adjacent multiples of 5	equations in different ways • Use knowledge of the 2, 5 and 10 times tables to solve problems • Use knowledge of the 2, 5 and 10 times tables to solve problems in a range of contexts • Explain what each factor represents in a multiplication story • Explain what each factor represents in a multiplication story when one of the factors is one • Explain how a multiplication equation with 2 as a factor is related to doubling		• Explain that objects can be shared equally • Use skip counting to solve a sharing problem • Skip count using the divisor to find the quotient in a sharing problem Solve a variety of division problems, explaining understanding	• Explain how times table facts can help to find the quotient (5 times table) • Explain how times table facts can help to find the quotient (2 times table) • Explain how a division equation with 2 as a divisor is related to halving • Explain each part of a division equation and know how they can be interchanged • Use knowledge of divisibility rules when the divisor is 2 to solve problems • Use knowledge of divisibility rules when the divisor is 10 to solve problems • Use knowledge of divisibility rules when the divisor is 5 to solve problems • Explain how a dividend of zero affects the quotient • Explain how the quotient is affected when the divisor is equal to the dividend • Explain how a divisor of one affects the quotient
<u>Number: Fractions</u> **I can recognise, find, name and write fractions ½, ¼, ¾ of a length, shape, set of objects or quantity.** **I can write simple fractions for example ½ of 3 =6 and recognise the equivalent 2/4 is 6.**	**<u>Fractions: identify equal parts and be familiar with halves, thirds and quarters</u>** • Identify if something has been split into equal or unequal parts • Name the fraction 'one half' in relation to a fraction of a length, shape or set of objects • Name the fraction 'one quarter' in relation to a fraction of a length, shape or set of objects • Name the fraction 'one third' in relation to a fraction of a					

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Maths Number - Medium Term Overview

	length, shape or set of objects • Read and write the fraction notation 1/2,1/3, 1/4 and relate this to a fractions of objects and sets • Find half of a number • Relate finding half of a number to halving • Find 1/3 or 1/4 of a number • Find 1/4 and 3/4 of an object, shape, set of objects, length or quantity • Recognise the equivalence of 2/4 and 1/2					
Key Vocab						

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Maths Number - Medium Term Overview

National Curriculum Year 3

Number: Number and Place value **I recognise the place value of each digit in a three-digit number (hundreds, tens, ones).** **I can estimate the answer to a calculation and use inverse operations to check answers.** **I can compare and order numbers up to 1000.** **I can identify, represent and estimate numbers using different representations.** **I can read and write numbers up to 1000 in numerals and in words.** **I can find the value of the letter in calculations consisting of 2 computations e.g. 14 + 7 = n –**	**Securing place value to 100 and applying to addition and subtraction** • Composition of 100 in 10s and 1s • Composition of 100 in 50s, 25s and 20s • Multiples of 10 that total 100 • Use known facts to find pairs of numbers that total 100 • Use known facts to find complements to 100 efficiently • Represent 3-digit multiples of 10 in different ways • Use place value knowledge to write addition and subtraction equations • Bridge 100 by adding in multiples of 10 • Bridge 100 by subtracting in multiples of 10 • Solve problems using knowledge of addition and subtraction of multiples of 10	**Bridging 100: counting on and back in 10s, adding/subtracting multiples of 10** • Count across and on from 100 • Represent a 3-digit number up to 199 in different ways • Bridge 100 by adding or subtracting a single-digit number • Find 10 more or 10 less than a given number • Cross the hundreds boundary when adding and subtracting any 2-digit multiple of 10	**Representing 3-digit numbers, comparing and positioning on number lines** • Represent a 3-digit number up to 1000 in different ways • Use knowledge of addition to solve problems • Position 3-digit numbers on number lines • Estimate the position of 3-digit numbers on unmarked number lines • Comparing and ordering numbers with 1, 2 and 3 digits • Ordering sets of 3-digit numbers • Use known facts to add and subtract multiples of 100 within 1000 • Write a 3-digit multiple of 10 as a multiplication equation • Partition 3-digit numbers in different ways • Use known facts to solve problems involving partitioning numbers • Use known facts to add and subtract to and from multiples of 100 • Add and subtract to and from a 3-digit number bridging 100 • Solve problems by adding and subtracting to or from 3-digit numbers • Count forwards and backwards in multiples of 2, 20, 5, 50 and 25 • Solve problems by counting forwards and backwards in multiples of 2, 20, 5, 50 and 25		
Number: Addition and Subtraction **I can add and subtract numbers mentally.** **I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.** **I can solve problems, including missing number problems,**	**Review strategies for adding and subtracting across 10** • Add 3 numbers together using doubles and near doubles • Add 3 numbers together in different contexts • Numbers can be added in any order • Add three addends by finding pairs that total 10 • Add three addends efficiently using a range of strategies • Addition by bridging through 10 • Subtracting small numbers	**Informal and mental strategies for adding and subtracting two 3-digit numbers** • Add two 3-digit numbers using partitioning • Add two 3-digit numbers using adjusting strategies • Add 2 and 3-digit numbers by redistributing • Choose the most efficient strategy to add two 3-digit numbers • Subtract 2 or 3-digit numbers using partitioning and bridging a multiple of 10	**Column Addition** • Identify the addends and the sum in column addition • Use knowledge of place value to correctly lay out column addition • Add a pair of 2-digit numbers using column addition • Add using column addition • Use knowledge of column addition to solve problems • Add a pair of 2-digit numbers using column addition with regrouping in the ones column • Add a pair of 2-digit numbers using column addition with regrouping in the tens column	**Column subtraction** • Identify the minuend and subtrahend in column subtraction • Explain what is happening when you use column subtraction • Subtract from a 2-digit number using column subtraction with exchanging from tens to ones • Subtract from a 3-digit number using column subtraction with exchanging from hundreds to tens • Evaluate the efficiency of different subtraction strategies including column subtraction	**Understand additive relationships and apply them to rearrange equations** • Understand why the order of addition and subtraction steps in a multi-step problem can be chosen • Solve multi-step problems efficiently using addition and subtraction • Understand the relationship between addition and subtraction equations with 2 and 3 digits • Use knowledge of the additive relationship to rearrange addition equations

Use skills ladders for assessment

Maths Number - Medium Term Overview

using number facts, place value, and more complex addition and subtraction.	• Subtracting to and from 10 • Subtracting numbers that bridge through 10 • Solving problems involving addition and subtraction	• Subtract a pair of 2-digit numbers by finding the difference • Subtract 3-digit multiples of 10 by finding the difference between them • Choose the most efficient strategy to subtract from a 3-digit number • Use addition and subtraction to solve problems involving bar charts, pictograms and tables • Use addition and subtraction to solve problems in different contexts	• Add using column addition with regrouping • Use known facts and strategies to accurately and efficiently calculate and check column addition • Use knowledge of column addition with regrouping to solve problems		• Use knowledge of the additive relationship to rearrange subtraction equations • Use knowledge of the additive relationship to identify knowns and unknowns in addition equations • Use knowledge of the additive relationship to identify knowns and unknowns in subtraction equations • Use knowledge of the additive relationship to rearrange equations before solving • Solve one and two-step problems using information in scaled bar charts, pictograms and tables • Solve one and two-step problems in different contexts
<u>Number: Multiplication and division</u> **I recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.** **I can count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.** **I can write and calculate mathematical statements for multiplication and division using the multiplication tables I know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.**	**<u>2, 4 and 8 times tables: using times tables to solve problems</u>** • Represent counting in fours as the 4 times table • Use knowledge of the 4 times table to solve problems • Explain the relationship between adjacent multiples of four • Explain the relationship between multiples of 2 and multiples of 4 • Use knowledge of the relationship between the 2 and 4 times tables to solve problems • Represent counting in eights as the 8 times table • Explain the relationship between adjacent multiples of eight • Explain the relationship between multiples of 4 and multiples of 8 • Use knowledge of the relationship between the 4 and 8 times tables to solve problems • Explain the relationship between the multiples of 2, 4 and 8 • Use knowledge of the relationship between the 2, 4 and 8 times tables to solve problems • Use knowledge of the divisibility rules for divisors of 2 and 4 to solve problems • Use knowledge of the divisibility rules for divisors 8 to solve problems • Scale known multiplication facts by 10 • Scale divisions derived from multiplication facts by 10				

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Maths Number - Medium Term Overview

Number: Fractions	**Unit fractions as part of a whole**	**Compare and order unit fractions**	**Calculate the value of a part (fractions as operators)**	**Non-unit fractions**	**Composition of non-unit fractions: addition and subtraction**
I can count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. **I can recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.** **I recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.** **I recognise and show, using diagrams, equivalent fractions with small denominators.** **I can add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]** **I can compare and order unit fractions, and fractions with the same denominators.** **I solve number problems and practical problems involving these ideas.** **I can use and solve problems containing factors of ten and fractions with common denominators.**	• Identify a whole and the parts that make it up • Explain why a part can only be defined in relation to a whole • Identify the number of equal or unequal parts in a whole • Identify equal parts when they do not look the same • Explain the size of a part in relation to the whole • Construct a whole when given a part and the number of parts • Identify how many equal parts a whole as been divided into • Use fraction notation to describe an equal part of the whole • Represent unit fractions in different ways • Solve problems involving identifying equal parts and the whole	• Compare unit fractions by looking at the denominator • Compare and order unit fractions by looking at the denominator • Identify when unit fractions cannot be compared • Solve problems involving comparing unit fractions • Solve problems involving comparing and ordering unit fractions in a range of contexts	• Construct a whole when given one part and the fraction that it represents • Use knowledge of parts and wholes in unit fractions to solve problems • Use knowledge of parts and wholes to find a unit fraction of a set of objects • Calculate the value of a part by using understanding of division and knowledge of division facts • Calculate the value of a part by connecting division knowledge with finding a fraction of a quantity	• Explain that non-unit fractions are composed of more than one unit fraction • Identify non-unit fractions • Identify the number of equal or unequal parts in a whole in different contexts • Use knowledge of non-unit fractions to solve problems • Use knowledge of unit fractions to find one whole • Place fractions between 0 and 1 on a number line • Compare fractions using knowledge of non-unit fractions including those equal to 1 • Compare non-unit fractions with the same denominator • Review comparing unit fractions • Compare fractions with the same numerator	• Use repeated addition of a unit fraction to form a non-unit fraction • Use repeated addition of a unit fraction to form 1 • Add up fractions with the same denominator • Add on fractions with the same denominator • Add fractions with the same denominator and generalise the rule • Subtract fractions with the same denominator • Add and subtract fractions with the same denominator in a range of contexts • Explain that addition and subtraction of fractions are inverse operations • Subtract fractions from a whole by converting the whole to a fraction • Represent a whole as a fraction in different ways and use this to solve subtraction problems
Key vocab					

Use skills ladders for assessment

Maths Number - Medium Term Overview

National Curriculum Year 4						
Number: Number and Place value **I can estimate and use inverse operations to check answers to a calculation.** **I can count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.** **I use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.** **I can find 1000 more or less than a given number.** **I can round decimals with one decimal place to the nearest whole number.** **I can solve number and practical problems that involve all of the above and with increasingly large positive numbers.** **I count backwards through zero to include negative numbers.** **I compare numbers with the same number of decimal places up to two decimal places.** **I can read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the**	**Secure place value to 1000: apply to addition and subtraction: multiples of 100** • Explain how many hundreds, tens and ones 1,000 is composed of • Use place value to explain how many hundreds, tens and ones compose 1,000 • Use different strategies to add multiples of 100 • Use different strategies to subtract multiples of 100 • Use addition and subtraction strategies to solve problems with multiples of 100	**Comparing, ordering and rounding 4-digit numbers** • Use place value and number facts to decompose 4-digit numbers in different ways • Compare and order 4-digit numbers • Explain what rounding is and round a 4-digit number to the nearest thousand • Round a 4-digit number to the nearest hundred and ten • Round a 4-digit number to the nearest thousand, hundred and ten				

Use skills ladders for assessment

Maths Number - Medium Term Overview

concept of zero and place value. **I can solve simple measure and money problems involving fractions and decimals to two decimal places.** **I can add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** **I can find the value of x using multiplication and division e.g. 3x = 21 x= ?** **I recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).** **I recognise and write decimal equivalents of any number of tenths or hundredths.** **I can order and compare numbers beyond 1000.** **I recognise and write decimal equivalents.** **I can identify, represent and estimate numbers using different representations.** **I can round any number to the nearest 10, 100 or 1000.**						

Use skills ladders for assessment

Maths Number - Medium Term Overview

Number: Addition and Subtraction **I can add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.** **I can solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.** **I can solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.**	**Review of column addition and subtraction (Roman Numerals)** • Review column addition and identify and name the addends and sum • Review and use knowledge of place value to correctly lay out column addition • Review adding pairs of 2-digit numbers using column addition with no regrouping • Review using column addition • Use column addition to solve problems in different contexts • Review adding pairs of 2-digit numbers using column addition with regrouping in the ones column • Review adding pairs of 2-digit numbers using column addition with regrouping in the tens column • Review using column addition with regrouping in the ones and tens columns • Review using known facts and strategies to accurately and efficiently use and check column addition • Use knowledge of column addition to solve problems in a range of contexts • Review identifying the minuend and subtrahend in column subtraction • Use column subtraction to subtract without exchanging • Review subtracting from a 2-digit number using	**Column addition and subtraction with 4-digit numbers** • Add two or more 4-digit numbers using column addition without regrouping • Add two or more 4-digit numbers using column addition with regrouping in the ones and tens • Add two or more 4-digit numbers using column addition with regrouping in the ones, tens and hundreds • Subtract two 4-digit numbers using column subtraction without exchanging • Subtract two 4-digit numbers exchanging in the tens and ones • Subtract two 4-digit numbers exchanging in the hundreds, tens and ones • Solve problems involving column addition and subtraction of up to 4-digit numbers • Use strategies to make solving calculations more efficient • Explain how many 100s and 200s that 1,000 is composed of • Explain how many 500s and 250s that 1,000 is composed of				

Use skills ladders for assessment

Maths Number - Medium Term Overview

	column subtraction with exchanging from tens to ones • Review subtracting from a 3-digit number using column subtraction with exchanging from 100s to 10s • Decide which is the most efficient subtraction strategy to use in different situations					
Number: Multiplication and division **I recall multiplication and division facts for multiplication tables up to 12.** **I can count in multiples of 6, 7, 9, 25 and 1000.** **I can recognise and use factor pairs and commutativity in mental calculations.** **I can multiply two-digit and three-digit numbers by a one-digit number using formal written layout.** **I can solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.** **I can find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths**	**Represent counting in threes and sixes as the 3 and 6 times tables** • Represent counting in threes as the 3 times table • Explain the relationship between adjacent multiples of three • Represent counting in sixes as the 6 times table • Explain the relationship between adjacent multiples of six • Use known facts from the 5 times table to solve problems involving the 6 times table	**Relationship between the 3 and 6 times tables and tests of divisibility** • Use knowledge of the 3 and 6 times tables to solve problems • Explain the relationship between multiples of three and six • Use knowledge of the relationships between the 3 and 6 times tables to solve problems • Use the divisibility rules for divisors of 3 • Use divisibility rules for divisors of 6	**Represent counting in nines as the 9 times table** • Represent counting in nines as the 9 times table • Explain the relationship between adjacent multiples of nine • Solve problems involving adjacent multiples of nine • Use known facts from the 10 times table to solve problems involving the 9 times table • Use knowledge of the 9 times table to solve problems	**Relationship between the 3 and 9 times tables** • Explain the relationship between multiples of three and multiples of nine • Explain the relationship between pairs of 3 and 9 times table facts that have the same product • Solve problems using the relationship between 3 and 9 times table facts with the same product • Solve problems using divisibility rules for divisors of 3 and 6 • Solve problems involving the 3, 6 and 9 times tables	**7 times table: odd and even patterns, square numbers and tests of divisibility** • Represent counting in sevens as the 7 times table • Explain the relationship between adjacent multiples of seven • Use known facts from the 2, 5 and 6 times tables to solve problems involving the 7 times table • Use knowledge of the 7 times table to solve problems • Identify patterns of odd and even numbers in the times tables • Use patterns of odd and even numbers in the times tables to solve problems • Represent a square number • Identify and use square numbers to solve problems • Use divisibility rules for 3, 4, 6 and 8 times tables to solve problems • Use divisibility rules for 2, 3, 4, 5, 6, 8 and 10 times tables to solve problems	**Understand and represent multiplicative structures** • Explain what each factor represents in a multiplication equation • Explain how each part of a multiplication and division equation relates to a story • Explain where zero can be part of a multiplication or division expression and the impact it has • Partition one of the factors in a multiplication equation in different ways using representations • Explain which is the most efficient factor to partition to solve a multiplication problem **Division with Remainders** • Represent a quotative division story where there is a remainder with multiplication and addition • Represent a partitive division story where there is a remainder with multiplication and addition • Represent division stories where there is a remainder with division and multiplication equations • Explain how the remainder relates to the

Use skills ladders for assessment

Maths Number - Medium Term Overview

						divisor in a division equation • Identify the largest possible remainder and how it relates to the divisor in a division equation • Identify and explain when there will or will not be a remainder in a division equation • Use knowledge of times tables and divisibility rules to identify when there will be a remainder • Use knowledge of division equations and remainders to solve problems • Decide what to do with the answer to a division calculation to solve a problem • Solve problems involving division with remainders in a range of contexts **<u>Apply the distributive law to multiplication</u>** • Use knowledge of the distributive law to solve two part addition problems • Use knowledge of the distributive law to solve two part subtraction problems • Use knowledge of the distributive law to calculate products using known times tables • Use knowledge of the distributive law to calculate products beyond known times tables • Use knowledge of the distributive law to solve problems in different contexts **<u>Understand what happens when a number is multiplied or divided by 10 and 100</u>**

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Maths Number - Medium Term Overview

						• Explain the relationship between multiplying a number by 10 and multiples of 10 • Understand that multiplying by 10 makes a number ten times the size • Use place value to explain placing a zero after the final digit when we multiply whole numbers by 10 • Understand that dividing a number by 10 makes it ten times smaller or one tenth the size • Use place value to explain removing the zero in the ones from a multiple of ten when we divide by 10 • Explain the relationship between multiplying a number by 100 and multiples of 100 • Use place value to explain placing 2 0's after the final digit when we multiply whole numbers by 100 • Use place value to explain removing the final 2 zeros from a multiple of 100 when we divide by 100 • Use knowledge of the composition of 100 to multiply and divide by 100 in different ways • Explain how making a factor 10 times the size affects the product • Explain how making the dividend 10 times the size affects the quotient • Explain how making a factor 100 times the size affects the product • Explain how making the dividend 100 times the size affects the quotient • Scale known multiplication facts by 100 • Scale division facts derived from

Use skills ladders for assessment

Maths Number - Medium Term Overview

						multiplication facts by 100
Number: Fractions **I can recognise and show, using diagrams, families of common equivalent fractions.** **I can solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.** **I add and subtract fractions with the same denominator.**	**Review of fractions** • Secure identifying a whole and the parts that make it up • Secure identifying the number of equal or unequal parts in a whole • Secure identifying equal parts when they do not look the same • Review explaining the size of the part in relation to the whole • Review constructing a whole when given a part and the number of parts	**Composition of fractions greater than one** • Explain how to express quantities made up of both whole numbers and a fractional part • Explain how a quantity made up of whole numbers and a fractional part is composed • Compose and decompose quantities made of whole numbers and fractional parts • Solve problems involving fractions greater than one • Accurately label a range of number lines and explain the meaning of each part	**Compare and order mixed numbers and position on a number line** • Identify numbers on marked but unlabelled number lines • Estimate the position of number on a number line using fraction sense • Compare and order mixed numbers using fraction sense • Compare and order mixed numbers when the whole number is the same • Compare and order mixed numbers when the whole number and the numerator of the fractions is the same	**Addition and subtraction of fractions and mixed numbers (within a whole)** • Make efficient choices about the order when solving addition problems within a whole • Make efficient choices about the order when solving subtraction problems within a whole • Express a quantity as a mixed number and an improper fraction (quarters) • Express a quantity as a mixed number and an improper fraction (fifths) • Express a quantity as a mixed number and an improper fraction	**Convert improper fractions to mixed numbers and vice versa** • Convert a quantity from an improper fraction to a mixed number (quarters) • Express and convert a quantity from an improper fraction to a mixed number (fifths) • Explain how an improper fraction is converted into a mixed number • Explain how a mixed number is converted into an improper fraction • Solve problems involving converting between mixed numbers and improper fractions and vice versa	**Efficient strategies for adding and subtracting mixed numbers (crossing a whole)** • Add mixed numbers crossing the whole • Subtract a proper fraction from a mixed number crossing the whole • Subtract a mixed number from a mixed number and explain which strategy is most efficient • Use knowledge of subtraction to choose efficient approaches when subtracting mixed numbers • Solve problems involving the addition and subtraction of mixed numbers
Key Vocab						

Use skills ladders for assessment

Maths Number - Medium Term Overview

National Curriculum Year 5						
Number: Number and Place value **I can read, write, order and compare numbers to at least 1 000 000** **I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers** **I count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000** **I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy** **I can establish whether a number up to 100 is prime and recall prime numbers up to 19** **I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero** **I can round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000** **I can solve number problems and practical problems that involve numbers from 10s to 1,000,000s** **I can read and write decimal numbers as fractions [for**	**Understand tenths as part of a whole, represent and calculate mentally** • Identify tenths as part of a whole • Describe and represent tenths as a decimal number • Count tenths in different ways • Describe and write decimal numbers with tenths in different ways • Compare and order decimal numbers with tenths	**Understand hundredths as parts of a whole and represent** • Identify hundredths as part of a whole • Describe and represent hundredths as a decimal number • Describe and write decimal numbers with hundredths in different ways • Compare and order decimal numbers with hundredths • Explain that decimal numbers with hundredths can be partitioned in different ways	**Negative numbers** • Represent a change story using addition and subtraction symbols • Interpret numbers greater than and less than zero in different contexts • Read and write negative numbers • Explain how the value of a number relates to its position from zero • Identify and place negative numbers on a number line • Interpret sets of negative and positive numbers in a range of contexts • Use knowledge of positive and negative numbers to calculate intervals • Explain how negative numbers are used on a coordinate grid • Use knowledge of positive and negative numbers to interpret graphs • Solve problems involving positive and negative numbers in a range of contexts			

Use skills ladders for assessment

Maths Number - Medium Term Overview

example, 0.71 = 71/100] **I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.** **I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** **I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000** **I can round decimals with two decimal places to the nearest whole number and to one decimal place** **I can recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)** **I can read, write, order and compare numbers with up to three decimal places** **I can solve problems involving number up to three decimal places** **I recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction** **I can solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.** **Begin to use squared and cubed to solve algebraic equations e.g. x squared = 25, x =?**						

Use skills ladders for assessment

Maths Number - Medium Term Overview

Number: Addition and Subtraction **I can add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)** **I can add and subtract numbers mentally with increasingly large numbers** **I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** **I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign**	**Compose and calculate with decimals including column addition and subtraction** • Explain that decimal numbers with tenths can be composed additively • Explain that decimal numbers with tenths can be composed multiplicatively • Use known facts and mental strategies to calculate with decimal numbers within and across a whole • Use knowledge of column addition and subtraction to calculate with decimal numbers • Use representations to round a decimal number with tenths to the nearest whole number					
Number: Multiplication and division **I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** **I can multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers** **I can multiply and divide numbers mentally drawing upon known facts** **I can compare and order fractions whose denominators are all**	**Multiplication by partitioning leading to short multiplication (2 by 1-digit)** • Multiply a 2-digit number by a 1-digit number using partitioning and representations (one regroup) • Multiply a 2-digit number by a 1-digit number using partitioning and representations (two regroups) • Multiply a 2-digit number by a 1-digit number using partitioning • Multiply a 2-digit number by a 1-digit number using expanded multiplication (no regroups) • Multiply a 2-digit number by a 1-digit	**Multiplication by partitioning leading to short multiplication (3 by 1-digit)** • Multiply a 3-digit by a 1-digit number using partitioning • Multiply a 3-digit by a 1-digit number with no regroups • Multiply a 3-digit by a 1-digit number with one or two regroups • Multiply a 3-digit by a 1-digit number with multiple regroups • Use estimation to support accurate calculation	**Division by partitioning leading to short division (2 and 3-digits by 1-digit)** • Divide a 2-digit by a 1-digit number using partitioning and representations (no remainders) • Divide a 2-digit by a 1-digit number using partitioning and representations (with exchanging) • Divide a 2-digit by a 1-digit number using representations with exchanging and remainders • Divide a 2-digit by a 1-digit number using short division (no exchanging or remainders) • Divide a 2-digit by a 1-digit number using	**Multiply 3 or more numbers (commutative and associative laws)** • Explain the use of the commutative and associative laws when multiplying three or more numbers • Apply the commutative and associative laws to simplify multiplications of three or more numbers • Explain the reasons for changing two-factor multiplication calculations to three-factor calculations • Apply the commutative and associative laws to simplify volume calculations • Apply the commutative and associative laws to simplify problems in a range of contexts	**Understand and use the concept of factorisation (square and prime numbers)** • Explain what a factor is and use arrays and multiplication and division facts to find them • Explain how to find all the factors of a number systematically • Use a complete list of factors to explain when a number is a square number • Explain how to identify a prime number or a composite number • Explain how to identify a prime factor of a number	**Use common factors and multiples to solve calculations efficiently** • Explain how to identify common factors between two or more numbers • Explain how to identify a common multiple of two or more numbers • Use knowledge of properties of number to solve problems • Explain how to use the factor pairs of 100 to solve calculations efficiently • Use properties of numbers and the commutative and associative laws to simplify calculations

Use skills ladders for assessment

Maths Number - Medium Term Overview

multiples of the same number **I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** **I can divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context** **I can solve problems involving multiplication and division including using my knowledge of factors and multiples, squares and cubes** **I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.**	number using short multiplication (no regroups) • Multiply a 2-digit number by a 1-digit number using expanded multiplication (regrouping 1s to 10s) • Multiply a 2-digit number by a 1-digit number using short multiplication (regrouping 1s to 10s) • Multiply a 2-digit number by a 1-digit number using expanded multiplication (regrouping 10s to 100s) • Multiply a 2-digit number by a 1-digit number using short multiplication (regrouping 10s to 100s) • Estimate and multiply a 2-digit by a 1-digit number using expanded and short multiplication		short division (with exchanging) • Divide a 2-digit by a 1-digit number using short division (with exchanging and remainders) • Divide a 3-digit by a 1-digit number using partitioning and representations (no remainders) • Divide a 3-digit by a 1-digit number using partitioning and representations (one exchange) • Divide a 3-digit by a 1-digit number using partitioning and representations (exchange and remainder) • Divide a 3-digit by a 1-digit number using short division • Divide a 3-digit by a 1-digit number using short division with exchanging and remainders • Use short division when the hundreds digit is smaller than the divisor • Use efficient division strategies to solve problems • Solve problems involving multiplication and division • Solve problems involving multiplication and division in a range of contexts			
<u>Number: Fractions</u> **I recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number 2/5 +4/5 = = 1]**	**<u>Calculating with decimal fractions</u>** • Explain the effect of multiplying and dividing a number by 10, 100 and 1,000 • Explain the effect of multiplying and dividing a number by 10, 100 and 1,000 including bridging 1	**<u>Multiply a proper fraction by a whole number</u>** • Explain the relationship between repeated addition of unit fractions and multiplication of fractions • Explain the relationship between repeated	**<u>Multiply improper fractions and mixed numbers by a whole number</u>** • Represent multiplication of a mixed number using multiplication and repeated addition • Multiply an improper fraction by a whole number	**<u>Find unit and non-unit fractions of whole numbers exploring parts and wholes</u>** • Find a unit fraction of a quantity using representations • Explain how finding a fraction of a quantity relates to multiplying by a unit fraction	**<u>Comparing fractions using equivalence and decimals</u>** • Use representations to describe and compare two fractions • Use representations to describe and compare fractions	

Use skills ladders for assessment

Maths Number - Medium Term Overview

I can add and subtract fractions with the same denominator and denominators that are multiples of the same number **I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams**	• Explain how to multiply and divide a number by 10, 100 and 1,000 • Use knowledge of multiplication and division by 10, 100 and 1,000 to convert units of length • Use knowledge of multiplication and division by 10, 100, 1,000 to convert units of mass and capacity • Use known multiplication facts and unitising to multiply tenths by whole numbers • Use known multiplication facts and unitising to multiply hundredths by whole numbers • Use knowledge of multiplying decimal fractions by whole numbers to solve measures problems • Explain the relationship between multiplying by 0.1 and dividing by 10 • Explain the relationship between multiplying by 0.01 and dividing by 100 • Explain how to use multiplying and dividing by 10 or 100 to multiply 1-digit numbers by decimals • Explain how to use written and mental methods to multiply 1-digit numbers by decimal fractions • Explain how to use the size of one factor to predict the size of the product • Explain how to use multiplying by 10 or 100 to divide decimal fractions by 1-digit numbers mentally • Explain how to use written and mental methods to divide decimal fractions by 1-digit numbers	addition of fractions and multiplication of fractions • Multiply a proper fraction by a whole number where the product is within a whole • Multiply a proper fraction by a whole number where the product is greater than a whole • Solve problems involving multiplying proper fractions by whole numbers	• Multiply a mixed number by a whole number not bridging a whole • Multiply a mixed number by a whole number bridging a whole • Solve problems involving multiplication of a fractions and mixed numbers by a whole number	• Explain how dividing by a whole number relates to multiplying by a unit fraction • Use knowledge of multiplying a whole number by a unit fraction to solve problems • Find a non-unit fraction of a quantity using mental and written calculation strategies • Multiply a whole number by a proper fraction • Explain when a calculation represents scaling down and when it represents repeated addition • Find the whole when the size of a unit fraction is known • Find a unit fraction when the size of a non-unit fraction is known • Find the whole when the size of a non-unit fraction is known	• Use representations to describe and compare two fractions in a continuous context • Use the language of equivalent fractions correctly • Explain the relationship between numerators and denominators in equivalent fractions • Use the relationship between the numerator and denominator in equivalent fractions to solve problems • Use the relationship between the numerator and denominator to simplify fractions • Explain the relationship between numerators and denominators across equivalent fractions • Explain the relationship within families of equivalent fractions • Use understanding of equivalent fractions to solve problems • Explain and represent how to divide 1 into different numbers of equal parts • Identify and describe patterns in the number system • Use knowledge of common equivalents to compare fractions and decimals • Recall common fraction-decimal equivalents • Solve problems using fraction-decimal equivalents	
Key Vocab						

Use skills ladders for assessment

Maths Number - Medium Term Overview

National Curriculum Year 6						
Number: Number and Place value **I can read, write, order and compare numbers up to 10 000 000 and determine the value of each digit** **I can round any whole number to a required degree of accuracy** **I can use negative numbers in context, and calculate intervals across zero** **I can perform mental calculations, including with mixed operations and large numbers** **I can solve number and practical problems that involve large numbers, rounding numbers and negative numbers** **I can use my knowledge of the order of operations to carry out calculations involving the four operations** **I can identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places** **I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.** **I can solve problems which require answers to be rounded**	**Multiples of 1,000** • Explain how ten thousand can be composed • Explain how one hundred thousand can be composed • Read and write numbers up to one million using a place value chart • Read and write numbers up to one million in a range of contexts • Position five-digit multiples of one thousand on a marked but unlabeled number line • Position six-digit multiples of one thousand on a marked but unlabeled number line • Count forwards and backwards in steps of 10, 100 and 1,000 to and from any multiple of 1,000 • Explain that 10,000 is composed of 5,000s, 2,500s and 2,000s • Explain that 100,000 is composed of 50,000s, 25,000s and 20,000s • Read the scales of graphs and measures using knowledge of the composition of 10,000 and 100,000	**Understand place value within numbers with up to 7 digits** • Use representations to identify and explain patterns in powers of 10 • Compose 7 or 8-digit numbers using common intervals • Use knowledge of the composition of up to 8-digit numbers to solve problems • Explain how to read numbers with up to 7 digits efficiently • Recognise and create numbers that contain place-holding zeroes	**Order, compare and calculate with numbers up to 8 digits** • Determine the value of digits in numbers up to tens of millions • Explain how to compare up to 8-digit numbers • Add and subtract mentally without bridging a boundary with one or more digits changing • Add powers of 10 crossing the millions boundary • Subtract powers of 10 crossing the millions boundary • Explain how a 7-digit number can be composed and decomposed into parts • Identify and explain a pattern in a counting sequence • Estimate and identify numbers with up to 7-digits on marked and unmarked number lines • Add and subtract numbers with up to 7-digits using column addition and subtraction • Solve problems involving addition and subtraction of up to 7-digit numbers	**Rounding and solving problems with numbers up to 7 digits** • Explain how and why we round 7-digit numbers to the nearest million • Explain how to round 7-digit numbers to any power of 10 • Identify and explain the most efficient way to solve a calculation • Explore and explain written and mental strategies to solve addition and subtraction problems • Solve addition and subtraction problems in and explain which strategy is most efficient		

Use skills ladders for assessment

Maths Number - Medium Term Overview

to specified degrees of accuracy **I can solve algebraic equations with one variable, and more than one step e.g. 4x +7=15, x=?**						
Number: Addition and Subtraction **I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why** **I can solve problems involving addition, subtraction, multiplication and division** **I can multiply one-digit numbers with up to two decimal places by whole numbers**	**Use knowledge of part whole structure to solve additive problems** • Explain how a combination of different parts can be equivalent to the same whole • Identify structures within stories and use knowledge of structures to create stories • Identify the missing part using knowledge of part whole relationships and structures • Use a model to interpret and represent a part-whole problem with three addends • Create stories to match structures presented in a model • Use knowledge of additive structure to solve problems • Use mental strategies and known facts to calculate the value of a missing part • Use written strategies and known facts to calculate the value of a missing part • Represent an equation in a part-whole model correctly • Use part-whole models to solve additive problems in a range of contexts	**Use equivalence and compensation to simplify and solve addition calculations** • Explain how adjusting both addends affects the sum with 2-digit numbers • Explain how adjusting both addends affects the sum with decimal fractions • Use the 'same sum' rule to balance equations • Use the same sum rule to balance equations with an unknown • Explain how adjusting one addend affects the sum • Solve addition calculations mentally by using known facts • Solve addition calculations mentally by using known facts in a range of contexts • Solve calculations with missing addends • Use equivalence and compensation strategies to solve problems • Use equivalence and compensation strategies to solve addition problems in a range of contexts	**Use equivalence and compensation to simplify and solve subtraction problems** • Explain and represent the same difference generalization for subtraction • Explain how using the same difference rule can make written calculations easier • Use the same difference rule to balance equations • Explain how increasing or decreasing the minuend affects the difference • Solve subtraction calculations mentally by using known facts • Explain how adjusting the minuend can make mental calculation easier • Explain how adjusting the subtrahend affects the difference: reduction structure • Explain how increasing or decreasing the subtrahend affects the difference: partitioning structure • Calculate the difference using knowledge of an adjusted subtrahend: difference structure • Use equivalence and compensation strategies to solve subtraction problems in a range of contexts		
Number: Multiplication and division **I can multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication**	**Multiplying and dividing by 2-digit numbers** • Explain how to multiply a 3-digit number by a 2-digit number • Explain how to use long multiplication to multiply two 2-digit numbers regrouping ones to tens					

Use skills ladders for assessment

Maths Number - Medium Term Overview

I can divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context **I can compare and order fractions, including fractions > 1** **I can divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context** **I can multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4** **I can identify common factors, common multiples and prime numbers** **I can solve problems involving addition, subtraction, multiplication and division** **I can use written division methods in cases where the answer has up to two decimal places**	• Explain how to use long multiplication to multiply two 2-digit numbers with regrouping • Explain how to use long multiplication to multiply a 3-digit by a 2-digit number • Explain how to use long multiplication to multiply a 4-digit by a 2-digit number • Explain how to use the associative law to multiply efficiently • Explain when it is efficient to use factorising or long multiplication to multiply by 2-digits • Explain how to use short and long division to divide 2 and 3-digits numbers by multiples of 10 • Explain how to use long division to divide by 2-digit numbers with and without remainders • Use long division to solve problems in a range of contexts with and without remainders • Use estimation and lists of multiples to help solve division problems using long and short division • Use long division with fraction remainders • Use long division with decimal remainders with up to 2 decimal places • Explain how and why a quotient changes when a divisor increases or decreases multiplicatively • Identify and explain the relationship between divisors and quotients and use this to solve problems					
<u>Fractions</u> **I use common factors to simplify fractions; use common multiples to express fractions in the same denomination**	**<u>Addition and subtraction of fractions</u>** • Explain how to write a fraction in its simplest form • Reason about how to write a fraction in its simplest form • Use knowledge of fractions in their simplest	**<u>Comparing fractions</u>** • Explain how to compare non-related fractions finding equivalent fractions with common denominators • Explain how to compare pairs of non-related	**<u>Multiplication and division of fractions</u>** • Explain how to multiply two unit fractions • Explain how to multiply two non-unit fractions • Explain how to divide a unit fraction by a whole number			

Use skills ladders for assessment

Maths Number - Medium Term Overview

I can divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6 **I can associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example 3/8]** **I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions** **I recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.**	form when solving addition and subtraction problems • Explain how to add related unit fractions with and without a representation or image • Explain how to subtract related unit fractions • Use knowledge of adding and subtracting related unit fractions to solve problems • Explain with and without an image how to add and subtract related non-unit fractions • Explain with and without images how to add and subtract related non-unit fractions bridging a whole • Add and subtract non-related fractions with different denominators • Solve problems involving adding, subtracting and simplifying fractions	fractions by comparing to a half • Explain how to compare pairs of non-related fractions using fraction sense • Explain which strategy for comparing non-related fractions is most efficient • Order sets of non-related fractions using a range of strategies	• Explain how to divide a non-unit fraction by a whole number • Explain how to divide a fraction by a whole number efficiently			
<u>Algebra</u> • **use simple formulae** • **generate and describe linear number sequences** • **express missing number problems algebraically** • **find pairs of numbers that satisfy an equation with two unknowns** • **enumerate possibilities of combinations of two variables.**	**<u>Calculating using knowledge of equivalence in addition and subtraction</u>** • Explain how to balance equations with addition expressions • Explain how to balance equations with subtraction expressions • Explain how to balance equations with addition or subtraction expressions • Explain how to balance equations with addition and subtraction expressions • Use knowledge of balancing equations to solve problems	**<u>Solving problems with two unknowns</u>** • Compare the structure of problems with one or two unknowns • Represent the structure of a problem with two unknowns in context • Explain why there is sometimes only one solution to a problem • Explain the values that a part-whole model could represent • Use a bar model to represent a problem with two unknowns including spatial problems • Explain how to represent an equation with a bar model • Solve problems with two unknowns in a range of contexts • Explain how you know you have found all the possible solutions to a	**<u>Order of operations</u>** • Explain how to combine multiplication with addition and subtraction to solve problems effectively • Explain how the distributive law applies to multiplication expressions with a common factor • Explain how to combine division with addition and subtraction to solve problems effectively • Explain how the distributive law applies to division expressions with a common divisor • Use knowledge of the distributive law to solve equations		

Use skills ladders for assessment

Maths Number - Medium Term Overview

		problem with two unknowns • Explain how to balance an equation with two unknowns • Systematically solve problems with two unknows with one, several and infinite solutions				
Ratio and Proportion • **solve problems involving the relative sizes of two quantities where missing values** • **can be found by using integer multiplication and division facts** • **solve problems involving the calculation of percentages [for example, of measures,** • **and such as 15% of 360] and the use of percentages for comparison** • **solve problems involving similar shapes where the scale factor is known or can be** • **found** • **solve problems involving unequal sharing and grouping using knowledge of fractions** • **and multiples**	**Understanding percentages** • Explain what percent means and represent a percentage in different ways • Explain how to convert percentages to decimals and fractions with a denominator of 100 • Explain how to convert a percentage to a fraction without a denominator of 100 • Use knowledge of fraction-decimal-percentage conversions to solve problems in a range of contexts • Use knowledge of calculating 50%, 10% and 1% of a number to solve problems in a range of contexts • Use knowledge of calculating common percentages of a number to solve problems in a range of contexts • Use knowledge of calculating any percentage of a number to solve problems in a range of contexts • Explain how to solve problems where the percentage part and size is known but the whole is unknown • Solve problems where the known percentage part and size represents a change to the whole • Solve problems involving percentages in a range of contexts	**Ratio and proportion** • Describe the relationship between two factors in a ratio context • Representing ratio in different ways • Explain how to represent ratio and to calculate unknown values • Use multiplication and division to calculate unknown values in ratio problems • Solve problems involving ratio • Explain how and why scaling is used to make and interpret maps • Use knowledge of multiplication and division to solve scaling problems in a range of contexts • Solve problems involving scaling and ratio • Identify and describe the relationship between regular polygons using scale factors • Identify and describe the relationship between irregular polygons using scale factors	**Using equivalence to calculate** • Explain why the product stays the same when one factor is doubled and the other is halved • Explain the effect on the product when scaling the factors up and down by the same amount • Use knowledge of equivalence when scaling factors to solve problems • Explain the effect on the quotient when scaling the dividend and the divisor by 10 • Explain the effect on the quotient when scaling the dividend and the divisor by the same amount			
Key vocab						

Use skills ladders for assessment

Maths Number - Medium Term Overview

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