

Goldington Green Academy – Maths Curriculum Progression

Intent	Maths at GGA will ensure that all children will have the opportunity to experience mastery in mathematics so that they are fluent, able to reason and problem solve; using concrete, pictorial and abstract representations. Children will leave GGA with mathematical skills and understanding that they can apply to their next stage in education and in real life contexts. Children will continuously develop their enquiring mathematical mind through a stimulating and exciting Maths curriculum and extra curricula Maths activities which promote and inspire mathematical curiosity.					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1-topic	We are weather experts		Carnival of the animals		We are Britain	
Vocabulary	<p>Number: Place Value (within 10) Digit, value, matching, count on, count back, one more, one less, is equal to =, less than <, more than >, greater than, fewer than, more, fewer, less, most, fewest, first, second, third.</p> <p>Addition and Subtraction (within 10) Group, whole, part, part-whole model, number sentence, how many, plus +, equal to =, Add +, total, altogether, count on.</p>	<p>Addition and subtraction (within 10) Missing part, missing whole, subtract, minus, take away, count back, difference, how many, how many left, how many less, how many more.</p> <p>Geometry: Shape 2D: square, rectangle, circle, triangle. 3D: cube, cuboid, sphere, cylinder, pyramid, cone, ovoid (egg shape), face Pattern: repeat</p>	<p>Number: Place Value (within 20) Numbers 11 to 20, one more, one less, order, groups, tens, ones, more, more than, greater than >, fewer, few, less than <, most, fewest, least.</p> <p>Addition and subtraction (within 20) Represent, number bond, subtract, find the difference, count back.</p>	<p>Place value: numbers up to 50 Tens, ones, compare, order, greater than >, less than <, number names to 50, numerals to 50.</p> <p>Measurement: Height and Length Measure, ruler, unit, centimetre (cm), distance, length, height, tall, taller, tallest, long, longer longest</p> <p>Measurement: Weight and Volume Weight, weigh, capacity, contains, heavier, heaviest, lighter, lightest, balance scales, balanced, equal to.</p>	<p>Multiplication and Division Equal group, array, row, column, double, twice, sharing, share, share equally, fair, fairly, divide.</p> <p>Fractions Half, halves, quarter, equal.</p> <p>Position and Direction Turn, position, direction, half turn, quarter turn, above, below, top, bottom.</p>	<p>Number: Place Value (up to 100) Number names and numerals up to 100, more, larger, less than <, greater than >, tens, ones, place value, partition.</p> <p>Money Pound £, penny, pence p, coins, notes, bank notes, value, worth</p> <p>Time O' clock, hour hand, half past, minute hand, second, yesterday, today, minute, hour, tomorrow, faster, slower, earlier, later</p>
Skills	<p>Number: Place Value (within 10) Sorting objects into groups. Counting up to 10 – forwards, backwards, one more, one less.</p>	<p>Addition and subtraction (within 10) Using subtraction to find how many left. Breaking the whole apart and use subtraction to find a part.</p>	<p>Place value: numbers to 20 (within 20) Counting and writing numbers to 20.</p>	<p>Place value: numbers up to 50 Counting, writing and representing numbers to 50. Comparing objects and numbers to 50.</p>	<p>Multiplication and Division Skip counting in 2's, 5's and 10's'. Making equal groups – multiplying. Making equal groups – sharing / grouping. Adding equal groups.</p>	<p>Number: Place Value (numbers up to 100) Counting to 100 Partitioning numbers into tens and ones. Comparing numbers with language and using comparison</p>

	<p>Comparing groups, number of objects, numbers Ordering objects and numbers. Using ordinal numbers Using a number line to count and order numbers. Addition and Subtraction (within 10) Using a part-whole model. Finding number bonds. Comparing number bonds. Adding together to find the whole. Adding on to find the whole. Finding a part by using subtraction. Finding and making number bonds. Finding additi/on facts. Solving word problems related to addition.</p>	<p>Counting back to subtract. Using subtraction to find the difference. Solving word problems related to addition and subtraction. Comparing addition and subtraction facts up to 10. Geometry: Shape Naming 2D and 3D shapes Making patterns with shapes.</p>	<p>Counting one more and one less with numbers up to 20. Comparing numbers of objects and numbers up to 20. Ordering objects and numbers up to 20. Addition and subtraction (within 20) Using counting on to add. Adding ones. Finding number bonds to 20. Adding on by making 10 first, then the rest. Subtracting ones. Subtracting tens and ones. Using subtraction to cross over ten. Comparing addition and subtraction facts up to 20.</p>	<p>Measurement: Height and Length Comparing lengths and height. Using non-standard units to measure length. Using a ruler (cm) to measure. Measurement: Weight and Volume Comparing weight using balance scales and non-standard units. Using non-standard unit to measure weight. Comparing capacity using language. Measuring capacity</p>	<p>Making simple arrays. Making doubles. Sharing equally. Using multiplying and dividing to solve worded problems. Fractions Finding halves of shapes. Finding halves of small quantities. Finding quarters of shapes. Finding quarters of small quantities. Using halves and quarters of shape and quantities to solve word problems. Position and direction Describe position in relation to where something is. Describe direction – which way something is going or has gone.</p>	<p>symbols with numbers up to 100. Ordering numbers from smallest to largest and largest to smallest with numbers up to 100. Finding one more and less than any number up to 100. Using number bonds to 10 to support number bonds within 100. Money Recognising the value of different dominations of coins Recognising the value of dominations of notes Counting in 2's, 5's and 10's to count money efficiently. Time Using before and after Using a calendar Telling time to the hour Telling time to the half hour Using time to measure how long something takes. Comparing different amounts of time Using time to solve word problems.</p>
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<p>Knowledge</p>	<p>Number and place value for numbers to 10. Relatable facts within number bonds to 10. Using addition and subtraction to find the total or a part. KIRF: Know all the number bonds to 6.</p>	<p>Relatable facts with addition and subtraction up to 10. Using addition and subtraction up to 10 to solve problems. Knowing the names of 2D and 3D shapes as well as the 2D shapes of the faces on 3D shapes. KIRF: Know the days of the week and months of the year.</p>	<p>Understanding of tens and ones within a 2-digit number up to 20. Numbers and place value for numbers up to 20. Number bonds to 20. Using facts to solve problems up to 20. Applying addition and subtraction skills to solve problems with numbers up to 20. KIRF: Number bonds to 10 (revision)</p>	<p>Number and place value for numbers up to 50. Understanding of tens and ones within a 2-digit number up to 50. Multiples is adding the same number each time. How big a cm is. The purpose to measure is to compare sizes and give a quantity to size. KIRF: Know all doubles and halves to 10.</p>	<p>Rolling numbers for the 2's, 5's and 10's – how to use these for multiplying and dividing. The difference between dividing by sharing and dividing by grouping. Knowing half and doubles of small quantities. Knowing left and right. KIRF: Know all addition and subtraction facts for all numbers between 0 and 10.</p>	<p>Recognising number patterns for numbers up to 100. Number bonds up to 100. Count money and know how much money is worth. Describe, sort and order events. Know 7 days in the week and their names in order and out of order. Know the months of the year in order. Know what month their birthday is. Tell the time for o'clock and half past. Difference between seconds, minutes and hours. KIRF: To be able to tell the time to the hour.</p>
<p>Visit/Special Occasions</p>						

Year 2 topic	Turrets and Trebuchets		Fire and Ice	Wet and Wild		
Vocabulary	<p>Place Value: Numbers to 100. less than, fewer, smaller, less, equal to, (=) greatest, biggest fewest, smallest tens, ones how many?, count, partition place value grid, part-whole model</p> <p>Addition and subtraction part, whole and part-whole, add, added, plus, total, altogether, sum, calculation, (+), count, count on, count back, left, subtract, take away, minus, (-), exchange, compare, greater than, less than, more, less, (>), (<), ones, tens, 10 more, 10 less, place value, column, 1-digit number, 2-digit number, number sentence, number bonds, known fact, fact family</p>	<p>Addition and subtraction part, whole and part-whole, partition, add, added, plus, total, altogether, sum, calculation, (+), count, count on, count back, left, difference, subtract, take away, minus, (-), exchange, compare, greater than, less than, more, less, (>), (<), regroup, represent, ones, tens, 10 more, 10 less, place value, column, 1-digit number, 2-digit number, bar model, number sentence, number bonds, known fact, fact family</p> <p>Geometry: Properties of shape circle, semicircle, oval, triangle, square, rectangle, quadrilateral, polygon, pentagon, hexagon, octagon, sphere, hemisphere, cone, ovoid, cylinder, triangle-based pyramid, square-based pyramid, pentagon-based pyramid, hexagon-based pyramid, cube, cuboid, triangular prism,</p>	<p>Money money, coins, notes pounds (£), pence (p), change, left, right, money, buy(s), spend, step how much?, value, amount, total, altogether, parts, between, difference, count on, sort, match, compare, add, addition, calculate, subtraction, great(er/est), smallest, exact(ly), higher, lower, most, least more than (>), less than (<)</p> <p>Multiplication and division divide, division, the division sign (÷), share, group, odd, even, times-tables, equal groups</p> <p>Statistics tally chart, tally pictogram, block diagram, table, more, less, most, least, favourite, popular, equal, represent, symbol, key, information,</p>	<p>Measurement: Length and height Centimetres (cm), metres (m), length, height, width, distance, ruler</p> <p>Measurement: Mass, Capacity and Temperature Mass, balance, weighing scales, grams, g, kilograms, kg, litres, l, millilitres, ml, volume, capacity, temperature, thermometer, degrees Celsius, °C, estimate, approximation.</p>	<p>Fractions Fraction, half, quarter, third, whole, part, equal part, numerator, denominator, fraction bar, unit fraction, non-unit fraction, equivalent, three-quarters, equal, divided by (÷), odd, even, share, pattern</p> <p>Measurement: Time hands, face, hour, minute, analogue, o'clock, past, to, half past, quarter past, quarter to, quarter of an hour, almost, same, units, last, convert, how long, left, passed, shorter, longer, fastest, slowest, five, ten, fifteen, twenty, twenty-five, thirty, thirty-five, forty, forty-five, fifty, fifty-five, sixty, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, time, start time, end time, duration, time taken, finish, forwards, backwards, twice, 24 hours, day, daytime, night time, around the clock, am, pm, midday, midnight, morning, afternoon</p>	<p>Statistics tally chart, tally pictogram, block diagram, table, more, less, most, least, favourite, popular, equal, represent, symbol, key, information, total, altogether, compare</p> <p>Position and direction quarter turn, half turn, three-quarter turn, whole turn clockwise, anticlockwise, forwards, backwards, left, right, up, down, turn, middle, position, pattern, above, below, top, bottom, between</p>

		pentagonal prism, hexagonal prism, 2D, 3D properties, side, vertex, vertices, edge, face, pattern symmetry, symmetrical, line of symmetry, curved surface	total, altogether, compare			
Skills	<p>Place Value: Numbers to 100 Counting objects and representing numbers to 100 Reading and writing numbers to 100 in numerals and words Partitioning numbers into tens and ones using a part-whole model and addition Representing numbers on a place value chart Comparing objects and numerals up to 100 using vocabulary and symbols Ordering objects and numbers up to 100 from greatest to smallest and smallest to greatest Counting in 2's, 5's and 10's from any number Skip counting in 3's</p> <p>Addition and subtraction</p>	<p>Addition and subtraction Using the column method to add 2-digit numbers together (with no exchange and exchange) and to subtract with 2-digit numbers (not crossing 10 and crossing 10) Using number bonds to 10 and 20 to find number bonds to 100 (tens and ones), e.g. $25 + 75 = 100...$ Using number bonds to add three 1 digit numbers Using addition and subtraction to solve problems</p> <p>Geometry: Properties of shape Recognising 2D and 3D shapes Drawing 2D shapes Counting sides on 2D shape Counting vertices on 2D shapes Finding lines of symmetry</p>	<p>Money Counting in 1's, 2's, 5's, 10's and 20's to count coins in pence and pounds separately and together Showing amounts using coins and making equal amounts in different ways with coins Comparing two different values using vocabulary and inequality symbols Using addition to calculate the total amount Using subtraction and bar-modelling to find the difference between two amounts Using subtraction to find the change Using all skills needed for money to solve two-step problems</p>	<p>Measurement: Length and height Measuring in cm and m Comparing lengths Ordering lengths Using the four operations to solve word problems involving length.</p> <p>Measurement: Mass, Capacity and Temperature Use balance scales to compare the mass of two or more objects, and use chains of reasoning to order the mass of more than two objects. Explore the use of standard units of mass (grams), and how they can measure these using both balance scales and weighing scales. Measure and compare the mass of objects that are over 100 g using scales, giving the mass to the nearest 100 g.</p>	<p>Fractions Making equal parts Recognising a half Finding half of a set of objects and a number Recognising a quarter Finding a quarter of a set of objects and a number Recognising a third Finding a third of a set of objects and a number Exploring the equivalence between 2 quarters and 1 half</p> <p>Measurement: Time Read and describe times to the hour and the half hour. Describe times using the vocabulary of 'quarter past' and 'quarter to'. Read the five-minute intervals. Use the understanding of 60 minutes in an hour, and the representation of the bar model, to help them solve mathematical problems. Find the duration, in minutes, between two points of time. Find and compare two or more durations of time.</p>	<p>Statistics Making tally charts Draw pictograms using a symbol to represent 1, 2, 5 or 10 items. Interpreting pictograms using symbols to represent 1, 2, 5 or 10 items Build block diagrams using cubes, then drawing block diagrams Using statistic and operational skills to solve problems</p> <p>Position and direction Describe movement in a straight line and turns. Describe and record directions. Building patterns and repeating patterns with shapes, involving directions and turns.</p>

	<p>Using number bonds to 20 to identify related facts and check calculations. Comparing number sentences using structure Finding related facts using what they already know. Using multiples of ten to make number bonds to 100 Adding and subtracting 1's and 10's with numbers up to 100 Finding 10 more and less than a number up to 100 By counting up or down in ones, using number bonds or using the column method to add 2 digit and 1 digit together, subtract 1 digit from a 2 digit.</p>	<p>Sorting 2D shapes Making patterns with 2D shapes Counting faces on 3D shapes Counting edges on 3D shapes Counting vertices on 3D shapes Sorting 3D shapes Making patterns with 3D shapes</p>	<p>Multiplication and division Dividing by sharing objects into equal groups by one-to-one correspondence Dividing by making equal groups Dividing by 2, 5 and 10 Using bar-modelling to divide by sharing and grouping (different method for each) Using division to solve problems</p>	<p>Explore measuring and estimating mass using both grams and kilograms. Explore, measure and compare volume and capacity. Explore and use millilitres (ml) as a standard unit of measuring capacity and volume. Estimate and measure capacity and volume in ml. Use scales that are marked in increments of 100 to link millilitres and litres (l). Carry out a variety of calculations using litres. Read temperatures from a thermometer and use temperature to make simple comparisons and to carry out calculations. Read different scales on thermometers.</p>	<p>Find an end time, when given a start time and a duration. Find a start time, when given an end time and a duration.</p>	
Knowledge	<p>Rolling numbers – 2's, 5's, 10's, 3's. Fact families for numbers up to 20. Understanding of commutativity. Related facts, e.g. $2 + 3 = 5$ so $20 + 30 = 50...$</p>	<p>Understanding of commutativity. Number bonds to 10 to add three 1 digit. 2D shape names KIRF: Multiplication and division facts for the 2 x table</p>	<p>Related facts, e.g. counting in 2's and counting in 20's (for money) Money values Recognise odd and even numbers Structures of bar-modelling to divide Skip counting in 5's</p>	<p>How big a cm and m is. Know that $1m = 100cm$, therefore metres are bigger than centimetres. Counting in 2's, 5's and 10's (reading scales). KIRF: Doubles and halves for all numbers to 20.</p>	<p>Understanding the meaning of whole and parts Understand the concept of a unit fraction recognising it as one equal part of a whole Understand the concept of a non-unit fraction as more than one equal part of a whole</p>	<p>Structures of bar-modelling to divide Skip counting in 5's Number line structure to read scales on block diagrams Knowledge of operations for interpreting block diagrams</p>

	<p>Number bonds to 100 (multiples of ten) e.g. 20 + 80, 50 + 50...</p> <p>Pattern of adding and subtracting 1's and 10's to numbers</p> <p>Structures of column addition and subtraction</p> <p>KIRF: Know all number bonds to 20.</p>		<p>KIRF: Multiplication and division facts for the 10 x table</p>		<p>Understand that 2 quarters are equal to 1 half</p> <p>Confidently read and record times on an analogue clock.</p> <p>60 minutes = 1 hour.</p> <p>Hours are longer than minutes.</p> <p>Minutes are longer than seconds.</p> <p>There are 24 hours in a day.</p> <p>There are morning and afternoon times.</p> <p>KIRF: <i>Know all addition and subtraction facts for multiples of 10 to 100. (school)</i></p> <p>Know multiplication and division facts for 5x tables.</p>	<p>Know directions and turns language fluently.</p> <p>Methods and strategies for adding and subtracting to solve worded problems efficiently.</p> <p>Choose appropriate methods based on the question they are presented with.</p> <p>Decide if a problem requires multiplication or division to solve it, using the bar model to help make their choice.</p> <p>Deep understanding of the four operations.</p> <p>KIRF: To tell the time to quarter hour.</p>
Visit/Special Occasions						

Year 3	Stones and Bones		Righteous Romans	Mighty Mountains	Rainforests	
Vocabulary	<p>Place Value Hundreds (100s), tens (10s), ones (1s), place value, more, less, greater than (>), less than (<), equal to, order, compare, estimate, exchange.</p> <p>Addition and Subtraction Addition, subtraction, mental method, column method, exchange.</p>	<p>Addition and Subtraction Exchange, column method, mental method, estimate, approximate, digits, multiple.</p> <p>Multiplication and Division Equal, multiply, divide, times-tables, sharing, grouping, array, bar model, remainder, repeated addition, multiplication sentence, division statement, division facts.</p>	<p>Multiplication and Division Multiplication, division, statement, number sentence, compare, more than, less than (<), greater than (>), equal (=), equally, least, most, remainder, share, partition, multi-step.</p> <p>Length and Perimeter Length, height, width, perimeter, distance, centimetres (cm), millimetres (mm), metres (m), unit of measurement, measure, add, subtract, multiply, equivalent, convert, greater than (>), less than (<), ruler, meter stick</p>	<p>Fractions Equal, parts, whole, unit fraction, equation, integer, non-unit fraction, numerator, denominator, represent, share, divide, set of objects, multiply, tenth, interval.</p> <p>Mass Mass, weigh, measure, scale, interval, grams (g), kilograms (kg).</p> <p>Capacity Capacity, litre (l), millilitre (ml), scale, interval, convert.</p>	<p>Fractions Equivalent, numerator, denominator, compare, add, subtract, fraction, whole, equivalent fraction, greater than (>), less than (<), equal to, multiply, divide, difference, inequality statement.</p> <p>Money Pounds (£), pence (p), convert, total, difference, change.</p> <p>Time Month, year, midnight, midday, am, pm, duration, estimate, consecutive, hour, minute, second, past, to, start, end, duration, digital clock, analogue clock.</p>	<p>Angles and Properties of Shape Right angle, acute, obtuse, parallel, perpendicular, vertical, horizontal, triangle, quadrilateral, kite, trapezium, rhombus, parallelogram, cuboid, triangular prism, square-based pyramid, cone, cylinder, sphere, edges, faces, vertices, clockwise, anticlockwise.</p> <p>Statistics Pictogram, key, bar chart, scale, table, row, column, vertical axis.</p>
Skills	<p>Place Value Count in hundreds from 0 to 1000. Use base 10 equipment and part whole models to represent numbers. Represent numbers in place</p>	<p>Addition and Subtraction Explore patterns in addition and subtraction and the effect on different digits of adding or subtracting 1s, 10s or 100s.</p>	<p>Multiplication and Division Compare multiplication and division statements using the comparison symbols.</p>	<p>Fractions Work out what complementary fraction needs to be added to another fraction to make it a whole. Count up and down in tenths.</p>	<p>Fractions Use diagrams and number lines to recognise equivalent fractions with small denominators. Compare two fractions using a fraction wall / fraction strips by the use of the inequality symbols.</p>	<p>Properties of Shape Recognise angles that are greater than, equal to or less than a right angle. Draw and measure accurately in centimetres and millimetres and apply</p>

<p>value grids and write 3-digit numbers in multiple ways. Represent numbers in place value grids using counters. Write numbers represented with counters in a place value grid. Identify values and mark points on number lines that go up in 100s, 10s and 1s. Identify numbers that lie between two points. Find 1, 10, 100 more or less than a given number (including cases that require an exchange). Find the original number given the increase or decrease. Compare two groups of objects using $<$, $>$ and $=$ signs. Compare two 3-digit numbers, and work out missing digits to make an inequality statement correct. Order three or more numbers up to three digits in length and work out missing</p>	<p>Add two 3-digit numbers with and without exchange using the column method. Subtract a 3-digit from another 3-digit number with and without exchange, using the column method. Use estimation and approximation to make simple checks of addition and subtraction. Use inverse operations and fact families as checking strategies. Use a single bar model to represent word problems that require addition or subtraction. Using two bars in a bar model to represent comparison and tackle problems with two or more steps.</p> <p>Multiplication and Division Recognise equal groups. Multiply and divide by 3, 4 and 8. Solve simple one-step multiplication and division problems using a simple bar model to represent the problem. Solve two / three step multiplication and</p>	<p>Solve related multiplication problems. Use multiplication and division facts to find related calculation facts and fact families. Use known multiplication facts to make comparisons without finding answers to the actual calculations. Use the expanded method to solve 2-digit by 1-digit number multiplications, with and without exchange of ones into the tens column. Use the expanded method for multiplication to solve mixed problems. Use partitioning to divide a 2-digit number by a 1-digit number, with and without exchange to simplify calculations. Use known multiplication facts to predict remainders when dividing.</p>	<p>Place fractions on a number line, remaining within a whole and with mixed numbers on a number line that extends beyond 1. Count along a number line to identify a fractions position. Position fractions with different denominators on a number line. Find a unit and non-unit fraction of a set of objects and amount, using a bar model / strips of paper where appropriate. Use given fractional amounts to calculate and unknown whole. Solve problems that include fractions of set objects, plus whole and uncountable – but measurable – quantities.</p> <p>Mass Read a range of scales relating to mass, including those with missing intervals and in which kg and g are mixed. Find midpoints between intervals. Convert amounts in grams to values in both kilograms and grams. Compare masses by ordering them on a</p>	<p>Order a set of fractions on a number line by using fraction strips. Add and subtract two or more fractions with the same denominator. Reason mathematically and solve problems involving fractions and money by adding and subtracting fractions.</p> <p>Money Answer questions that involve finding a total amount and express these amounts using the word 'and'. Convert between pounds and pence. Write an amount in pounds and pence from a representation of coins. Add and subtract amounts of money given in pounds and pence. Find the difference between two amounts of money. Solve problems with money that involve adding, subtracting, multiplying and dividing with amounts of money that are given in pounds and pence.</p> <p>Time Estimate the time just by looking at the hour hand. Tell the time to 5 minutes. Read and describe times to the nearest minute. Read times using analogue and digital clocks.</p>	<p>this to reasoning about 2D shapes. Identify and draw horizontal and vertical lines. Identify and construct parallel and perpendicular lines. Apply understanding of types of lines and angles to the properties of 2D shapes. Identify and sort 3D shapes based on properties of faces, vertices and edges. Describe the shapes and dimensions of faces of different 3D shapes. Construct 3D shapes by considering their properties in relation to different construction materials.</p> <p>Statistics Interpret pictograms where each symbol is worth more than 1. Solve 1- and 2-step problems based on information that is presented in pictograms, based on the interpretation of bar charts.</p>
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	<p>digits in lists of ordered numbers. Count forwards and backwards in 50s from 0 to 1,000 and count from any multiple of 50, and work out how many 50s in a number.</p> <p>Addition and Subtraction</p> <p>Use number bonds within 10 to add and subtract multiples of 100, up to 1000. Add and subtract a single digit to and from a 3-digit number, without bridging 10 and bridging 10. Subtract a single digit number where the subtraction bridges a 10. Add a multiple of 10 to a 3-digit number, with and without exchanging. Subtract a multiple of 10 from a 3-digit number, with and without exchanging. Use the column method to add and subtract a 3-digit and 2-digit number with and without exchange.</p>	<p>division problems that may involve addition and subtraction. Divide numbers with remainders. Find other related facts when just given one fact.</p>	<p>Calculate the number of ways that n objects can be connected to m objects and will use the multiplication rule for correspondence problems. Solve mixed problems involving multiplication and division of 2-digit numbers. Use all four operations to solve mixed multi-step problems.</p> <p>Length and Perimeter</p> <p>Accurately measure and record length using a combination of metres and centimetres. Use a ruler to measure different objects accurately in centimetres and millimetres. Explore the equivalence between measurements given in centimetres and measurements given in metres and centimetres. Read and convert measurements in cm and mm.</p>	<p>number line and using the inequality symbols. Add and subtract masses, which include mixed units, using a range of strategies. Solve problems involving mass.</p> <p>Capacity</p> <p>Measure volume in litres and millilitres. Read a variety of scales where only some of the divisions are labelled. Read mixed units of capacity given in litres and millilitres and as half litres, and convert them to millilitres. Read scales showing amounts over 1 litre. Convert between litres and millilitres, including mixed units, in the context of real-life scenarios. Compare capacities by first comparing the number of litres then the number of millilitres. Apply knowledge of converting when comparing capacities given in different units. Add and subtract capacities by using converting between litres and millilitres.</p>	<p>Describe time using am and pm, or morning and afternoon/evening. Tell the time using the 24-hour clock. Convert the time from 12-hour clock to 24-hour clock. Find a duration between two times, including the 24-hour clock. Compare durations of time. Find start and end times to the minute for different events. Measure events (such as a race) in seconds.</p>	<p>Read and interpret bar charts which have a range of scales. Interpret data which is presented in tables. Use data from tables to answer 1- and 2-step problems.</p>
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			<p>Compare and order lengths. Use addition to find the totals of two or more lengths, converting answers as appropriate. Use subtraction to find the difference between two lengths, converting answers as appropriate. Measure the perimeter for a range of shapes in both cm and mm. Calculate the perimeter where side lengths are given but cannot physically measure themselves. Solve one-step and multi-step problems involving length.</p>	<p>Solve problems for capacity involving all four operations.</p>		
Knowledge	<p>Write numbers in numerals and words. Understand that a number up to 1,000 is made up of some 100s, some 10s and some 1s. Understand where numbers lie on a number line. Number bonds within 10.</p>	<p>Understanding of the formal written method (column method) for addition and subtraction. Recognise when exchange is and is not necessary. Number sense knowledge and knowing approximate positions of numbers on a number line.</p>	<p>Understanding of commutativity – multiplication to spot patterns and division is not commutative. Recall known multiplication and division facts. Secure understanding of partitioning and place value for the</p>	<p>Fraction is part of a whole. Unit fractions = one piece of the whole. Non-unit fractions = more than one piece of the whole. Tenths = dividing an object or number 1 into 10 equal parts. Tenths arise from dividing 1-digit</p>	<p>Understand equivalent fractions with the use of proportional reasoning. Understanding of pattern and numerical reasoning for equivalent fractions. Know to reason a mathematical problem is by explaining why and how. The value of each coin and note and understand what these values</p>	<p>Understand angles as a measure of turn. Right angle = a quarter turn. Two right angles = a half turn. Four right angles = a whole turn. Angles are used to measure the distance between two lines that meet in a shape.</p>

<p>Clear understanding of place value. Recognise additions where they will bridge a ten and know how to use exchange of 10 ones for 1 ten. Knowledge of exchanging 10 tens for 1 hundred. Understanding of the formal written method (column method) for addition and subtraction. KIRF: Know all number bonds for each number to 20.</p>	<p>Make appropriate calculations more efficient as mental strategies. Knowledge of bar modelling and when to use this appropriately. For any equal groups, children should be able to write down a multiplication sentence, know how it links to repeated addition and know how to find the answer. Know the link between repeated addition, skip counting and multiplying. A division statement can be used to represent either grouping or sharing. Skip counting in 3's, 4's and 8's. Recall multiplication and division facts from the 3 x table, 4 x table and 8 x table. Know that the 4 x table can be derived from the 2 x table. Know that the 8 x table can be derived from the 2 and 4 x table. Dividing can sometimes leave a remainder and that the greatest possible remainder is 1 less</p>	<p>use of column method for multiplying. Secure understanding of all four operations. Conversions of length: 1cm = 10mm 1m = 100cm Perimeter = add up the lengths of all the sides together. KIRF: Know the facts about duration of time.</p>	<p>numbers or quantities by 10. On a number line, the denominator represents the number of parts the number line must be partitioned into. Finding a unit fraction of an amount = dividing by the denominator. Finding a non-unit fraction of an amount = dividing by the denominator then multiply by the numerator. Strategies of finding mass and converting measurements in mass. Conversions of mass: 1kg = 1000g Measure volume in litres and millilitres. Use of number, division and multiplication to assist with reading different scales. Conversion of volume: 1l = 1000ml For adding and subtracting capacities – number bonds to 1000 and partitioning. KIRF: <i>Know doubles and halves of: All whole numbers to 20. All multiples of 10 to 500. All multiples of 100 to 5000. (School)</i></p>	<p>represent. 100p = £1 A year consists of 12 months, 365 days. A leap year has 366 days (29 days in February). 30 days – September, April, June, November 31 days – January, March, May, July, August, October, December. February – 28 days (leap year =29 days) There are 24 hours in a day, including noon and midnight. 7 days in a week. Reading analogue clocks by reading the 5-minute intervals. Tell the time using 'minutes past' and 'minutes to' and using the 12-hour analogue clock. Understand 'am' is morning and 'pm' is afternoon / evening. KIRF: <i>Know all addition and subtraction facts for: Multiples of 100 to 1000. Multiples of 5 with a total of 100. Number pairs that total 100. (school)</i> To tell the time to the nearest five minutes and minute.</p>	<p>The symbol in a shape to represent a right angle looks like a mini square. Perpendicular lines = two lines that are at a right angle. Acute means less than a right angle. Obtuse means more than a right angle. Vertical line = Horizontal line = - A vertical line forms a right angle with a horizontal line. Parallel lines = lines that stay the same distance apart. Difference between cubes and cuboids = cubes (all square faces), cuboid (some square, some rectangle). Differences and similarities between pictogram, bar chart and table. KIRF: Know all multiplication and division facts for 8 x table.</p>
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		<p>than the number they divide by. Know how to write a division problem with a remainder, i.e. $14 \div 3 = 4 \text{ r } 2$. An array determines two multiplication and division facts. KIRF: Know multiplication and division facts for 3 x table.</p>		<p>Know multiplication and division facts for 4 x table.</p>		
Visit/Special Occasions						

Year 4	Invaders and Raiders		Walk Like and Egyptian		Oceania	
Vocabulary	<p>Place Value Tens, hundreds, thousands, rounding, order, more than (>), less than (<), partition, numerals, nearest, distance. Ascending, descending, negative, step, multiple, greater than (>), less than (<).</p> <p>Addition and Subtraction Addition, total, more than, subtraction, less than, column method, estimate, how much, strategy, efficient, accurate, exact, fact, diagram.</p>	<p>Area Length, width, area, space, rectangle, square, rectilinear shape, unit, least, greatest, triangle, quadrilateral, reflection, rotation</p> <p>Multiplication and Division Multiply (x), divide (\div), multiplication fact, division fact, lots of, groups of, times-table, array.</p>	<p>Multiplication and Division Multiply, divide, times-tables, partition, array, bar model, part-whole model, remainder, factor pair, factors, commutative.</p> <p>Length and Perimeter Length, width, perimeter, distance, rectangle, square, rectilinear shape, centimetre (cm), metre (m), kilometre (km), equivalent to.</p>	<p>Fractions Numerator, denominator, add, subtract, improper fraction, mixed number, fraction of an amount.</p> <p>Decimals Tens, ones, decimal point, tenths, hundredths, greater than, equivalent, less than, decimal, centimetre, millimetre.</p>	<p>Decimals Tenths, hundredths, decimal point, 0.1 and 0.01, equivalent, whole number, rounding, greater than (>), less than (<), equal to (=), order, compare, convert, decimal place, ascending, descending.</p> <p>Money Notes, coins, pounds (£), pence (p), add, subtract, change, round to the nearest, order, greater than (>), less than (<), cheaper, more expensive, estimate, over estimate, under estimate, total, notation.</p> <p>Time Convert, compare, units of time, seconds, minutes, hours, days, weeks, months, years, 12-hour, 24-hour, analogue, digital, am/pm</p>	<p>Properties of Shape Quadrilateral, triangle, regular, irregular, interior angle, angle, acute, obtuse, reflect, right angle, symmetrical, isosceles, scalene, equilateral, line of symmetry, reflective symmetry.</p> <p>Statistics Data, line graph, pictogram, bar chart, table, altogether, more than, greatest, smallest, continuous data, compare.</p> <p>Position and Direction Position, horizontal, vertical, up, down, left, right, coordinate, square, rectangle, plot, vertex, vertices, point, grid.</p>
Skills	<p>Place Value Represent 4-digit numbers using different equipment, including base 10 and place value counters, and partition numbers, represented by a part-whole model. Round to the nearest 10, 100 and 1,000, then solve</p>	<p>Area Measure the area of a 2D shape by counting non-standard units that fit within squares and rectangles. Use squares as a standard unit of measuring the area of squares, rectangles and then more complex rectilinear shapes.</p>	<p>Multiplication and Division Solve addition and multiplication problems. Solve multi-step multiplication and division problems using the bar models to expose the underlying structure. Use (short) formal multiplication, then</p>	<p>Fractions Add fractions with the same denominator where the answer is greater than one – write the answers as both improper fractions and mixed fractions, using visual aids such as fraction strips and number lines. Subtract proper fractions from mixed numbers with the same</p>	<p>Decimals Given a number of tenths or hundredths to make the number bond up to 1. Compare decimal numbers by looking at the largest place value and then moving to the next large place value. Order numbers with up to two decimal places. Round a decimal to the nearest whole number by looking at the tenths digit.</p>	<p>Properties of Shape Compare angles and identify acute, obtuse and right angles. Use angles size to order them. Recognise the similarities and differences between regular and irregular polygons. Reason about 2D shapes.</p>

<p>problems that involve rounding. Count in 1000s from 0 to 10,000 and in 25's, forwards and backwards. Use a place-value grid to help correctly order and write numbers in numerals. Identify numbers and fill in intervals on number lines up to 10,000. Place numbers on a number line and read off values. Write down numbers between two given numbers on a number line. Convert between modern-day numerals and Roman numerals. Find 1000 more or less than a given number. Compare 4-digit numbers using; concrete equipment and pictorial representations, then by focusing on the value of each digit. Order 4-digit numbers, focusing on the value of the digits and using a</p>	<p>Make shapes with given areas. Compare shapes according to their areas. Multiplication and Division Multiply by multiples of 10 and 100 using known facts and place value knowledge. Divide multiples of 10 and 100 using known facts and place value knowledge. Multiply numbers by 1 and 0, using visual representations to explain. Divide numbers by 1, also relating divisions to the inverse (multiplications). Multiply and divide by 6, 9, 7, 11 and 12. Apply the time-table knowledge to finding solutions to real-life contexts.</p>	<p>progress to examples that require exchange of 1 ten, and then more than 1 ten. Multiplying 3-digit numbers by a 1-digit number. Solve a mixture of problems by using the formal written method. Use the commutative properties of multiplication to calculate 'in a different order' to calculate mentally. Simplify multiplications by finding factor pairs of 2-digit numbers and then using commutativity to help perform mental calculations. Solve more complex correspondence problems, working out how n objects relate to m objects, finding all solutions and noticing how to use multiplication to solve these. Divide 2-digit numbers by 1-digit numbers with and without remainders.</p>	<p>denominator, using fraction strips and number lines to help visualise what is happening. Subtract fractions from a whole number and explore different methods. Apply understanding of adding and subtracting fractions to solve problems. Calculate a fraction of a quantity, using fraction strips to help visualise the concept. Calculate the whole when a fraction of an amount is given or when a part is given as a quantity. Solve multi-step problem solving questions involving finding a fraction of a quantity and finding the whole. Decimals Count in tenths and record these as decimals, extend this to numbers greater than 1. Explore the place value of numbers, using a place value grid, with one decimal place. Represent tenths on a number line extending beyond 1.</p>	<p>Place decimal numbers on a number line. Represent fractions and decimals using a number line and a hundredths grid. Convert between different units of measurement and solve simple problems. Money Add pence, breaking the pound boundary, and pounds and pence. Write totals as pence, pounds and pence, and using a decimal point. Identify and put in order the most and least expensive items and amounts of money. Convert prices and amounts in a variety of notations into a common unit. Round amounts of money to the nearest 10p and £1 using number lines. Explore the difference between given amounts and multiples of 10 and 100 in order to round correctly. Round amounts to estimate totals. Look at differences between prices. Work out how much money remains. Explore over and under estimates depending on how prices were rounded. Solve problems involving pounds and pence.</p>	<p>Identify the three different types of triangles. Name, describe and identify quadrilaterals, recognising their similarities and differences. Classify and compare quadrilaterals. Solve shape problems and puzzles. Explore reflective symmetry. Identify lines of symmetry within regular and irregular polygons. Identify symmetry within and outside shapes. Find symmetry within a range of patterns and designs. Complete symmetric patterns when the lines of symmetry are given. Reason about how shapes are affected by different lines of symmetry. Complete symmetric shapes using a given line of symmetry Statistics Interpret data with larger numbers and a wider range of scales on bar charts, tables and pictograms.</p>
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	<p>place value grid to support. Count back through 0 on number lines using negative numbers, then look at negative numbers in context.</p> <p>Addition and Subtraction Add and subtract 1, 10, 100 and 1000 to and from 4-digit numbers. Add 4-digit numbers using the column method (without exchanging first, then with exchanging in one column, then more than one column), paired with a place value grid to support. Subtract 4-digit numbers using the column method (without exchanging first, then where one exchange is required, then more than one is required.) Subtract 4-digit numbers using the column method when there is a zero in the column to be exchanged from.</p>		<p>Use partitioning to divide a 3-digit number by a 1-digit number. Apply multiplying and dividing methods to solve problems.</p> <p>Length and Perimeter Find the perimeter by counting square lengths around rectangles and squares. Problem solve by finding the perimeter. Find the width of a rectangle given the perimeter and the length. Find the perimeter for rectilinear shapes that are not squares or rectangles and where not all the side measurements are given.</p>	<p>Make connections with tenths to divide a 1-digit number by 10, then 2-digit numbers by 10. Use a hundredths grid to make the connection between hundredths and tenths. Practise writing hundredths as a decimal and counting forwards and backwards in hundredths from a given number. Divide 1- and 2-digit numbers by 100.</p>	<p>Solve addition and subtraction problems and work out change. Solve money problems with multiplication and division using the part-whole model. Use different strategies to solve two-step and multi-step money problems.</p> <p>Time Convert between different units of time. Convert between analogue and digital times. Convert between 12-hour and 24-hour times expressed on analogue and digital clocks. Use mathematical reasoning, choosing when and how to convert between units of time or between analogue and digital times in order to solve problems.</p>	<p>Answer increasingly complex problems, including those which involve differences and totals. Read values from a line graph. Make statements and comparisons based on data presented in line graphs. Apply skills to a range of increasingly challenging problems.</p> <p>Position and Direction Describe relative positions on a map, initially without a grid and then with a grid. Use coordinates in the first quadrant to describe positions on a grid, using the conventional order and notation. Use coordinates to plot points in the first quadrant and to construct simple shapes by plotting their vertices. Use the properties of shapes and points to help make constructions on the coordinate grid. Carry out simple translations on a coordinate grid, following instructions given in the form</p>
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	<p>Equivalent difference method of subtraction.</p> <p>Make choices about whether to round to the nearest 10, 100 or 1000 and how to use that to decide if a calculation is accurate.</p> <p>Strategies for checking answers, using the inverse operation and estimating by rounding.</p> <p>Apply addition and subtraction strategies and explore single bar models and comparison bar models to interpret and to solve one-step problems and multi-step problems.</p>					<p>'left/right and up/down'.</p> <p>Work out translations (expressed in the form 'right/left, up/down') that are needed to move from one position on the coordinate grid to another.</p>
Knowledge	<p>Place value of numbers to 1000.</p> <p>Count in 10s, 100s and 1000s.</p> <p>Roman numerals for 1, 5, 10, 50 and 100.</p> <p>Rounding to the nearest 10 and 100.</p> <p>Negative numbers.</p> <p>Understanding of the column method strategy.</p> <p>KIRF: Know all number bonds to 100.</p>	<p>Understand that area of a shape is the space it takes up.</p> <p>Area = length x width.</p> <p>Place value understanding.</p> <p>Factor x 0 = Product that is 0.</p> <p>Factor x 1 = Product that is the same as the factor we multiplied by 1.</p> <p>Dividend ÷ 1 = Quotient that is the same as the dividend.</p>	<p>Multiplying a number by two numbers added together is the same as doing separate multiplications and then adding the answers (known as the distributive law).</p> <p>The process of the expanded method.</p>	<p>Process of finding a unit fraction of an amount to find non-unit fractions of an amount.</p> <p>Decimal point – separates the ones and tenths column.</p> <p>Understanding of tenths, extend this to numbers greater than 1.</p> <p>Use knowledge of equivalence, place value and tenths to</p>	<p>A number made up of two decimal places can be made up of some 10s, 1s, tenths and hundredths.</p> <p>Number bonds to 1 with tenths and hundredths.</p> <p>$\frac{1}{2} = 0.5$</p> <p>$\frac{1}{4} = 0.25$</p> <p>$\frac{3}{4} = 0.75$</p> <p>Know the link between fractions of a pound and converting to decimals with two decimal places.</p>	<p>Obtuse – an angle greater than a right angle.</p> <p>Acute – an angle less than a right angle.</p> <p>Interior angles – angles inside a polygon.</p> <p>Regular shapes – sides are the same length and all angles are the same size.</p> <p>Irregular shapes – sides are different</p>

		<p>Skip counting in 6's, 9's and 7's.</p> <p>Know the multiplication and division facts for the 6 x table, 9 x table, 7 x table, 11 x table and 12 x table.</p> <p>Know the link between the 3, 6 and 9 times-table.</p> <p>KIRF: Know multiplication and division facts for the 6 x table.</p>	<p>The process of the (short) formal method.</p> <p>Place value understanding – power of 10 – exchanging in formal method.</p> <p>Bar model structures to support solving problems.</p> <p>Dividing numbers can have remainders.</p> <p>Converting measurements: 1000m = 1km. Perimeter = add up the lengths of all the sides together.</p> <p>KIRF: <i>Know all 2-digit pairs that total 100 (School)</i></p> <p>Know the multiplication and division facts for the 9 and 11 x table.</p>	<p>divide a 1-digit number by 10.</p> <p>Divide a 1-digit number by ten, gives a tenth.</p> <p>Tenth as a decimal = 0.1</p> <p>Hundredth as a decimal = 0.01</p> <p>A number less than 1, with two decimal places, is a number of tenths plus some hundredths.</p> <p>To divide by 100 – divide by 10 and then 10 again.</p> <p>KIRF: <i>Know doubles and halves of: All whole numbers to 50, All multiples of 5 to 1000, All multiples of 50 to 5000. (school)</i></p> <p>Know multiplication and division facts for the 7 x table.</p>	<p>Equivalences between different units of time, e.g. days, weeks, months, years.</p> <p>KIRF: <i>Know all pairs of multiples of 50 with a total of 1000. (school)</i></p> <p>Know the multiplication and division facts for all the x tables up to the 12 x 12.</p>	<p>lengths and all angles are different sizes.</p> <p>Isosceles triangle – two equal sides and two equal angles.</p> <p>Scalene triangle – Three unequal sides and three unequal angles.</p> <p>Equilateral triangle – three equal sides and three equal angles.</p> <p>Quadrilateral – a polygon with four sides.</p> <p>Oblong rectangle – two longer sides and two shorter sides.</p> <p>Squares on a map make it easier to say where things are.</p> <p>Bar charts, pictograms and tables.</p> <p>Use a ruler to read correct values.</p> <p>Line graphs can show more than one set of data – each set of data has its own line.</p> <p>Coordinates – number across first (horizontal line), then the number going up (vertical line).</p> <p>KIRF: Recognise decimal equivalents of fractions.</p>
Visit/Special Occasions						

Year 5	Victorians		The Maya		Space	
Vocabulary	<p>Place Value Ones (1s), tens (10s), hundreds (100s), thousands (1000s), ten thousands (10,000s), place value, partition, estimate, round, compare, order, equivalent, greater than (>), less than (<), convert. Hundred thousands (100,000s), million (1,000,000), ascending, descending, sequence.</p> <p>Addition and Subtraction Add, subtract, ones (1s), tens (10s), hundreds (100s), thousands (1000s), ten thousands (10,000s), mentally, inverse, round, estimate, distance chart.</p>	<p>Multiplication and Division Prime number, composite number, square number, cube number, square (x^2), cube (x^3), inverse operation, multiply, divide, multiple, factor, prime factor.</p> <p>Fractions Add, subtract, proper fraction, improper fraction, convert, simplify, equivalent fraction, mixed number, denominator, numerator, whole, efficient, common denominator, multiply, whole(s), equal parts, divide, fraction of an amount, operator.</p>	<p>Multiplication and Division Multiply, divide, add, subtract, place value, partition, equal, factor, multiple, remainder, sum, total.</p> <p>Fractions Equivalent, numerator, denominator, whole, fraction, simplify, expand, division, improper, mixed number, convert, sequence, order, greater than (>), less than (<), equal to (=). Add, subtract, proper fraction, improper fraction, equivalent fraction, efficient, common denominator.</p>	<p>Decimals and Percentages Decimal, decimal place, tenths, hundredths, thousandths, decimal point, place value, digits, fractions, percent (%), percentages.</p> <p>Measurement: Perimeter and Area Perimeter, distance, area, space, length, width, centimetres, square centimetres (cm^2), metres, square metres (m^2), scale, compare, estimate, formula, 2D shape, brackets.</p> <p>Statistics Graph, line graph, table, dual line graph, horizontal, vertical, two-way table, scale, axis/axes, data kilometres (km), kilograms (kg), plot/plotted, tallies/tally, digits.</p>	<p>Properties of Shape Angle, whole turn, right angle, acute angle, obtuse angle, reflex angle, degrees ($^\circ$), interior angle, clockwise, anticlockwise, orientation. Parallel, perpendicular, angle, quadrilateral, view, regular, irregular, 3D shape, pyramid, sphere, cone, hexagon, pentagon, triangle, top view, plan view, side view.</p> <p>Position and Direction Reflection, translation, vertex, vertices, coordinates, mirror line, horizontal axis, vertical axis.</p> <p>Decimals Add, subtract, decimal, tenths, hundredths, thousandths, multiply, divide, decimal point, whole, column, exchange, place value, decimal place, digit.</p>	<p>Converting Units Convert, metric units, imperial units, kilo, kilogram, gram, millimetre, centimetre, metre, kilometre, litre, millilitre, pound (lb), ounce (oz), inch (in), foot (ft), yard (yd), pint, gallon, stone (st), approximately, timetable.</p> <p>Volume and Capacity Volume, cube, cuboid, 3D shape, solid, capacity, calculate, estimate, unit cubes, least, greatest.</p>
Skills	<p>Place Value Count in 1000s from different numbers. Round numbers up to 10,000 then 100,000, then 1 million to the nearest 10, 100 or</p>	<p>Multiplication and Division Spot patterns in multiples of numbers and use these to make generalisations and predictions. Use multiplication and division to find factors.</p>	<p>Multiplication and Division Multiply numbers up to 4 digits by a 1 digit number. Multiply pairs of 2 digit numbers by partitioning the numbers.</p>	<p>Decimals and Percentages Read and write decimals. Read and write decimals as fractions. Write a number up to 3 decimal places and link with thousandths.</p>	<p>Properties of Shape Measure turns as angles using degrees. Measure angles with a protractor. Use a protractor to draw angles accurately. Calculate missing angles on a straight line.</p>	<p>Converting Units Convert between kilograms and grams and visa versa. Convert between millimetres and metres or centimetres, and</p>

<p>1000, 10,000 or 100,000. Work with numbers to 100,000 focusing on position and value of each digit. Represent numbers in different ways and break them down. Work with a number line to 100,000 and identify numbers that are between two points, using mathematical language to describe the position. Estimate where a number should be placed on a number line and the number point or label represents. Compare and order numbers to 100,000, then 1 million using the signs < and > to show comparisons and order. Read and write numbers in the 100,000s. Partition and combine numbers with up to 6 digits. Use a number line to identify negative numbers and begin calculating with them.</p>	<p>Spot patterns in factors of numbers and use these to make generalisations and predictions. Differentiate between prime and composite numbers. Use prime numbers to solve mathematical problems and puzzles involving breaking down numbers into factors. Recognise and represent square numbers / cube numbers pictorially before linking this to notation (²) (³). Find square numbers in a multiplication grid / cube numbers and use them to solve calculations and problems. Use the inverse operation to check and solve problems. Develop proportional reasoning by using simple scaling. Fluently multiply / divide whole numbers by 10, 100 and 1000 mentally and using related facts. Fractions Adding and subtracting fractions with the same denominator.</p>	<p>Multiplying a 3-digit number by a 2-digit number. Multiplying a 4-digit number by a 2-digit number. Dividing up to a 4-digit number by a 1-digit number. Division with remainders. Problem solving – division with remainders. Fractions Find and represent equivalent fractions. Converting improper fractions to mixed numbers. Converting mixed numbers to improper fractions. Use fractions to complete number sequences. Compare and order fractions. Convert remainders from division calculations to a fraction.</p>	<p>Order and compare decimals using inequalities. Round decimals. Using percentages. Write percentages as fractions with a denominator of 100, and as a decimal. Solve problems relating to equivalent percentages, fractions and decimals. Measurement: Perimeter and Area Find the perimeter of rectilinear shapes through measurement in centimetres and metres. Use a shape's perimeter to derive its dimensions. Solve problems including perimeter. Calculate area by using square centimetres and square metres. Compare the area of rectangles (including squares). Estimate the area of irregular shapes. Statistics Extract information from tables to solve a range of problems involving four operations.</p>	<p>Calculate the missing angles around a point. Calculate missing angles and lengths. Recognise and draw parallel lines. Recognise and draw perpendicular lines. Reason about parallel and perpendicular lines. Understand regular and irregular polygons. Reason about 3D shapes. Position and Direction Reflect simple 2D shapes in vertical and horizontal lines. Reflect with coordinates. Translate simple 2D shapes on grid paper by moving one vertex at a time. Decimals Add and subtract decimals less than one mentally and using the written column method. Work out how much needs to be added to another decimal to make the whole. Add numbers less than one where the total is greater than one. Add two numbers that have the same number of decimal places. Use the column method to subtract decimals in the context of taking away or finding the difference. Add and subtract decimals with a different number of decimal places.</p>	<p>between millilitres and litres. Solve problems involving measurements that have different numbers of decimal places and fractions of units. Convert between all combinations of mm, cm, m and km, including splitting conversions into more than one step. Convert between imperial units of length. Convert between imperial units of mass. Convert between imperial units of capacity. Convert units of time. Use timetables. Solve problems involving measure. Volume and Capacity Measure the volume of a 3D shape by counting unit cubes that fit in the shape. Compare shapes according to their volumes. Estimate the volumes of 3D shapes. Estimate and order capacity.</p>	
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	<p>Recognise and complete sequences. Find a rule to a given number sequence.</p> <p>Addition and Subtraction Use the written column method to add or subtract two or more whole numbers with 4 digits, then more than 4 digits. Use rounding numbers to help make estimates, identify sensible answers, find mistakes and check answers to calculations. Mentally add/subtract whole numbers by choosing the most efficient method from a variety of strategies. Use the inverse operation in order to check the answers to addition and subtraction calculations. Strategies to use to solve problems / multi-step complex problems that involve adding and subtracting whole</p>	<p>Adding and subtracting proper fractions. Add fractions with a sum greater than 1. Add mixed numbers and fractions. Subtract a fraction from a mixed number, then where it crosses the whole, then subtracting the wholes and parts separately. Subtract mixed numbers by converting them to improper fractions and finding a common denominator. Add and subtract mixed fractions in the context of word problems. Solve multi-step addition and subtraction word problems using fractions and mixed numbers. Multiply a whole number and a unit fraction together. Multiply a whole number and a non-unit fraction. Multiply a whole number and a mixed number. Calculate fractions of an amount. Using fractions as operators.</p>		<p>Create and extract information from two-way tables. Read line graphs with a range of scales / complex scales, including dual line graphs and interpret the information to solve simple sum and difference problems. Draw simple line graphs from data that is given in a table.</p>	<p>Add and subtract decimal numbers with up to 4 digits from whole numbers. Count and complete decimal sequences. Solve problems involving adding and subtracting numbers with up to three decimal places. Multiply decimals by 10, 100 and 1000. Divide decimals by 10, 100 and 1000.</p>	
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	<p>numbers with more than 4 digits, then involve identifying and interpreting the information.</p> <p>Statistics Extract information from tables to solve a range of problems involving four operations. Create and extract information from two-way tables. Read line graphs with a range of scales / complex scales, including dual line graphs and interpret the information to solve simple sum and difference problems. Draw simple line graphs from data that is given in a table.</p>	Use fraction knowledge to solve problems				
Knowledge	<p>Know which two multiples of 10, 100 or 1000 a number lies between in order to make appropriate decisions. Look at the 1s digit to round to the nearest 10. Look at the 10s digit to round to the nearest hundred.</p>	<p>Multiple of a number is that number multiplied by another number. Factors are numbers that divide exactly into another number. Prime numbers – numbers with only two factors, themselves and 1. Composite numbers – numbers which have more than two factors.</p>	<p>Area model – looks like the grid method. Place value for formal method multiplication. First the ones, then the tens, then the hundreds, etc. Using a formal method is an efficient way. Multiplication facts.</p>	<p>To add or subtract fractions the denominator needs to be the same – common denominator. Multiplication is commutative. Use of a bar model to support problem solving. Say each digit after point as separate numbers, e.g. 0.35 “zero point three five”</p>	<p>Turns are measured in degrees (°). 90° - quarter turn 360° - whole turn 180° - half turn Arrow markings are used to show parallel lines. 90° angle = right angle. Perpendicular lines do not always have to touch or cross. Regular shapes – all angles are equal and all sides are the same length.</p>	<p>Prefix kilo – comes from Greek meaning “thousand”. Prefix milli – comes from Latin meaning “one thousandth” of something. Imperial units were used in the UK until the metric system was introduced in 1965. The metric system made things easier as</p>

	<p>Look at the 1000s digit to round to the nearest 10,000. Look at the ten thousands to round to the nearest 100,000. A number with 5 or more rounds up. A number between 0 and 4 rounds down. Ascending – in order from lowest to highest. Descending – in order from highest to lowest. Roman numerals to 10,000. M – 1000 D – 500 I – 1 X – 10 V – 5 C – 100 L – 50 Read Roman numerals left to right. When there is a smaller number in front of the larger number subtract the smallest from the largest. Place value up to 100,000s. Negative numbers – the relationship with positive numbers.</p>	<p>Write factors in increasing order. Prime factors – factors that are also prime numbers. Square number – found by multiplying a whole number by itself. The small ² (square notation) means to multiply it by itself, not multiply by 2. Cube number – found by multiplying a whole number by itself and then itself again. The small ³ (cube notation) means to multiply it by itself, and then itself again, not multiply by 3. Inverse – one that reverses the effect of another operation, e.g. multiplication is division, division is multiplication. Simplifying a fraction = finding an equivalent with a smaller denominator and numerator. Improper fraction = the numerator is larger than the denominator. Fraction is a representation of division, e.g 11/4 is another way of saying 11 divided by 4.</p>	<p>Formal method for short division. The amount left over is called the remainder. Letter r represents remainder. KIRF: <i>Know the doubles and halves of all two-digit numbers (school)</i> Recall metric conversions.</p>	<p>not “zero point thirty-five”. 0.5 is equivalent to a half. Place value with tenths, hundredths and thousandths. 1,2,3,4 – round down. 5, 6, 7, 8, 9 – round up. One decimal place – one number after the decimal point. Two decimal places – two numbers after the decimal point. Percent = per cent = (%) parts out of 100. To convert percentages into fractions and decimals they need to be equivalent. Perimeter of a 2D shape – distance all around it. Square metre = 1m x 1m square (m²) Distance chart – tells you the distance between two places. Inverse – one that reverses the effect of another operation, e.g. addition is subtraction. Subtraction is addition. Structure of bar modelling for addition and subtraction to solve problems. Two-way table – shows two or more different sets of information.</p>	<p>Irregular shapes – different sizes for angles and sides. Plan view – view from the top. Coordinates – first across then up. Translation – shape moves left / right first, then up / down (like coordinates). Sequence – related things happen in an order. In decimals, if the final digit is a 0, we don’t need to write it or say it. When multiplying by 10, the digits move one place to the left. When multiplying by 100, the digits move two places to the left. When multiplying by 1000, the digits move three places to the left. When dividing by 10, the digits move one place to the right. When dividing by 100, the digits move two places to the right. When dividing by 1000, the digits move three places to the right. KIRF: Know all pairs of factors of numbers up to 100.</p>	<p>it deals with 10s, 100s and 1000s. Imperial units are still sometimes used. 12 inches = 1 foot 1 inch = 2.5cm (approx.) 1lb = 16 oz 1st = 14lb 1 gallon = 8 pints 1 pint = 570ml (approx.) Timetables are usually written in 24-hour time so you may have to convert. A volume of a 3D shape is how many unit cubes can fit inside it. Capacity is how much a container can hold. KIRF: Recall square numbers up to 122 and their square roots.</p>
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	<p>Understanding of numbers and number patterns. Adding/subtracting using the written column method – add/subtract the ones, then the tens, then the hundreds, then the thousands...etc. Distance chart – tells you the distance between two places. Inverse – one that reverses the effect of another operation, e.g. addition is subtraction. Subtraction is addition. Structure of bar modelling for addition and subtraction to solve problems. Two-way table – shows two or more different sets of information. Dual line graph – shows two sets of information on the same graph.</p> <p>KIRF: Know all decimals that total 1 or 10 (1 decimal place).</p>	<p>KIRF: Multiply and divide single-digit numbers by 10 and 100.</p>		<p>Dual line graph – shows two sets of information on the same graph.</p> <p>KIRF: <i>Know doubles and halves of: All whole numbers to 100, All multiples of 10 to 1000, All multiples of 100 to 10,000. (school)</i> Identify prime numbers up to 20.</p>		
Visit/Special Occasions						

Year 6	World War 2		Ancient Greeks		Bedford, Our Locality	
Vocabulary	<p><u>Place Value</u> Ten thousands (10,000s), hundred thousands (100,000s), millions (1,000,000s), ten million (10,000,000), place value, partition, interval, estimate, compare, order, rounding, negative, positive.</p> <p><u>Four Operations</u> Column addition, column multiplication, short division, long division, remainder, factor, estimate, common factor, common multiple, prime, composite, squared (x^2), cubed (x^3), order of operations, brackets, inverse operation.</p>	<p><u>Fractions</u> Numerator, denominator, common denominator, common factor, equivalent, simplify, simplest form, factor, highest common factor, lowest common factor (LCM), compare, order, ascending, descending, proper fraction, improper fraction, mixed number, convert, lowest common denominator, equivalent, whole number, simplify.</p> <p><u>Converting units</u> Metric, imperial, units of measurement (or measure), grams (g), kilograms (kg), pounds (lbs), ounces (oz), mass, millilitres (ml), litres (l), pints, capacity, millimetres (mm), centimetres (cm), metres (m), kilometres (km), inches (in), feet (ft), yards, miles, length, convert, conversion table, conversion graph.</p>	<p><u>Ratio and Proportion</u> Ratio, proportion, part, whole, scale, scale factor, similar, notation.</p> <p><u>Algebra</u> Sequence, term, rule, algebra, expression, calculation, formula, substitute, generalise, operation, calculate, equation, inverse, solution.</p> <p><u>Decimals</u> Multiply, divide, decimal, decimal place (dp), recurring decimal, placeholder, place value, tenths, hundredths, thousandths, products, fraction.</p>	<p><u>Percentages</u> Percent (%), percentage, parts, whole, decimal, fraction, divide, share, multiply, convert, compare, order, equivalent fraction, simplify, less than (<), greater than (>).</p> <p><u>Perimeter, Area and Volume</u> Area, volume, perimeter, parallelogram, height, enclosed, width, length, square centimetres (cm^2), square metres (m^2), base, estimate, formula, compound shape, cubic centimetres (cm^3), cubic metres (m^3).</p> <p><u>Statistics</u> Mean, average, pie chart, segment, line graph, bar chart, percentage, fraction, data.</p>	<p><u>Geometry</u> Degree, angle, obtuse, acute, reflex, right angle, protractor, triangle, isosceles, equilateral, scalene, regular, polygon, quadrilateral, parallelogram, kite, rhombus, trapezium, diameter, radius, circumference, concentric, perimeter, net, pyramid, tetrahedron, cylinder, prism, vertically opposite angles, cuboid, cube.</p> <p><u>Position and Direction</u> Quadrant, four quadrant, translate, translation, x-axis, y-axis, axis, axes, horizontal, vertical, vertex, reflect, reflection.</p>	<p><u>Problem Solving</u> Partition, estimate, round, compare, equivalent, percentage, ratio, proportion, convert, common denominator, coordinates, translation, reflection, vertex, scaling, isosceles triangle.</p>
Skills	<p><u>Place Value</u> Read and write numbers to 1,000,000, then 10,000,000 fluently</p>	<p><u>Fractions</u> Apply knowledge of factors to use common factors to simplify fractions.</p>	<p><u>Ratio and Proportion</u> Understand the concept of ratio and proportion.</p>	<p><u>Percentages</u> Find percentages of a range of amounts. Use two different methods to find 20%.</p>	<p><u>Geometry</u> Measure angles using a protractor.</p>	<p><u>Problem Solving</u> Solve number and practical problems that involve place</p>

<p>and identify their place value. Partition numbers up to 10,000,000 and solve problems in real-life contexts. Identify and estimate where numbers up to 10,000,000 lie on a number line. Compare and order numbers up to 10,000,000. Round numbers up to 10,000,000. Understanding of when rounding is appropriate and which power of 10 to round to in a given context. Use negative numbers in context and use a number line to identify negative numbers and begin calculating with them.</p> <p>Four Operations</p> <p>Use column methods for addition and subtraction where exchanging is necessary to solve problems. Multiply numbers up to 4 digits by a 1-digit number, then a</p>	<p>Simplify mixed numbers and improper fractions. Count up and down on a number line in fractions, place missing fractions on a number line and find missing numbers in a fractional sequence. Compare and order fractions by making the denominators the same and comparing the numerators. Compare and order mixed numbers and improper fractions by converting between improper fractions and mixed numbers and using a common denominator. Add and subtract fractions where the answer is between 0 and 1. Add and subtract mixed numbers where the fractional answer is between 0 and 1 and does not cross the whole. Add mixed numbers and fractions by using two methods to add mixed fractions where the fractional answer is greater than 1. Subtract mixed numbers and fractions</p>	<p>Compare ratios, explore different representations of ratio and identify ratios from given amounts or diagrams. Compare fractions and ratio. Use ratios to calculate totals and amounts and will consider the different methods that can be used. Use ratios to deduce quantities. Interpret scales on maps and plans. Find the scale factor when provided with measurements, then apply the scale factor to calculate further measurements. For two shapes to be similar they must have the same proportions. Identify if shapes are similar, deduce scale factors and draw similar shapes. Solve problems involving proportion where the scale is not a whole number. Solve a range of problems involving</p>	<p>Find 1% and then use this to work out multiples of 1%. Find 75% of an amount. Find missing values in problems involving percentages. Use a range of strategies to convert fractions to percentages. Find equivalent fractions, decimals and percentages, and convert between them. Order and compare decimals, percentages and fractions, including those that are greater than 1. Solve a range of problems and puzzles involving fractions, decimals and percentages.</p> <p>Perimeter, Area and Volume</p> <p>Find the area of shapes by counting individual squares and draw different shapes with the same area. Explore simple shapes (other than rectangles) that have the same area but different perimeters. Explore how shapes with the same perimeter can have different areas, find</p>	<p>Draw shapes accurately using a ruler and a protractor. Accurately measuring angles in triangles. Calculate missing angles in triangles and quadrilaterals without using a protractor. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Identify shapes from nets and draw nets. Explore the multiple nets of cubes in the context of dice.</p> <p>Position and Direction</p> <p>Plot coordinates in the first quadrant, then in all four quadrants. Plot translations and reflections. Reason about shapes based on their properties, to solve problems that involve coordinates in all four quadrants.</p>	<p>value and negative numbers. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division. Use knowledge of the order of operations to carry out calculations involving the four operations. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Solve problems involving the relative sizes of two quantities</p>
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	<p>2-digit number using multiple methods and representations to solve these. Divide numbers up to 4 digits by 2-digit numbers, using multiple methods and representations to solve these. Use long division as a method to solve division calculations. Use different methods of division to solve mathematical problems with real-life contexts. Use division methods to work out division calculations that have a remainder. To represent remainders from division calculations as fractions. Find common factors. Find common multiples. Recognise and identify prime numbers. Recognise and identify square and cube numbers. Use the correct order of operations</p>	<p>to calculations where the fractional answer crosses the whole and cannot simply subtract the wholes and subtract the parts. Use adding and subtracting mixed numbers to solve problems which involve adding and subtracting more than two mixed numbers. Solve more complex problems that involve adding and subtracting mixed numbers and fractions with more than one step. Multiply proper and improper fractions and mixed numbers by a whole number. Multiply a fraction by a fraction by using a divided square, then multiplying the numerators and multiplying the denominators. Divide unit fractions by a whole number. Divide non-unit fractions by a whole number when the numerator is a multiple of the whole number. Divide any fraction by a whole number. Solve fraction problems involving</p>	<p>ratio including 2-step problems. Algebra Investigate number sequences and identify the algebraic rule that governs them. Write rules in a form that allows them to be applied generally. Find a rule for a number sequence that has more than one step. Apply understanding of algebraic rules and investigate how they can be used to solve and generalise a contextual problem. Use understanding of algebraic rules to find the nth term in an algebraic sequence. Create algebraic expressions that generalise the rule in a number sequence, then use these expressions to find the nth term in a sequence. Find and record algebraic formulae, then link these formulae to</p>	<p>missing lengths and calculate the area of squares, rectangles and rectilinear shapes. Rearrange a parallelogram into a rectangle to derive the formula for calculating the shape's area. Apply knowledge of area to estimate the area of triangles by counting squares and to find the area by rearranging triangles into rectangles. Find the area of right-angled triangles. Apply knowledge of area to calculate the area of any triangle. Apply knowledge of area to solve problems, in particular when calculating the area of a composite shape or when finding missing measurements for a given area. Apply knowledge of perimeter to solve problems, in particular when calculating unknown lengths and perimeters of composite rectilinear shapes. Calculate the volume of cuboids and explore different shapes with the same volume.</p>		<p>where missing values can be found by using integer multiplication and division facts. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Describe positions on the full coordinate grid (all four quadrants). Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</p>
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	<p>to help solve multi-step calculations. Using brackets to help determine the order of operation for calculations. Use efficient mental methods for solving calculations with smaller numbers, including decimals, then larger numbers, up to millions. Read, understand and solve mathematical puzzles and problems. Use number facts they know to help them solve more complicated problems.</p>	<p>addition, subtraction, multiplication and division, also using the order of operations within these problems. Find fractions of amounts in various contexts. Solve problems involving finding fractions of amounts, including problems where the whole needs to be found using information about a part.</p> <p><u>Converting units</u> Read, write and recognise all metric measures for length, mass and capacity, apply understanding to make sensible estimations. Convert between metric units of measurement, including measurements that involve decimals. Solve a range of problems using all four operations in the context of metric measures. Convert between two imperial units and between an imperial and metric unit of measurement.</p>	<p>different real-life contexts and use them to spot patterns. Read, understand and solve algebraic equations. Use the inverse calculation to find the missing number in an equation. Create algebraic equations based on contextual word problems. Create equations to find all solutions to a given problem. Find all possible solutions to a given problem, when it involves more than one variable, representing the solutions with algebraic equations</p> <p><u>Decimals</u> Multiply decimals by the power of 10. Divide decimals by the power of 10. Convert decimals to fractions where the denominator is a power of 10. Convert fractions to decimals. Calculate the decimal equivalents of fractions by drawing on known</p>	<p>Calculate the volume of shapes, using the formula and find missing dimensions when the volume is given.</p> <p><u>Statistics</u> Calculate and interpret the mean as an average. Interpret and construct pie charts and line graphs and use these to solve problems. Calculate the fractions represented in pie charts. Use given fractions of a pie chart to calculate the amount/number of items in a category. Compare and convert percentages of pie charts to fractions.</p>		
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			<p>fraction/decimal equivalents or by dividing the numerator by the denominator.</p> <p>Multiply decimals by whole numbers, then a whole number where the product requires crossing into the next place up, or where one or both numbers in the multiplication need to be partitioned.</p> <p>Divide decimals by using known multiplication facts and adjusting by powers of 10.</p> <p>Use short division and exchange to divide decimals.</p>			
Knowledge	<p>Place value of numbers to 1,000,000, then 10,000,000.</p> <p>1-digit factors of 2-digit numbers can be used to make the division of numbers with up to 4-digits by 2-digits easier to solve.</p> <p>When long division is more efficient than short division. Write out their multiples of a 2-digit</p>	<p>To find a fraction's simplest form we divide the numerator and the denominator by a common factor.</p> <p>Equivalent – equal to.</p> <p>Highest common factor – the highest number that divides into all/both numbers.</p> <p>We know we have simplified fully when we cannot divide the numerator and denominator by any other number apart from 1.</p>	<p>Ratio – compares two or more parts of the whole.</p> <p>(<u> </u>:<u> </u>) answers written in the simplest form.</p> <p>Use letters to represent a value we do not know for certain, or that can change.</p> <p>Expression = when $2 \times n$ should be written as $2n$ (don't need to write the multiplication symbol, always the</p>	<p>Find 50% = divide by 2.</p> <p>Find 25% = divide by 4.</p> <p>Find 10% = divide by 10.</p> <p>Find 20% = divide by 5 <u>or</u> divide by 10 then double that number.</p> <p>Find 1% = divide by 100.</p> <p>Find 75% = find 50%, find 25%, then add these two together.</p> <p>Converting fractions into percentages is a good way to compare them.</p> <p>Compound shape = shape that is made of</p>	<p>There are two scales on a protractor, to read angles that turn different ways.</p> <p>Triangle's angles total to 180°</p> <p>Quadrilateral's angles total to 360°.</p> <p>Vertically opposite angles are equal.</p> <p>As the number of vertices increases an equal distance from the centre, a circle is formed.</p> <p>Radius – the distance from the centre of a circle.</p>	<p>KIRF: Consolidate previous work.</p>

<p>number to help with long division. Representing a remainder as a fraction gives a more accurate answer. Common factors can link two or more numbers. Factor – a number that divides a number exactly. Common multiples link two or more numbers. Prime numbers - have exactly two factors (0 and 1). Composite numbers – numbers that are not prime. The ² tells you the number is squared. A ³ tells you a number is cubed. Order of operations – following the same order so we do not confuse each other with different solutions to the same calculation. The operations of multiplication and division are carried out before the operations of addition and subtraction.</p>	<p>When adding or subtracting fractions, we need to find a common denominator. Estimation = using the facts you know to help estimate what you do not know. Convert from a larger unit to a smaller unit – multiply. Convert from a smaller unit to a larger unit – divide. Convert the different measurements in problems to the same measurements. Apply the 5:8 ratio between miles and kilometres to convert between these imperial and metric units of measurement. 8 kilometres = 5 miles. Metric measurements are used most often. Imperial measurements are still used in everyday life. Conversion graph – help convert between two units of measure. KIRF: Use all multiplication and division facts for the times tables up to 10x10, to derive x and ÷ of decimals numbers.</p>	<p>number before the letter). When a value is given for <i>n</i>, substitute the value for <i>n</i> into the rule. Equation = $80 + x = 230$. When multiplying by 10, digits move to the left. When dividing by 10, digits move to the right. Dividing/multiplying by 10 is the inverse of multiplying/dividing by 10. To simplify a fraction, you need to find a common factor of the numerator and denominator. Recurring decimal = numbers that have a repeating decimal. Dp = shorter way to write decimal places. Product = answer to a multiplication calculation. Decimal points must be aligned when using formal written methods. KIRF:</p>	<p>two or more shapes put together. Parallelogram = a quadrilateral, each opposite sides are parallel. Area of a parallelogram = base x height. Perpendicular height - in a parallelogram, the perpendicular distance from the base to the top. The area of a triangle = area of a rectangle ÷ 2. Base = <i>b</i> Height = <i>h</i> Area of a rectangle = 2 x area of a triangle. Area of a triangle = base x height ÷ 2. The height is always perpendicular to the base. Volume = amount of space a solid figure takes up – measured in cm³. Formula for finding the volume of shapes: length x width x height ($V = l \times w \times h$) Average can mean different things. Mean – try to make every group an equal size (add all the amounts in all the groups up and divide by how many groups there are). This is a useful</p>	<p>Diameter – distance from one side of the circle to the other. (Double the radius) Concentric circles – circles with the same centre. Circumference – the distance all around the circle. Four quadrant grids – both axes show negative and positive values. Translate – move the vertices of the shape according to the instructions given. KIRF: Know the tests for divisibility for 4 and 6.</p>	
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	<p>Sometimes, a calculation requires us to solve operations in a different order. Brackets show which parts of a calculation are worked out together first.</p> <p>KIRF: Know all previous number bonds including decimals.</p>		<p>Know doubles and halves of 2-digit decimals.</p>	<p>way to compare groups of different sizes. A pie chart is split into segments to show how each part fits into the whole. The whole circle represents all the results.</p> <p>To identify the total or amount of items in each of the categories - use the difference between two categories.</p> <p>Whole pie chart is represented by 100%.</p> <p>KIRF: Know the doubles and halves of all multiples of 10 to 10000.</p>		
<p>Visit/Special Occasions</p>						