**Intent:**

At Underhill, we believe that children should leave primary education as confident, resilient mathematicians with a deep conceptual understanding of the skills required to approach any maths problem. Our mission is to enable all learners to enjoy and succeed in mathematics. We want learners to think about maths beyond what is tested in national examinations and to be equipped with an understanding of mathematics that will be relevant and useful in their future studies and in the world of work. We understand that a deep grasp of mathematics is essential to enabling greater social equity and mobility.

We want our pupils to be successful not only in their schooling career, but throughout their adult lives. Through carefully designed lessons, our teachers are able to make meaningful connections between content with a high emphasis placed on problem solving. The Mathematics Mastery programme has been designed on principles to provide learners with a deep conceptual understanding of mathematical principles, the ability to confidently communicate in precise mathematical language, while becoming mathematical thinkers.

The programme can be delivered with confidence in the knowledge that if a student understands the core principles, they will be able to remember more and do more maths, in whatever context they encounter it.

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|  |  | Autumn 1 | Autumn 2 | Spring 1 | | Spring 2 | | Summer 1 | | Summer 2 | |
| Reception | Topic | Unit 1: Early Mathematical experiences  Unit 2: Pattern and Early Number | Unit 3: Numbers within 6  Unit 4: Addition and subtraction within 6  Unit 5: Measures  Unit 6: Shape and sorting | Unit 7: Numbers within 10  Unit 8: Calendar and time  Unit 9: Addition and subtraction within 10 Unit 10: Grouping and Sharing | | Unit 10: Grouping and Sharing  Unit 11: Number patterns within 15  Unit 12: Doubling and halving  Unit 13: Shape and pattern | | Unit 14: Securing addition and subtraction facts  Unit 15: Number patterns within 20  Unit 16: Number patterns beyond 20 | | Unit 17: Money  Unit 18: Measures Unit 19: Exploration of patterns within number | |
| I can | **Early mathematical experiences**  I can classify objects based on one attribute  I can match equal and unequal sets  I can compare objects and sets  I can order objects and sets  **Pattern and early number**  I can recognise, describe, copy and extend colour and size patterns  I can count and represent the numbers 1 to 3  I can estimate and check by counting | **Numbers within 6**  I can count up to six objects.  I can count one more or one fewer  I can order numbers 1 – 6  I can understand conservation of numbers within six  **Addition and subtraction within 6**  I can explore zero  I can explore addition and subtraction  **Measures**  I can estimate, order, compare, discuss and explore capacity, weight and lengths  **Shape and sorting**  I can describe, and sort 3-D shapes  I can describe position accurately | **Numbers within 10**  I can count up to ten objects  I can represent, order and explore numbers to ten  I can count one more or fewer, one greater or less  **Calendar and time**  I can understand days of the week, seasons  I can sequence daily events  **Addition and subtraction within 10**  I can explore addition as counting on and subtraction as taking away  **Grouping and sharing**  I can count and share in equal groups  I can group into fives and tens  I can understand the relationship between grouping and sharing | | **Grouping and sharing**  I can count and share in equal groups  I can group into fives and tens  I can understand the relationship between grouping and sharing  **Numbers within 15**  I can count up to 15 objects and recognise different representations  I can order and explore numbers to 15  I can count one more or fewer with numbers up to 15  **Doubling and halving**  I can understand doubling and halving  I can understand the relationship between doubling and halving  **Shape and pattern**  I can describe and sort 2-D and 3- D shapes  I can recognise, complete and create patterns | | **Securing addition and subtraction facts**  I can understand commutativity  I can explore addition and subtraction  I can compare two amounts  **Numbers patterns within 20**  I can count up to 10 and beyond with objects  I can represent, compare and explore numbers to 20  I can find one more or one fewer within number to 20  **Numbers patterns beyond 20**  I can find one more and one less  I can estimate and count  I can group and share | | **Money**  I can recognise coins and values  I can explore combinations to total 20p  I can begin to find change from 10p  **Measures**  I can describe capacities  I can compare volumes  I can compare weights  I can estimate, compare and order lengths  **Exploration of patterns within number**  I can explore numbers and strategies  I can recognise and extend patterns  I can apply number, shape and measures knowledge  I can count forwards and backwards | |
| Skills | • match equal sets using one-to-one correspondence  • match unequal sets using one-to-one correspondence  • compare objects according to size  • compare sets without counting  • order objects according to length or height  • order sets without counting  • recognise, create and describe patterns  • describe and create patterns that are the same and different  • count 1, 2 or 3 objects reliably  • recognise if a number of objects is the same or different (working with  numbers 1, 2 and 3)  • count one, two or three objects, images or sounds reliably  • recognise the numerals 1, 2 and 3  • create representations for numbers 1, 2 and 3 | • say which number is one more or one less than a given number  • estimate a number of objects and check by counting  • count reliably with numbers from 1 to 6  • Create representations for numbers 1- 6  • place numbers 1-6 in order  • say which number from 1-6 is one more or one less than a given number  • recognise the numerals 1-6  • understand the conservation of number  • add and subtract two single-digit numbers  • estimate a number of objects and check by counting up to 6  • introduce the concept of 0 as the empty set  • subitise within 5  • represent and use number bonds within 5  • use quantities and objects to add and subtract two single-digit numbers  • use everyday language to talk about size, weight, capacity  • estimate, measure, weigh and compare and order objects  • compare objects and quantities  • solve size problems related to measures  • explore characteristics of everyday objects and shapes and use  mathematical language to describe them  • shows an interest in shape and space by playing with shapes by  sustained construction activity  • explore characteristics of everyday objects and shapes (focusing on 3-D  shapes)  • use positional language  • use mathematical language associated with shape  • classify and sort everyday objects | • say which number is one more or one less than a given number  • estimate a number of objects and check by counting  • count reliably with numbers from 1 to 10  • develop an understanding of zero  • create representations for numbers 0-10  • place numbers 0-10 in order  • recognise the numerals 0-10  • use ordinal numbers: 1st, 2nd...last  • understand the conservation of numbers  • use everyday language to talk about time, days of the week and months  of the year  • measures short periods of time in simple ways  • orders and sequences familiar events  • use ordinal numbers: 1st, 2nd...last  • estimate a number of objects and check by counting up to 10  • add and subtract two single-digit numbers and count on or back to find the  answer  • use quantities and objects to add and subtract two single-digit numbers  • solve practical problems that involve combining groups of 2, 5 or 10, or  sharing into equal groups  • solve practical problems that involve grouping and sharing  • explore counting on in steps of 2 from zero | | • solve practical problems that involve combining groups of 2, 5 or 10, or  sharing into equal groups  • solve practical problems that involve grouping and sharing  • explore counting on in steps of 2 from zero  • say which number is one more or one less than a given number  • estimate a number of objects and check by counting  • count reliably with numbers from 0 to 15  • Create representations for numbers 0-15  • place numbers from 0-15 in order  • considering equal and unequal groups  • solve problems, including doubling, halving and sharing  • Explore the relationship between doubling and halving  • talk about properties of shapes  • explore characteristics of everyday objects and shapes and use  mathematical language to describe them  • explore characteristics of everyday objects and shapes (focusing on 2-D  shapes)  • use mathematical language associated with shape  • classify and sort shapes  • recognise, create and describe patterns with shapes  • use mathematical language to describe size and position | | • estimate a number of objects and check by counting up to 20  • add and subtract two single-digit numbers and count on or back to find the  answer  • explore the relationship between addition and subtraction  • compare quantities and objects to solve problems  • solve problems, including doubling, halving and sharing  • say which number is one more or one less than a given number  • use quantities and objects to add and subtract two single-digit numbers  • count reliably with numbers from one to 20  • place numbers from 0-20 in order  • say which number is one more or one less than a given number  • solve practical problems that involve grouping and sharing  • Create representations for numbers 0-20  • estimate a number of objects and check by counting, considering equal  and unequal groups  • say which number is one more or one less than a given number  • solve problems including grouping and sharing  • estimate a number of objects and check by counting  • count reliably to 50  • explore counting on and back from any number within 50  • place numbers from 0-50 in order  • estimate a number of objects and check by counting  • solve practical problems that involve combining groups of 2, 5 or 10, or  sharing into equal groups | | • compare quantities and objects to solve problems  • use everyday language to talk about money, recognise coins up to 50p  and their values  • compare the value of coins  • use quantities and objects to count on and back to add and subtract  • use everyday language to talk about size, weight, capacity  • estimate, measure, weigh and compare and order objects  • compare objects and quantities  • solve size problems involving measures  • explore measuring objects using non-standard units  • solve problems including grouping, sharing, doubling and halving  • Records using marks that they can interpret and explain  • Begins to identify own mathematical problems based on own interests  and fascinations | |
| Year 1 | Topic | Unit 1: Numbers to 10  Unit 2: Addition and subtraction within 10  Unit 3: Shape and patterns | U3: Shape and patterns  Unit 4: Numbers to 20  Unit 5: Addition and subtraction within 20 | Unit 6: Time  Unit 7: Exploring calculation strategies within 20  Unit 8: Numbers to 50 | | Unit 9: Addition and subtraction within 20 (comparison)  Unit 10: Fractions  Unit 11: Measures (1): Length and mass | | Uint 12: Numbers 50 to 100 and beyond  Unit 13: Addition and subtraction (applying strategies)  Unit 14: Money | | Unit 14: Money  Unit 15: Multiplication and division  Unit 16: Measures (2): Capacity and volume | |
| I can | **Numbers to 10**  I can represent,  compare and explore  numbers within 10  I can find one more  and one less for  numbers up to 10  I can find doubles and  halves to 10  **Addition and**  **subtraction within 10**  I can represent and  explain addition and  subtraction  I can understand  commutativity  I can find addition and  subtraction facts  **Shape and patterns**  I can identify, describe,  sort and classify 2-D  and 3-D shapes  I can investigate  repeating patterns  I can use and follow  instructional and  positional language | **Shape and patterns**  I can identify, describe,  sort and classify 2-D  and 3-D shapes  I can investigate  repeating patterns  I can use and follow  instructional and  positional language  **Numbers to 20**  I can identify,  represent, compare  and order numbers to  20  I can find Doubles and  halves to 20  I can find one more  and one less for  numbers up to 20  **Addition and**  **subtraction within 20**  I can represent and  explain addition and  subtraction strategies  including ‘Make Ten’  I can use known facts  to add and subtract | **Time**  I can read, write and tell the time to o’clock and half past on analogue clock  I can sequence daily activities  I can understand whole and half turns linked to time  **Exploring calculation strategies within 20**  I can model, explain and choose addition and subtraction strategies  **Numbers to 50**  I can understand 2-digit numbers – represent, sequence, explore, compare.  I can count in 2s, 5s and 10s  I can describe and complete number patterns | | **Addition and**  **subtraction within 20**  I can illustrate, explain  and link addition and  subtraction with  equations  I can apply ‘Make Ten’  strategy  I can use language to  quantify and compare  difference  **Fractions**  I can identify 1/2 and  1/4 of a shape or  object  I can find 1/2 and ¼  of a quantity  **Measures: Length and**  **mass**  I can compare and  measure lengths and  mass using cm and kg  I can understand  doubling and halving | | **Numbers 50 to 100**  **and beyond**  I can read, write,  represent, compare  and order numbers to  100  I can find one more /  fewer, ten more /  fewer  I can identify number  Patterns  **Addition and**  **subtraction**  I can explore addition  and subtraction  involving 2-digit  numbers and ones  I can represent and  explain addition and  subtraction with  regrouping  I can investigate  number bonds within  20  **Money**  I can name coins and  notes and understand  their value  I can represent the  same value using  different coins  I can find change | | **Money**  I can name coins and  notes and understand  their value  I can represent the  same value using  different coins  I can find change  **Multiplication and division**  I can share equally into groups  I can understand doubling  I can link halving to fractions  I can add equal groups  I can explore arrays  **Measures: Capacity and volume**  I can compare capacities, volumes and lengths  I can explore litres  I can apply my understanding of fractions to capacity | |
| Skills | • count to ten, forwards and backwards, beginning with 0 or 1, or from any  given number  • count, read and write numbers to 10 in numerals and words  • 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  • given a number, identify one more and one less  • count in multiples of two  • double and halve numbers within 10  • estimate numbers within 10  • represent and use number bonds and related subtraction facts [within  10]  • add and subtract one-digit numbers [to 10], including zero  • read, write and interpret mathematical statements involving addition (+),  subtraction (–) and equals (=) signs  • solve one-step problems that involve addition and subtraction, using  concrete objects and pictorial representations, and missing number  problems  • recognise and name common 2-D and 3-D shapes, including: 2-D  shapes [for example, rectangles (including squares), circles and  triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids  and spheres]  • describe position, direction and movement, including whole and half  turns | • recognise and name common 2-D and 3-D shapes, including: 2-D  shapes [for example, rectangles (including squares), circles and  triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids  and spheres]  • describe position, direction and movement, including whole and half  Turns  • count to twenty, forwards and backwards, beginning with 0 or 1, or from  any given number  • count, read and write numbers from 1 to 20 in numerals and words  • 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  • count in multiples of two and five  • double and halve numbers within 20  • represent and use number bonds and related subtraction facts within 20  • add and subtract one-digit and two-digit numbers to 20, including zero  • read, write and interpret mathematical statements involving addition (+),  subtraction (–) and equals (=) signs  • solve one-step problems that involve addition and subtraction, using  concrete objects and pictorial representations, and missing number  problems such as  7 =  – 9  • estimate to check answers | • tell the time to the hour and half past the hour and draw the hands on a clock  face to show these times  • recognise and use language relating to dates, including days of the week,  weeks, months and years  • compare, describe and solve practical problems for time [for example,  quicker, slower, earlier, later] and measure and begin to record time (hours,  minutes, seconds  • sequence events in chronological order using language [for example, before  and after, next, first, today, yesterday, tomorrow, morning, afternoon and  evening]  • describe position, direction and movement, including whole, half, quarter and  three-quarter turns, with reference to the clock face  • represent and use number bonds and related subtraction facts within 20  • add and subtract one-digit and two-digit numbers to 20, including zero  • read, write and interpret mathematical statements involving addition (+),  subtraction (–) and equals (=) signs  • solve one-step problems that involve addition and subtraction, using concrete  objects and pictorial representations, and missing number problems such as  7 =  – 9  • count to fifty, forwards and backwards, beginning with 0 or 1, or from any  given number; count in multiples of two, five and ten.  • count, read and write numbers from 1 to 20 in numerals and words  • 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  • given a number, identify one more and one less  • recognise the place value of each digit in a two-digit number (tens, ones) (Y2) | | • represent and use number bonds and related subtraction facts within 20  • add and subtract one-digit and two-digit numbers to 20, including zero  • add and subtract numbers using concrete objects, pictorial representations,  and mentally, including: a two-digit number and ones; adding three one-digit  numbers (Y2)  • read, write and interpret mathematical statements involving addition (+),  subtraction (–) and equals (=) signs  • solve one-step problems that involve addition and subtraction, using concrete  objects and pictorial representations, and missing number problems such as  7 =  – 9  • estimate to check answers  • recognise, find and name a half as one of two equal parts of an object, shape  or quantity  • recognise, find and name a quarter as one of four equal parts of an object,  shape or quantity  • compare, describe and solve practical problems for: lengths and heights [for  example, long/short, longer/shorter, tall/short, double/half]; mass/weight [for  example, heavy/light, heavier than, lighter than]  • measure and begin to record the following: lengths and heights; mass/weight | | • count to and across 100, forwards and backwards, beginning with 0 or 1, or  from any given number; count on and back in two, five and ten.  • count, read and write numbers from 1 to 20 in numerals and words; read  and write numbers to at least 100 in numerals  • given a number, identify one more and one less  • 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  • recognise the place value of each digit in a two-digit number (tens, ones)  (Y2)  • represent and use number bonds and related subtraction facts within 20  • add and subtract one-digit and two-digit numbers, including zero  • add and subtract numbers using concrete objects, pictorial representations,  and mentally, including: a two-digit number and ones; a two-digit number  and tens; two two-digit numbers; adding three one-digit numbers (Y2)  • read, write and interpret mathematical statements involving addition (+),  subtraction (–) and equals (=) signs  • solve one-step problems that involve addition and subtraction, using  concrete objects and pictorial representations, and missing number  problems such as  7 =  – 9  • estimate to check answers  • recognise and know the value of different denominations of coins and notes  • solve one-step problems that involve addition and subtraction, using  concrete objects and pictorial representations, and missing number  problems such as  7 =  – 9 | | • recognise and know the value of different denominations of coins and notes  • solve one-step problems that involve addition and subtraction, using  concrete objects and pictorial representations, and missing number  problems such as  7 =  – 9  • solve one-step problems involving multiplication and division, by calculating  the answer using concrete objects, pictorial representations and arrays with  the support of the teacher  • recognise, find and name a half as one of two equal parts of a quantity  • recognise, find and name a quarter as one of four equal parts of a quantity  • compare, describe and solve practical problems for: lengths and heights  [for example, long/short, longer/shorter, tall/short, double/half]; mass/weight  [for example, heavy/light, heavier than, lighter than]; capacity and volume  [for example, full/empty, more than, less than, half, half full, quarter]  • measure and begin to record the following: lengths and heights;  mass/weight; capacity and volume | |
| Year 2 | Topic | Unit 1: Numbers within 100  Unit 2: Addition and subtraction of 2-digit numbers  Unit 3: Addition and subtraction word problems | Unit 4: Measures: Length  Unit 5: Graphs  Unit 6: Multiplication and division: 2, 5 and 10 | Unit 7: Time  Unit 8: Fractions  Unit 9: Addition and subtraction of 2-digit numbers (regrouping and adjusting) | | Unit 10: Money  Unit 11: Faces, shapes and patterns; lines and turns | | Unit 12: Numbers within 1000  Unit 13: Measures: Capacity and volume  Unit 14: Measures: Mass | | Unit 15: Exploring calculation strategies  Unit 16: Multiplication and division: 3 and 4 | |
| I can | **Numbers within 100**  I can read, write, represent, partition, compare and order numbers to 100  I can explore patterns including, odds and evens, tens and ones  **Addition and subtraction of 2-digit numbers**  I can apply number bonds to add and subtract  I can represent and explain addition and subtraction of two 2-digit numbers.  I can add three 1-digit numbers  **Addition and subtraction word problems**  I can begin to understand bar models as a representation  I can create, label and sketch bar models | **Measures: Length**  I can draw and measure lengths in centimetres  I can use < > and = to compare and order lengths in metres and centimetres  **Graphs**  I can represent and interpret: pictograms, block diagrams, tables and tally charts  **Multiplication and Division: 2x, 5x, 10x**  I can calculate the times tables of 2, 5, and 10 by skip counting  I can relate the 2 times table to doubling  I can explore representations of multiplication and division  I can understand commutativity | **Time**  I can tell the time on an analogue clock: quarter past, quarter to and five minute intervals  I can calculate durations of time in minutes and seconds  I can sequence daily events  I can tell you how many minutes in an hour and hours in a day  **Fractions**  I can understand part-whole relationships  I can understand fractions as part of a whole or a whole set  I can relate fractions to division  I can find equivalent fractions  **Addition and subtraction of 2-digit numbers**  I can illustrate, represent and explain addition and subtraction involving regrouping including ‘Make Ten’, ‘Round and adjust’ and near doubles strategies | | **Money**  I can recognise coins and notes  I can use £ and p accurately  I can add and subtract amounts  I can calculate change  **Face, shapes and patterns; lines and turns**  I can explore, sort and describe 2-D shapes  I can find lines of symmetry in 2-D shapes  I can identify 2-D shapes on 3-D shapes  I can compare and sort 2-D and 3-D shapes  I can use language to describe position, direction and rotation to follow a route | | **Numbers within 1000**  I can represent in different ways  I can compare using symbols  I can read scales  **Measures: Capacity and volume**  I can read and measure temperature  I can estimate, measure and understand litres and millilitres  I can compare and order capacities  **Measures: Mass**  I can weigh and compare masses in kilograms and grams | | **Exploring calculation strategies**  I can apply addition and subtraction strategies to solve equations  I can illustrate and explain addition and subtraction using column method  **Multiplication and Division: 3x, 4x**  I can use multiplication and division facts for 3 and 4  I can relate 4 times table to doubling the 2 times tables  I can describe, interpret and represent using arrays and bar models  I can recognise inverse relationship | |
| Skills | • use place value and number facts to solve problems  • recognise the place value of each digit in a two-digit number (tens, ones)  • identify, represent and estimate numbers to 100 using different  representations, including the number line  • compare and order numbers from 0 up to 100; use <, > and = signs  • read and write numbers to at least 100 in numerals and in words  • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward  and backward  • recall and use addition and subtraction facts to 20 fluently, and derive and  use related facts up to 100  • show that addition of two numbers can be done in any order  (commutative) and subtraction of one number from another cannot  • add and subtract numbers using concrete objects, pictorial  representations, and mentally, including: a two-digit number and ones; a  two-digit number and tens; two two-digit numbers; adding three one-digit  numbers  • recognise and use the inverse relationship between addition and  subtraction and use this to check calculations and solve missing number  problems  • solve problems with addition and subtraction: using concrete objects and  pictorial representations, including those involving numbers, quantities  and measures; applying their increasing knowledge of mental and written  methods | • choose and use appropriate standard units to estimate and measure  length/height in any direction (m/cm) to the nearest appropriate unit, using  rulers and scales  • compare and order length and record the results using >, < and =  • apply knowledge of numbers to 100 to read scales to the nearest  appropriate standard unit in the context of length (m/cm)  • interpret and construct simple pictograms, tally charts, block diagrams  and simple tables  • ask and answer simple questions by counting the number of objects in  each category and sorting the categories by quantity  • ask and answer questions about totalling and comparing categorical data  • calculate mathematical statements for multiplication and division within  the multiplication tables and write them using the multiplication (×),  division (÷) and equals (=) signs  • solve problems involving multiplication and division, using materials,  arrays, repeated addition, mental methods, and multiplication and division  facts, including problems in contexts  • show that multiplication of two numbers can be done in any order  (commutative) and division of one number by another cannot  • recall and use multiplication and division facts for the 2, 5 and 10  multiplication tables, including recognising odd and even numbers | • tell and write the time to five minutes, including quarter past/to the hour  and draw the hands on a clock face to show these times  • know the number of minutes in an hour and the number of hours in a day  • compare and sequence intervals of time  • recognise, find, name and write fractions 1/3, ¼ ,2/4 and 3/4  of a length, shape, set of objects or quantity  • write simple fractions for example, ½  of 6 = 3  • recognise the equivalence of 2/4  and ½  • recall and use addition and subtraction facts to 20 fluently, and derive and  use related facts up to 100  • show that addition of two numbers can be done in any order  (commutative) and subtraction of one number from another cannot  • add and subtract numbers using concrete objects, pictorial  representations, and mentally, including: a two-digit number and ones; a  two-digit number and tens; two two-digit numbers; adding three one-digit  numbers  • solve problems with addition and subtraction: using concrete objects and  pictorial representations, including those involving numbers, quantities and  measures; applying their increasing knowledge of mental and written  methods | | • recognise and use symbols for pounds (£) and pence (p); combine  amounts to make a particular value  • find different combinations of coins that equal the same amounts of money  • solve simple problems in a practical context involving addition and  subtraction of money of the same unit, including giving change  • identify and describe the properties of 3-D shapes, including the number of  edges, vertices and faces  • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on  a cylinder and a triangle on a pyramid]  • identify and describe the properties of 2-D shapes, including the number of  sides and line symmetry in a vertical line  • compare and sort common 2-D and 3-D shapes and everyday objects  • order and arrange combinations of mathematical objects in patterns and  sequences  • use mathematical vocabulary to describe position, direction and  movement, including movement in a straight line and distinguishing  between rotation as a turn and in terms of right angles for quarter, half and  three-quarter turns (clockwise and anticlockwise) | | • use place value and number facts to solve problems  • identify, represent and estimate numbers to 1000 using different  representations (Y3)  • recognise the place value of each digit in a three-digit number  (hundreds, tens, ones) (Y3)  • compare and order numbers up to 1000 (Y3)  • read and write numbers up to 1000 in numerals and in words (Y3)  • count from 0 in multiples of 100; find 10 or 100 more or less than a  given number (Y3)  • choose and use appropriate standard units to estimate and measure  capacity (litres/ml) and temperature (°C) to the nearest appropriate  unit, using scales, thermometers and measuring vessels  • compare and order volume and capacity and record the results using  >, < and =  • apply knowledge of numbers to 1000 to read scales to the nearest  appropriate standard unit in the context of capacity (litres/ml) and  temperature (°C)  • using known facts to derive new facts (2ml + 2ml =4ml so 200ml +  200ml =400ml)  • choose and use appropriate standard units to estimate and measure  mass (kg/g) to the nearest appropriate unit, using rulers, scales,  thermometers and measuring vessels  • compare and order mass and record the results using >, < and =  • apply knowledge of numbers to 1000 to read scales to the nearest  appropriate standard unit in the context of mass (kg/g)  • using known facts to derive new facts (2g + 2g =4g so 200g + 200g  =400g) | | • recall and use addition and subtraction facts to 20 fluently, and derive  and use related facts up to 100  • show that addition of two numbers can be done in any order  (commutative) and subtraction of one number from another cannot  • add and subtract numbers mentally, including: a two-digit number and  ones; a two-digit number and tens; adding three one-digit numbers  • add and subtract numbers with up to two digits, using written methods  • recall and use multiplication and division facts for the 3 and 4  multiplication tables (Y3)  • calculate mathematical statements for multiplication and division within  the multiplication tables and write them using the multiplication (×),  division (÷) and equals (=) signs  • solve problems involving multiplication and division, using materials,  arrays, repeated addition, mental methods, and multiplication and  division facts, including problems in contexts  • show that multiplication of two numbers can be done in any order  (commutative) and division of one number by another cannot | |
| Year 3 | Topic | Unit 1: Number sense and exploring calculation strategies  Unit 2: Place Value  Unit 3: Graphs | Unit 4: Addition and subtraction  Unit 5: Length and perimeter | Unit 6: Multiplication and division  Unit 7: Deriving multiplication and division facts | | Unit 8: Time  Unit 9: Fractions | | Unit 10: Angles and Shape  Unit 11: Measures | | Unit 11: Measures  Unit 12: Securing multiplication and division  Unit 13: Exploring calculation strategies and place value | |
| I can | **Number sense and exploring calculation strategies**  I can read, write, order and compare numbers to 100  I can calculate mentally using known facts, round and adjust, near doubles, adding on to find the difference  I can derive new facts from a known fact  **Place Value**  I can read, write, represent, partition, order and compare 3-digit numbers  I can find 10 and 100 more or less  I can round to the nearest multiple of 10 and 100  **Graphs**  I can collect, interpret and present data using charts and tables | **Addition and Subtraction**  I can develop and use a range of mental calculation strategies  I can illustrate and explain formal written methods – column method  **Length and Perimeter**  I can measure, draw and compare lengths  I can add and subtract lengths  I can calculate perimeter | **Multiplication and Division**  I can derive multiplication and division facts for 2, 3, 4, 5, 6, 8 and 10  I can understand multiplicative structures e.g. equal groups/parts, change and comparison, correspondence problems  I can understand relationships: commutativity and inverse  **Deriving Multiplication and Division Facts**  I can multiply and divide by 10 and 100  I can multiply a 2-digit number by 2, 3, 4, 5 and corresponding division situations  I can divide 2-digits by a 1-digit | | **Time**  I can tell, record, write and order the time analogue and digital  I can tell the time in a range of formats: 12-hour, a.m., p.m.  I can measure, calculate and compare durations  **Fractions**  I can understand and use part-whole relationships  I can understand fractions as part of a whole or a whole set and as a number  I can add, subtract, compare and order fractions | | **Angles and Shape**  I can identify angles including right angles and recognise them as a quarter of a turn  I can identify and draw parallel and perpendicular lines  I can draw/make, classify and compare 2-D and 3-D shapes  I can measure the perimeter  **Measures**  I can read scales with different intervals when measuring mass and volume  I can weigh and compare masses and capacities with mixed units  I can estimate mass and capacity | | **Measures**  I can read scales with different intervals when measuring mass and volume  I can weigh and compare masses and capacities with mixed units  I can estimate mass and capacity  **Securing Multiplication and Division**  I can recall and use multiplication and division facts for 6 and 8 times table  **Explore Calculation Strategies and Place Value**  I can add and subtract mentally  I can find 10, 100 and 1000 more or less  I can order and compare beyond 1000  I can round numbers | |
| Skills | • solve problems, including missing number problems, using number facts,  place value, and more complex addition and subtraction  • recognise the place value of each digit (tens, ones), compare and order  numbers up to 100  • find 10 more or less than a given number  • read and write numbers up to 100 in numerals and in words  • solve number problems and practical problems involving these ideas  • identify, represent and estimate numbers using different representations,  including the number line  • add and subtract amounts of money to give change, using both £ and p in  practical contexts  • identify, represent and estimate numbers using different representations  • find 10 or 100 more or less than a given number  • recognise the place value of each digit in a three-digit number (hundreds,  tens, ones)  • compare and order numbers up to 1000  • read and write numbers up to 1000 in numerals and in words  • solve number problems and practical problems involving these ideas  • count from 0 in multiples of 50 and 100  • interpret and present data using bar charts, pictograms and tables  • solve one-step and two-step questions [for example, ‘How many more?’  and ‘How many fewer?’] using information presented in scaled bar charts  and pictograms and tables | • add and subtract numbers mentally, including: a three-digit number and  ones; a three-digit number and tens; a three-digit number and hundreds  • add and subtract numbers with up to three digits, using formal written  methods of columnar addition and subtraction  • estimate the answer to a calculation and use inverse operations to check  answers  • solve problems, including missing number problems, using number facts,  place value, and more complex addition and subtraction  • measure, compare, add and subtract: lengths (m/cm/mm)  • solve problems, including missing number problems, using number facts,  place value, and more complex addition and subtraction  • measure the perimeter of simple 2-D shapes  • continue to measure using the appropriate tools and units, progressing to  using a wider range of measures, including comparing and using mixed ...  and simple equivalents of mixed units (for example, 5m = 500cm) | • recall and use multiplication and division facts for the 3 and 4  multiplication tables  • count from zero in multiples of 4  • solve problems, including missing number problems, involving  multiplication and division, including positive integer scaling problems  and correspondence problems in which n objects are connected to m  objects  • recall and use multiplication and division facts for the 3 and 4  multiplication tables  • write and calculate mathematical statements for multiplication and  division using the multiplication tables that they know, including for two-  digit numbers times one-digit numbers, using mental and progressing to  formal written methods  • solve problems, including missing number problems, involving  multiplication and division, including positive integer scaling problems  and correspondence problems in which n objects are connected to m  objects | | • tell and write the time using 12-hour analogue and digital clocks,  including using Roman numerals from I to XII  • estimate and read time with increasing accuracy to the nearest minute  • record and compare time in terms of seconds, minutes and hours  • use vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon  and midnight  • know the number of seconds in a minute and the number of days in  each month, year and leap year  • compare durations of events [for example to calculate the time taken by  particular events or tasks]  • recognise and use fractions as numbers: unit fractions and non-unit  fractions with small denominators  • recognise, find and write fractions of a discrete set of objects: unit  fractions and non-unit fractions with small denominators  • 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  • recognise and show, using diagrams, equivalent fractions with small  denominators  • add and subtract fractions with the same denominator within one whole [  for example, 5/7 + 1/7  = 6/7]  • compare and order unit fractions, and fractions with the same denominators  • solve problems that involve all of the above | | • recognise angles as a property of shape or a description of a turn  • identify right angles, recognise that two right angles make a half-turn,  three make three quarters of a turn and four a complete turn; identify  whether angles are greater than or less than a right angle  • identify horizontal and vertical lines and pairs of perpendicular and  parallel lines  • draw 2-D shapes and make 3-D shapes using modelling materials  • recognise 3-D shapes in different orientations and describe them  • measure the perimeter of simple 2-D shapes  • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g);  volume/capacity (l/ml)  • solve problems, including missing number problems, using number facts,  place value, and more complex addition and subtraction  • continue to measure using the appropriate tools and units, progressing  to using a wider range of measures, including comparing and using  mixed units (for example, 1 kg and 200g) and simple equivalents of  mixed units (for example, 5m = 500cm) | | • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g);  volume/capacity (l/ml)  • solve problems, including missing number problems, using number facts,  place value, and more complex addition and subtraction  • continue to measure using the appropriate tools and units, progressing  to using a wider range of measures, including comparing and using  mixed units (for example, 1 kg and 200g) and simple equivalents of  mixed units (for example, 5m = 500cm)  • write and calculate mathematical statements for multiplication and  division using the multiplication tables that they know, including for two-  digit numbers times one-digit numbers, using mental and progressing to  formal written methods  • recall and use multiplication and division facts for the 8 multiplication  tables  • count from zero in multiples of 8  • add and subtract numbers mentally  • find 1000 more or less than a given number; recognise the place value of  each digit in a four-digit number (thousands, hundreds, tens, and ones)  (Y4)  • order and compare numbers beyond 1000 (Y4)  • round any number to the nearest 10, 100 or 1000 (Y4) | |
| Year 4 | Topic | Unit 1: Reasoning with 4-digit numbers  Unit 2: Addition and subtraction  Unit 3: Multiplication and division | Unit 3: Multiplication and division  Unit 4: Interpreting and presenting data | Unit 5: Securing multiplication facts  Unit 6: Fractions  Unit 7: Time | | Unit 8: Decimals  Unit 9: Area and perimeter | | Unit 10: Solving measure and money problems  Unit 11: 2-D Shape and Symmetry | | Unit 11: 2-D Shape and Symmetry  Unit 12: Position and Direction  Unit 13: Reasoning with patterns and sequences  Unit 14: 3D Shape | |
| I can | **Reasoning with large numbers**  I can understand 4-digit place value. (Read, write, represent, order and compare)  I can find 10, 100 or 1000 more or less  I can round numbers to the nearest 10, 100 or 1000  **Addition and subtraction**  I can select appropriate strategies to add and subtract  I can illustrate and explain appropriate addition and subtraction strategies including column method with regrouping  **Multiplication and division**  I can distributive property including multiplying three 1-digit numbers  I can understand mental multiplication and division strategies using place value and known/derived facts  I can understand short multiplication and division | **Multiplication and division**  I can distributive property including multiplying three 1-digit numbers  I can understand mental multiplication and division strategies using place value and known/derived facts  I can understand short multiplication and division  **Discrete and continuous data**  I can read, interpret and construct pictograms, bar charts and time graphs  I can compare tables, pictograms and bar charts | **Securing multiplication facts**  I can identify and explore patterns in multiplication tables including 7 and 9  **Fractions**  I can explore different interpretations and representations of fractions  I can understand equivalent fractions  I can represent fractions greater than one as mixed number and improper fractions  I can add and subtract fractions with the same denominator including fractions greater than one  **Time**  I can understand analogue to digital, 12- hour and 24-hour  I can convert between units of time | | **Decimals**  I can understand decimal equivalents to tenths, quarters and halves  I can compare and order numbers with the same number of decimal places  I can multiply and divide by 10 and 100 including decimals  **Area and perimeter**  I can understand perimeter of rectangles and rectilinear figures  I can understand area of rectangles and rectilinear and compare  I can investigate area and perimeter | | **Solving measures and money problems**  I can convert units of measure  I can select appropriate units to measure  I can use strategies to investigate problems: trial and improvement, organising using lists and tables, working systematically  **Shape and symmetry**  I can classify, compare and order angles  I can compare and classify 2-D shapes  I can identify lines of symmetry | | **Shape and symmetry**  I can classify, compare and order angles  I can compare and classify 2-D shapes  I can identify lines of symmetry  **Position and direction**  I can describe and plot using coordinates  I can describe translations  **Reasoning with pattern and sequences**  I can understand Roman numerals up to 100  I can understand Place value of other number systems  I can understand number sequences and patterns  **3-D shape**  I can demonstrate an understanding of 3-D shapes  I can identify 3-D shapes from 2-D representations | |
| Skills | • find 1000 more or less than a given number  • recognise the place value of each digit in a four-digit number  (thousands, hundreds, tens, and ones)  • order and compare numbers beyond 1000  • solve number and practical problems that involve all of the above and  with increasingly large positive numbers  • identify, represent and estimate numbers using different representations  • round any number to the nearest 10, 100 or 1000  • count in multiples of 6, 7, 9, 25 and 1000  • add and subtract numbers with up to 4 digits using the formal written  methods of columnar addition and subtraction where appropriate  • estimate and use inverse operations to check answers to a calculation  • solve addition and subtraction two-step problems in contexts, deciding  which operations and methods to use and why  • recall multiplication and division facts for multiplication tables up to 12 ×  12  • 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  • recognise and use factor pairs and commutativity in mental calculations  • 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  • multiply two-digit and three-digit numbers by a one-digit number using  formal written layout | • recall multiplication and division facts for multiplication tables up to 12 ×  12  • 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  • recognise and use factor pairs and commutativity in mental calculations  • 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  • multiply two-digit and three-digit numbers by a one-digit number using  formal written layout  • solve comparison, sum and difference problems using information  presented in bar charts, pictograms, tables and other graphs  • interpret and present discrete and continuous data using appropriate  graphical methods, including bar charts and time graphs | • recall multiplication and division facts for multiplication tables up to 12 ×  12  • add and subtract fractions with the same denominator  • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/ 5] (Y5)  • recognise and show, using diagrams, families of common equivalent  fractions  • count up and down in hundredths; recognise that hundredths arise when  dividing an object by one hundred and dividing tenths by ten  • 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  • convert between different units of measure [for example, hour to minute]  • problems involving converting from hours to minutes; minutes to  seconds; years to months; weeks to days  • write and convert time between analogue and digital 12- and 24-hour  clocks | | • find the effect of dividing a one- or two-digit number by 10 and 100,  identifying the value of the digits in the answer as ones, tenths and  hundredths  • recognise and write decimal equivalents of any number of tenths or  hundredths  • recognise and write decimal equivalents to 1/4, 1/2, 3/4  • round decimals with one decimal place to the nearest whole number  • compare numbers with the same number of decimal places up to two  decimal places  • measure and calculate the perimeter of a rectilinear figure (including  squares) in centimetres and metres  • convert between different units of measure [for example, kilometre to metre]  • find the area of rectilinear shapes by counting squares  • calculate and compare the area of rectangles (including squares), and  including using standard units, square centimetres (cm2) and square metres (m2) (Y5)  • measure and calculate the perimeter of composite rectilinear shapes in  centimetres and metres (Y5) | | • convert between different units of measure [for example, kilometre to  metre; hour to minute]  • solve simple measure and money problems involving fractions and  decimals to two decimal places  • estimate, compare and calculate different measures, including money in  pounds and pence  • compare and classify geometric shapes, including quadrilaterals and  triangles, based on their properties and sizes  • identify acute and obtuse angles and compare and order angles up to two  right angles by size  • identify lines of symmetry in 2-D shapes presented in different orientations  • complete a simple symmetric figure with respect to a specific line of  symmetry | | • compare and classify geometric shapes, including quadrilaterals and  triangles, based on their properties and sizes  • identify acute and obtuse angles and compare and order angles up to two  right angles by size  • identify lines of symmetry in 2-D shapes presented in different orientations  • complete a simple symmetric figure with respect to a specific line of  Symmetry  • describe positions on a 2-D grid as coordinates in the first quadrant  • describe movements between positions as translations of a given unit to  the left/right and up/down  • plot specified points and draw sides to complete a given polygon  • read Roman numerals to 100 (I to C) and know that over time, the  numeral system changed to include the concept of zero and place value  • count backwards through zero to include negative numbers  • recognise and use square numbers, and the notation for squared (2  ) (Y5)  • identify 3-D shapes, including cubes and other cuboids, from 2-D  representations (Y5) | |
| Year 5 | Topic | Unit 1: Reasoning with large whole numbers  Unit 2: Problem solving with integer addition and subtraction  Unit 3: Line graphs and timetables | Unit 4: Multiplication and division  Unit 5: Perimeter and area | Unit 6: Fractions and decimals  Unit 7: Angles | | Unit 8: Fractions and percentages  Unit 9: Transformations | | Unit 10: Converting units of measure  Unit 11: Calculating with whole numbers and decimals | | Unit 12: 2-D and 3-D shape  Unit 13: Volume  Unit 14: Problem solving | |
| I can | **Reasoning with large whole integers**  I can read, write, order and compare numbers up to one million  I can round numbers within one million to the nearest multiple of powers of ten  I can read Roman numerals up to M  **Integer addition and subtraction**  I can use rounding to estimate  I can use a range of mental calculation strategies to add and subtract integers  I can illustrate and explain the written method of column addition and subtraction  I can select efficient calculation strategies  **Line graphs and timetables**  I can complete, read and interpret data presented in line graphs  I can read and interpret timetables including calculating intervals | **Multiplication and division**  I can identify multiples and factors  I can investigate prime numbers  I can multiply and divide by 10, 100 and 1000 (integers)  I can derive multiplication and division facts  I can illustrate and explain formal multiplication and division strategies such as short and long  I can use a range of mental calculation strategies  **Perimeter and area**  I can investigate area and perimeter of rectilinear shapes  I can estimate area of non-rectilinear shapes | **Fractions and decimals**  I can read, write, order and compare decimals  I can round decimals to the nearest whole number  I can represent, identify, name, write, order and compare fractions (including improper and mixed numbers)  I can calculate fractions of amounts  **Angles**  I can classify, compare and order angles  I can measure and draw angles with a protractor  I can understand and use angle facts to calculate missing angles | | **Fractions and percentages**  I can add and subtract fractions with denominators that are multiples of the same number  I can multiply fractions (and mixed numbers) by a whole number  I can explore percentage, decimal, fractions equivalence  **Transformations**  I can use coordinates in all four quadrants  I can understand translation and reflection  I can calculate intervals across zero as a context for negative numbers | | **Converting units of measure**  I can convert between metric units of length, mass and capacity and units of time  I can understand and use approximate conversion between imperial and metric  **Calculating with whole numbers and decimals**  I can use mental strategies to add and subtract involving decimals  I can use formal written strategies to add, subtract and multiply involving decimals  I can multiply and divide by 10, 100 and 1000 involving decimals  I can derive multiplication facts involving decimals | | **2-D and 3-D shape**  I can classify 2-D shapes and reason about regular and irregular polygons  I can understand properties of diagonals of quadrilaterals  I can classify 3-D shapes  I can identify 2-D representations of 3-D shapes.  **Volume**  I can use cube numbers and notation  I can estimate volume  I can convert units of volume  **Problem solving**  I can understand negative numbers and calculate intervals across zero  I can calculate the mean  I can interpret remainders  I can investigate numbers: consecutive, palindromic, multiples | |
| Skills | • read, write, order and compare numbers to at least 1 000 000 and determine  the value of each digit  • count forwards or backwards in steps of powers of 10 for any given number  up to 1 000 000  • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and  100 000  • solve number problems and practical problems that involve all of the above  • read Roman numerals to 1000 (M) and recognise years written in Roman  Numerals  • add and subtract numbers mentally with increasingly large numbers  • add and subtract whole numbers with more than 4 digits, including using  formal written methods (columnar addition and subtraction)  • use rounding to check answers to calculations and determine, in the context  of a problem, levels of accuracy  • solve addition and subtraction multi-step problems in contexts, deciding which  operations and methods to use and why  • solve comparison, sum and difference problems using information presented  in a line graph  • complete, read and interpret information in tables, including timetables  • solve problems involving converting between units of time | • identify multiples and factors, including finding all factor pairs of a number,  and common factors of two numbers  • recognise and use square numbers and the notation for squared (2  )  • know and use the vocabulary of prime numbers, prime factors and composite  (non-prime) numbers  • establish whether a number up to 100 is prime and recall prime numbers up to  19  • multiply and divide whole numbers by 10, 100 and 1000  • multiply and divide numbers mentally drawing upon known facts  • solve problems involving multiplication and division including using their  knowledge of factors and multiples, squares and cubes  • multiply numbers up to 4 digits by a one- or two-digit number using a formal  written method  • 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  • solve problems involving addition, subtraction, multiplication and division and  a combination of these, including understanding the meaning of the equals  sign  • measure and calculate the perimeter of composite rectilinear shapes in  centimetres and metres  • calculate and compare the area of rectangles (including squares), and  including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of non-rectilinear shapes | • compare and order fractions whose denominators are all multiples of the same  number  • recognise and use thousandths and relate them to tenths, hundredths and  decimal equivalents  • recognise mixed numbers and improper fractions and convert from one form to  the other and write mathematical statements > 1 as a mixed number [for  example, 2/5 + 4/5 = 6 /5 = 1 1/5]  • identify, name and write equivalent fractions of a given fraction, represented  visually, including tenths and hundredths  • read and write decimal numbers as fractions [for example, 0.71 = 71/100]  • round decimals with two decimal places to the nearest whole number and to  one decimal place  • read, write, order and compare numbers with up to three decimal places  • know angles are measured in degrees: estimate and compare acute, obtuse  and reflex angles  • draw given angles, and measure them in degrees (o)  • identify: angles at a point and one whole turn (total 360o); angles at a point on a straight line and 1/2 a turn (total 180o); other multiples of 90o | | • add and subtract fractions with the same denominator and denominators that  are multiples of the same number  • multiply proper fractions and mixed numbers by whole numbers, supported by  materials and diagrams  • solve problems involving multiplication and division, including scaling by simple  fractions and problems involving simple rates  • recognise the per cent symbol (%) and understand that per cent relates to  ‘number of parts per hundred’, and write percentages as a fraction with  denominator 100, and as a decimal  • solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and fraction and decimal equivalents of percentages that are multiples of 10 and 25  • solve problems involving number up to three decimal places  • use all four operations to solve problems involving measure (for example  length, mass, volume, money) using decimal notation, including scaling  • associate a fraction with division (Y6)  • use common factors to simplify fractions; use common multiples to express  fractions in the same denomination (Y6)  • identify, describe and represent the position of a shape following a reflection or  translation, using the appropriate language, and know that the shape has not  changed  • use the properties of rectangles to deduce related facts and find missing  lengths and angles  • describe positions on the full coordinate grid (all four quadrants) (Y6)  • interpret negative numbers in context, count forwards and backwards with  positive and negative whole numbers, including through zero  • use negative numbers in context, and calculate intervals across zero (Y6) | | • convert between different units of metric measure (for example,  kilometre and metre; centimetre and metre; centimetre and millimetre;  gram and kilogram)  • multiply and divide whole numbers and those involving decimals by 10,  100 and 1000  • understand and use approximate equivalences between metric units  and common imperial units such as inches, pounds and pints  • use all four operations to solve problems involving measure (for  example length, mass, volume, money) using decimal notation,  including scaling  • solve problems involving number up to three decimal places  • 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  • multiply and divide whole numbers and those involving decimals by 10,  100 and 1000 | | • distinguish between regular and irregular polygons based on reasoning  about equal sides and angles  • use the properties of rectangles to deduce related facts and find  missing lengths and angles  • identify 3-D shapes, including cubes and other cuboids, from 2-D  representations  • recognise, describe and build simple 3-D shapes, including making  nets (Y6)  • illustrate and name parts of circles, including radius, diameter and  circumference and know that diameter is twice the radius. (Y6)  • estimate volume [for example, using 1 cm3 blocks to build cuboids  (including cubes)] and capacity [for example, using water]  • recognise and use cube numbers and the notation for cubed (3)  • consolidation and application opportunities | |
| Year 6 | Topic | Unit 1: Integers & Decimals  Unit 2: Multiplication and division  Unit 3: Calculation Problems | Unit 4: Fractions  Unit 5: Missing angles and lengths  Unit 6: Coordinates and shape  Unit 7: Fractions 2 | Unit 6: Coordinates and shape  Unit 7: Fractions  Unit 8: Decimals and measures | | Unit 8: Decimals and measures  Unit 9: Percentages and statistics  Unit 10: Proportion problems | |  | |  | |
| I can | **Integers and decimals**  I can represent, read, write, order and compare numbers up to ten million  I can round numbers, make estimates and use this to solve problems in context  I can solve multi-step problems involving addition and subtraction  **Multiplication and division**  I can identify and use properties of number, focusing on primes  I can multiply larger integers and decimal numbers using a range of strategies  I can divide integers by 1-digit and 2-digit numbers representing remainders appropriately  I can illustrate and explain formal multiplication and division strategies  **Calculation problems**  I can understand the use of brackets  I can use knowledge of the order of operations to carry out calculations  I can generate and describe linear number sequences  I can express missing number problems algebraically  I can solve equations with unknown values | **Fractions**  I can deepen my understanding of equivalence  I can order, simplify and compare fractions, including those greater than one  I can recall equivalence between common fractions and decimals  I can find decimal quotients using short division  I can add and subtract fractions  **Missing angles and length**  I can compare and classify a range of geometric shapes  I can use angle facts to find unknown angles  **Coordinates and shapes**  I can draw a range of geometric shapes using given dimensions and angles  I can describe, draw, translate and reflect shapes on a co-ordinate plane  I can recognise and construct 3-D shapes  I can name and illustrate parts of a circle  **Fractions**  I can represent multiplication involving fractions  I can multiply two proper fractions  I can divide a fraction by an integer | **Coordinates and shapes**  I can draw a range of geometric shapes using given dimensions and angles  I can describe, draw, translate and reflect shapes on a co-ordinate plane  I can recognise and construct 3-D shapes  I can name and illustrate parts of a circle  **Fractions**  I can represent multiplication involving fractions  I can multiply two proper fractions  I can divide a fraction by an integer  **Decimals and measure**  I can use, read, write and convert between standard units of measures; length, mass, time, money and volume as well as imperial units  I can calculate the area of parallelograms and triangles  I can calculate, estimate and compare the volume of cuboids | | **Decimals and measure**  I can use, read, write and convert between standard units of measures; length, mass, time, money and volume as well as imperial units  I can calculate the area of parallelograms and triangles  I can calculate, estimate and compare the volume of cuboids  **Percentage and statistics**  I can calculate and compare percentages of amounts  I can connect percentages with fractions  I can explore the equivalence of fractions, decimals and percentages  I can calculate the mean  I can construct and interpret lines graphs and pie charts  I can compare pie charts  **Proportion problems**  I can use fractions to express proportion  I can identify ratio as a relationship between quantities and as a scale factor  I can understand unequal sharing involving ratio | |  | |  | |
| Skills | • read, write, order and compare numbers up to 10 000 000 and determine the  value of each digit  • round any whole number to a required degree of accuracy  • solve problems involving addition and subtraction  • solve addition and subtraction multi-step problems in contexts, deciding which  operations and methods to use and why  • 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  • use estimation to check answers to calculations and determine, in the context  of a problem, an appropriate degree of accuracy  • multiply multi-digit numbers up to 4 digits by a two-digit whole number using  the formal written method of long multiplication  • multiply one-digit numbers with up to two decimal places by whole numbers  • 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  • 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  • use written division methods in cases where the answer has up to two decimal  places  • identify common factors, common multiples and prime numbers  • perform mental calculations, including with mixed operations and large  numbers  • solve problems which require answers to be rounded to specified degrees of  Accuracy | • use common factors to simplify fractions; use common multiples to express  fractions in the same denomination  • compare and order fractions, including fractions > 1  • associate a fraction with division and calculate decimal fraction equivalents  [for example, 0.375] for a simple fraction [for example, 3/8]  • recall and use equivalences between simple fractions and decimals, including  in different contexts  • generate and describe linear number sequences (with fractions)  • add and subtract fractions with different denominators and mixed numbers,  using the concept of equivalent fractions  • recognise angles where they meet at a point, are on a straight line, or are  vertically opposite, and find missing angles.  • express missing number problems algebraically  • compare and classify geometric shapes based on their properties and sizes  and find unknown angles in any triangles, quadrilaterals, and regular polygons  • use negative numbers in context, and calculate intervals across zero  • describe positions on the full coordinate grid (all four quadrants)  • draw 2-D shapes using given dimensions and angles  • draw and translate simple shapes on the coordinate plane, and reflect  them in the axes  • recognise, describe and build simple 3-D shapes, including making nets  • illustrate and name parts of circles, including radius, diameter and  circumference and know that the diameter is twice the radius  • solve number and practical problems that involve all of the above  • multiply simple pairs of proper fractions, writing the answer in its simplest  form [for example, ¼ × ½ = 1/8]  • divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]  • recall and use equivalences between simple fractions and decimals,  including in different contexts | • use negative numbers in context, and calculate intervals across zero  • describe positions on the full coordinate grid (all four quadrants)  • draw 2-D shapes using given dimensions and angles  • draw and translate simple shapes on the coordinate plane, and reflect  them in the axes  • recognise, describe and build simple 3-D shapes, including making nets  • illustrate and name parts of circles, including radius, diameter and  circumference and know that the diameter is twice the radius  • solve number and practical problems that involve all of the above  • multiply simple pairs of proper fractions, writing the answer in its simplest  form [for example, ¼ × ½ = 1/8]  • divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]  • recall and use equivalences between simple fractions and decimals,  including in different contexts  • solve problems involving the calculation and conversion of units of  measure, using decimal notation up to three decimal places where  appropriate  • 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  • convert between miles and kilometres  • recognise that shapes with the same areas can have different perimeters  and vice versa  • recognise when it is possible to use formulae for area and volume of  shapes  • use simple formulae  • calculate the area of parallelograms and triangles  • calculate, estimate and compare volume of cubes and cuboids using  standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]  • generate and describe linear number sequences (with decimals) |  | •solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate  • 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  • convert between miles and kilometres  • recognise that shapes with the same areas can have different perimeters  and vice versa  • recognise when it is possible to use formulae for area and volume of  shapes  • use simple formulae  • calculate the area of parallelograms and triangles  • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]  • generate and describe linear number sequences (with decimals)  • recall and use equivalences between simple fractions, decimals and  percentages, including in different contexts  • solve problems involving the calculation of percentages [for example, of  measures, and such as 15% of 360] and the use of percentages for  comparison  • interpret and construct pie charts and line graphs and use these to solve  problems  • calculate and interpret the mean as an average  • 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 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 |  |  |  |  |  |
| • find pairs of numbers that satisfy an equation with two unknowns  • enumerate possibilities of combinations of two variables  • use knowledge of the order of operations to carry out calculations involving  the four operations  • generate and describe linear number sequences  • express missing number problems algebraically  • solve problems involving addition, subtraction, multiplication and division |  | |  | |  | |  | |