Millfield Mathematics Curriculum

Yearly Overviews

- **Statements shown in <u>bold are statutory requirements</u> from the Programmes of Study for this year**

- *Statements shown in <u>italics</u> are part of the <u>Millfield Mathematics Curriculum</u>, but are not statutory requirements from the Programmes of Study for this year*

FLUENCY, REASONING AND PROBLEM SOLVING UNDERPIN OUR CURRICULUM.

Year One

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

Number and Place Value

count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number

count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens

given a number, identify one more and one less

compare and order numbers from 0 – 30

identify and represent numbers using objects and pictorial representations including the number line

use the language of: equal to, more than, less than (fewer), most, least

read and write numbers from 1 to 20 in numerals and words.

recognise and represent the place value of each digit in a teen number

begin to use place value and number facts to solve problems (within20/30)

Addition and Subtraction

represent and use number bonds and related subtraction facts within 20

add and subtract one-digit and two-digit numbers to 20, including zero

begin to: add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

* *a two-digit number and ones*
* *a two-digit number and tens (+ only)*
* *adding three one-digit numbers*

read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

show that addition of two numbers can be done in any order (commutative) and subtraction cannot

Multiplication and Division

count in multiples of twos, fives and tens

begin to recognise odd/ even numbers

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

Fractions

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

Measurement

compare, describe and solve practical problems for:

* **lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]**
* **mass/weight [e.g. heavy/light, heavier than, lighter than]**
* **capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]**
* **time [e.g. quicker, slower, earlier, later]**

measure and begin to record the following:

* **lengths and heights**
* **mass/weight**
* **capacity and volume**
* **time (hours, minutes, seconds)**

sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]

recognise and use language relating to dates, including days of the week, weeks, months and years

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 know the value of different denominations of coins

Geometry –Properties of Shapes

recognise and name common 2-D and 3-D shapes, including:

* **2-D shapes [e.g. rectangles (including squares), circles and triangles]**
* **3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].**

identify and describe the properties of 2-D shapes, including the number of sides

draw 2-D shapes and make 3-D shapes using modelling materials

begin to compare and sort common 2-D and 3-D shapes and everyday objects

Geometry – Position and Direction

describe position, direction and movement, including half, quarter and three-quarter turns.

begin to order and arrange combinations of mathematical objects in patterns and sequences (repeating patterns with shapes, colours, pictures etc)

Statistics

begin to interpret and construct simple pictograms, tally charts, block diagrams and simple tables with 1:1 correspondence

begin to use venn diagrams to sort and classify

ask and answer simple questions about most/least , by counting the number of objects in each category

link to Algebra: solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9	**and notes**	

Year Two

Number and Place Value *reinforce/continue : count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number* **count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward** *reinforce/continue: given a number, identify one more and one less* **compare and order numbers from 0 up to 100; use <, > and = signs** **identify, represent and estimate numbers using different representations, including the number line** **read and write numbers to at least 100 in numerals and in words** **recognise and represent the place value of each digit in a two-digit number (tens, ones)** *round 2 digit numbers to the nearest 10* **use place value and number facts to solve problems** **Addition and Subtraction** **recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100** **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** *some children may be able to begin to use informal written methods for addition and subtraction* *eg expanded columns linked to base 10 representations without carrying or exchanging*	**Addition and Subtraction** **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** **link to Algebra :** **recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems** **Multiplication and Division** **recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers** **show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot** **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** **Fractions** **recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity** **begin to recognise and use fractions as numbers** **(count in 1/2s and 1/4s)** **write simple fractions e.g. $^{1}/_{2}$ of 6 = 3** **and recognise the equivalence of $^{2}/_{4}$ and $^{1}/_{2}$.**	**Measurement** **compare and order lengths, mass, volume/capacity and record the results using >, < and =** **compare and sequence intervals of time** **choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers & measuring vessels** **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 /subtraction of money of the same unit, including giving change** **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.** **Geometry – Properties of Shape** **identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line** **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]** *draw 2-D shapes and make 3-D shapes using modelling materials* **compare and sort common 2-D and 3-D shapes and everyday objects** *begin to recognise right angles as a property of a shape or description of a turn* **Geometry – Position and Direction** **use mathematical vocabulary to describe position, direction and movement**

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

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show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	*using practical/physical representations, and models and images, begin to add halves and quarters* *NSG : begin to solve practical problems involving known fractions* *count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the numberline*	**including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)** **order & arrange combinations of mathematical objects in patterns/sequences**

Statistics

interpret and construct simple pictograms, tally charts, block diagrams and simple tables

begin to use carroll diagrams to sort and classify

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

begin to solve one-step questions [e.g. 'How many more?' and 'How many fewer?']

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

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Year Three

Number and Place Value

count from 0 in multiples of 4, 8, 50 and 100;

find 10 or 100 more or less than a given number

compare and order numbers up to 1000

identify, represent and estimate numbers using different representations

read and write numbers up to 1000 in numerals and in words

recognise the place value of each digit in a three-digit number (hundreds, tens, ones)

round numbers to the nearest 10 or 100

solve number problems and practical problems involving these ideas.

Addition and Subtraction

reinforce/continue : recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

add and subtract numbers mentally, including:

- **a three-digit number and ones**
- **a three-digit number and tens**
- **a three-digit number and hundreds**

apply commutative understanding to manipulate calculations fluently

add and subtract numbers with up to three digits, *beginning to use* formal written methods of columnar addition and subtraction (expanded method)

estimate the answer to a calculation and use inverse operations to check answers

link to Algebra:
solve problems, including missing number problems, using number facts,

Multiplication and Division

recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

apply understanding that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot

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
partitioning, grid method, ladder method, chunking etc leading to more formal written

estimate the answer to a calculation and use inverse operations to check answers

link to Algebra:
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

Fractions

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, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

begin to compare and order unit fractions, and fractions with the same denominators

recognise and show, using diagrams,

Measurement

compare durations of events, for example to calculate the time taken by particular events or tasks

know the number of seconds in a minute and the number of days in each month, year and leap year

estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocab such as a.m./p.m., morning, afternoon, noon and midnight

tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks

measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

measure the perimeter of simple 2-D shapes

add and subtract amounts of money to give change, using both £ and p in practical contexts

Geometry – Properties of Shapes

draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them

begin to compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes

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

place value, and more complex addition and subtraction	**equivalent fractions with small denominators** **add and subtract fractions with the same denominator within one whole (e.g. $^{5}/_{7} + {}^{1}/_{7} = {}^{6}/_{7}$)** **solve problems that involve all of the above**	**lines** **<u>Geometry –Position and Direction</u>** *begin to describe positions on a 2-D grid as coordinates in the first quadrant*

<u>Statistics</u>

interpret and present data using bar charts, pictograms and tables

solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

Year Four

mber and Place Value

count backwards through zero to include negative numbers

count in multiples of 6, 7, 9, 25 and 1000

find 1000 more or less than a given number

order and compare numbers beyond 1000

identify, represent and estimate numbers using different representations

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.

recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
(extending to 5 digits)

round any number to the nearest 10, 100 or 1 000

solve number and practical problems that involve all of the above and with increasingly large positive numbers

Addition and Subtraction

reinforce/continue to : recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

begin to add and subtract numbers mentally with increasingly large numbers

apply commutative understanding to manipulate calculations fluently

add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
(Use expanded methods leading to standard methods)

estimate and use inverse operations to check answers to a calculation

Multiplication and Division

recall multiplication and division facts for multiplication tables up to 12 × 12

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

recognise and use factor pairs and commutativity in mental calculations

multiply two-digit and three-digit numbers by a one-digit number moving towards formal written layout

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

estimate and use inverse operations to check answers to a calculation.

Fractions (including decimals)

reinforce/continue to : count up and down in tenths

count up and down in hundredths

recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten

recognise and show, using diagrams, families of common equivalent fractions

reinforce/continue to : compare and order unit fractions and fractions with the same denominators

begin to find equivalent fractions and use them to simplify fractions (halves, quarters, thirds)

add and subtract fractions with the same denominator

solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the

Fractions (including decimals)

find the effect of dividing a one or two digit number by 10 and 100, identifying the value of digits in the answer as ones, tenths and hundredths

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

solve simple measure and money problems involving fractions and decimals to two decimal places

Measurement

estimate, compare and calculate different measures, including money in pounds and pence

convert between different units of measure (for example, km to m, hour to minute)

reinforce/continue to :compare durations of events, for example to calculate the time taken by particular events or tasks

reinforce/continue to : measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

link to Algebra: perimeter can be expressed as 2(a+b) where a and b are the dimensions in the same unit

find the area of rectilinear shapes by counting squares

read, write and convert time between analogue and digital 12 and 24-hour clocks

solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days

solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	**answer is a whole number** **recognise and write decimal equivalents of any number of tenths and hundredths** **recognise and write decimal equivalents to ¼ , ½, ¾**	
<u>Geometry – Properties of Shapes</u> **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** *reinforce/continue to:* *identify horizontal and vertical lines and pairs of perpendicular and parallel lines*	**<u>Geometry –Position and Direction</u>** **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**	**<u>Statistics</u>** **interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs** **solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs**

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

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Year Five

Number and Place Value	Multiplication and Division	Fractions (including decimals an percentages)
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 1000 000** **interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero** *begin to calculate intervals across zero* **round any number up to 1 000 000 to the nearest 10, 100, 1 000, 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 (link to LCC cycle)** **Addition and Subtraction** *reinforce/continue to: reinforce and apply number bonds* **add and subtract numbers mentally with increasingly large numbers** **add and subtract whole numbers with up to then more than 4 digits, including using formal written methods (columnar addition and subtraction)** *reinforce/continue to: estimate and use inverse operations to check answers to a calculation* **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**	*reinforce/continue to: use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1* **multiply and divide numbers mentally drawing upon known facts** **multiply and divide whole numbers and those involving decimals by 10, 100 and 1000** **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** **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** **identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** **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** **recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})** **solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes** **solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign** **solve problems involving multiplication and division, including**	**compare and order fractions whose denominators are all multiples of the same number** **read, write, order and compare numbers with up to three decimal places** **round decimals with two decimal places to the nearest whole number and to one decimal place** **identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** *begin to use common factors to simplify fractions; use common multiples to express fractions in the same denomination* *reinforce/continue to: recognise and write decimal equivalents of any number of tenths or hundredths* **read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$)** **recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** **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 as a decimal fraction** **add and subtract fractions with the same denominator and multiples of the same number** **recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1\,^1/_5$)** **multiply proper fractions and mixed numbers by whole numbers,**

Measurement **calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes** **estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)** *reinforce/continue to:* *measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres* **measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** **convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)** *reinforce/continue to:* *read, write and convert time between analogue and digital 12 and 24-hour clocks* **solve problems involving converting between units of time** **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 (e.g. length, mass, volume, money) using decimal notation including scaling.**	**scaling by simple fractions and problems involving simple rates** **Geometry – Properties of Shapes** **identify 3-D shapes, including cubes and other cuboids, from 2-D representations** *begin to : recognise, describe and build simple 3-D shapes, including making nets* *begin to : illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius* **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 360^o)** • **angles at a point on a straight line and ½ a turn (total 180^o)** • **other multiples of 90^o** **link to Algebra:** **use the properties of rectangles to deduce related facts and find missing lengths and angles** **distinguish between regular and irregular polygons based on reasoning about equal sides and angles** **Geometry – Position and Direction** **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**	**supported by materials and diagrams** **solve problems involving numbers up to three decimal places** **solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25.** **Statistics** **complete, read and interpret information in tables, including timetables** **solve comparison, sum and difference problems using information presented in a line graph**

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

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Year Six

Number and Place Value

read, write, order and compare numbers up to 10 000000 and determine the value of each digit

round any whole number to a required degree of accuracy

solve number and practical problems that involve all of the above

use negative numbers in context, and calculate intervals across zero

Addition, Subtraction, Multiplication and Division

continue to reinforce and apply number bonds

multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

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 whole number using the formal written method of short division where appropriate for the context

perform mental calculations, including with mixed operations and large numbers

identify common factors, common multiples and prime numbers

use their knowledge of the order of operations to carry out calculations involving the four operations

use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

Fractions (including decimals and percentages)

compare and order fractions, including fractions >1

use common factors to simplify fractions; use common multiples to express fractions in the same denomination

add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$)

identify the value of each digit in numbers given to three decimal places

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)

multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$)

divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)

identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

multiply one-digit numbers with up to two decimal places by whole numbers

use written division methods in cases where the answer has up to two decimal places

Ratio and Proportion

solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

solve problems involving similar shapes where the scale factor is known or can be found

solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Algebra

use simple formulae

generate and describe linear number sequences

express missing number problems algebraically

find pairs of numbers that satisfy number sentences involving two unknowns

enumerate all possibilities of combinations of two variables

Measurement

calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.

solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

recognise that shapes with the same areas can have different perimeters and vice versa

FLUENCY ..... REASONING ..... SOLVING PROBLEMS

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** **<u>Geometry – Properties of Shapes</u>** **draw 2-D shapes using given dimensions and angles** **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** **compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons** **recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles** **<u>Geometry – Position and Direction</u>** **describe positions on the full coordinate grid (all four quadrants)** **draw and translate simple shapes on the coordinate plane, and reflect them in the axes.**	**solve problems which require answers to be rounded to specified degrees of accuracy** **recall and use equivalences between simple fractions, decimals and percentages, including in different contexts** **<u>Statistics</u>** **interpret and construct pie charts and line graphs and use these to solve problems** **calculate and interpret the mean as an average**	**calculate the area of parallelograms and triangles** **calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3].** **<u>Measurement</u>** **recognise when it is possible to use formulae for area and volume of shapes** **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**

FLUENCY ..... REASONING ..... SOLVING PROBLEMS