Aintree Davenhill Primary School – Maths Curriculum Map

Nursery

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
All About Me/Autumn	Celebrations and Festivals	Winter Traditional Tales and Famous Book Characters	Spring Minibeasts, Plants and Growth	Houses and Homes	Journeys and Transport Summer

3 & 4-year-olds will be learning to:

Mathematical Vocabulary (Communication and Language)

- Use a wider range of vocabulary
- Understand 'why' questions, like: "Why do you think the caterpillar is so fat?"

Number and Place Value

Counting

- Recite numbers past 5
- Say one number for each item in order: 1, 2, 3, 4, 5
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle')

Identifying, Representing and Estimating Numbers

- Fast recognition of up to 3 objects, without having to count them individually (subitising)
- Link numerals and amounts: e.g. showing the right number of objects to match the numeral, up to 5
- Show 'finger numbers' up to 5
- Experiment with their own symbols and marks as well as numerals

Reading and Writing Numbers

- Link numerals and amounts: e.g. showing the right number of objects to match the numeral, up to 5
- Experiment with their own symbols and marks as well as numerals

Compare and Order Numbers

- Compare quantities using language: 'more than', 'fewer than'

Solve Problems

- Solve real word mathematical problems with numbers up to 5

Measurement

Describe, Compare and Solve

- Make comparisons between objects relating to size, length, weight and capacity

Telling the Time

- Begin to describe a sequence of events, real, or fictional, using words such as 'first', 'then…'

Properties of Shapes

Recognised 2D and 3D Shapes and their Properties

- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
- Combine shapes to make new ones – an arch, a bigger triangle, etc.

Position and Direction

Position, Direction and Movement

- Understand position through words alone – for example, "The bag is under the table," – with no pointing
- Describe a familiar route
- Discuss routes and locations, using words like 'in front of' and 'behind'

Patterns

- Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.
- Extend and create ABAB patterns (2 repeat pattern) – stick, leaf, stick, leaf
- Notice and correct an error in a repeating pattern

Statistics

Record, Represent and Interpret Data

- Experiment with their own symbols and marks as well as numeral

Reception

All About Me/Autumn	Celebrations and Festivals	Winter Traditional Tales and Famous Book Characters	Spring Minibeasts, Plants and Growth	Houses and Homes	Journeys and Transport Summer

4 & 5-year-olds will be learning to:

Mathematical Vocabulary (Communication and Language)

- Learn new vocabulary
- Use new vocabulary throughout the day

Number and Place Value

Counting

- Count objects, actions and sounds
- Count beyond 10

Identifying, Representing and Estimating Numbers

- Subitise
- Link the number symbol (numeral) with it cardinal number value

Reading and Writing Numbers

- Link the number symbol (numeral) with it cardinal number value

Compare and Order Numbers

- Compare numbers

Understanding Place Value

- Understand the 'one more than/one less than' relationship between consecutive numbers
- Explore the composition of numbers to 10

Addition and Subtraction

Mental Calculations

- Automatically recall number bonds for numbers 0-10

Solve Problems

- Subitise
- Link the number symbol (numeral) with it cardinal number value

Measurement

Describe, Compare and Solve

- Compare length, weight and capacity

Properties of Shapes

Recognised 2D and 3D Shapes and their Properties

- Select, rotate and manipulate shapes in order to develop spatial reasoning skills

Compare and Classify Shapes

- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can

Position and Direction
Position, Direction and Movement (Understanding the World)
- Draw information from a simple map

Patterns
- Continue copy and create repeating patterns

Early Learning Goal – Communication and Language
- Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary

Early Learning Goal – Number
- Subitise (recognise quantities without counting) up to 5
- Have a deep understanding of numbers to 10, including the composition of each number
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts

Early Learning Goal – Numerical Patterns
- Verbally count beyond 20, recognising the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater then, less than or the same as the other quantity
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

Year 1

Number and Place Value
- Counting items 0-9
- Value of 0
- Read and write numbers
- Use blocks to create a block graph
- Counting items 10-19 by making tens and ones (balloons,biscuits, pens in pots etc.)
- Recognise quantities on a 10 frame
- Counting items 10-19 by making tens and ones (straws,multilink, 10 frames)
- Group of ten
- Counting items 10-19 by making tens and ones (10 frames and base 10)
- Counting items 20-29 by making tens and ones(all prior equipment)
- Groups of ten and numbers not in groups of 10
- Counting and representing numbers 0-30
- Read and write numbers
- Structured equipment
- Concrete patterning
- Counting and representing numbers 0-30
- Patterning on number track/hundred square alongside concrete
- One more and one fewer 0-30 focus on bridging (10 frame and number track
- Comparing quantities to 20 More, fewer, equal to
- Different sizes of items, lining up, different orientations of lines

Measurement
- Compare and describe objects by length and height using,longer/shorter (long/short) and taller/shorter (tall, short)
- Measure and record lengths and heights using body parts,including the teacher
- Measure and record lengths and heights using uniform non-standard units (multilink)
- Compare and describe objects by mass/weight using,lighter/heavier, light/heavy
- Measure and record masses using uniform non-standard units

Addition and Subtraction
- Bonds for 10–10 frame, addition and subtraction facts relationships
- Part–part–whole language
- Counting all
- Part–part–whole including diagram
- Include adding 0
- Adding 10 and a single digit
- Counting on practically including part–part–whole diagram
- Solving one step addition problems–language focus
- Subtract single digit from another using take away concrete items including subtracting 0
- Subtract single digit from another using take away, concrete items on part–part–whole diagram
- Subtract 10 from teens number, subtract ones from teens number concrete 10 frames, base 10
- Solving one step subtraction problems–language focus

Shape

Number and Place Value (Mental Maths)
- Read and write numbers to 50 in figures
- Count on and back in 1s from any one or two-digit number
- Count on and back in multiples of 2
- Order a set of random numbers to 50
- Recall addition and subtraction facts for each number up to 10
- Recall doubles of numbers to 10 + 10
- Recall halves of even numbers to 20
- Add a single digit number to any number up to 20 by counting on
- Take away a single digit number from any number up to 20 by counting back
- Identify number patterns on number lines and hundred squares

Sorting and Sequencing
- Count in fives–identify patterns and sort
- Count in twos–identify patterns and sort
- Odd and even
- Arrange even amount into groups of 2 to check
- Recognise and create repeating patterns of numbers or shapes(two and three items repeated)
- Identify criteria that objects, shapes or numbers have in common
- Sort objects, shapes or numbers to a given criterion

Fractions
- Use concrete materials to explore part and whole (that a fraction is part of a whole)
- Importance of equal parts to name the fraction
- Fraction of 2-D shapes including equal and non-equal parts
- Recognise and name one half of a shape or object
- Find one half of a shape or object
- Recognise and name one quarter of a shape
- Find one quarter of a shape
- Find one quarter of different objects

Capacity and Volume
- Compare and describe a capacity or volume by using more/less, full/empty, half full, nearly full, nearly empty
- Measure and record capacity and volume using uniform non-standard units (cups)

Money
- Recognise coins to 20p by colour, shape, size and words
- Use the correct number of 1p coins for 2p, 5p, 10p and 20p coins
- Order coins by value
- Link to number line
- Represent an amount using coins (At the Shop)
- Adding two prices (some bonds to 10 within)

Time
- Days of the week and sequencing–before, after, next, morning, afternoon, evening
- Months of the year–before, after, next, first
- Use birthdays, festivals
- Compare the duration of two events use language of quicker and slower, i.e. which activity is quicker to do?
- Measure and compare time using seconds
- Compare the duration of two events use language of quicker and slower, i.e. Pete was quicker than Tim at tying his shoelaces

Number and Place Value (Mental Maths)
- Read and write numbers to 100 in figures
- Count on and back in 1s from any one or two-digit number including across 100
- Count on and back in multiples of 2, 5 and 10
- Order a set of random numbers to 100
- Recall addition and subtraction facts for each number up to 20
- Recall doubles of numbers to 10 + 10
- Recall halves of even numbers to 20
- Add a single digit number to any number up to 20
- Take away a single digit number from any number up to 20
- Identify number patterns on number lines and hundred squares

Number and Place Value
- Counting to 100 from 0, 1 and any number
- Counting back from 100 or any number
- Compare two numbers/amounts up to 50 using more, fewer, same
- Compare three numbers/amounts up to 20 using most, least/fewest, same
- Identify 10 more than a given number by adding 10 to a group
- Identify 10 fewer than a given number by taking 10 from a group
- Read, write and represent numbers to 100–concrete, jottings, numerals
- Identify numbers on number tracks and lines–full demarcation then labelled in twos
- Identify numbers on number tracks and lines–full demarcation then labelled in fives

Measurement (Mass/Weight)
- Measure and record mass using balance scales, standard units using 10g and 1g masses
- Measure and record mass using balance scales, standard units using 10g and 1g masses

Geometry (2D and 3D Shape)
- Identify circles and triangles
- Identify square rectangles and oblong rectangles
- Identify spheres and pyramids
- Identify cubes and cuboids
- Sort shapes using given and own criteria

Counting and Money
- Counting objects in twos–identifying patterns including odd and even numbers
- Counting objects in fives–identifying patterns
- Counting objects in tens–identifying patterns
- Recap coins to 20p and recognise coins 50p, £1 and £2 by colour, shape, size and words
- Recognise and know the value of £5, £10 and £20 notes
- Order all coins and notes from least to greatest value and vice versa

Multiplication
- Recognise when two groups of items are the same size and when they're not
- Use concrete materials to model doubles 1-5 as adding the same number to itself
- Use concrete materials to model doubles 6-10 as adding the same number to itself
- Solve problems involving multiplication by making or drawing groups of equal size
- Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens)
- Solve problems involving multiplication by making or drawing groups of equal size

Number and Place Value (Mental Maths)
- Read and write numbers to 100 in figures
- Count on and back in 1s from any one or two-digit number including across 100
- Count on and back in multiples of 2, 5 and 10
- Order a set of random numbers to 100
- Recall addition and subtraction facts for each number up to 20
- Recall doubles of numbers to 10 + 10
- Recall halves of even numbers to 20
- Add a single digit number to any number up to 20
- Take away a single digit number from any number up to 20
- Identify number patterns on number lines and hundred squares
- Recognise and create repeating patterns with numbers
- Identify odd and even numbers linked to counting in twos from 0 and 1

Measurement (Length, Mass and Weight)
- Measure and record mass/weight using 10g and 1g masses – link to place value
- Consolidate comparison language
- Measure and record length using base 10 cubes
- Measure and record length using base 10 rods and cubes – link to place value
- Understand that base 10 cubes are 1cm and rods are 10cm – link to ruler
- Measure and record length using rulers and metre rules
- Choose most appropriate estimate, e.g. book length 2cm, 20cm, 100cm?

Addition and Subtraction
- Use concrete materials (ten frames) to represent addition facts for twenty
- Add one- and two digit numbers using an appropriate strategy
- Subtract a one digit from a two digit number using an appropriate strategy
- Mixed + and – sentences (some related)
- Use concrete materials to create linked calculations
- Understand/identify part – part – whole
- Write mathematical statements involving addition and subtraction
- Use concrete materials to create linked calculations
- Understand/identify part – part – whole
- Identify missing number in calculation
- Understand/identify part – part – whole
- Identify missing number in calculation

Measurement
- Compare and describe lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)
- Measure and begin to record lengths and heights, using non-standard and then manageable standard units (m and cm) within children's range of counting competence
- Compare and describe mass/weight (for example, heavy/light, heavier than, lighter than)
- Measure and begin to record mass/weight, using non-standard and then standard units (kg and g) within children's range of counting competence
- Solve practical problems for lengths, heights and masses/weights

Fractions
- Recognise when a whole has been split into two parts that are equal and when they are not
- Use concrete materials to model halving even

Number and Place Value (Mental Maths)
- Read and write numbers to 100 in figures
- Count on and back in 1s from any one or two-digit number including across 100
- Count on and back in multiples of 2, 5 and 10
- Be.g.in to recall multiplication facts for the 2, 5- and 10-times tables
- Order a set of random numbers to 100
- Recall addition and subtraction facts for each number up to 20
- Recall doubles of numbers to 10 + 10
- Recall halves of even numbers to 20
- Add a single digit number to any number up to 20
- Take away a single digit number from any number up to 20
- Identify number patterns on number lines and hundred squares
- Recognise and create repeating patterns with numbers
- Identify odd and even numbers linked to counting in twos from 0 and 1

Number and Place Value
- Compare three numbers up to 20 (represented using concrete materials) using language of most and least and put them in order
- Use a labelled number line to order numbers to 20Correctly place a number from 1-20 on the number line (labelled in 2s, 5s then only 0 and 20)
- Compare and order three numbers up to 50 (represented using concrete materials) using language of most and least and put them in order
- Use a labelled number line to order numbers to 50Find 10 more than a given number using base 10 equipment
- Find numbers on 100 square – identify 10 more
- Find 10 less than a given number using base 10 equipment
- Find numbers on 100 square – identify 10 less

Addition and Subtraction
- Use concrete materials to solve missing number problems e.g. ? + 3 = 7, 3 = ? – 4
- Use concrete materials to solve missing number problems e.g. ? + 3 = 7, 3 = ? – 4
- Partitioning to add: 12 + 4
- Partitioning to add: 8 + 6
- Partitioning to subtract: 14 – 4 and 14 – 10
- Partitioning to subtract 14 – 6 = 14 – 4 – 2
- Partitioning to subtract 14 – 6 = 14 – 4 – 2
- Choose appropriate method for addition or subtraction questions

Measurement
- Measure and record capacity and volume using manageable standard units (litres and ml)
- Measure and record capacity and volume using manageable standard units (litres and ml)

Fractions
- Understand that a fraction can describe part of a whole
- Recap of half of a shape, object, quantity
- Recognise and name a half as one of two equal parts of an odd quantity
- Recognise and name a half as one of two equal parts of an odd quantity
- Find half of an odd quantity using materials that can be cut e.g. grapes, buns
- Recap of quarter of a shape and object
- Recognise, name and find a quarter as one of four equal parts of a quantity (which is a multiple of 4)
- Recognise, name and find a quarter as one of four equal parts of a quantity (which is a multiple of 4)

Number and Place Value (Mental Maths)
- Read and write numbers to 100 in figures
- Count on and back in 1s from any one or two-digit number including across 100
- Count on and back in multiples of 2, 5 and 10
- Begin to recall multiplication facts for the 2, 5- and 10-times tables
- Order a set of random numbers to 100
- Recall addition and subtraction facts for each number up to 20
- Recall doubles of numbers to 10 + 10
- Recall halves of even numbers to 20
- Add a single digit number to any number up to 20
- Take away a single digit number from any number up to 20
- Identify simple fractions of shapes
- Identify number patterns on number lines and hundred squares
- Recognise and create repeating patterns with numbers
- Identify odd and even numbers linked to counting in twos from 0 and 1

Time
- Recap telling the time to the hour
- Drawing hands on the clock to show these times
- Recap telling the time to the half hour
- Draw hands on the clock to show times to half past the hour and recognising that the hour hand is between the hour numbers
- Tell the time mixed hour and half hour (and some that are not either)
- Solve practical problems involving time

Multiplication and Division
- Solve problems involving multiplication
- Make/draw groups of equal size
- Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens)
- Solve problems involving multiplication
- Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens)
- Solve problems involving division by grouping
- Solve problems involving division by sharing or grouping (children represent the problem correctly)

Statistics and Calculation
- Present and interpret data in block diagrams using concrete materials
- Recap how many in a given data category (answer and ask)
- Present and interpret data in block diagrams using concrete materials
- How many in two given data categories (answer and ask)
- How many more/fewer when comparing two categories using concrete materials (ask and answer)
- How many more/fewer when comparing two categories using block diagrams (ask and answer)
- Problem solving/reasoning around block diagrams true/false statements

Measurement
- Measure and begin to record Measure and record mass/weight using weighing scales with a simple scale and manageable standard units (kg/g) within children's range of counting competence
- Compare items and notice the movement of the needle for lighter/heavier items

Aintree Davenhill Primary School – Maths Curriculum Map

	• Name circles and triangles–different sizes, orientations, colours, examples and non-examples • Name square rectangles and oblong rectangles–different sizes, orientations, colours, examples and non-examples • Name spheres and pyramids–different sizes, orientations, colours, examples and non-examples • Name cubes and cuboids–different sizes, orientations, colours, examples and non-examples		• Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens) • Solve problems involving multiplication by recognising and making arrays • Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens) Division • Recognise when a whole has been split into two parts that are equal and when it has not • Use concrete materials to model halving even numbers to 10 as splitting into two equal parts • Use concrete materials to model halves of even numbers from12-20 as splitting into two equal parts • Solve problems involving division by sharing into two equal groups–including when the remainder can be split between the two groups • Solve problems involving division by sharing into more than two equal groups (no remainders)	numbers as splitting into two equal parts • Find half of an even quantity • Recognise and name a quarter as one of four equal parts of a shape (Autumn) and object (Spring) e.g. KitKat • Find quarter of an object using objects that can be accurately quartered and those that cannot • Describe a capacity or volume using language of more than half full, less than half full, a quarter full Geometry: Position and Direction • Describe turning movements for whole and half turns – link to fractions • Describe turning movements using left and right • Describe direction using forwards/backwards, (sideways) left/right • Describe position using the terms top, middle, bottom and between and direction using up and down • Describe position using the terms on top of, in front of, above, below • Describe position using the terms on around, inside and outside Time • Tell the time to the hour • Sequence and order familiar events in the day • Draw hands on the clock to show times to the hour • Tell the time to half hour (minute hand focus) • Tell the time to half hour Tell the time to half hour (mixed)	Position, Direction and Time • Describe turning movements for quarter turns including using left and right • Describe turning movements for three-quarter turns including using left and right • Describe position using all positional vocabulary including near, close and far • Describe position using the terms before, after and the ordinal numbers • Recognise and use the language related to dates e.g. today is Monday 18th May 2020 • Solve practical problems for time e.g. describe a task that would take you about 1 minute to complete • Measure and record time using hours (identify durations of events e.g. lunch time, time at school time sleeping at night) 2D and 3D Shape • Recognise and name common 2-D shapes • Recognise and name common 3-D shapes • Reason about shapes (odd one out, identifying similarities and differences) • Recognise and create a repeating pattern using more than three shapes • Describe position using the terms before, after and the ordinal numbers •	• Solve practical problems for mass/weight e.g. use the balance scales to find two boxes that will balance this box • Solve practical problems for length and height e.g. which of these bags would I use to fit the cricket bat in? • Solve practical problems for capacity and volume e.g. which of these vessels would hold about two of these others? • Solve mixed measurement problems Sorting and Sequencing • Recap counting in 2s, 5s and 10s from 0 using concrete objects • Counting in 2s, 5s and 10s from 0 using number tracks and 100 squares – spotting patterns • Sorting objects and shapes using their own criterion • Sorting numbers using their own criterion • Recognise and create a repeating pattern using more than three numbers •
Year 2	Number and Place Value • Read and write numbers to at least 100 in numerals and in words • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers using different representations, including the number line • Compare and order numbers from 0 up to 100; use <, > and = signs • Round numbers to at least 100 to the nearest 10 • Use place value and number facts to solve problems • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • Find 1 or 10 more or less than a given number • Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) • Identify, represent and estimate numbers using different representations, including the number line • Use place value and number facts to solve problems Number and Place Value • Identify and make a two-digit number up to 50 using concrete materials (straws, base 10, arrow cards) (straightforward representations) • Identify and make a two-digit number up to 100 using concrete materials (straws, base 10, arrow cards) (straightforward representations) • Identify and make a two-digit number up to 100 using concrete materials (straws, base 10, arrow cards) (more complex representations) • Exchange 10 ones for 1 ten and vice versa Exchange 10 tens for 1 hundred and vice versa • Identify and make a two-digit number up to 100 using concrete materials (PV counters, abacus, arrow cards) (more complex representations)	Multiplication and Sorting • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • Represent adding the same number twice using concrete materials and understand this shows double the number. • Represent adding the same number two or more times using concrete materials in equal groups and record as repeated addition sentence. • Adapt equal groups into an array formation and identify the multiplication sentence. • Identify the two multiplication sentences from a given array and understand the commutativity of multiplication. • Explore and reason about patterns and sequences of counting involving 2s, 5s and 10s – include sorting. Statistics • Interpret simple tables and answer questions which ask how many…, most/least common/popular. • Interpret simple block graphs and answer questions which ask how many…, most/least common/popular, how many more/fewer…, how many altogether (children should be encouraged to solve these problems using calculation strategies they have learned in Unit 3). • Interpret simple pictograms (each symbol worth 1) and answer questions which ask how many…, most/least common/popular, how many more/fewer…, how many altogether (children should be encouraged to solve these problems using calculation strategies they have learned in Unit 3).Collect data using a tally chart and interpret tally charts. • Transfer data from one form to another: table, block graph, pictogram, tally chart. Fractions • Recap what one half means. Model one half using shapes and objects. • Relate to one quarter to understand denominator, numerator and what a fraction is.	Number and Place Value • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • Read and write numbers to at least 100 in numerals • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers using different representations, including the number line • Compare and order numbers from 0 up to 100; use <, > and = signs • Find 1 or 10 more or less than a given number • Round numbers to at least 100 to the nearest 10 • Choose and use appropriate standard units to estimate and measure mass (kg/g) to the nearest appropriate unit using scales • Compare and order mass and record the results using >, < and = • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward Number and Place Value • Identify what changes and stays the same when 10 is added to or removed from a two-digit number. • Describe the rule in a number sequence that counts on or back in tens. • Order three or more two-digit numbers when represented using the same equipment • Identify numbers on a beadstring and link to the number line • Correctly place a two-digit number on a number line with multiples of 10 labelled • Correctly place a two-digit number on a number line with multiples of 10 labelled • Round a two-digit number to the nearest 10, including understanding that where a number is exactly halfway between each multiple of 10, the number rounds up Measurement • Choose and use the correct equipment to measure mass e.g. balance scales, kitchen scales (with appropriate scale) • Order the values of three or more masses	Length • Choose and use the correct equipment to measure length and height in centimetres e.g. ruler, metre rule, tape measure • Choose and use the correct equipment to measure length and height in metres e.g. metre rule, tape measure, trundle wheel • Order the values of three or more lengths or heights • Solve simple problems involving addition and subtraction of measures (identifying operation required from the vocabulary and context used and represent as a bar model) • Solve simple problems involving addition and subtraction of measures (identifying operation required from the vocabulary and context used and represent as a bar model) Addition and Subtraction • Addition with exchange using jottings from concrete • Subtraction with exchange using Base 10 • Subtraction with exchange jottings from concrete • Subtraction with exchange jottings from concrete • Represent and solve addition and subtraction problems using bar modelling (length context) 2D and 3D Shape • Describe 2-D shapes according to the number of sides and vertices, and whether any of the sides or vertices are the same size as each other • Describe and sort 2-D shapes according to the number of sides and vertices, and whether any of the sides or vertices are the same size as each other • Identify a vertical line of symmetry in a 2-D shape • Describe 3-D shapes according to the number and shape of the faces, the number of edges and vertices and whether any of the faces are the same size as each other • Describe and sort 3-D shapes according to the number and shape of the faces, the number of edges and vertices and whether any of the faces are the same size as each other Position and Direction	Number and Place Value with Statistics • Recap partitioning a two-digit number into a multiple of 10 and another number • Partition a two-digit number in different ways and reason about how the parts change • Use the <, > and = signs when comparing one and two-digit numbers, particularly when the numbers have the same digits e.g. 34 and 43 • Order the amounts for each category in a data set • Correctly place a number from 1-100 on a number line with multiples of 10 marked but not labelled • Correctly place a number from 1-100 on a number line with multiples of 10 marked but not labelled • Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • Find 1 or 10 more or less than a given number • Partition numbers in different ways (for example, 23 = 20 + 3 and 23 = 10 + 13) Addition and Subtraction • Extend number sequences counting on and back in twos, fives and tens from any number • Addition with exchange using jottings • Subtraction with exchange jottings • Mixed addition and subtraction with exchange jottings • Represent and solve addition and subtraction problems using bar modelling Capacity and Volume • Know common points of reference for volume / capacity such as teaspoon / medicine spoon 5ml, and large bottle of fizzy drink is 2 litres • Use common points of reference they know to estimate the volume in / capacity of other vessels • Read scales to measure the volume of liquid including pictures • Use <, > and = to compare volumes and capacities Temperature • Understand and • Know that temperature is the measure of how hot or cold something is • Know that temperature is measured in degrees Celsius and is measured using a thermometer • Read the temperature on a thermometer • Know that the average room temperature is between 18 and 20 degrees Celsius	Mental Addition and Subtraction • Tell and write the time • Add numbers by bridging through a multiple of 10 efficiently e.g. 48 + 6 becomes 48 + 2 + 4 • Subtract numbers by bridging through a multiple of 10 efficiently e.g. 43 – 6 becomes 43 – 3 – 3 • Add 9 and 19 by rounding and compensating e.g. 46 + 9 becomes 46 + 10 – 1 using a number line • Subtract 9 and 19 by rounding and compensating e.g. 46 – 9 becomes 46 – 10 + 1 using a number line • Mixed addition and subtraction – select the operation and the strategy Multiplication and Division • Understand multiplication as repeated addition and arrays and recognise commutativity • Understand division as sharing and grouping: make equal sized groups including where there is a remainder • Understand the remainder in the context of a grouping division problem • Solve problems involving multiplication and division, selecting a strategy appropriate for the context • Solve problems involving multiplication and division, selecting a strategy appropriate for the context Statistics and Calculation • Ask and answer questions about statistics presented in tables, block graphs, pictograms (where the symbol is worth 1) and tally charts • Interpret and construct pictograms where the symbol is worth 5 • Interpret and construct pictograms where the symbol is worth 2 or 10 (including partial symbols) • Sort objects, shapes and numbers in different ways • Identify the property / properties by which a set has been sorted Measurement • Know common points of reference for length and height such as ruler 30cm, door height 2m

	• Partition a two-digit number in different ways where one group is a multiple of 10 • 1 more and 1 less/fewer with bridging • 10 more and 10 less/fewer with bridging • Compare two numbers • Include numbers represented in block graphs and tables • Identify most/least, greatest/least value from a selection Include numbers represented in block graphs and tables • Identify the multiple of 10 either side of a number and which is closest Measurement (Length and Mass/Weight) • Measure and record length and height using standard units (m) • Measure and record length and height using standard units (cm) • Measure and record mass/weight using standard units (kg) • Measure and record mass/weight using standard units (g) • Compare the values of two lengths or masses Addition and Subtraction • Add a one-digit number to a two-digit number (no bridging) – concrete and pictorial Part – part – whole • Subtract a one-digit number from a two-digit number (no bridging) – concrete and pictorial Part – part – whole • Solve missing number problems using inverse and part – part – whole • Add a multiple of 10 to a two-digit number (two strategies: add tens and combine ones; conserve number and count on in tens) • Subtract a multiple of 10 from a two-digit number (two strategies: subtract tens and combine ones; conserve number and count back in tens) • Derive and reason about bonds to numbers within 10 If I know that 5 + 2 = 7 then what is 15 + 2 • Add TU + TU no bridging concrete and pictorial • Subtract TU - TU no bridging concrete and pictorial • Derive and reason about bonds totalling 20 1U + U with bridging using 10 frames • Add three single digit numbers Geometry (2-D and 3-D Shape) • Identify and make (circles,) triangles, square rectangles, oblong rectangles and introduce quadrilaterals by counting their sides and vertices – different sizes, orientations, colours, examples and non-examples • Identify and make pentagons, hexagons and octagons by counting their sides and vertices – different sizes, orientations, colours, examples and non-examples • Know face, edge and vertex • Identify and name 3-D shapes with faces (flat surfaces): cube, cuboid, pyramid, triangular prism by counting their faces and vertices and recognising the shape of their faces – different sizes, orientations, colours, examples and non-examples • Identify and name 3-D shapes with faces and curved surfaces: sphere, cylinder, cone by counting their surfaces and vertices and recognising the shape of their faces - different sizes, orientations, colours, examples and non-examples •	• Split the same shape or object into different numbers of equal parts and compare the sizes of the denominators. • Use language of whole and part accurately. • Split the same set of objects into different numbers of equal parts and compare the sizes of the answers. • Use equations to represent the fractions of amounts being calculated, e.g. $\frac{1}{4}$ of 8 = 2. • Use language of whole and part accurately. • Find a quarter of a set of objects. • Use equations to represent the fractions of amounts being • calculated $\frac{1}{4}$ of 8 = 2. • Use language of whole and part accurately. • Recognise that $\frac{2}{4}$ is the same as one half • Use equations to represent the fractions of amounts being calculated $\frac{1}{4}$ of 8 = 2. • Use language of whole and part accurately. • Find one half and one quarter of a range of shapes or amounts; identify images to match given fractions. Capacity and Volume • Understand the difference between the units millilitres and litres. • Understand that very large containers will have their capacity measured in litres and smaller containers will have their capacity measured in millilitres. • Know that capacity is the amount a container can hold when it is full; volume is how much a container is holding which could be any amount from nearly empty to nearly full. • Measure and record volume/capacity using standard units (ml, l). Money • Recognise and use • Exchange the correct number of 1p coins for 2p, 5p, 10p and 20p. • Exchange the correct number of 10p coins for 20p, 50p, £1 and £2. • Add two prices together to find the total cost where bridging is not required (children should be encouraged to solve these problems using calculation strategies they have learned in Unit 3). • Add two prices together to find the total cost where bridging is required (children should be encouraged to solve these problems using calculation strategies they have learned in Unit 3). Time • Recap telling the time to the hour and half past the hour. • Tell the time to quarter past the hour and draw hands on the clock to show the time (noticing that the hour hand will be slightly past the number). • Tell the time to quarter to the hour and draw hands on the clock to show the time (noticing that the hour hand will be slightly before the number). • Tell the time to quarter to the hour and draw hands on the clock to show the time (noticing that the hour hand will be slightly before the number). • Tell the time to o'clock, half past, quarter past the hour and quarter to the hour. •	• Choose and use the correct equipment to measure volume/capacity e.g. measuring cylinders / jugs with appropriate scales • Order the values of three or more volumes / capacities • Solve simple problems in a practical context involving addition and subtraction of measures Addition and Subtraction • Addition with exchange using concrete equipment • Subtraction with exchange using concrete equipment • Subtraction with exchange using concrete equipment • Subtraction as difference using concrete materials, counting between the numbers to find the difference and linking to how many more and how many fewer. • Solve missing number problems in the forms: ? + □ = □ and ? - □ = □ using inverse operations. Recognise that ? + 3 = 11 can be solved by calculating 11– 3 = ? because 11 is the **whole** which is made of two **parts** one of which is 3. Recognise that ? – 5 = 9 can be solved by calculating 9 + 5 = ? because two **parts** which are 9 and 5 go together to create the **whole**. Money • Exchange different coins for other coins of the same value • Recognise that amounts of money can be partitioned in different ways (using coins) e.g. 50p can be 30p and 20p or 15p and 35p • For a given value identify how much more can be spent following the purchase of one item e.g. 38p + ? = 50p • Identify combinations which can be bought for a specific amount of money e.g. what two or more items can I buy for exactly 70p? • Solve problems involving addition and subtraction of money Multiplication and Division • Dgdf g • Write two different number sentences to represent a repeated addition situation and an array e.g. 5 + 5 + 5 = 15 or 5 x 3 = 15 • Use base 10 equipment to explore the relationship between the halving of a single digit even number to the halving of its related multiple of 10 e.g. half of 6 is 3 and half of 6 tens is 3 tens which is 30 • Recall and use halves of all multiples of 10 up to 100 with an even tens digit • Use partitioning to halve simple two-digit even numbers (numbers in which the tens are even)Use a sharing strategy to divide an amount equally across sets where there is no remainder and where there is (real life context) • Model division number sentences using concrete materialsUse a sharing strategy to divide an amount equally across sets where there is no remainder and where there is (real life context) • Model division number sentences using concrete materials Recognise that in practical situations the division of one number by another cannot be done in any order because they give different answers • Use a grouping strategy to divide an amount where there is no remainder • Use concrete materials to represent division as grouping by creating equal sized groups of a given size from an amount Write a number sentence to represent the amount being grouped, the number in each group and how many groups are created e.g. 20 ÷ 5 = 4 • Use a grouping strategy to divide an amount where there is no remainder	• Recognise, name and find one quarter, two quarters, three quarters and four quarters of a shape and object • Recognise, name and find one quarter, two quarters, three quarters and four quarters of a length (represent using bar model) • Recognise, name and find one quarter, two quarters, three quarters and four quarters of a quantity • Recognise, name and find one quarter, two quarters, three quarters and four quarters of a shape, object or quantity • Know that a quarter turn is the same as a turn through one right angle. • Know that a half turn is the same as a turn through two right angles. • Know that a full turn is the same as a turn through four right angles. Time • Recap telling the time to the hour, half past, quarter past and quarter to the hour • Count in fives clockwise starting at 12 (for zero) to 6 (for thirty) progressing to counting in times, e.g. 5 minutes past, 10 minutes past, 15 minutes past (quarter past), 20 minutes past etc. • Tell the time to the nearest five minutes past the hour (up to 25 minutes past) • Tell the time to the nearest five minutes past the hour (up to 25 minutes past) • Solve simple problems involving time language focus	• Compare different temperatures saying whether they are hotter or colder than room temperature • Read the temperature on a thermometer Fractions • Use mathematical vocabulary • Recognise and name one third as any one of three equal parts of a shape or object and write the fraction one third • Find one third of a shape, object, set of objects/quantity or length • Find different fractions of shapes, objects, quantities and lengths • Find different fractions of shapes, objects, quantities and lengths • Count in steps of $\frac{1}{4}$ changing the counting sequence to simplest form Time, Position and Direction • Identify and describe the • Compare different units of time, converting between units where appropriate e.g. half an hour is 30 minutes • Order units of time • Tell the time to the nearest 5 minutes to the hour including draw hands on the clock • Tell the time to the nearest 5 minutes including draw hands on the clock • Understand language of clockwise and anticlockwise when turning: quarter, half, three quarter and full turns • Starting point North/up • Understand language of clockwise and anticlockwise when turning: quarter, half, three quarter and full turns • Different starting points 2D and 3D Shape • From a set of shapes identify those with a vertical line of symmetry and those without • Sort and reason about shapes using the properties learned including identifying similarities and differences between shapes • Sort and reason about shapes using the properties learned including identifying similarities and differences between shapes Order and arrange a combination of mathematical objects in patterns / sequences	• Use common points of reference they know to estimate the length and height of different objects • Measure the length and height of different objects • Use <, > and = to compare lengths and heights • Know common points of reference for mass such as small packet of crisps between 25g and 30g and a bag of sugar 1kg • Use common points of reference they know to estimate the mass of different objects • Measure the mass of different objects • Use <, > and = to compare masses • Solve mixed measurement problems

Aintree Davenhill Primary School – Maths Curriculum Map

			• Use concrete materials to represent division as grouping by creating equal sized groups of a given size from an amount • Write a number sentence to represent the amount being grouped, the number in each group and how many groups are created e.g. 20 ÷ 5 = 4Using an array, show how many groups of a given size can be made from the total (using rows and columns) • Write a number sentence to represent the total and the groups of a given size e.g. 20 ÷ 5 = ? understanding this as how many groups of 5 can be made out of 20 • Represent and solve multiplication and division problems using concrete materials • Represent and solve multiplication and division problems using pictorial representations and arrays •			
Year 3	Number and Place Value (Mental Maths) • Read and write numbers to 1000 in figures and words • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Count on and back in multiples of 4 or 8 from 0 • Describe and extend number sequences involving counting on or back in different steps • Order a set of random numbers to 1000 • Recall addition and subtraction facts for each number up to 20 • Recall pairs of multiples of 100 that make 1000 • Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts • Double any number up to 50 • Halve any even two-digit number up to 100 Place Value, Addition and Subtraction • Exchange 10 ones for 1 ten and vice versa • Exchange 10 tens for 1 hundred and vice versa • Identify and represent numbers up to 1000 using concrete materials such as base 10 apparatus • Partition a three-digit number into hundreds, tens and ones • Identify and represent numbers up to 1000 using models such as place value counters and arrow cards. • Partition a three-digit number into hundreds, tens and ones • Compare three or more numbers up to 1000 when represented using the same concrete materials saying which numbers are greater or less and use <, > and = correctly. • Identify the multiples of 10 immediately before and after numbers with up to three-digits and round the numbers to the nearest ten. • Identify the number ten more/ ten less and one hundred more/ one hundred less than a given number with up to three-digits without crossing any boundaries • Add and subtract a three-digit number and tens mentally with no boundaries crossed • Identify and describe the rule (addition or subtraction) in a number sequence by calculating the difference between two adjacent numbers • Extend number sequences by using the identified rule • Recognise addition calculations that require mental partitioning e.g. 37 + 25 and use this strategy where appropriate • Recognise subtraction calculations that require mental partitioning e.g. 42 – 17 and use this strategy where appropriate	Number and Place Value (Mental Maths) • Read and write numbers to 1000 in figures and words • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Count on and back in multiples of 4 or 8 from 0 • Describe and extend number sequences involving counting on or back in different steps • Order a set of random numbers to 1000 • Recall addition and subtraction facts for each number up to 20 • Recall addition and subtraction facts for 100 (multiples of 5 and 10) • Recall pairs of multiples of 100 that make 1000 • Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts • Double any number up to 50 • Halve any even two-digit number up to 100 Multiplication Tables x3 and x4 • Use arrays to understand the multiplication facts for the 3 and 4 multiplication tables (including commutativity) • Understand the relationship between arrays and repeated addition • Represent multiplication as repeated addition on a number line • Derive facts from the 3 and 4 multiplication tables using known facts from the 1, 2, 5 and 10 multiplication tables • Extend number sequences by using an identified rule (counting in 3s, 4s, 10s and 100s) • Use single Venn and one criterion Carroll diagrams to compare and sort numbers • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Count on and back in multiples of 4 or 8 from 0 Multiplication • Use partitioning to derive doubles of all numbers to 50 • Use an array to represent a teens number multiplied by a single digit number and partition the array into tens and ones to support calculating the product • Use partitioning to calculate a teens number multiplied by a single digit number (grid method) • Use partitioning to calculate a teens number multiplied by a single digit number • To solve problems involving multiplication Division • Understand division as sharing and grouping • Use concrete or pictorial representations to derive the division facts related to the multiplication facts that they know	Number and Place Value (Mental Maths) • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Partition three-digit numbers in different ways, (e.g. 325 = 300 + 20 + 5 but is also 200 + 125 etc.) • Order a set of random numbers to 1000 • Recall addition and subtraction facts for each number up to 20 • Recall addition and subtraction facts for 100 (multiples of 5 and 10) • State the addition fact that links to a subtraction fact and vice versa • Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts • Describe and extend number sequences involving counting on or back in different steps • State the multiplication fact that links to a division fact and vice versa • Double any number up to 100 • Double any multiple of 50 up to 500 • Halve any number up to 100 • Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$ Place Value, Addition and Subtraction • Identify the multiples of 100 immediately before and after a given number • Round numbers with up to three-digits to the nearest hundred, e.g. 356 rounds to 400 • Add a number up to three-digits and tens where the tens and hundreds digit changes, e.g. ten more than 397 • Add a number up to three-digits and ones where the ones, tens and hundreds digit changes, e.g. one more than 499 • Subtract a number up to three-digits and tens where the tens and hundreds digit changes, e.g. ten less than 407 • Subtract a number up to three-digits and ones where the ones, tens and hundreds digit changes, e.g. one less than 500 • Recognise addition calculations that require mental compensation e.g. 129 + 49 and use this strategy where appropriate Recognise subtraction calculations that require mental compensation e.g. 175 - 39 and use this strategy where appropriate Multiplication • Use partitioning to derive doubles of all numbers to 100. • Use arrays to understand the multiplication and division facts for the 8 multiplication table • Derive the 8 multiplication table from the 4 multiplication table • Use Venn and Carroll diagrams to compare and sort numbers • Use concrete materials to model the effect of multiplying a two-digit number by 10 • Describe the effect of multiplying a two-digit number by ten	Number and Place Value (Mental Maths) • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Partition three-digit numbers in different ways, (e.g. 325 = 300 + 20 + 5 but is also 200 + 125 etc.) • Order a set of random numbers to 1000 • Recall addition and subtraction facts for each number up to 20 • Recall addition and subtraction facts for 100 (e.g. 37+63 = 100, 63+37=100, 100-63=37, 100-37=63) • State the addition fact that links to a subtraction fact and vice versa • Recall multiplication facts for 2, 3, 4, 5 and 10 times tables and derive associated division facts • Describe and extend number sequences involving counting on or back in different steps • State the multiplication fact that links to a division fact and vice versa • Double any number up to 100 • Double any multiple of 50 up to 500 • Halve any number up to 100 • Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$ … 2D Shape • Recognise angles as a description of a turn • Recognise quarter-, half-, three-quarter- and full turns from different starting points as an appropriate number of right angles • Recognise where sides meet at a vertex in a shape that an angle is created • Recognise a drawn right angle when presented in any orientation • Identify pairs of perpendicular and parallel lines • Sort 2-D shapes according to their properties - Venn with two intersecting sets and two criteria Carroll diagrams (perpendicular, parallel, right angles) • Draw 2-D shapes with specific properties (perpendicular, parallel, right angles) Addition, Subtraction and Statistics • Add two numbers with three digits using formal written methods of columnar addition with exchange from ones into tens and tens into hundreds, e.g. 468 + 356 • Use rounding to estimate, and inverse to check, the answer to a calculation • Subtract numbers with three digits using formal written methods of columnar subtraction with exchange from tens into ones and hundreds into tens, e.g. 426 – 357 • Use rounding to estimate, and inverse to check, the answer to a calculation • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction • Present data using bar charts with a scale in fives or tens Select the most appropriate scale when representing data in a bar chart • Interpret information in a bar chart to solve two-step questions	Number and Place Value (Mental Maths) • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Partition three-digit numbers in different ways, (e.g. 325 = 300 + 20 + 5 but is also 200 + 125 etc.) • Identify the value of each digit to one decimal place • Recall addition and subtraction facts for 100 (e.g. 37+63 = 100, 63+37=100, 100-63=37, 100-37=63) • Mentally add groups of small numbers • Recall multiplication facts for 2, 3, 4, 5, 8 and 10 times tables and derive associated division facts • Describe and extend number sequences involving counting on or back in different steps • Double any number up to 100 • Halve any number up to 200 • Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$ Addition and Subtraction • Add more than two numbers with three digits using formal written methods of columnar addition with exchange from ones into tens and tens into hundreds including when the 'carried' amount has more than one ten e.g. 326 + 147 + 219 Use rounding to estimate, and inverse to check, the answer to a calculation • Identify missing digits in columnar addition calculations • Subtract numbers with different numbers of digits up to three digits, using formal written methods of columnar subtraction with exchange from tens into ones and hundreds into tens, e.g. 334 – 68 using the place value columns to set the calculation out correctly • Use rounding to estimate, and inverse to check, the answer to a calculation • Identify missing digits in columnar subtraction calculations • Recognise addition calculations that require bridging through a multiple of 10 or 100 efficiently • Recognise subtraction calculations that require bridging through a multiple of 10 or 100 efficiently • Recognise calculations that require counting on mentally to find the difference • Choose an appropriate strategy to solve a calculation based upon the numbers involved Multiplication and Division • Describe and extend number sequences involving counting on or back in different steps (including 4, 8, 50 and 100) • Identify and describe the rule in a number sequence by calculating the step size between non-adjacent numbers in the sequence • Use the grid method to solve a two-digit by one-digit multiplication • Use rounding to estimate the answer to a calculation • Use the grid method to solve multiplication problems including positive integer scaling problems • Use rounding to estimate the answer to a calculation	Number and Place Value (Mental Maths) • Count on and back in 1s, 10s or 100s from any two- or three-digit number • Partition three-digit numbers in different ways, (e.g. 325 = 300 + 20 + 5 but is also 200 + 125 etc.) • Identify the value of each digit to one decimal place • Recall addition and subtraction facts for 100 (e.g. 37+63 = 100, 63+37=100, 100-63=37, 100-37=63) • Derive and use addition and subtraction facts for multiples of 100 totalling 1000 • Mentally add groups of small numbers • Recall multiplication facts for 2, 3, 4, 5, 8 and 10 times tables and derive associated division facts • Describe and extend number sequences involving counting on or back in different steps • Double any number up to 100 • Double any multiple of 50 up to 500 • Halve any number up to 200 • Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$ Place Value • Count from 0 in • Read Roman numerals from I to XII • Estimate and place numbers on a range of number lines • Read scales for mass, volume/capacity and temperature • Solve non-routine problems involving rounding Calculation • Estimate the answer to a calculation (all four operations) • Choose and use an appropriate strategy to solve a variety of calculations • Solve one and two step problems involving money • Use bar modelling to solve addition and subtraction problems Use inverse operations to check answers • Use bar modelling to solve multiplication and division problems • Use inverse operations to check answers Fractions • Recognise and use • Identify fractions with the same denominators on a number line (marked and unmarked) • Compare and order fractions with the same denominators • Compare and order unit fractions such as $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{7}$ and $\frac{1}{6}$ by positioning them including on a number line • Recognise and show, using diagrams, equivalent fractions with small denominators, applying in different contexts • Use pictorial representations, e.g. bar model, to find non-unit fractions of a set of objects beyond multiplication table knowledge (using a multiplication grid), e.g. $\frac{3}{7}$ of 56 • Use pictorial representations, e.g. bar model, to find non-unit fractions of a set of objects beyond

	Length and Perimeter • Accurately draw 2-D shapes including with specific properties using squared and isometric paper • Measure lengths in cm and m • Add and subtract, including finding the difference between, lengths. • Measure lengths in mm • Add and subtract, including finding the difference between, lengths • Develop an understanding of perimeter using straws • Use counting to calculate the perimeter of a polygon drawn on squared cm paper • Use counting to calculate the perimeter of a polygon drawn on squared cm paper • Calculate the perimeter of a polygon where the lengths of sides are given Statistics • Derive and use addition and subtraction facts for 100 using bead strings, a blank 10 by 10 grid etc. • Recognise that when calculating addition facts to 100 the 1s total 10 and the tens total 90Collect data in a frequency table and use the data to draw a bar chart with a scale in ones. • Use data in a frequency table to draw a bar chart with a scale in twos. • Answer questions using data contained in a bar chart • Solve one-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in a bar chart or table • Present and interpret data using pictograms with a symbol representing 1, 2 or 10 (including half symbols). • Solve one-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in a pictogram Addition and Subtraction • Add 2 two-digit numbers using formal written methods with exchange from ones into tens • Add 2 three-digit numbers using formal written methods with exchange from ones into tens • Add 2 three-digit numbers using formal written methods with exchange from ones into tens • Choose an appropriate strategy for a given addition calculation • Subtract 2 two-digit numbers using formal written methods with exchange from tens into ones • Subtract 2 three-digit numbers using formal written methods with exchange from tens into ones • Subtract 2 three-digit numbers using formal written methods with exchange from tens into ones • Choose an appropriate strategy for a given subtraction calculation • Use a formal written method of addition to make a given criteria, e.g. choose from a set of given numbers to make a total • Use a formal written method of subtraction to make a given criteria, e.g. choose from a set of given numbers to make a difference	• Use concrete materials to show division as repeated subtraction for numbers beyond the multiplication facts that they know • Use concrete materials to show division as repeated subtraction for numbers beyond the multiplication facts that they know using greater multiples of the divisor • Use concrete materials to show division as repeated subtraction for numbers beyond the multiplication facts that they know including those that have a remainder Time • Tell and write time on an analogue clock to o'clock, quarter past (15 minutes past), half past (30 minutes past) and quarter to (15 minutes to) • Tell and write the time on an analogue clock to 5 minutes – past and to • Tell and write the time on an analogue clock to 5 minutes – past and to • Tell and write the time on an analogue clock to the nearest minute – past • Tell and write the time on an analogue clock to the nearest minute – to • Know that there are 60 seconds in a minute Record time in seconds and minutes • Compare two time intervals which are in the same unit 3D Shape • Identify and describe the properties of 3-D shapes, including the number of edges, faces and vertices • Use construction materials such as Clixi or Polydron to make 3-D shapes • Make the skeletons of 3-D shapes using straws and Playdoh • Identify horizontal and vertical lines • Use single Venn and one criterion Carroll diagrams to compare and sort 3-D shapes	• Multiply a multiple of 10 by a one-digit number, e.g. 60 x 4 • Use partitioning to calculate a two-digit number multiplied by a single digit number using grid method • Use rounding to estimate the answer to a calculation • Use partitioning to calculate a two-digit number multiplied by a single digit number using grid method • Within known tables, use partitioning to multiply T1 by a one- digit number • Use compensation to multiply 19 by a single digit number • Solve positive integer scaling problems • Solve correspondence problems in which n objects are connected to m objects. (finding all possibilities) Fractions • Recognise fractions of a shape, set of objects or quantity (with small denominators) • Recognise and use fractions as numbers (on a bar model and demarcated number line) • Estimate the position of a fraction on a number line • Use concrete materials to find unit fractions (with denominators of ten or less) of a set of objects, 1/7 of 63 • Use concrete materials to find non-unit fractions (with denominators of ten or less) of a set of objects, 2/7 of 63 • Use pictorial representations, e.g. bar model, to find unit fractions of a set of objects, e.g 1/3 of 51 • Use pictorial representations, e.g. bar model, to find non-unit fractions of a set of objects, e.g. 2/3 of 51 • Solve problems involving fractions Division • Use partitioning to derive and use halves of multiples of 10 where the tens digit is odd • Use partitioning to derive and use halves of all even numbers to 100Use a horizontal number line to show division as repeated subtraction including numbers beyond the multiplication facts that they know • Use a vertical number line to show division as repeated subtraction including numbers beyond the multiplication facts that they know using greater multiples of the divisor • Use a vertical number line to show division as repeated subtraction for numbers beyond the multiplication facts that they know using greater multiples of the divisor (including remainders) • Use division to identify unlabelled marks on a scale • Read different scales to the nearest whole unit Volume, Capacity and Mass • Estimate, measure and compare the volume/capacity of different containers • Find the difference between the volume/capacities of containers • Measure and add the volume/capacity of different containers • Estimate, measure and compare the mass of different objects • Find the difference between the masses of objects Measure and add the mass of different objects	• Select the most appropriate key when representing data in a pictogram • Interpret information in a pictogram to solve two-step questions Fractions • Use pictorial representations, including the number line, to compare and order fractions with the same denominator • Use pictorial representations to compare and order unit fractions • Use concrete and pictorial representations to recognise where fractions are equivalent • Use concrete and pictorial representations to recognise where fractions are equivalent • Add fractions to make one whole Subtract fractions from one whole • Add fractions with the same denominator within one whole • Subtract fractions with the same denominator within one whole • Add and subtract fractions with the same denominator within one whole Position and Direction • Describe positions on a square grid labelled with letters and numbers • Use a grid to describe position, direction and movement in a straight line • Use a grid to describe position, direction, movement and turn Time • Tell the time on an analogue clock for minutes past and to, e.g. 33 minutes past 4 and 27 minutes to 5 • Tell the time on a digital clock to the nearest minute and know whether this is before or after midday • Solve time problems working within the hour boundary • Solve time problems working across the hour boundary Solve calendar problems working across the month boundary	• Identify missing numbers in grid method calculations • Choose an appropriate strategy to solve a multiplication calculation based upon the numbers involved • Use a vertical number line to show division as repeated subtraction for numbers beyond the multiplication facts that they know using repeated greater multiples of the divisor (including remainders) • Use rounding to estimate the answer to a calculation • Use a vertical number line to show division as repeated subtraction for numbers beyond the multiplication facts that they know using efficient greater multiples of the divisor (including remainders) • Use rounding to estimate the answer to a calculation • Solve division problems that require the interpretation of remainders • Choose an appropriate strategy to solve a division calculation based upon the numbers involved 2D Shape • Identify whether an angle is greater or less than a right angle • Accurately draw 2-D shapes with specific properties (including angles) • Measure the perimeter of simple polygons by measuring each side using a ruler and calculating the total • Decimal Place Value • Use concrete representations, e.g. straws, to understand the relationship between fractional tenths and decimal tenths Identify the value of each digit to one decimal place • Know the decimal point separates whole numbers and decimal fractions • Use concrete representations, e.g. place value counters, to understand the relationship between fractional tenths and decimal tenths • Divide a one-digit number by 10 and describe the effect using a place value chart • Count up and down in fractional and decimal tenths • Identify fractional and decimal tenths on number lines • Compare numbers with one decimal place • Order numbers with one decimal place 3D Shape • Recognise and describe 3-D shapes in different orientations Sort 3-D shapes according to their properties (using Venn diagrams with two intersecting sets and two criteria Carroll diagrams)	multiplication table knowledge (using a multiplication grid), e.g. $\frac{3}{7}$ of 56 Statistics • Pose a question and identify what data to collect to answer the question • Collect and record data • Present data in a bar chart with an appropriate scale • Present data in a pictogram with an appropriate key • Use and interpret data from bar charts and pictograms to answer questions • Compare and evaluate representations of data • Solve problems involving statistics (convert between different representations, incomplete sets of data, matching tables to graphs) Data Handling • Record and compare time in terms of seconds, minutes and hours • Tell and write the time from an analogue clock including using Roman numerals • Tell and write the time from a 12 hour digital clock • Solve problems involving time

Aintree Davenhill Primary School – Maths Curriculum Map

Year 4

Autumn 1

Number and Place Value (Mental Maths)
- Read and write numbers to 10,000
- Count on and back in 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures
- Order a set of decimal numbers to one decimal place
- Recall addition and subtraction facts for each number up to 20
- Recall addition and subtraction facts for 100
- Recall multiplication facts for 2, 3, 4, 5 and 8x tables
- Multiply and divide whole numbers by 10 or 100 (whole number answers)

Place Value, Addition and Subtraction
- Exchange 10 tens for 1 hundred and vice versa using base 10 equipment
- Exchange 10 hundreds for 1 thousand and vice versa using place value counters
- Identify and represent numbers up to 10,000 using concrete materials such as base 10 apparatus and place value counters
- Partition a four-digit number into thousands, hundreds, tens and ones
- Identify and represent numbers with one decimal place using models such as place value counters and arrow cards Partition a number with one decimal place into tens, ones and tenths including in different ways (revisit of Y3 learning)
- Compare two numbers and order three or more numbers up to 10 000 and numbers with one decimal place when represented using the same concrete materials saying which numbers are greater or less and use <, > and = correctly
- Identify the multiples of 10 and 100 immediately before and after numbers with up to four-digits and round the numbers to the nearest ten and hundred
- Identify the number 1, 10, 100 or 1,000 more or less than a given number with up to four-digits recognising which digits stay the same and which digits change
- Recognise calculations that require counting on or back mentally e.g. 243 + 230 (counting on in hundreds and then in tens) and use this strategy where appropriate
- From given complete sequences, identify whether they have a constant step size or not
- Recognise addition calculations that require mental partitioning e.g. 765 + 231 (no boundaries crossed), 87 + 35 (boundaries crossed) and use this strategy where appropriate
- Recognise subtraction calculations that require mental partitioning e.g. 765 – 241 (no boundaries crossed), 122 – 35 (boundaries crossed) and use this strategy where appropriate

Length and Perimeter
- Measure and draw lengths as properties of 2-D shapes e.g. a triangle with one side of 82mm
- Measure lengths in cm and mm, including cm as decimals with one decimal place e.g. 12mm and 1.2cm
- Compare the length of different objects including numbers to one decimal place

Autumn 2

Number and Place Value (Mental Maths)
- Read and write numbers to 10,000
- Count on and back in 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals
- Recall addition and subtraction facts for 100
- Recall multiplication facts for 2, 3, 4, 5, 6, 8 and 9x tables
- Multiply and divide whole numbers by 10 or 100 (whole number answers)
- Double any number up to 100
- Halve any number up to 200
- Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$

Multiplication
- Use arrays to understand the multiplication facts for the 11 and 9 multiplication tables (including commutativity)
- Identify relationships within a multiplication square Derive the 11 and 9 multiplication tables from the 10 multiplication table by using 10 groups add/subtract 1 group strategy
- Use arrays to identify what the term 'factor' means
- Use arrays to identify all the factor pairs of a given number
- Recognise that multiplying by 0 gives a product of 0 and that multiplying by 1 does not change the number
- Understand the effect of multiplying a one- or two-digit number by 10 and 100
- Recognise the relationship between a known fact and a related
- calculation, e.g. 6 × 9 = 54 and 600 × 9 = 5400
- Use compensation to multiply T9 by a one-digit number
- Use partitioning to mentally multiply TU × U
- Use partitioning to double any number up to 4 digits (with an answer less than 10,000)
- Use partitioning to calculate a 1TU × U using the grid method
- Use partitioning to calculate a 1TU × U using the grid method
- Choose an appropriate strategy to solve a calculation based upon the numbers involved
- To solve problems involving multiplication including in measurement contexts

Division
- Use knowledge of place value and multiplication facts to divide related greater numbers e.g. 540 ÷ 6
- Divide two digit numbers (beyond the multiplication facts) by a single digit number using the chunking method where there is no remainder
- Divide two digit numbers (beyond the multiplication facts) by a single digit number using the chunking method where there is a remainder
- Recognise that dividing a number by 1 does not change the number
- Use concrete materials to model and describe the effect of dividing a 2-digit number by 10Solve problems involving division including interpreting remainders in a given context
- Time
- Tell and write the time on an analogue clock to the nearest minute – past and to
- Tell, write and match analogue and digital times (12-hour clock)
- Know that 24-hour clock times are written using four digits
- Understand how times on a digital 24-hour clock are before or after midday

Spring 1

Number and Place Value (Mental Maths)
- Read and write numbers with one decimal place
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals
- Recall addition and subtraction facts for 100
- Recall multiplication facts for 2, 3, 4, 5, 6, 8 and 9x tables and derive associated division facts
- Identify patterns of similar calculations, e.g. if I know 7 x 8, I also know 0.7 x 0.8, 70 x 8, 70 x 80 etc.
- Multiply and divide numbers by 10, including those which have answers to one decimal place
- Double any multiple of 10 or 100
- Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$

Place Value
- Read and
- Identify the multiples of 1000 immediately before and after a given number
- Round numbers with up to four digits to the nearest thousand
- Correctly place any number on a number line with multiples of 1000 marked but not labelled
- Correctly place any number on a number line with multiples of 1000 marked but not labelled with a variety of start and end points
- Label positive and negative numbers on a demarcated number line
- Place temperatures including negative numbers on a number line
- Count backwards through zero to include negative numbers
- Make a number with 2 decimal places using straws and place value counters
- Use pictorial representations such as a 10 x 10 grid to show that 1 of an object can be found by dividing the object into 100 one hundred equal parts
- Understand the hundredths heading in place value columns represents a given number of fractional hundredths, e.g. 3/100 is equal to 0.03
- Recognise and write decimal equivalents for any number of hundredths less than 10/100 e.g. 7/100 is 0.07
- Identify the value of each digit to two decimal places in a variety of ways
- Use pictorial representations such as a 10 x 10 grid (and number lines) to recognise that 1/100 of an object can be found by dividing 1/10 of the object into ten equal parts
- Recognise that 10/100 is equivalent to 1/10 or 0.1
- Recognise that 20/100 is equivalent to 2/10 or 0.2
- Write any number of hundredths in fraction and decimal form
- Recognise how place value columns relate to money notation i.e. units/ones column relates to the number of £1 coins; tenths column relates to the number of equivalent 10p coins; hundredths column relates to the number of equivalent 1p coins
- Recognise that one hundred 1p coins equal £1
- Recognise that each 1p coin is 1/100 of £1, hence 1p being written as £0.01 which is consistent with the columns in a place value chart
- Make a number with 2 decimal places using place value counters and coins (£1, 10p and 1p)
- Understand how a number with 2 decimal places can be represented in different ways, e.g. 0.27 can 27/100 or 2/10 and 7/10
- Compare two or more numbers with ones, tenths and hundredths using concrete materials
- Order two or more numbers with ones, tenths and hundredths using concrete materials

Spring 2

Number and Place Value (Mental Maths)
- Read and write numbers with one decimal place
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals
- Recall addition and subtraction facts for 100
- Recall and use addition and subtraction facts for multiples of 100 totalling 1000
- Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)
- Use partitioning to double or halve any number, including decimals to one decimal place
- Recall multiplication facts for all times tables other than 12x and derive associated division facts
- Identify patterns of similar calculations, e.g. if I know 7 x 8, I also know 0.7 x 0.8, 70 x 8, 70 x 80 etc.
- Multiply and divide numbers by 10, including those which have answers to one decimal place
- Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$

Addition and Subtraction
- Read and write numbers with one decimal place
- Subtract a three-digit number from a three-digit number including crossing the hundreds boundary, e.g. 303 – 196
- Add more than two numbers with up to four digits using formal written method of columnar addition
- Use inverse to check the answer to a calculation, e.g. 4,423 + 2,389 = 6,812 can be checked by carrying out either of the following calculations correctly: 6,812 – 4,423 or 6,812 – 2,389
- Add two numbers with one decimal place using formal written methods of columnar addition with exchange
- Use appropriate rounding to estimate the answer to a calculation
- Subtract two numbers with one decimal place using formal written methods of columnar subtraction with exchange
- 2D Shape and Sorting
- Know that an angle less than a right angle is called 'acute' Know that an angle between a right angle and a straight angle is called 'obtuse'
- Identify acute and obtuse angles where one of the lines is horizontal
- Identify acute and obtuse angles where one of the lines is vertical
- Identify acute and obtuse angles in any orientation
- Compare any two angles less than two right angles where one of the lines is horizontal, identifying which is greater and less
- Order more than two angles less than two right angles where one of the lines is horizontal
- Compare any two angles less than two right angles where one of the lines is vertical, identifying which is greater and less
- Order more than two angles less than two right angles where one of the lines is vertical
- Identify a vertical or horizontal line of symmetry in a shape From a set of shapes, identify those with a vertical or horizontal line of symmetry and those without
- Complete a simple symmetric figure using a vertical or horizontal line of symmetry where the mirror line cuts the shape in half
- Name triangles according to their properties (scalene, isosceles, equilateral) and use the terms regular and irregular
- Name quadrilaterals (square rectangle, oblong rectangle, rhombus, parallelogram, kite, trapezium, isosceles trapezium) according to their properties and use the terms regular and irregular
- Identify properties of 2-D shapes including: sides – number of sides, where any are equal, parallel

Summer 1

Number and Place Value (Mental Maths)
- Read and write numbers with one decimal place
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals
- Recall addition and subtraction facts for 100
- Recall and use addition and subtraction facts for multiples of 100 totalling 1000
- Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)
- Use partitioning to double or halve any number, including decimals to one decimal place
- Recall multiplication facts for all times up to 12 x 12 and derive associated division facts
- Identify patterns of similar calculations, e.g. if I know 7 x 8, I also know 0.7 x 0.8, 70 x 8, 70 x 80 etc.
- Multiply and divide numbers by 10, including those which have answers to one decimal place
- Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$

Place Value
- Identify, represent and estimate numbers using different representations (including the number line)
- Find 0.1, 1, 10, 100 or 1,000 more or less than a given number
- Order and compare numbers beyond 1,000
- Compare numbers with the same number of decimal places saying which number is more or less and use <, > and = correctly. Pay particular attention to numbers that have the same digits, e.g. 115.62 and 161.52
- Order numbers with the same number of decimal places saying which numbers are greater or less. Pay particular attention to numbers that have the same digits, e.g. 65.12, 21.56 and 26.15
- Round any number to the nearest 10, 100 or 1,000
- Identify the whole numbers immediately before and after a number to one decimal place where the number is less than 10
- Round numbers with one decimal place to the nearest whole number where the number is less than 10
- Identify the whole numbers immediately before and after a number to one decimal place where the number is up to 10,000
- Round numbers with one decimal place to the nearest whole number where the number is up to 10,000
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence

Addition and Subtraction
- Partition a four-digit number without the use of practical equipment into two groups in different ways where one group is appropriate to the context e.g. 1,500 + 2,643 = 1,500 + 2,500 + 143
- Mental addition strategies – whole numbers and decimals incl. add a number with one decimal place to another where the ones boundary is crossed, e.g. 14.7 + 8.6 (This could be supported by jottings or a number line)
- Mental subtraction strategies – whole numbers and decimals incl. subtract a number with one decimal place from another where the ones boundary is crossed, e.g. 14.2 - 5.6 (This could be supported by jottings or a number line)

Summer 2

Number and Place Value (Mental Maths)
- Read and write numbers with one decimal place
- Count on and back in 0.1s, 1s, 10s or 100s from any number up to 10,000
- Count forwards and backwards in equal steps and describe any patterns in the sequence
- Order a set of random numbers to at least 10,000 including amounts of money and measures involving decimals
- Recall addition and subtraction facts for 100
- Recall and use addition and subtraction facts for multiples of 100 totalling 1000
- Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)
- Use partitioning to double or halve any number, including decimals to one decimal place
- Recall multiplication facts for all times up to 12 x 12 and derive associated division facts
- Identify patterns of similar calculations, e.g. if I know 7 x 8, I also know 0.7 x 0.8, 70 x 8, 70 x 80 etc.
- Multiply and divide numbers by 10, including those which have answers to one decimal place
- Count in fraction steps, e.g. $^1/_5$, $^2/_5$, $^3/_5$

Fractions
- Read and write numbers with one decimal place
- Use pictorial representations such as fraction walls to recognise where more than two fractions are equivalent e.g ¾, 6/9, 9/12
- Recognise and show, using diagrams, families of common equivalent fractions
- Recognise and show, using diagrams, families of common equivalent fractions
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Recognise and write decimal equivalents to ¼, ½, ¾
- Add and subtract fractions with the same denominator (using diagrams)
- Where a fraction of an amount cannot be found by using known division facts, use pictorial representations, e.g. bar model, to find non-unit fractions of a set of objects
- Find non-unit fractions of an amount by using division to find the unit fraction then multiplying to scale up by the numerator 4/7 of 315 by calculating 315 ÷ 7 to find 1/7 which is 45 then 45 × 4 to find 4/7 of 315 which is 180
- 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
- Solve simple measure problems involving fractions and decimals to two decimal places
- Solve simple money problems involving fractions and decimals to two decimal places

2D and 3D Shape
- Complete a simple symmetric figure where the line of symmetry is not vertical or horizontal
- Compare and name any two angles less than two right angles in any orientation, identifying which is greater and less
- Order more than two angles less than two right angles in any orientation
- Compare and name any two angles less than two right angles in any orientation, identifying which is greater and less
- Order more than two angles less than two right angles in any orientation

	• Add and subtract, including finding the difference between, lengths • Measure and calculate the perimeter of any rectilinear figure where all the side lengths are given • Recognise where sides are the same length in oblong rectangles and square rectangles and use this when measuring and calculating perimeter • Recognise where the sides are the same length in L and T shaped rectilinear figures and use this when measuring and calculating perimeter • Calculate the length of missing sides using known dimensions Statistics • Derive and use addition and subtraction facts for 1 using number lines, bar models and related facts • Derive and use addition and subtraction facts for 10 for numbers with one decimal place using number lines, bar models and related facts • Recognise that when calculating addition facts to 10 the tenths total 1 and the ones total 9 • Present discrete data using bar charts and a scale appropriate to Year 4 counting and place value • Choose the appropriate scale when representing data in a bar chart • Interpret data and solve one-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in a bar chart or table • Interpret data and solve one-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in a bar chart or table • Present and interpret data using pictograms with a symbols representing numbers appropriate for Year 4 (including half symbols). • Solve one-step questions (for example, 'How many more/fewer?') using information presented in a pictogram Addition and Subtraction • Add two numbers with four digits using formal written methods of columnar addition with exchange • Use appropriate rounding to estimate the answer to a calculation • Identify missing digits in columnar addition calculations • Add three numbers with four digits using formal written methods of columnar addition with exchange • Choose an appropriate strategy for a given addition calculation • Subtract two numbers with four digits using formal written methods of columnar subtraction with exchange • Use appropriate rounding to estimate the answer to a calculation • Subtract two numbers with four digits using formal written methods of columnar subtraction with exchange where the greater number has 0 as a place holder e.g. 3805 – 2588 Use appropriate rounding to estimate the answer to a calculation • Identify missing digits in columnar subtraction calculations • Choose an appropriate strategy for a given subtraction calculation • Solve problems involving addition and subtraction such as use a formal written method of addition/subtraction to make a given criteria, e.g. choose from a set of given numbers to make a total • Represent and solve a problem using structured pictorial representations such as the bar model	• Calculate the analogue time from a given 24-hour clock time when the hour value is greater than 12 • Tell the time on a 24-hour clock, e.g. 16:27 is 27 minutes past 4 in the afternoon • Solve problems involving converting between different units of time Shape • Identify, name and describe 2-D shapes according to the properties of their sides and vertices • Identify and name different prisms according to their properties • Describe the properties of prisms: faces – number, shape and where any are congruent (identical); number of edges and where any are of equal length; number of vertices • Identify and name different pyramids according to their properties • Describe the properties of pyramids: faces – number, shape and where any are congruent (identical); number of edges and where any are of equal length; number of vertices • Identify and describe the properties of 3-D shapes: faces – number, shape and where any are congruent (identical); number of edges and where any are of equal length; number of vertices • Use Venn and Carroll diagrams to compare and sort 3-D shapes	• Correctly place multiples of 0.01 on a number line with • multiples of 0.1 marked but not labelled • Use concrete materials to model effect of dividing a one-digit or two-digit number by 100 • Describe the effect of dividing a one-digit or two-digit number by 100 • Multiplication • Recall and use multiplication and division facts for the 7 multiplication table • Recall and use multiplication and division facts for the 12 multiplication table • Identify and describe the rule in a number sequence by calculating the difference between two adjacent number • Extend number sequences by using the identified rule • Identify and describe the rule in a number sequence by calculating the step size between non-adjacent numbers in the sequence, including counting steps to complement tables facts as well as other steps e.g. 3, _, _, _, 31 • Use partitioning to double a number with ones and tenths, e.g. double 6.8 • Identify factor pairs of a given number within the multiplication tables that they know • Use appropriate factor pairs and commutativity in mental calculations e.g. 300 × 6 = 3 × 100 × 6 which becomes 3 × 6 × • 100 = 18 × 100 • Use partitioning to calculate a three-digit number multiplied by a single digit number using grid method. • Estimate multiplication by rounding to the nearest multiple of 10 or 100 and using related facts e.g. 384 × 6 ≈ 400 × 6Solve problems by using partitioning to calculate a three-digit number multiplied by a single digit number using grid method • Estimate multiplication by rounding to the nearest multiple of 10 or 100 and using related facts e.g. 384 × 6 ≈ 400 × 6 • Represent multiplication of three numbers using arrays e.g. 2 × 3 × 4 can be shown using a 2 × 3 array four times • Use commutativity to reorder multiplication of three numbers to simplify the calculation • Use inverse to check the answer to a calculation, e.g. 256 ÷ 4 = 64 can be checked by carrying out the following calculation correctly: 64 × 4 • Division • Use partitioning to halve any four digit number where each digit is even • Use partitioning to halve a number with ones and tenths where both digits are even • Use partitioning to halve any four digit even number where some of the digits are odd e.g. 4524 could be partitioned into 4000 + 500 + 20 + 4 or 4400 + 100 + 24 • Use partitioning to halve any number with ones and tenths where the tenths digit is even e.g. half of 3.6 could be partitioned into 3 + 0.6 or 2 + 1.6 • Divide a two-digit number by a one-digit number using a partitioning strategy e.g. 96 ÷ 4 becomes (80 ÷ 4) + (16 ÷ 4) • Divide three-digit numbers by a single digit number using the chunking method where there is no remainder e.g. 248 ÷ 4 • Divide three-digit numbers by a single digit number using the chunking method, making the calculation more efficient by subtracting more than one multiple of 10 of the divisor e.g. 248 ÷ 4 by subtracting 240 (60 groups of 4) and 8 (2 groups of 4) • Divide three-digit numbers by a single digit number using the chunking method, making the calculation more efficient by subtracting more than one multiple of 10 of the divisor e.g. 248 ÷ 4 by subtracting 240 (60 groups of 4) and 8 (2 groups of 4) • Estimate division by rounding to the nearest multiple of 10 of the divisor and using related facts e.g. 352 ÷ 6 ≈ 360 ÷ 6 • Use inverse to check the answer to a calculation, e.g. 78 × 6 = 468 can be checked by carrying out the following calculation correctly: 468 ÷ 6 • Addition and Subtraction	and perpendicular vertices – number of vertices, size of angles (right, acute, obtuse and where angles are equal) diagonals – number, if and how they intersect, line symmetry Position and Direction • Describe positions on a 2-D grid as coordinates in the first quadrant • Plot specified points • Plot specified points and draw sides to complete a given polygon • Describe movements between positions as translations of a given unit to the left/right and up/down Area • Know area is a measure of surface within a given boundary • Find the area of irregular shapes (including those with curved sides) by counting squares • Find the area of rectangles presented on squared paper where the sides are horizontal and vertical by counting squares • Use knowledge of arrays to find the area of rectangles by counting squares in groups • Find the area of other rectilinear shapes presented on squared paper where the sides are horizontal and vertical by counting squares in groups Statistics • Explain what a time graph is showing, e.g. a child might describe temperature increasing or decreasing at different times during a day • Answer questions using time graphs by reading from labelled values, e.g. what was the temperature at 3:00pm (where each hour is labelled on the x axis) • Present time graphs from given data using appropriate scales • Answer questions using time graphs by reading from between labelled values, e.g. what was the temperature at 1:30pm (where each hour is labelled on the x axis) Measures • Measure, draw and compare lengths (cm/mm) and use known measurements to make reasonable estimates including numbers to one decimal place • Measure, read and record lengths measured in m and cm Understand how fractions of a metre can be recorded as cm or m using decimals • Use the relationship between different units of length to identify the calculation necessary for conversion, e.g. to convert from m to cm, multiply the number of m by 100 • Measure mass (kg/g) and use known measurements to make reasonable estimates including numbers to two decimal places • Compare the mass of different objects including numbers to two decimal places • Measure volume/capacity (l/ml) and use known measurements to make reasonable estimates including numbers to two decimal places • Compare the volume/capacity of different objects including numbers to two decimal places	• (Recap) Mental calculation strategies – whole numbers and decimals • Select a mental strategy appropriate for the numbers involved in the calculation (counting on, partitioning, bridging, reordering, compensation) • Use mental calculation strategies to calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Add more than two numbers with up to one decimal place using formal written methods of columnar addition with exchange, e.g. 268 + 34.7 + 356.5 • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why • Subtract two numbers with one decimal place using formal written methods of columnar subtraction with exchange where the greater number has 0 as a place holder, e.g. 50.7 - 23.8 • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why • Estimate; use inverse operations to check answers to a calculation • Solve addition and subtraction problems involving missing numbers • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally without a jotting, use a jotting, written method) • Describe and extend number sequences involving counting on or back in different steps Multiplication and Division and Measures • Use related facts to multiply TO × 20 (by doubling then multiplying by 10) • Recognise and use factor pairs and commutativity in mental calculations • Recap mental multiplication strategies: compensation, partitioning (incl. doubling), factor pairs, multiplying by 0 and 1, multiplying together three numbers • Recap mental division strategies (halving, dividing by 1, partitioning, related facts) • Select a mental strategy appropriate for the numbers involved in the calculation • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout (grid method) • Solve problems involving multiplying and adding, including using the distributive law to multiply two and three digit numbers by one digit, integer scaling problems • Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, harder correspondence problems such as n objects are connected to m objects • Divide three-digit numbers by a single digit number efficiently using the chunking method where there is a remainder e.g. 176 ÷ 6, and interpret remainders appropriately for the context • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Solve problems involving converting from years to months; weeks to days • Solve problems involving converting from hours to minutes; minutes to seconds Area	• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes (2-D shapes) • Compare and classify geometric shapes based on their properties and sizes (3-D shapes) Statistics • Understand that discrete data that can only take specific, separate values and the data sets are not related to each other Interpret and present discrete data using appropriate graphical methods, including bar charts • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs • Understand that continuous data is data that can take on any value along a continuum • Interpret and present continuous data using appropriate graphical methods, including time graphs • Solve comparison, sum and difference problems using information presented in time graphs • Use a variety of sorting diagrams to compare and classify numbers Place Value • Count backwards through zero to include negative numbers • Know that L represents 50 and C represents 100 • Represent numbers with only additive properties up to 100 i.e. not ending in 4 or 9 • Know that I can only be used before V and X to represent 1 less than 5 (4) and 1 less than 10 (9) • Know that X can only be used before L and C to represent 10 less than 50 (40) and 10 less than 100 (90) • Represent any number up to 100

Aintree Davenhill Primary School – Maths Curriculum Map

			• Recognise calculations that require counting on or back mentally, bridging through a multiple of 10 efficiently • Recognise calculations that require a mental compensation method • Fractions • Where a fraction of an amount cannot be found by using known division facts, use pictorial representations, e.g. bar model, to find non-unit fractions of a set of objects, e.g. 3/8 of 112 • Use pictorial representations, such as fraction strips, to add fractions with the same denominator crossing a ones boundary, e.g 5/7 + 4/7 = 9/7 • Add fractions with the same denominator crossing a ones boundary by adding the numerators • Use pictorial representations, such as fraction strips, to subtract fractions with the same denominator crossing a ones boundary Subtract fractions with the same denominator crossing a ones boundary by subtracting the numerators eg. 15/7 – 8/7 = 7/7		• Find the area of rectilinear shapes by counting squares in groups (where sides are horizontal or vertical) Find the area of rectangles (and rectilinear shapes) presented on squared paper where the sides are not horizontal and vertical by counting half squares	
Year 5	Number and Place Value (Mental Maths) • Read and write any integer and use decimal notation for tenth and hundredths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Find pairs of numbers with a sum of 100 • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Find doubles and halves of decimals each with units and tenths • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places Place Value • Exchange 10 thousands for 1 ten thousand and vice versa using place value counters • Exchange 10 ten thousands for 1 hundred thousand and vice versa using place value counters • Identify represent and estimate numbers using place value counters and a place value chart • Partition a five-digit number into ten thousands, thousands, hundreds, tens and ones • Exchange 10 ten thousands for 1 hundred thousand and vice versa using place value counters • Exchange 10 hundred thousands for 1 million and vice versa using place value counters • Identify represent and estimate numbers using place value counters and a place value chart	**Number and Place Value (Mental Maths)** • Read and write any integer and use decimal notation for tenth and hundredths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Find pairs of numbers with a sum of 100 • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Find doubles and halves of decimals each with units and tenths • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places **Mental Multiplication and Division** • 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 • Establish whether a number up to 100 is prime • Recognise and use square numbers and the notation for squared (^{2}) • Use partitioning to double or halve any number, including decimals to two decimal places • Multiply and divide numbers mentally drawing upon known facts • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes **Division**	**Number and Place Value (Mental Maths)** • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) • Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Use partitioning to double or halve any number, including decimals to two decimal places • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$converting to$\frac{1}{12}$, $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Place Value (Roman Numerals, Counting and Negative Numbers)** • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero • Calculate difference in temperature, including those that involve a positive and negative temperature • Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal • Continue to order temperatures including those below 0°c • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals **Addition and Subtraction**	**Number and Place Value (Mental Maths)** • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) • Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Use partitioning to double or halve any number, including decimals to two decimal places • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$converting to$\frac{1}{12}$, $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Mental and Written Multiplication** • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Multiply and divide numbers mentally drawing upon known facts • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation	**Number and Place Value (Mental Maths)** • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, and 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) • Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Use partitioning to double or halve any number, including decimals to two decimal places • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$converting to$\frac{1}{12}$, $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Place Value** • Identify, represent and estimate numbers using the number line • Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • Identify the value of each digit to three decimal places • Read, write, order and compare numbers with up to three decimal places • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • Count forwards and backwards in decimal steps • Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	**Number and Place Value (Mental Maths)** • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Count forwards and backwards in steps of 0.01, 0.1, 1, 10, 100, 1000 from any positive integer or decimal • Count forwards and backwards in equal steps and describe any patterns in the sequence • Order and compare whole numbers up to 1 000 000, negative numbers and decimals with up to two decimal places • Know by heart facts for all multiplication tables up to 12 x 12 • Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers) • Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place) • Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Use partitioning to double or halve any number, including decimals to two decimal places • Multiply and divide whole numbers and decimals with up to two decimal places mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to two decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$converting to$\frac{1}{12}$, $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Place Value** • 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 • Describe and extend number sequences including those with multiplication and division steps and those where the step size is a decimal • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • Continue to order temperatures including those below 0°c • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000

	• Partition a six-digit number into hundred thousands, ten thousands, thousands, hundreds, tens and ones • Exchange 1 tenth for 10 hundredths and vice versa using place value counters • Exchange 1 hundredth for 10 thousandths and vice versa using place value counters • Identify and represent numbers up to three decimal places using place value counters • Partition a number with up to three decimal places into tens, ones, tenths, hundredths and thousandths • Use a place value chart or place value counters to support with identifying the value of each digit to three decimal places • Compare numbers to 1,000,000 • Compare numbers up to three decimal places where 0 is not used as a place holder • Order numbers to 1,000,000 • Order numbers up to three decimal places where 0 is not used as a placeholder • Identify, represent and estimate numbers on a number line from 0 to 100,000 where the number line has ten demarcations • Identify, represent and estimate numbers on a number line from0 to 1,000,000 where the number line has ten demarcations • Round any number up to 100,000 (Year 5 number) to the nearest 10, 100 or 1,000 (Year 4 rounding) • Round any number up to 1,000,000 (Year 5 number) to the nearest 10, 100 or 1,000 (Year 4 rounding) • Round any number up to 100,000 to the nearest 10,000 • Find 0.01, 0.1, 1, 10, 100, 1000 more or less than a given number up to1,000,000 including crossing boundaries • Find 10,000 more or less than a given number up to 1,000,000including crossing100,000 boundaries • Find 100,000 more or less than a given number up to 1,000,000 • Count forwards and backwards in steps of 10, 100 or 1,000 (Year 4 steps) for any given number up to 100,000 (Year 5number) • Count forwards and backwards in steps of 10, 100 or 1,000 (Year 4 steps) for any given number up to 1,000,000 (Year 5number) • Count forwards and backwards in steps of 10,000 for any given number up to 1,000,000 • Describe and extend number sequences where the step size is in multiples of tenths, e.g. 1.4, 1.7, 2.0, 2.3 (step size 0.3) • Describe and extend number sequences where the step size is in multiples of hundredths less than a tenth, e.g. 2.31, 2.37,2.43, 2.49 (step size 0.06) • Describe and extend number sequences where the step size is in multiples of hundredths greater than a tenth, e.g. 2.42, 2.57,2.72, 2.87 (step size 0.15) Addition and Subtraction • Recognise calculations that require mental partitioning e.g.4,300 + 1,400 or 424–250 or 6.32–3.5 and use this strategy where appropriate • Recognise calculations that require counting on or back mentally, bridging through a multiple of 10 efficiently e.g. 1995+ 278 becomes1995 + 5 + 273 or 703–128 becomes703–3–125 and use this strategy where appropriate • Recognise calculations that require counting on mentally to find the difference e.g. 5003–1960 (counting efficiently between the two numbers) and use this strategy where appropriate • Recognise calculations that require a mental compensation method e.g. 325 + 298 becomes 325 + 300–2 and use this strategy where appropriate	• 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Solve problems involving division **Fractions** • Count on and back in mixed number steps such as $1\frac{1}{2}$ • Read and write decimal numbers as fractions • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Compare and order fractions whose denominators are all multiples of the same number(including on a number line) • Solve problems involving fractions **Multiplication and Measurement (Area)** • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes **Data Handling and Measurement (Time)** • Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks • Complete, read and interpret information in tables, including timetables • Solve problems involving converting between units of time	• Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places • Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction) • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Calculate difference in temperature, including those that involve a positive and negative temperature • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation **Mental and Written Multiplication** • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Multiply and divide numbers mentally drawing upon known facts • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve problems involving multiplication including using their knowledge of factors and multiples, cubes and squares • Solve problems involving multiplication, including scaling by simple fractions and problems involving simple rates **Measurement (Length, Mass and Capacity)** • Use, read and write standard units of length and mass to a suitable degree of accuracy • Estimate (and calculate) capacity • Multiply and divide numbers and those involving decimals by 10, 100 and 1000 • Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) **Movement of Shape (Reflection and Translation)** • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles • Describe positions on the first quadrant of a coordinate grid • Plot specified points and complete shapes • 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 **Angles** • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draw given angles, and measure them in degrees (°) • Identify angles at a point and one whole turn (total 360°) • Identify angles at a point on a straight line and a turn (total 180°) • Identify other multiples of 90°	• Solve problems involving multiplication including using their knowledge of factors and multiples, cubes and squares • Solve problems involving multiplication, including scaling by simple fractions and problems involving simple rates **Mental and Written Division** • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • Divide numbers mentally drawing upon known facts • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • 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 scaling by simple fractions and problems involving simple rates **Fractions Calculations** • Recognise mixed number and improper fractions and convert from one form to the other • Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams) • Write mathematical statements > 1 as a mixed number, e.g. $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$ **Measurement (Area and Volume)** • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • Understand the difference between liquid volume, including capacity and solid volume • Estimate (and calculate) volume (for example, using $1cm^3$ blocks to build cuboids (including cubes)) • Use, read and write standard units of length and mass to a suitable degree of accuracy • Estimate and calculate capacity **Data Handling** • Calculate and interpret the mode, median and range • Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places • Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	• Round decimals with two decimal places to the nearest whole number and to one decimal place • Solve number problems and practical problems that involve all of the above • Find 0.01, 0.1, 1, 10, 100, 1000 and other powers of 10 more or less than a given number than a given number **Fractions** • Recognise mixed numbers and improper fractions and convert from one form to another • Compare and order fractions whose denominators are all multiples of the same number (including on a number line) • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Add and subtract fractions with the same denominator and denominators that are multiples of the same number (using diagrams) • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams **Measurement (Time)** • Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks • Complete, read and interpret information in tables, including timetables • Solve problems involving converting between units of time **Data Handling (Measurement)** • Understand and use approximate equivalences between metric and common imperial units such as pints • Solve comparison, sum and difference problems using information presented in all types of graph including a line graph • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles • Use the properties of rectangles to deduce related facts and missing lengths and angles • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles • Describe positions on the first quadrant of a coordinate grid • Plot specified points and complete shapes • 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 • Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction) • Add and subtract numbers mentally with increasingly large numbers and decimals to two decimal places • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • 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 • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation	• Solve number problems and practical problems that involve all of the above **Written Calculations** • Add and subtract whole numbers with more than 4 digits and decimals with two decimal places, including using formal written methods (columnar addition and subtraction) • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **Fractions** • Round decimals with two decimal places to the nearest whole number and to one decimal place • Solve problems involving number up to three decimal places • 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 $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 **Measurement (Mass, Volume, Capacity and Time)** • Solve problems involving converting between units of time • Use all four operations to solve problems involving measure (for example, mass, capacity and volume) using decimal notation, including scaling • Understand the difference between liquid volume, including capacity and solid volume • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints **Measurement (Area and Volume)** • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes • Understand the difference between liquid volume, including capacity and solid volume • Estimate volume (for example, using 1 cm^3 blocks to build cuboids (including cubes)) and capacity (for example, using water)

Aintree Davenhill Primary School – Maths Curriculum Map

	• Choose an appropriate mental strategy to solve a calculation based upon the numbers involved • Add whole numbers with more than 4 digits including combinations of numbers with different amounts of digits using a column method e.g. 4,689 + 67,302 + 78Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Add decimals with two decimal places using a column method, e.g. 53.67 + 26.54 = • Subtract whole numbers with more than 4 digits including pairs of numbers with different amounts of digits, e.g. 54,368–9,279 • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Subtract decimals with two decimal places, e.g. 206.04–72.36 • Choose an appropriate strategy to solve a calculation based upon the numbers involved(recall a known fact, calculate mentally, use a jotting, written method) Statistics • Discrete data • Answer questions which ask 'How many/much more…?' or 'How many fewer/much less…?' when comparing two categories in a data set • Answer questions which ask 'How many in total…?' for different data readings • Solve question where the answer has to be inferred from a given data set e.g. few ice creams were sold on Tuesday because it was raining • Understand the purpose of different types of graph and identify which is best suited for a particular data set • Continuous data • Answer questions which ask 'How many/much more…?' or 'How many fewer/much less…?' when comparing two categories in a data set • Answer questions which ask 'How many in total…?' for different data readings • Solve question where the answer has to be inferred from a given data set e.g. few ice creams were sold on Tuesday because it was raining • Understand the purpose of different types of graph and identify which is best suited for a particular data set (Misconception to address in teaching. E.g. rainfall on different days with a day's data missing. It can't be inferred from previous and subsequent data) Geometry (Angles) • Know that angles are measured in degrees ° • Identify reflex angles as those greater than 180° where two lines meet • Compare all types of angles including reflex angles • Measure acute angles to the nearest degree • Measure obtuse angles to the nearest degree • Draw acute angles to the nearest degree • Draw obtuse angles to the nearest degree Geometry (Angles) • Measure and draw lines to the nearest mm • Draw shapes with some given side dimensions, for example draw a triangle with side lengths of 67mm and 4.3cm. What is the length of the other side? Is				• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	

	there more than one possibility? lengths and angles be? • Identify the perimeter of composite rectilinear shapes through accurate measuring to the nearest mm • Calculate/identify the length of missing sides of composite rectilinear shapes (lengths in mm and decimal cm) • Calculate the perimeter of a composite rectilinear shape where the lengths of some sides are not given (lengths in mm and decimal cm)					
Year 6	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 12 x 12 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1 or 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Order and compare whole numbers up to 1 000 000, negative numbers and decimals • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$ converting to $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Place Value and Decimals** • Identify, represent and estimate numbers using the number line • 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 • Use negative numbers in context, and calculate intervals across zero • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Order and compare numbers including integers, decimals and negative numbers • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Round decimals with three places to the nearest whole number or one or two decimal places • 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 • Solve number and practical problems that involve all of the above **Mental and Written Addition** • Perform mental calculations, including with mixed operations and large numbers and decimals	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 12 x 12 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Order and compare whole numbers up to 1 000 000, negative numbers and decimals • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps and convert equivalent fractions (e.g. count in steps of $\frac{1}{12}$ converting to $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}, \ldots$) **Place Value and Decimals** • Identify, represent and estimate numbers using the number line • 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 • Use negative numbers in context, and calculate intervals across zero • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Order and compare numbers including integers, decimals and negative numbers • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Round decimals with three places to the nearest whole number or one or two decimal places • 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 • Solve number and practical problems that involve all of the above **Fractions** • Identify common factors, common multiples and prime numbers	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 10 x 10 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Identify the multiples/factors of given numbers • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Compare and order two or more different positive and/or negative integers and/or decimal numbers with up to 3 decimal places, say which is the least/greatest; use the symbols <, > and = correctly and place on a number line • Calculate differences in temperature, including those that involve a positive and negative temperature • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps (e.g. of $\frac{1}{12}$, i.e. $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}$) **Place Value and Sequences** • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal • Use simple formulae • Generate and describe linear number sequences **Place Value and Negative Numbers** • Use negative numbers in context, and calculate intervals across zero • Order and compare numbers including integers, decimals and negative numbers **Coordinates** • Describe positions on the full coordinate grid (all four quadrants) **2-D and 3-D Shape** • Draw 2-D shapes using given dimensions and angles • Recognise, describe and build simple 3-D shapes, including making nets • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 10 x 10 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Identify the multiples/factors of given numbers • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Compare and order two or more different positive and/or negative integers and/or decimal numbers with up to 3 decimal places, say which is the least/greatest; use the symbols <, > and = correctly and place on a number line • Calculate differences in temperature, including those that involve a positive and negative temperature • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps (e.g. of $\frac{1}{12}$, i.e. $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}$) **Place Value and Decimals** • Identify, represent and estimate numbers using the number line • 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 • Use negative numbers in context, and calculate intervals across zero • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Order and compare numbers including integers, decimals and negative numbers • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Round decimals with three places to the nearest whole number or one or two decimal places • 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 • Solve number and practical problems that involve all of the above **Fractions, Percentages and Decimals** • Identify common factors, common multiples and prime numbers • Compare and order fractions, including fractions>1 (including on a number line)	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 10 x 10 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Identify the multiples/factors of given numbers • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Compare and order two or more different positive and/or negative integers and/or decimal numbers with up to 3 decimal places, say which is the least / greatest; use the symbols <, > and = correctly and place on a number line • Calculate differences in temperature, including those that involve a positive and negative temperature • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps (e.g. of $\frac{1}{12}$, i.e. $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}$) **Place Value and Decimals** • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Order and compare numbers including integers, decimals and negative numbers • Identify, represent and estimate numbers using the number line • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number **Fractions, Percentages and Decimals** • Round decimals with three places to the nearest whole number or one or two decimal places • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions>1 (including on a number line) • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Associate a fraction with division and calculate decimal fraction equivalents(e.g. 0.375)for a simple fraction (e.g. $\frac{3}{8}$) • Multiply simple pairs of proper fractions, writing the answer in its simplest form (using diagram)(e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) • Divide proper fractions by whole numbers(using diagram)(e.g. $\frac{1}{3} \times 2 = \frac{1}{6}$) • 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	**Number and Place Value (Mental Maths)** • Know by heart facts for all multiplication tables up to 10 x 10 • Find pairs of numbers with a sum of 100, decimals with a sum of 0.1, 1, 10 • To derive related facts from those already known (e.g. 4 x 0.8 linked to 4 x 8 or 3 + 7 = 10 linked to 0.3 + 0.7 = 1) • Mentally multiply and divide two-digit and single-digit numbers • Use partitioning to double or halve any number • Mentally multiply and divide pairs of multiples of 10 and 100 • Mentally multiply and divide two-digit decimals by a single digit number, e.g. (U.t x U or U.t ÷ U) • Identify the multiples/factors of given numbers • Read and write any integer and use decimal notation for tenths, hundredths and thousandths and know what each digit represents • Compare and order two or more different positive and/or negative integers and/or decimal numbers with up to 3 decimal places, say which is the least/ greatest; use the symbols <, > and = correctly and place on a number line • Calculate differences in temperature, including those that involve a positive and negative temperature • Count forwards and backwards in steps of 0.001, 0.01, 0.1, 1, 10, 100, 1000, 25, 2.5, 0.2, 0.25 from any positive or negative integer or decimal • Recall and use addition and subtraction facts for 1 (with decimal numbers to two decimal places) • Multiply and divide whole numbers and decimals mentally by 10 or 100, and integers by 1000 and use this to convert between units of measurement, e.g. cm to m, g to kg, etc. • Round whole numbers to the nearest 10, 100, 1000 or a number with up to three decimal places to the nearest integer or number of decimal places • Count in fraction steps (e.g. of $\frac{1}{12}$, i.e. $\frac{1}{12}, \frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{5}{12}, \frac{1}{2}$) **Place Value, Decimals and Fractions** • Count forwards or backwards in steps of integers, decimals or powers of 10 for any number • Order and compare numbers including integers, decimals and negative numbers • Identify, represent and estimate numbers using the number line • Find 0.001, 0.01, 0.1, 1, 10 and powers of 10 more or less than a given number • Round decimals with three places to the nearest whole number or one or two decimal places • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions>1 (including on a number line) • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Associate a fraction with division and calculate decimal fraction equivalents(e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) **Mental and Written Calculation** • Perform mental calculations, including with mixed operations and large numbers and decimals • Identify, represent and estimate numbers using the number line • Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction)

Aintree Davenhill Primary School – Maths Curriculum Map

	• Identify, represent and estimate numbers using the number line • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve addition multi-step problems in contexts, deciding which operations and methods to use and why • Solve problems involving addition • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Add whole numbers and decimals using formal written methods (columnar addition) • Solve problems which require answers to be rounded to specified degrees of accuracy **Mental and Written Multiplication** • 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 • Perform mental calculations, including with mixed operations and large numbers and decimals • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve problems involving addition, subtraction, multiplication and division • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Use, read, write and convert between standard units, converting measurements of time from a smaller unit to a larger unit, and vice versa • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • Solve problems which require answers to be rounded to specified degrees of accuracy **Mental and Written Subtraction** • Perform mental calculations, including with mixed operations and large numbers and decimals • Identify, represent and estimate numbers using the number line • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Solve problems involving subtraction • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns • Use estimation and inverse to check answers to calculations and determine, in	• Compare and order fractions, including fractions>1 (including on a number line) • Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g.$\frac{3}{8}$) • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts • Solve problems involving fractions **Fractions Calculations** • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Solve problems involving fractions	• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Movement of Shape (Translation and Reflection)** • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes **Data Handling (Mean, Median, Mode and Range)** • Calculate and interpret the mean as an average **Fractions Calculations** • Identify common factors, common multiples and prime numbers • 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 (using diagram) (e.g.$\frac{1}{4}\times\frac{1}{2}=\frac{1}{8}$) • Divide proper fractions by whole numbers(using diagram) (e.g.$\frac{1}{3}\div 2=\frac{1}{6}$) • Associate a fraction with division and calculate decimal fraction equivalents(e.g. 0.375)for a simple fraction (e.g.$\frac{3}{8}$) **Mental and Written Division** • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Solve problems which require answers to be rounded to specified degrees of accuracy **Mental and Written Multiplication** • 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve problems which require answers to be rounded to specified degrees of accuracy • Enumerate possibilities of combinations of two variables **Measurement** • Recognise that shapes with the same areas can have different perimeters and vice versa • Recognise when it is possible to use the formulae for area and volume of shapes • 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 (for example, mm^3 and km^3)	• Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g.$\frac{3}{8}$) • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts • Solve problems involving fractions **Ratio and Proportion** • Solve problems involving similar shapes where the scale factor is known or can be found • 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 unequal sharing and grouping using knowledge of fractions and multiples **Mental and Written Addition and Subtraction** • Identify, represent and estimate numbers using the number line • Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction) • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve problems involving addition and subtraction • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use their knowledge of the order of operations to carryout calculations involving the four operations **Algebra and Sequences** • Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal • Use simple formulae • Generate and describe linear number sequences • Convert between miles and kilometres **Measurement** • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure toa larger unit, and vice versa, using decimal notation to up to three decimal places • Solve problems involving the calculation and conversion of units of measure (including money and time), using decimal notation up to three decimal places where appropriate **2-D and 3-D Shape** • Draw 2-D shapes using given dimensions and angles • Recognise, describe and build simple 3-D shapes, including making nets • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **Data Handling** • Convert between miles and kilometres • Interpret and construct pie charts and line graphs and use these to solve problems • Solve comparison, sum and difference problems using information presented in all types of graph **Angles**	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 **Ratio and Proportion** • Solve problems involving similar shapes where the scale factor is known or can be found • 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 unequal sharing and grouping using knowledge of fractions and multiples **Mental and Written Calculation** • Perform mental calculations, including with mixed operations and large numbers and decimals • Identify, represent and estimate numbers using the number line • Add and subtract whole numbers and decimals using formal written methods (columnar addition and subtraction) • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Solve problems involving addition, subtraction, multiplication and division • Use their knowledge of the order of operations to carryout calculations involving the four operations • 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 to4 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 estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy **Algebra and Sequences** • Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal • Use simple formulae • Generate and describe linear number sequences • Convert between miles and kilometres **Measurement** • Solve problems involving the calculation and conversion of units of measure (including money and time),using decimal notation up to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **2-D and 3-D Shape** • Draw 2-D shapes using given dimensions and angles • Recognise, describe and build simple 3-D shapes, including making nets • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Select a mental strategy appropriate for the numbers involved in the calculation • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Solve problems involving addition, subtraction, multiplication and division • Use their knowledge of the order of operations to carryout calculations involving the four operations • 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 number using the formal written method of short division where appropriate, interpreting remainders according to the context • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy **Fractions Calculations** • Multiply simple pairs of proper fractions, writing the answer in its simplest form (using diagram)(e.g.$\frac{1}{4}\times\frac{1}{7}=\frac{1}{8}$) • Divide proper fractions by whole numbers(using diagram)(e.g.$\frac{1}{3}\times 2=\frac{1}{6}$) • 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 **Ratio and Proportion** • 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 **Coordinates** • Describe positions on the full coordinate grid(all four quadrants) **Movement of Shape (Translation and Reflection)** • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes **Algebra and Sequences** • Describe and extend number sequences including those with multiplication and division steps, inconsistent steps, alternating steps and those where the step size is a decimal • Use simple formulae • Generate and describe linear number sequences • Convert between miles and kilometres **Measurement (Length and Time)** • Solve problems involving the calculation and conversion of units of measure (including money and time),using decimal notation up to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places **Data Handling** • Calculate and interpret the mean as an average • Solve comparison, sum and difference problems using information presented in all types of graph **Measurement (Area and Perimeter)** • Recognise that shapes with the same areas can have different perimeters and vice versa • Recognise when it is possible to use the formulae for area of shapes • Calculate the area of parallelograms and triangles

	the context of a problem, an appropriate degree of accuracy • Subtract whole numbers and decimals using formal written methods (columnar subtraction) • Solve problems which require answers to be rounded to specified degrees of accuracy **Mental and Written Division** • Perform mental calculations, including with mixed operations and large numbers and decimals • Divide numbers up to4 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 • Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Solve problems involving division • Solve problems which require answers to be rounded to specified degrees of accuracy • Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy **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 similar shapes where the scale factor is known or can be found **Measurement** • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • Solve problems involving the calculation of units of measure (including money and time), using decimal notation up to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length and mass, 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 **Angles** • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles			• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	• Continue to complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes) • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius **Data Handling** • Calculate and interpret the mean as an average • Solve comparison, sum and difference problems using information presented in all types of graph **Angles** • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	