

Mathematics at Park Hill Junior School

Year 5

Autumn Term		
	Strands	Summary
1	Number and place value (NPV); Written addition and subtraction (WAS)	Read, write, compare and order 5-digit numbers, understanding the place value and using < and > signs; add and subtract multiples of 10, 100 and 1000 to and from 5-digit numbers; use written addition to add two 4-digit numbers; work systematically to spot patterns
2	Mental addition and subtraction (MAS); Number and place value (NPV)	Add and subtract 2-digit numbers mentally; choose a strategy for solving mental additions or subtractions; solve word problems
3	Decimals, percentages and their equivalence to fractions (DPE); Mental multiplication and division (MMD)	Understand place value in decimal numbers; multiply and divide numbers with up to two decimal places by 10 and 100; multiply and divide by 0 and 100; add and subtract 0.1 and 0.01; multiply and divide by 4 by doubling or halving twice; use mental multiplication strategies to multiply by 20, 25 and 9
4	Measurement (MEA)	Revise converting 12-hour clock times to 24-hour clock times; find a time a given number of minutes or hours and minutes later; calculate time intervals using 24-hour clock format; measure lengths in mm and convert to cm; find perimeters in cm and convert cm to m
5	Written addition and subtraction (WAS); Mental addition and subtraction (MAS)	Solve subtraction using a written method for 3-digit – 3-digit numbers and for 4-digit numbers; use counting up (Frog) as a strategy to perform mental subtraction; find change from a multiple of ten pounds using counting up
6	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Recognise which numbers are divisible by 2, 3, 4, 5, 6, 9 and 25 and identify multiples; find factors; compare and place fractions on a line; find equivalent fractions and reduce them to their simplest form
7	Mental multiplication and division (MMD); Written multiplication and division (WMD)	Use mental strategies to multiply and divide multiples of 10 and 100; use a written method to multiply 3-digit and 4-digit numbers by 1-digit numbers and estimate answers; divide 3-digit numbers by 1-digit numbers using a written method and express remainders as a fraction
8	Geometry: properties of shapes (GPS)	Use a protractor to measure and draw angles in degrees; recognise, use terms and classify angles as obtuse, acute and reflex; recognise that angles on a line total 180° and angles round a point total 360°; identify and name parts of a circle including diameter, radius and circumference; draw circles to a given radius using a pair of compasses; relate angles to turns, and recognise that a 360° angle is a complete turn; use angle facts to solve problems related to turn
9	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Place numbers to 100 000 and decimals up to two places on a line, round numbers to the nearest 10, 100 and 1000 and decimals up to two places to the nearest whole number; compare and order numbers with up to two decimal places; reduce fractions to their simplest form; know and recognise equivalent fractions and decimals to half, tenths and fifths
10	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Number and place value (NPV); Written multiplication and division (WMD); Mental multiplication and division (MMD)	Revise mental and written addition and subtraction strategies, choose to use a mental strategy or written method to solve addition and subtraction, choose to solve multiplication and division questions including 2- and 3-digit by 1-digit and 2-digit by 2-digit using a mental or a written method, Identify the operation being used on numbers, understand that addition and subtraction are inverse operations multiplication and division, use function machines

Spring Term		
	Strands	Summary
11	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE)	Read, write and order numbers with up to 6 digits and understand the place value of each digit; place 6-digit numbers on a number line and find numbers between; solve place-value additions and subtractions with 6-digit numbers; understand place value in decimal numbers as tenths and hundredths; multiply and divide by 10/100/1000 using a place-value grid; understand place value in decimal numbers to 2-decimal places; place decimal numbers on a line; round two-place decimal numbers to nearest tenth and whole number; say the number a tenth or a hundredth more
12	Mental addition and subtraction (MAS); Written addition and subtraction (WAS)	Rehearse mental addition strategies for decimals and whole numbers; use counting on as a strategy to perform mental addition of 2-place decimals to the next whole number; solve missing number sentences; use mental strategies to solve word problems; use counting up as a strategy to perform written subtraction (Frog)
13	Mental multiplication and division (MMD); Number and place value (NPV)	Use rules of divisibility to find if numbers are divisible by 2, 3, 4, 5, 9 and 10; identify prime numbers; revise finding factors of numbers; find squares and square roots of square numbers; make and test rules; use mental multiplication and division strategies; relate mental division strategies to multiples of ten of the divisor
14	Geometry: properties of shapes (GPS); Measurement (MEA); Statistics (STA)	Know properties of equilateral, isosceles, scalene and right-angled triangles; find that angles in a triangle have a total of 180°; sort triangles according to their properties; use scales to weigh amounts to the nearest half interval; convert from grams to kilograms and vice versa, from millilitres to litres and vice versa, and from metres to kilometres and vice versa; read scales to the nearest half division; understand that we measure distance in kilometres and miles; use ready reckoning to give approximate values of miles in kilometres and vice versa; draw line conversion graphs
15	Written addition and subtraction (WAS)	Use a written column method to add amounts of money in pounds and pence; add 2-place decimals using written column addition; subtract decimal numbers using counting up (Frog)
16	Written multiplication and division (WMD)	Use a written method (grid) to multiply pairs of 2-digit numbers; use short division to divide 3-digit numbers by 1-digit numbers, including those which leave a remainder
17	Written multiplication and division (WMD); Fractions, ratio and proportion (FRP)	Find unit fractions and non-unit fractions of 3-digit numbers; use short multiplication to multiply 3-digit numbers by 1-digit numbers; begin to use short multiplication to multiply 4-digit numbers by 1-digit numbers
18	Geometry: properties of shapes (GPS); Measurement (MEA)	Understand what a polygon is; draw polygons using dotted square and isometric paper; revise terms obtuse, acute and reflex angles, perpendicular and parallel sides; recognise quadrilaterals as polygons and identify their properties; classify quadrilaterals; draw regular polygons and explore their properties; revise metric units of weight, capacity and length; understand that we can measure in imperial units and relate these to their instances in daily life
19	Fractions, ratio and proportion (FRP)	Place mixed numbers on lines; count up in fractions using equivalence; convert improper fractions to mixed numbers and vice versa; write improper fractions as mixed numbers and vice versa; multiply proper fractions by whole numbers
20	Written addition and subtraction (WAS)	Solve subtraction of 4-digit numbers using written column subtraction (decomposition); add several numbers using written column addition; use column to solve problems

Summer Term		
	Strands	Summary
21	Mental addition and subtraction (MAS); Decimals, percentages and their equivalence to fractions (DPE)	Add mentally 2-place decimal numbers in the context of money using rounding; add several small amounts of money using mental methods; mentally subtract amounts of money including giving change; calculate the difference between two amounts using counting up; solve word problems, including 2-step problems, choosing an appropriate method
22	Fractions, ratio and proportion (FRP); Written multiplication and division (WMD)	Multiply fractions less than 1 by whole numbers, convert improper fractions to whole numbers; use short multiplication to multiply 3-digit and 4-digit numbers by 1-digit numbers; use long multiplication to multiply 2-digit and 3-digit numbers by teens numbers
23	Decimals, percentages and their equivalence to fractions (DPE); Number and place value (NPV)	Read, write and compare decimals to three decimal places, understanding that the third decimal place represents thousandths; multiply and divide numbers by 10, 100 and 1000 using 3-place decimal numbers in the calculations; place 2-place decimals on a number line and round them to the nearest tenth and whole number; read, write, order and compare 3-place decimal numbers; understand and use negative numbers in the context of temperature
24	Geometry: position and direction (GPD); Geometry: properties of shapes (GPS)	Read and mark co-ordinates in the first two quadrants; draw simple polygons using co-ordinates; translate simple polygons by adding to and subtracting from the co-ordinates; reflect simple shapes in the y axis or in a line, noting the effect on the co-ordinates; translate simple shapes and note what happens to the co-ordinates; draw regular and irregular 2D shapes using given dimensions and angles; use the properties of 2D shapes, including rectangles, to derive related facts; identify 3D shapes from 2D representations; create 3D shapes using 2D nets and draw 3D shapes
25	Written addition and subtraction (WAS)	Add 5-digit numbers using written column addition; subtract 5-digit numbers using written method (decomposition); check answers to subtractions using written column addition; solve subtractions of 4- and 5-digit numbers using written column subtraction or number line counting up
26	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP)	Identify factors and multiples, find factor pairs; revise equivalent fractions; compare and order fractions with related denominators; add fractions with same or related denominators, then convert answer into a mixed number; subtract fractions with same and related denominators, revise multiplying fractions by whole numbers
27	Written multiplication and division (WMD)	Use short division to divide 3-digit numbers by 1-digit numbers and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers
28	Measurement (MEA)	Find the area and perimeter of squares and rectangles by calculation and pursue a line of enquiry; estimate and find the area of irregular shapes; calculate the perimeter and area of composite shapes; use the relations of area and perimeter to find unknown lengths; begin to understand the concept of volume; find the volume of a cube or cuboid by counting cubes; understand volume as measurement in three dimensions; relate volume to capacity; recognise and estimate volumes
29	Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP); Number and place value (NPV)	Understand what percentages are, relating them to hundredths; know key equivalences between percentages and fractions, finding percentages of amounts of money; find equivalent fractions, decimals and percentages; solve problems involving

		fraction and percentage equivalents; write dates using Roman numerals
30	Statistics (STA); Measurement (MEA); Written multiplication and division (WMD); Mental multiplication and division (MMD)	Find cubes of numbers to 10; draw and interpret line graphs showing change in temperature over time; begin to understand rate; use timetables using the 24-hour clock and use counting up to find time intervals of several hours and minutes; solve problems involving scaling by simple fractions; use factors to multiply; solve scaling problems involving measure