Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	**Number** **(22-36)** I can recite some numbers in a sequence. I can create and experiment with symbols and marks that make numbers. **(30-50)** I can use some numbers during play. I can find examples of numbers in the environment and say what they are. I can represent numbers using marks, fingers or pictures. **Shape** **(22-36)** I can notice simple shapes or patterns in pictures. I can create and experiment with symbols and marks that make numbers. I can use language associated with size. **(30-50)** I can make arrangements with shapes such as creating pictures. I can identify shapes in the world around me identifying similarities. I can use positional language; up, down, in front etc.	**Calculation** **(22-36)** I can a make comparison between quantities using—more, a lot. I can explain how a group of objects has changed when I add or take objects away—more and Less. **(30-50)** I can identify and count groups of objects up to 5. I can select the correct number to represent a group of objects up to 5. **Time** I can use language associated with immediate past, future; Later I am… Before break I… Soon I will… I can say what day it is today with support.	**Number** **(30-50)** I can show curiosity about numbers (is that a number? What does it mean?). I can recite numbers to 10 in sequence. I can find examples of numbers 1-5 in the environment and attempt to copy them. **Shape** **(30-50)** I can find shapes in the environment. I can create pictures or patterns using shapes and talk about the shapes I have used. I can use language round, tall, curved etc. I can identify squares, rectangles, triangles and circles in 2D form and in the environment.	**Calculation** **(30-50)** I can compare two groups of objects and say when they have the same amount. I can explain how changing the position of a group of 3 or 4 objects doesn't change the total. I can split groups (3&4) into parts and understand that the total will be the same. I can begin to show an interest in number problems . **Time** **(30-50)** I can use language associated with immediate past, future; Later I am… Before break I… Soon I will… I can recall days of the week with some days in the correct order.	**Number** **(30-50)** I can recite numbers to 10 in sequence. I can count in my immediate environment; steps, wheels on a car, a pile of books etc. **(40-60)** I can recognise number of personal significance i.e. I am… I can recognise numerals 1-5 and begin to write them. I can count actions or objects which cannot be moved i.e. steps, claps etc upto 10. **Shape** **(30-50)** I can use language round, tall, curved etc. **(40-60)** I can use the vocabulary flat and solid to identify 2D and 3D shapes. I can identify and select common shapes Inc. semi-circle.	**Calculation** **(40-60)** I can count up to 6 objects. I can explain how changing the position of a group of up to 5 objects doesn't change the total. I can split groups of up to 5 into parts and understand that the total will be the same. I can begin to show an interest in number problems . **Time** **(40-60)** I can use everyday language related to time inc. Yesterday I… Today I… tomorrow I... I can order and sequence familiar events i.e. school day. I can recall days of the week with most days in the correct order.
	Objectives to feed in throughout the year; Counting 1-10 Identifying number 1-5 Forming numbers 1-5 Days of the week.					

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	**Number** **(40-60)** I can count up to 3-4 objects saying 1number name for each item. I can recognise numbers of personal significance. I can record using marks that I can interpret and explain. I can recognise numerals 1-5 and begin to write them using marks I recognise. I can count actions or objects (that can't be moved) i.e. steps, claps etc. up to 10. I can count irregular arrangements of numbers up to 10. I can estimate the number of objects up to 10. I can select the correct numerals 1-5 then 5-10. **Shape** **(40-60)** I can use the vocabulary of flat and solid to identify 2D and 3D shapes. I can identify and select basic named shapes inc. semi-circle, pentagon and hexagon. I can explain how the properties of a square and rectangle differ. I can identify the basic properties of the above shapes. I can make arrangements with 2D shapes and recognise and create 2D shape patterns.	**Calculation** **(40-60)** I can use fewer and more to describe and compare two sets of object (up to 10). I can find the total of two groups by counting all of them (up to 10). I can use apparatus to identify a number that is one more. I can find 1 more or 1 less in numbers (to 5 the 10) from a group of objects. I can say number that is 1 more or 1 less than the given number. **Time** **(40-60)** I can use everyday language related to time inc. Yesterday I… Today I… tomorrow I... I can order and sequence familiar events i.e. school day. I can measure short periods of time in simple ways. **Space** **(40-60)** I can describe my relative position i.e. beyond, next to etc. I can use positional language.	**Number** **(40-60)** I can recognise numerals 1-10 and write them. I can order numbers 1-10 and write them correctly. **Shape** **(40-60)** I can explain how the properties of a square and rectangle differ. I can identify the basic properties of simple 2D shapes. I can create repeating patterns i.e. colour and shape. I can create and describe repeating patterns i.e. colour and shape (ELG). **Money** **(40-60)** I can use language associated with money. I can count in 1ps. I can pay for objects (up to 5p then 10p) giving the correct amount of 1ps.	**Calculation** **(40-60)** I can use fewer and more to describe and compare two sets of objects (up to 20). I can use basic terminology relating to addition and subtraction. I can find the total of two groups by counting all of them (up to 10) and record this using simple number sentences. I can find 1 more and 1 less in numbers (to 20). I can estimate the amount of objects in a group. I can identify my own mathematical problems based on my own interests. **Measure** **(40-60)** I can order up to 3 objects according to their size. I can order up to 3 objects according to their length or height. I can order two items according to their weight. I can order two items according to their capacity.	**Number** **(ELG)** I can count reliably to 20. I can recognise numerals 1-20 and write them. I can order numbers 1-20. I can identify missing numbers on a number line 1-20. I can identify a missing number on a number line 1-10. **(EXCEEDING)** **I can estimate a number of objects and check quantities by counting up to 20.** **I can solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups.** **Money** **(40-60)** I can begin to use everyday language in relation to money. I can recognise some coins 1 pence to 1 pound. I can use coins in the context of shopping ,using associate language (1p, 2p and 10p).	**Calculation** **(ELG)** I can solve practical problems that involve combining groups of 2, 5 or 10, or sharing into equal groups. I can use basic terminology relating to addition and subtraction. I can find the total of two single digit numbers using pictures, objects and number lines. I can subtract 2 single digit numbers counting on or back to find the answer. I can create my own number sentences (1's+1's) and find the answer. I can double numbers to 5 and halve numbers to 10 using grouping and sharing. I can use number bonds from 1-5 and their related inverse facts. **Measure** **(40-60)** I can order up to 5 objects according to their size. I can order up to 5 objects according to their length or height. I can order 3 items according to their weight. I can order 3 items according to their capacity. **(EXCEEDING)** **I can estimate, measure, weigh and compare and order objects and talk**
	Objectives to feed throughout the year; Counting 1-20 and beyond Identifying number 1-20 Forming numbers 1-20 Days of the week and months of the year O'clock					

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Number and Place Value** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. **Geometry** Recognise and name common 2-D and 3 -D shapes, including: -2-D shapes [for example, rectangles (including squares), circles and triangles]. -3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	**Number + & -** Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Represent and use number bonds and related subtraction facts within 20. **Measures (Time)** Understanding time [for example, quicker, slower, earlier, later]. Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]. Recognise and use language relating to dates, including days of the week, weeks, months and years. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. **Real Life Maths Week** ****Linked to Whitgreave Wheels ****	**Number and Place Value** Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Read and write numbers from 1 to 20 in numerals and words. **Number x & /** Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	**Number + & -** Add and subtract one-digit and two-digit numbers to 20, including zero. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. **Measures (Money)** *Link* Recognise and know the value of different denominations of coins and notes. **Geometry** Recognise and name common 2-D and 3 -D shapes, including: -2-D shapes [for example, rectangles (including squares), circles and triangles]. -3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. Describe position, direction and movement, including whole, half, quarter and three-quarter turns. **Real Life Maths Week** ****Linked to Whitgreave Wheels ****	**Fractions** Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. **Measures (Standard units)** Compare, describe and solve practical problems for: -lengths and heights [for example, long/ short, longer/shorter, tall/short, double/ half]. -mass/weight [for example, heavy/light, heavier than, lighter than]. -capacity and volume [for example, full/ empty, more than, less than, half, half full, quarter]. Measure and begin to record the following: -lengths and heights -mass/weight -capacity and volume -time (hours, minutes, seconds).	**Number x & /** Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. **Geometry—Position** Describe position, direction and movement, including whole, half, quarter and three-quarter turns. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****
	Objectives to feed throughout the year; Recall multiplication and division facts for multiplication tables up to 12 × 12. 10x, 2x 5x (Greater Depth)					

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 1
Year 2	**Number and Place Value** Recognise the place value of each digit in a two-digit number (tens, ones). Read and write numbers to at least 100 in numerals and in words. 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 **Number + & -** Solve problems with addition and subtraction: - Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. - Applying their increasing knowledge of mental and written methods. Use estimation to check that thier answers to a calculation are reasonable (e.g. 48+35 would be <100). Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - A two-digit number and ones - A two-digit number and tens - Two two-digit numbers - Adding three one-digit numbers	**Measures (Money)** Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. **Statistics** Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data. **Geometry** Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid] Compare and sort common 2-D and 3-D shapes and everyday objects. **Real Life Problems (1 week)**	**Number x & /** Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Measures (Time)** Compare and sequence intervals of time. Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day. . **Number and Place Value (M/O revisit)** 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.	**Number + & -** .Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: - A two-digit number and ones - A two-digit number and tens - Two two-digit numbers - Adding three one-digit numbers Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **Fractions** Recognise, find, name and write fractions , 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity. Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels **** **Objectives to feed throughout the year;** Recall multiplication and division facts for multiplication tables up to 12 × 12. 10x, 5x, 2x, 3x. Children are also able to find patterns of odd and even within X Tables.	**Statistics** Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data. **Measures (Standard Units)** Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and record the results using >, < and =.	**Number x & /** Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. **Geometry—Position** Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Number and Place Value** Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Compare and order numbers up to 1000. **Number + & -** Add and subtract numbers mentally, including: a three-digit number and ones three-digit number and tens, a three-digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction + estimating. I can add and subtract using £ and p in practical contexts. I can add and subtract amounts of money to give change, using both £ and p in practical contexts.	**Measures (Standard Units)** I can read scales in divisions of 1s, 2s, 5s and 10s, in practical situations (where not all numbers on the scales are given). I can read measuring instruments with increasing accuracy,. I can compare, add and subtract measures. Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). **Area and Perimeter** Measure the perimeter and area of simple 2-D shapes. **Geometry** Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****	**Number x & /** Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Recognise and use factor pairs and commutatively in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. **Number and Place Value (M/O revisit)** Identify, represent and estimate numbers using different representations. Read and write numbers up to 1000 in numerals and in words. Solve number problems and practical problems involving these ideas. **Statistics** Interpret and present data using bar charts, pictograms and tables. Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	**Number + & -** Add and subtract numbers mentally, including: a three-digit number and ones three-digit number and tens, three-digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of column addition, subtraction and estimating. I can add and subtract amounts of money to give change, using both £ and p in practical contexts. **Geometry** Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****	**Fractions** Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. **Statistics (M/O revisit)** Interpret and present data using bar charts, pictograms and tables. Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. **Measures (Time)** Tell and write the time from an analogue clock, including using roman numerals from I to XII, and 12-hour and 24-hour clocks. Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events [for example to calculate the time taken by particular events or tasks].	**Number x & /** Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. **Number Fractions** Add and subtract fractions with the same denominator within one whole [for example, + =]. Compare and order unit fractions, and fractions with the same denominators. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****
	Objectives to feed throughout the year; Recall multiplication and division facts for multiplication tables up to 12 × 12. 3x, 4x, 6x, 11x					

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 1/2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	**Number and Place Value** Order and compare numbers beyond 1000. Identify, represent and estimate numbers using different representations. Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that involve all of the above and with increasingly large positive numbers. Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Read roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. Identify, represent and estimate numbers using different representations. Count in multiples of 6, 7, 9, 25 and 1000 Round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to two decimal places. **Number + & -** Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation.	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. I can add and subtract money with decimal places. I can use both £ and p in context and recognise equivalence e.g. 306p = £3.06 **Autumn 2** **Measure inc Area and Perimeter** Convert between different units of measure [for example, kilometre to metre; hour to minute]. Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares. Estimate, compare and calculate different measures, including money in pounds and pence. **Geometry** Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify acute and obtuse angles and compare and order angles up to two right angles by size. Identify lines of symmetry in 2-D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry. **Real Life Problems (1 week)** ****Linked to Learning Wheels **** **Objectives to feed throughout the year;** Recall multiplication and division facts for multiplication tables up to 12 × 12. 7x, 8x, 9x, 12x	**Number x & /** Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. **Number and Place Value (M/O revisit)** Objectives from Autumn 1 during mental starters. **Statistics** Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	**Number + & -** Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why including money. **Geometry (Position)** Describe positions on a 2-D grid as co-ordinates in the first quadrant. Describe movements between positions as translations of a given unit to the left/right and up/down. Plot specified points and draw sides to complete a given polygon. **Measure (Time)** I can read, write and convert time between analogue and digital 12 and 24 hour clocks. I can solve problems involving calculating lengths of time. I can convert hours to minutes, minutes to seconds, years to months or weeks to days. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****	**Fractions** Recognise and show, using diagrams, families of common equivalent fractions. Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. Add and subtract fractions with the same denominator. **Measures (Money)** Estimate, compare and calculate different measures, including money pounds and pence. **Area and Perimeter (M/O revisit)** Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares.	**Number x & /** Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. Recognise and use factor pairs and commutativity in mental calculations. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. **Decimals** Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to 1/4, 1/2, 3/4. Find the effect of dividing a one- or two -digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. Solve simple measure and money problems involving fractions and decimals to two decimal places. **Real Life Problems (1 week)** ****Linked to Whitgreave Wheels ****

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	**Number and 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. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 . Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 . Read roman numerals to 1000 (M) and recognise years written in roman numerals. Solve number problems and practical problems that involve all objectives relating to place value. **Number + & -** Add and subtract whole numbers with more than 4 digits, including using formal written methods (column addition and subtraction). Add and subtract numbers mentally with increasingly large numbers. Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	**Measures (Standard Units)** Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **Geometry** Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. **Real Life Problems (2 weeks)** ****Linked to Whitgreave Wheels **** **Objectives to feed throughout the year;** (Re-cap of Number facts to 12x12) Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Multiply and divide 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.	**Number x & /** Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two -digit numbers. Multiply and divide 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. **Number and Place Value (M/O revisit)** Objectives from Autumn 1 during mental starters. **Measure (Time)** I can solve problems which involve converting between units of time, e.g, expressing answer as days and weeks. I can solve problems involving time including reading timetables.	**Number + & -** Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). Add and subtract numbers mentally with increasingly large numbers. Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. **Fractions** Compare and order fractions whose denominators are all multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, + = = 1]. Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. **Real Life Problems (2 weeks)** ****Linked to WhitgreaveWheels ****	**Statistics** Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables, including timetables. **Area and Perimeter** Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. Solve problems involving converting between units of time. **Geometry (Position)** Draw given angles, and measure them in degrees (o). Identify: • Angles at a point and one whole turn (total 360o). • Angles at a point on a straight line and a turn (total 180o). • Other multiples of 90o. 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.	**Number x & /** Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. Number Fractions. **Fractions** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places 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 , , , , and those fractions with a denominator of a multiple of 10 or 25. **Real Life Problems (2 weeks)** ****Linked to Whitgreave Wheels ****

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Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2
Year 6	**Number and Place Value** 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. Solve number and practical problems that involve all of the above. 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. **Number + & -, x and /** Confidently add numbers mentally, with increasingly large numbers, manipulating expressions to simply the calculation. Confidently estimate the answer to an addition calculation and use the inverse to check it's correct. Confidently add whole numbers with more than 4 digits, using formal column addition. Confidently add a mix of whole numbers and decimals with different numbers of decimal places using column addition. Confidently subtract numbers mentally, with increasingly large numbers, manipulating expressions to simply the calculation. Confidently estimate the answer to a subtraction calculation and use the inverse to check it's correct. Confidently subtract whole numbers with more than 4 digits, using formal column subtraction. Confidently subtract a mix of whole numbers and decimals with different numbers of decimal places using column subtraction. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 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	**Fractions** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1. 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 [for example, 1/4 × 1/2 = 1/8). Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,]. Multiply one-digit numbers with up to two decimal places by whole numbers. Use written division methods in cases where the answer has up to two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Decimals and Percentages** Multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places. Associate a fraction with division and calculate decimal equivalents of common fractions such as halves, quarters and fifths. Calculate more complex decimal equivalents such as 3/8 = 0.375, using my understanding of fractions and decimals. I can recall and use equivalence between fractions, decimals and % to solve problems (e.g, 10% of £5.00 or 50% of the team). Use the relationship between fractions, decimals and %, to decide how best to approach a problem (e.g. 40% is the same as 2/5, 85% = 50% + 20% + 10% +5%). Solve % problems in a variety of contexts such as comparing % (e.g, best buys). the whole).	**Geometry** 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. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. **Area and Perimeter** Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. **Measures (Standard Units)** Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Convert between miles and kilometres.	**Ratio and Proportion** Solve problems involving similar shapes where the scale factor is known or can be found. Identify that a problem can be written as a ratio and solve problems using the relationship. Divide a quantity in a given ratio (recognising the proportion as a fraction of **Algebra** Use simple formulae. Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables. **Statistics** Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.
	Objectives to feed throughout the year; (Re-cap of Number facts to 12x12) Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.			

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6 (WEBSITE)	**Number and Place Value** 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. Solve number and practical problems that involve all of the above. 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. **Number + & -,** Confidently add numbers mentally, with increasingly large numbers, manipulating expressions to simply the calculation. Confidently estimate the answer to an addition calculation and use the inverse to check it's correct. Confidently add whole numbers with more than 4 digits, using formal column addition. Confidently add a mix of whole numbers and decimals with different numbers of decimal places using column addition. Confidently subtract numbers mentally, with increasingly large numbers, manipulating expressions to simply the calculation. Confidently estimate the answer to a subtraction calculation and use the inverse to check it's correct. Confidently subtract whole numbers with more than 4 digits, using formal column subtraction. Confidently subtract a mix of whole numbers and decimals with different numbers of decimal places using column subtraction. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	**Number x and /** 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. **Fractions** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. Compare and order fractions, including fractions > 1. 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 [for example, 1/4 × 1/2 = 1/8). Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]. Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,].	**Fractions (Continued)** Multiply one-digit numbers with up to two decimal places by whole numbers. Use written division methods in cases where the answer has up to two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. **Decimals and Percentages** Multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places. Associate a fraction with division and calculate decimal equivalents of common fractions such as halves, quarters and fifths. Calculate more complex decimal equivalents such as 3/8 = 0.375, using my understanding of fractions and decimals. I can recall and use equivalence between fractions, decimals and % to solve problems (e.g, 10% of £5.00 or 50% of the team). Use the relationship between fractions, decimals and %, to decide how best to approach a problem (e.g. 40% is the same as 2/5, 85% = 50% + 20% + 10% +5%). Solve % problems in a variety of contexts such as comparing % (e.g, best buys).	**Geometry** 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. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. **Area and Perimeter** Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].	**Measures (Standard Units)** Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. Convert between miles and kilometres. **Ratio and Proportion** Solve problems involving similar shapes where the scale factor is known or can be found. Identify that a problem can be written as a ratio and solve problems using the relationship. Divide a quantity in a given ratio (recognising the proportion as a fraction of	**Algebra** Use simple formulae. Generate and describe linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy an equation with two unknowns. Enumerate possibilities of combinations of two variables. **Statistics** Interpret and construct pie charts and line graphs and use these to solve problems. Calculate and interpret the mean as an average.
	Objectives to feed throughout the year; (Re-cap of Number facts to 12x12) Perform mental calculations, including with mixed operations and large numbers. Identify common factors, common multiples and prime numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.					

Whitgreave Primary School—Curriculum Map

Subject Leader—A Albutt

	Number	Algebra	Ratio, Proportion, Rates and Change	Geometry and Measures	Probability
Year 7/8	Understand and use place value for decimals, measures and integers of any size Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥ . Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative. Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals. Recognise and use relationships between operations including inverse operations. Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations. Interpret and compare numbers in standard form A x 10n 1≤A<10, where n is a positive or negative integer or zero. Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and or 0.375 and) 27. Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% . Interpret fractions and percentages as operators . Use standard units of mass, length, time, money and other measures, including with decimal quantities. Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation a<x≤b. Use a calculator and other technologies to calculate results accurately and then interpret them appropriately. Appreciate the infinite nature of the sets of integers, real and rational numbers.	Use and interpret algebraic notation, including: Substitute numerical values into formulae and expressions, including scientific formulae. Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors. Simplify and manipulate algebraic expressions to maintain equivalence. Understand and use standard mathematical formulae; rearrange formulae to change the subject. Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs. Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement). Work with coordinates in all four quadrants. Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane. Interpret mathematical relationships both algebraically and graphically. Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically. Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations. Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs. Generate terms of a sequence from either a term-to-term or a position-to-term rule. Recognise arithmetic sequences and find the nth term. Recognise geometric sequences and appreciate other sequences that arise.	Change freely between related standard units [for example time, length, area, volume/capacity, mass]. Use scale factors, scale diagrams and maps. Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1. Use ratio notation, including reduction to simplest form. Divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio . Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction. Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions. Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics. Solve problems involving direct and inverse proportion, including graphical and algebraic representations. Use compound units such as speed, unit pricing and density to solve problems.	Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders). Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes. Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line. Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric. Use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles Understand and use the relationship between parallel lines and alternate and corresponding angles Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D Interpret mathematical relationships both algebraically and geometrically.	Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale. Understand that the probabilities of all possible outcomes sum to 1. Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams. Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities. **Statistics** Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) . Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data. Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.