The Avenue Infant School

Maths Progression Map

December 2015

CONTINUOUS MENTAL MATHS THROUGHOUT WHOLE YEAR FOR ALL YEAR GROUPS EITHER BASED ON CURRENT CONCEPT OF PREVIOUSLY TAUGHT CONCEPT.

Term Focus Objectives Resources CCJ Blocks		Reception	Year One	Year 2
Autumn 1 Main Focus			Number Place Value	Number Place Value
Autumn 1 Symphony Gold Objectives (Some Bronze /Silver identified if very different from Gold statements) Reception 30-50 months	Numbers ▪ Uses some number names and number language spontaneously. ▪ Uses some number names accurately in play. ▪ Recites numbers in order to 10. ▪ Knows that numbers identify how many objects are in a set. ▪ Beginning to represent numbers using fingers, marks on paper or pictures. ▪ Sometimes matches numeral and quantity correctly. ▪ Shows curiosity about numbers by offering comments or asking questions. ▪ Compares two groups of objects, saying when they have the same number. ▪ Shows an interest in number problems. ▪ Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same. ▪ Shows an interest in numerals in the environment. ▪ Shows an interest in representing numbers. ▪ Realises not only objects, but anything can be counted, including steps, claps or jumps. Shape, space and measures ▪ Shows an interest in shape and space by playing with shapes or making arrangements with objects. ▪ Shows awareness of similarities of shapes in the environment. ▪ Uses positional language. ▪ Shows interest in shape by sustained construction activity or by talking about shapes or arrangements. ▪ Shows interest in shapes in the environment. ▪ Uses shapes appropriately for tasks. ▪ Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'.	Pupil can: NUMBER KNOWLEDGE AND PLACE VALUE ■count beyond 100, forwards and backwards, beginning with 0 or 1, or from any given number ■able to say one more or one less than a number beyond 100 ■count in multiples of 2s, 5s and 10s to 100 ■given a number, say one more and one less ■write numbers 1-20 in numerals and words (not necessarily spelt correctly)	Pupil can: NUMBER AND PLACE VALUE Bronze ■count in steps of 2 and 5 from 0; forwards and backwards. Silver ■count in steps of ten from any number, forward and backward ■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 ■identify odd and even numbers Gold ■count in steps of 3 from 0 to at least 30 ■understand the importance of 0 as a place holder in 2 and 3 digit numbers ■partition numbers in different ways e.g. 23 as 20+3 or 10+13 ■estimate numbers on an empty number line ■round numbers to the nearest 10 ■compare and order numbers beyond 100 ■solve problems and explain reasoning ■read and write numbers beyond 100 in numerals and words ■begin to understand the place value of 3 digit numbers

Term Focus Objectives Resources CCJ Blocks	Reception	Year One	Year 2
Autumn 2 Main Focus		Number Place Value Measurement	Addition & Subtraction (Including problem solving) Statistics Shape

Autumn 2
Symphony Gold Objectives
 	
(Some Bronze /Silver identified if very different from Gold statements)
 	
Reception 30-50 months
	<u>Numbers</u>
	▪ Uses some number names and number language spontaneously.
	▪ Uses some number names accurately in play.
	▪ Recites numbers in order to 10.
	▪ Knows that numbers identify how many objects are in a set.
	▪ Beginning to represent numbers using fingers, marks on paper or pictures.
	▪ Sometimes matches numeral and quantity correctly.
	▪ Shows curiosity about numbers by offering comments or asking questions.
	▪ Compares two groups of objects, saying when they have the same number.
	▪ Shows an interest in number problems.
	▪ Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.
	▪ Shows an interest in numerals in the environment.
	▪ Shows an interest in representing numbers.
	▪ Realises not only objects, but anything can be counted, including steps, claps or jumps.
	
	<u>Shape, space and measures</u>
	▪ Shows an interest in shape and space by playing with shapes or making arrangements with objects.
	▪ Shows awareness of similarities of shapes in the environment.
	▪ Uses positional language.
	▪ Shows interest in shape by sustained construction activity or by talking about shapes or arrangements.
	▪ Shows interest in shapes in the environment.
	▪ Uses shapes appropriately for tasks.
	▪ Beginning to talk about the shapes of everyday objects, e.g. 'round' and 'tall'.
		As above for Number and Place Value plus the pupil can…
		
		MEASUREMENT
		Silver
		■recognise the value of different denominations of coins and notes (NOT conversion at this stage)
		
		Gold
		■use everyday language to compare, describe and solve practical problems for time for example, quicker, slower, earlier and later
		■begin to measure and record the following using standard units of measurement and equipment when given the equipment and units of measure to use
		   □lengths and heights e.g. pen = 7cm
		   □mass/weight e.g. glue stick = 10g
		   □capacity and volume e.g. cup = 100ml
			Pupil can:
			
			ADDITION AND SUBTRACTION
			Bronze
			■understand and use 'sum' and 'difference'
			
			Silver
			■show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
			
			Gold
			■solve 3 step problems with addition and subtraction:
			   □applying their increasing knowledge of mental and written methods
			■recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
			■add and subtract numbers mentally and using written columnar methods, including - adding several two-digit numbers, subtracting two-digit numbers, adding a two-digit number to a three-digit number, adding and subtracting several single digit numbers
			■begin to solve + and – in columns without crossing boundaries
			■recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and 1s or 10s).
			
			STATISTICS
			■ask and answer questions about totalling and comparing categorical data
			■Interpret and construct pictograms (where the symbols show many-to-one correspondence) and block graphs (where the scale is divided into 2s and 5s).
			
			SHAPE
			Silver
			■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]
			
			Gold
			■identify line symmetry in a vertical line when exploring 2-D shapes.
			■compare and sort common 2-D and 3-D shapes and everyday objects using more than one criterion (on the basis of their geometric properties including vertices, sides, edges, faces).

Term Focus Objectives Resources CCJ Blocks	**Reception**	**Year One**	**Year 2**
Spring 1		Addition & Subtraction (Including problem solving) Statistics	Multiplication & Division (Including problem solving)
Spring 1 Symphony Gold Objectives (Some Bronze /Silver identified if very different from Gold statements) Reception 40-60 months	**Numbers** ▪ Recognise some numerals of personal significance. ▪ Recognises numerals 1 to 5. ▪ Counts up to three or four objects by saying one number name for each item. ▪ Counts actions or objects which cannot be moved. ▪ Counts objects to 10, & beginning to count beyond 10. ▪ Counts out up to six objects from a larger group. ▪ Selects the correct numeral to represent 1 to 5, then 1 to 10 objects. ▪ Counts an irregular arrangement of up to tenobjects ▪ Estimates how many objects they can see & checks by counting them. ▪ Uses the language of 'more' & 'fewer' to compare two sets of objects. ▪ Finds the total number of items in two groups by counting all of them. ▪ Says the number that is one more than a given number. ▪ Finds one more or one less from a group of up to five objects, then ten objects. ▪ In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. ▪ Records, using marks that they can interpret and explain. ▪ Begins to identify own mathematical problems based on own interests and fascinations. **Shape, Space and Measures** ▪ Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, & mathematical terms to describe shapes. ▪ Selects a particular named shape. ▪ Can describe their relative position such as 'behind' or 'next to'. ▪ Orders two or three items by length or height. ▪ Orders two items by weight or capacity. ▪ Uses familiar objects & common shapes to create & recreate patterns & build models. ▪ Uses everyday language related to time. ▪ Beginning to use everyday language related to money. ▪ Orders & sequences familiar events. ▪ Measures short periods of time in simple ways.	Pupil can: ADDITION & SUBTRACTION Silver ■read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs within 20 [e.g. 7+6=13, 5-3=2, **and** 13 = 7+6, 2=5-3] ■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. ■**use** the vocabulary associated with + and – (e.g. add, take away, more, less, subtract, minus) Gold ■understand the vocabulary associated with problem solving ■represent and use number bonds and related subtraction facts within 20 (using concrete objects or pictorial representations) ■**begin to know bonds of all numbers to 20** (using concrete objects or pictorial representations) STATISTICS ■begin to *Interpret* simple pictograms where the picture is worth 1 unit. ■begin to Interpret simple tally charts	Pupil can: MULTIPLICATION AND DIVISION Silver ■recognise odd and even numbers to at least 100 (and explain why) Gold ■know doubles of multiples of 5 and 10 <double 100 and know inverse (using jottings if necessary) ■recall X facts for X2,5,10 and their inverse using the multiplication (✕), division (÷) and equals (=) signs ■solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. ■derive facts for multiples of 5 by (for example) multiplying by 10 and halving ■relate fractions and measures e.g. 40÷2=20, and 20 is half of 40 ■Count in 3s to solve x and ÷ problems for the 3 x table

Term Focus Objectives Resources CCJ Blocks		**Reception**	**Year One**	**Year 2**
Spring 2			Addition & Subtraction (Including problem solving) Statistics Multiplication & Division (Including problem solving)	Multiplication & Division (Including problem solving) Fractions
Spring 2 Symphony Gold Objectives (Some Bronze /Silver identified if very different from Gold statements) Reception 40-60 months		**Numbers** ▪ Recognise some numerals of personal significance. ▪ Recognises numerals 1 to 5. ▪ Counts up to three or four objects by saying one number name for each item. ▪ Counts actions or objects which cannot be moved. ▪ Counts objects to 10, & beginning to count beyond 10. ▪ Counts out up to six objects from a larger group. ▪ Selects the correct numeral to represent 1 to 5, then 1 to 10 objects. ▪ Counts an irregular arrangement of up to tenobjects. ▪ Estimates how many objects they can see & checks by counting them. ▪ Uses the language of 'more' & 'fewer' to compare two sets of objects. ▪ Finds the total number of items in two groupsby counting all of them. ▪ Says the number that is one more than a given number. ▪ Finds one more or one less from a group of up to five objects, then ten objects. ▪ In practical activities and discussion, beginning to use vocabulary involved in adding and subtracting. ▪ Records, using marks that they can interpret and explain. ▪ Begins to identify own mathematical problems based on own interests & fascinations. **Shape, Space and Measures** ▪ Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, & mathematical terms to describe shapes. ▪ Selects a particular named shape. ▪ Can describe their relative position such as 'behind' or 'next to'. ▪ Orders two or three items by length or height. ▪ Orders two items by weight or capacity. ▪ Uses familiar objects & common shapes to create & recreate patterns & build models. ▪ Uses everyday language related to time. ▪ Beginning to use everyday language related to money. ▪ Orders & sequences familiar events. ▪ Measures short periods of time in simple ways.	As above for Addition & Subtraction and Statistics plus the pupil can: MULTIPLICATION AND DIVISION Silver ■begin to know corresponding halves ■begin to know doubles to double 10 ■recognise odd and even numbers Gold ■group objects into 2,5,or 10 to aid counting ■solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. ■recognise patterns of numbers in x2, x10, x5	As above for Multiplication and Division plus pupil can: FRACTIONS Silver ■count in halves up to 10 from any number Gold ■recognise, find, name and write fractions $1/_3$, ¼, $1/_2$ and ¾ of a length, shape, set of objects or quantity using objects ■count in quarters up to 10 from any number ■recognise the equivalence of $1/_2$ and $2/_4$ in practical contexts and when counting in fractions

Term Focus Objectives Resources CCJ Blocks	**Reception**	**Year One**	**Year 2**
Summer 1		Fractions Position & Direction Time	Time Geometry – Position and Direction
Summer 1 Symphony Gold Objectives (Some Bronze /Silver identified if very different from Gold statements) Reception ELG	Numbers: ELG: ▪ Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. ▪ Using quantities and objects, they add and subtract two single digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing. Shape, Space and Measure ELG: ▪ Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. ▪ They recognise, create and describe patterns. ▪ They explore characteristics of everyday objects and shapes and use mathematical language to describe them. Exceeding ▪ Children estimate a number of objects and check quantities by counting up to 20. ▪ They solve practical problems that involve combining groups of 2, 5 or 10 or sharing into equal groups.	Pupil can: FRACTIONS Silver statements ■recognise, find and name a half as one of two equal parts of an object, shape or quantity using concrete objects Gold statements ■recognise, find and name a quarter as one of four equal parts of an object, shape or a quantity using concrete objects POSITION & DIRECTION ■know the vocabulary 'left' and 'right.' ■describe position, direction and movement, using the terms 'whole' and 'half' turns practically ■describe position, direction and movement using the terms 'quarter' and 'three-quarter' turns. TIME Silver statements ■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 begin to draw the hands on a clock face to show these times. Gold statements ■measure and begin to record time (hours, minutes, seconds) ■know the names of the seasons ■know the names and sequence of the months	Pupil can: TIME ■compare and sequence intervals of time (e.g. I know a month is longer than a week – not converting and comparing units of time) ■tell and write the time to five minutes and draw the hands on a clock face to show these times ■know that there are 60 minutes in an hour and 24 hours in a day and use these facts to solve problems GEOMETRY – POSITION AND DIRECTION Silver ■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 Gold ■explore, describe and explain patterns. ■use the terms clockwise and anti-clockwise to describe position, direction and movement.

Term Focus Objectives Resources CCJ Blocks	**Reception**	**Year One**	**Year 2**
Summer 2		Shape Problem Solving	Problem solving
Summer 2 Symphony Gold Objectives (Some Bronze /Silver identified if very different from Gold statements) Reception ELG	Numbers: ELG: ▪ Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. ▪ Using quantities and objects, they add and subtract two single digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing. Shape, Space and Measure ELG: ▪ Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. ▪ They recognise, create and describe patterns. ▪ They explore characteristics of everyday objects and shapes and use mathematical language to describe them. Exceeding ▪ Children estimate a number of objects and check quantities by counting up to 20. ▪ They solve practical problems that involve combining groups of 2, 5 or 10 or sharing into equal groups.	See above for all sections plus pupil can: SHAPE ■recognise and name common 2-D shapes in different orientations and sizes. ■recognise and name cube, cuboids, sphere, cylinder, cone and pyramid PROBLEM SOLVING Addition & Subtraction ■solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [ ] – 9. Multiplication & Division ■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. Problem solving using all concepts taught throughout the year.	Pupil can: NUMBER AND PLACE VALUE ■solve problems and explain reasoning ADDITION AND SUBTRACTION ■solve 3 step problems with addition and subtraction: 　□applying their increasing knowledge of mental and written methods MULTIPLICATION AND DIVISION ■ solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change with appropriate amounts (e.g. change from £1 or change from £50 e.g. £50 - £36) MEASUREMENT ■solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Problem solving using all the concept taught throughout the year.