**Springfield School** 

Maths APP

Levels 2 to 4

	Algebra	Numbers and the number system	Calculating	Using and applying mathematics	Shape, space and measure	Handling data
Level 4	<ul> <li>◆ begin to use simple formulae expressed in words</li> <li>◆ use and interpret coordinates in the first quadrant</li> </ul>	<ul> <li>◆recognise and describe number patterns</li> <li>◆recognise and describe number relationships including multiple, factor and square</li> <li>◆ use place value to multiply and divide whole numbers by 10 or 100</li> <li>◆ recognise approximate proportions of a whole and use simple fractions and percentages to describe these</li> <li>◆ order decimals to three decimal places</li> <li>◆ begin to understand simple ratio</li> </ul>	<ul> <li>◆ use a range of mental methods of computation with all operations</li> <li>◆ recall multiplication facts up to 10 × 10 and quickly derive corresponding division facts</li> <li>◆ use efficient written methods of addition and subtraction and of short multiplication and division</li> <li>◆ multiply a simple decimal by a single digit</li> <li>◆ solve problems with or without a calculator</li> <li>◆ check the reasonableness of results with reference to the context or size of numbers</li> </ul>	<ul> <li>◆ develop own strategies for solving problems</li> <li>◆ use their own strategies within mathematics and in applying mathematics to practical contexts</li> <li>◆ present information and results in a clear and organised way</li> <li>◆ search for a solution by trying out ideas of their own</li> </ul>	<ul> <li>◆ use the properties of 2-D and 3-D shapes</li> <li>◆ make 3-D models by linking given faces or edges and draw common 2-D shapes in different orientations on grids</li> <li>◆ reflect simple shapes in a mirror line, translate shapes horizontally or vertically and begin to rotate a simple shape or object about its centre or a vertex</li> <li>◆ choose and use appropriate units and instruments</li> <li>◆ interpret, with appropriate accuracy, numbers on a range of measuring instruments</li> <li>◆ find perimeters of simple shapes and find areas by counting squares</li> </ul>	<ul> <li>◆ collect and record discrete data</li> <li>◆ group data, where appropriate, in equal class intervals</li> <li>◆ continue to use Venn and Carroll diagrams to record their sorting and classifying of information</li> <li>◆ construct and interpret frequency diagrams and simple line graphs</li> <li>◆ understand and use the mode and range to describe sets of data</li> </ul>
Level 3	<ul> <li>◆recognise a wider range of sequences</li> <li>◆ begin to understand the role of '=' (the 'equals' sign)</li> </ul>	<ul> <li>◆ understand place value in numbers to 1000</li> <li>◆ use place value to make approximations</li> <li>◆ recognise negative numbers in contexts such as temperature</li> <li>◆ use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent</li> <li>◆ begin to use decimal notation in contexts such as money</li> </ul>	<ul> <li>◆ derive associated division facts from known multiplication facts</li> <li>◆ add and subtract two-digit numbers mentally</li> <li>◆ add and subtract three digit numbers using written method</li> <li>◆ multiply and divide two digit numbers by 2, 3, 4 or 5 as well as 10 with whole number answers and remainders</li> <li>◆ use mental recall of addition and subtraction facts to 20 in solving problems involving larger numbers</li> <li>◆ solve whole number problems including those involving multiplication or division that may give rise to remainders</li> </ul>	<ul> <li>◆ select the mathematics they use in a wider range of classroom activities</li> <li>◆ try different approaches and find ways of overcoming difficulties that arise when they are solving problems</li> <li>◆ begin to organise their work and check results</li> <li>◆ use and interpret mathematical symbols and diagrams</li> <li>◆ understand a general statement by finding particular examples that match it</li> <li>◆ review their work and reasoning</li> </ul>	<ul> <li>classify 3-D and 2-D shapes in various ways using mathematical properties such as reflective symmetry for 2-D shapes</li> <li>begin to recognise nets of familiar 3-D shapes, e.g. cube, cuboid, triangular prism, square-based pyramid</li> <li>recognise shapes in different orientations and reflect shapes, presented on a grid, in a vertical or horizontal mirror line</li> <li>describe position and movement</li> <li>use a wider range of measures including non-standard units and standard metric units of length, capacity and mass in a range of contexts</li> <li>use standard units of time</li> </ul>	<ul> <li>◆gather information</li> <li>◆construct bar charts and pictograms, where the symbol represents a group of units</li> <li>◆use Venn and Carroll diagrams to record their sorting and classifying of information</li> <li>◆extract and interpret information presented in simple tables, lists, bar charts and pictograms</li> </ul>
Level 2	◆recognise sequences of numbers, including odd and even numbers	◆count sets of objects reliably  ◆begin to understand the place value of each digit; use this to order numbers up to 100  ◆begin to use halves and quarters and relate the concept of half of a small quantity to the concept of half of a shape	<ul> <li>◆ use the knowledge that subtraction is the inverse of addition and understand halving as a way of 'undoing' doubling and vice versa</li> <li>◆ use mental recall of addition and subtraction facts to 10</li> <li>◆ use mental calculation strategies to solve number problems including those involving money and measures</li> <li>◆ record their work in writing</li> <li>◆ choose the appropriate operation when solving addition and subtraction problems</li> </ul>	<ul> <li>♦ select the mathematics they use in some classroom activities</li> <li>♦ discuss their work using mathematical language</li> <li>♦ begin to represent their work using symbols and simple diagrams</li> <li>♦ predict what comes next in a simple number, shape or spatial pattern or sequence and give reasons for their opinions</li> <li>♦ explain why an answer is correct</li> </ul>	<ul> <li>use mathematical names for common 3-D and 2-D shapes</li> <li>describe their properties, including numbers of sides and corners</li> <li>describe the position of objects</li> <li>distinguish between straight and turning movements, recognise right angles in turns and understand angle as a measurement of turn</li> <li>begin to use a wider range of measures including to use everyday non-standard and standard units to measure length and mass</li> <li>begin to understand that numbers can be used not only to count discrete objects but also to describe continuous measures</li> </ul>	<ul> <li>◆recognise a wider range of sequences</li> <li>◆begin to understand the role of '=' (the 'equals' sign)</li> </ul>

In maths assessment focus 2, number, at level:

- Pupils use their understanding of place value to multiply and divide whole numbers by 10 or 100. In solving number problems, pupils use a range of mental methods of computation with the four operations, including mental recall of multiplication facts up to 10 × 10 and quick derivation of corresponding division facts. They use efficient written methods of addition and subtraction and of short multiplication and division. They add and subtract decimals to two places and order decimals to three places. In solving problems with or without a calculator, pupils check the reasonableness of their results by reference to their knowledge of the context or to the size of the numbers. They recognise approximate proportions of a whole and use simple fractions and percentages to describe these. Pupils recognise and describe number patterns, and relationships including multiple, factor and square. They begin to use simple formulae expressed in words. Pupils use and interpret coordinates in the first quadrant.
- Children show understanding of place value in numbers up to 1000 and use this to make approximations. They begin to use decimal notation and to recognise negative numbers, in contexts such as money and temperature. Pupils use mental recall of addition and subtraction facts to 20 in solving problems involving larger numbers. They add and subtract numbers with two digits mentally and numbers with three digits using written methods. They use mental recall of the 2, 3, 4, 5 and 10 multiplication tables and derive the associated division facts. They solve whole number problems involving multiplication or division, including those that give rise to remainders. They use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent.
- Children count sets of objects reliably, and use mental recall of addition and subtraction facts to 10. They begin to understand the place value of each digit in a number and use this to order numbers up to 100. They choose the appropriate operation when solving addition and subtraction problems. They use the knowledge that subtraction is the inverse of addition. They use mental calculation strategies to solve number problems involving money and measures. They recognise sequences of numbers, including odd and even numbers.

Date:	
Level:	