South Farnborough Junior School

Year 3 Long Term Planning

Topic	Objectives / Key concepts	Misconceptions
Number: Place Value	• recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • read and write numbers up to 1000 in numerals and in words • identify, represent and estimate numbers using different representations • solve number problems and practical problems involving these ideas • compare and order numbers up to 1000 • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • solve number problems and practical problems involving these ideas	• Some pupils may write three-digit numbers literally, for example, four hundred and six as '4006' Some pupils may ignore place value and simply write the digits mentioned in a number, for example, four hundred and six as '46' • Some pupils may write three-digit numbers literally, for example, four hundred and six as '4006' • Some pupils may ignore place value and simply write the digits mentioned in a number, for example, four hundred and six as '46'
Calculating- adding and subtracting	• add and subtract numbers mentally, including: a three-digit number and ones; a 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 columnar addition and subtraction • estimate the answer to a calculation and use inverse operations to check answers solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	• Some pupils may carry the wrong carry digit (i.e. the ones digit rather than the tens digit) • Some pupils incorrectly assume and use commutativity within column subtraction; for example: 9 2 6 – 7 3 4 2 1 2 Some pupils may not use place value settings correctly (especially when the numbers have a different number of digits)
Calculating multiplication and division	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	• Some pupils 'see' the times tables as a list of 12 unconnected facts • Some pupils do not understand multiplication is commutative. • Some pupils may write statements such as $2 \div 8 = 4$ • Some pupils think because $3 \times 5 = 5 \times 3$ then $15 \div 3 = 3 \div 15$
Measurement: Money	• add and subtract amounts of money to give change, using both £ and p in practical contexts	• Some pupils may think that the larger the size of the coin, the greater the value of the coin, for example, a 2p coin is greater in value than a 5p coin. • Some pupils may ignore the units in the first instance and simply add the numerical value of the coins, for example, 10p coin + £1 coin = 11p or £11 • Some pupils may try and use the £ and p notation together, such as £3p rather than £3 or 300p.

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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	• Some pupils may not leave gaps between the bars in a bar chart • Some pupils may think that one centimetre on the frequency axis of a bar chart always represents one unit in a bar chart. • Some pupils may think that a symbol always represents one unit in a pictogram. • Some pupils may think that the bars of a bar chart must be vertical.
Measurement: length and perimeter	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) measure the perimeter of simple 2-D shapes	• Some pupils may think that you put the end of the ruler (rather than the '0') at the start of a line to measure it. • Some pupils may think that the conversion factor between all measures is multiply or divide by 10. Some pupils may think that milli- refers to 'million'
Number: Fractions	• recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • recognise and show, using diagrams, equivalent fractions with small denominators compare and order unit fractions, and fractions with the same denominators	• Some pupils may think that diagrams to show fractions must always be circular • Some pupils may not acknowledge that the parts in a fraction must be equal; e.g. they talk about the 'bigger half'. • Some pupils may not appreciate the fact that a non-unit fraction is a multiple of a unit fraction
Measurement: 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]	• The use of IIII on a clock face suggests that a Roman numeral can be repeated four times, but this is a special case. In general, three is the maximum number of repeats and the subtractive method should be used instead (i.e. IV) • Some pupils may think that all months have the same number of days. Some pupils do not have a realistic sense of the length of one minute (usually they count one, two, three … etc. far too quickly!)

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Geometry: Properties of Shape	• 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 • identify horizontal lines and verticle lines and pairs of perpendicular and parallel lines draw 2-d shapes and male 3-d shapes using modelling materials, recognise 3d shapes in different orientations and describe them.	• Some pupils may think that right angles have to look like this:  • Some pupils may think that right angles have to be created from a horizontal and vertical line Some pupils may think that all turns have to be in a clockwise direction