Mathematics Basic Facts & Skills Progression

Year	Emerging	Developing	Secure (NC 2014 Statements)
1	• Read and write numbers from 1 to 10 in **words**.	• Read and write numbers from 1 to 15 in **words**.	• Write numbers from 1 to 20 in **words**.
	• Know all number bonds to 10.	• Know all number bonds to 20.	• Represent and use number bonds and related subtraction facts within 20. e.g. 9 + 7 = 16; 16 – 7 = 9; 7 = 16 – 9
	• Know doubles up to double 5. • Know halves up to half of 10.	• Know doubles to double 10 • Know halves up to half of 20.	
		• Know that there are 60 seconds in a minute. • Know that there are 60 minutes in an hour.	
	• Know and sequence the days of the week.	• Know and sequence the months of the year.	
2	• Read and write numbers 1 – 30 in **words**.	• Read and write numbers 1 – 50 in **words**.	• Read and write numbers to at least 100 in **words.**
	• Derive addition facts to 20 using concrete objects. • Derive subtraction facts to 20 using concrete objects.	• Begin to derive related facts (e.g. 3 + 7 = 10 therefore 7 + 3 = 10, 10 – 7 = 3, 7 = 10 - 3). • Begin to derive further related facts (e.g. 70 + 30 = 100, 100 – 70 = 30, 70 = 100 – 30)	• Recall addition and subtraction facts to 20 fluently. • Derive and use related facts up to 100.
	• Recall 2 times tables from 0 to 24. • Recall 5 times tables from 0 to 60. • Recall 10 times tables from 0 to 120.	• Recall 2, 5 and 10 times tables. • Derive division facts for 2 times tables. • Derive division facts for 5 times tables. • Derive division facts for 10 times tables.	• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. • Recognise odd and even numbers.
	• Know that two halves make a whole.	• Know that four quarters make a whole	• Recognise the equivalence 2/4 = ½
		• Know there are 60 minutes in an hour. • Know that there are 24 hours in a day.	• Know the number of minutes in an hour and the number of hours in a day.
3		• Read and write numbers up to 1000 in **words**.	
	• Recall 3 times tables from 0 to 36. • Recall 4 times tables from 0 to 48.	• Derive division facts for 3 times tables. • Derive division facts for 4 times tables.	• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication

		• Derive 8 times tables by doubling 4 times tables.	tables.
	• Recall 2, 5 and 10 times tables. • Recall 3 and 4 times tables.	• Use commutative and associative rules to derive related multiplication and division facts, e.g. 4 x 3 = 12, 3 x 4 = 12, 4 x 30 = 120, 30 x 4 = 120, 40 x 3 = 120, 3 x 40 = 120. 12 ÷ 4 = 3, 12 ÷ 3 =4, 120 ÷ 4 = 30, 120 ÷ 30 = 4, 120 ÷ 40 = 3, 120 ÷ 3 = 40.	
	• Recognise the equivalence ½ = 2/4 = 3/6 = 4/8 = 5/10 • Recognise the equivalence ¼ = 2/8	• Show, using diagrams, the equivalence ½ = 2/4 = 3/6 = 4/8 = 5/10 • Show, using diagrams, the equivalence ¼ = 2/8	• Recognise and show, using diagrams, equivalent fractions with small denominators.
		• Know that there are 100cm in a metre. • Know that there are 1000g in a kg. • Know that there are 1000ml in a l.	
	• Know that there are 60 seconds in a minute. • Know that there are 365 days in a year.	• Know the number of days in each month, e.g. January has 31 days. • Know that there are 366 days in a leap year.	• Know the number of seconds in a minute and the number of days in each month, year and leap year.
		• Know that there are 90^0 in a right angle.	

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4	• Read Roman numerals to 10.	• Read and write Roman numerals up to and including 50.	• Read Roman numerals to 100 (I to C).
	• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	• Recall multiplication facts for the 6, 7, 9, 11 and 12 multiplication tables. • Derive division facts for the 6, 7, 9, 11 and 12 times tables.	• Recall multiplication and division facts for multiplication tables up to 12 x 12.
	• Use commutative rules in mental calculation e.g. 8 x 6 = 48, 6 x 8 = 48, 48 ÷ 8 = 6 and 48 ÷ 6 = 8.	• Recognise that **20** x 7 = **10** x **2** x 7 or **10** x 7 x **2** to make calculation easier	• Recognise and use factor pairs and commutativity in mental calculations.
	• Show, using diagrams, the equivalence ½ = 2/4 = 3/6 = 4/8 = 5/10. • Show, using diagrams, the equivalence ¼ = 2/8.	• Show, using diagrams, the equivalence 1/3 = 2/6 = 3/9. • Show, using diagrams, the equivalence 2/3 = 4/6 = 6/9.	• Recognise and show, using diagrams, families of common equivalent fractions.
	• Recognise and write any number of tenths as decimals.	• Recognise and write any number of hundredths as decimals.	• Recognise and write decimal equivalents of any number of tenths or hundredths.
	• Use concrete resources to show ½ as 0.5 and vice versa.	• Recognise 0.75 as ¾ and 0.25 as ¼.	• Recognise and write decimal equivalents to ¼, ½, ¾.
	• Recall that there are: - 1000g in 1kg. - 100cm in 1m. - 10mm in 1cm. - 1000ml in 1l.	• Begin to understand place value when a number (whole or decimal) is: - Multiplied and divided by 10 (cm/mm). - Multiplied and divided by 100 (m/cm). - Multiplied and divided by 1000 (km/m).	• Convert between different units of measure [for example, kilometre to metre; hour to minute].
	• Convert time between analogue and digital 12-hour clocks.	• Convert time between a 12- and 24-hour clock (2:30pm = 14:30). • Convert time between analogue and digital 24-hour clocks.	• Read, write and convert time between analogue and digital 12- and 24-hour clocks.
	• Convert hours to minutes. • Convert minutes to seconds. • Convert years to months. • Convert weeks to days. • Know that an acute angle		

	is less than 90^0. • Know that an obtuse angle is greater than 90^0 but less than 180^0.		
5		• Write in words numbers to 1 000 000, using correct spelling.	• Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.
	• Read Roman numerals, multiples of hundreds to 1000.	• Read all Roman numerals, numbers to 1000 (M).	• Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
	• Identify and explain prime numbers. • Know what composite numbers are.	• Identify and explain prime factors, e.g. derive the prime factors of 36 by starting with a pair of factors: 18 x **2**, 18 then factors into 9 x **2**, 9 factors into **3 x 3**, prime factors of 36 are **3 x 3 x 2 x 2.**	• Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
	• Investigate prime numbers to 100.	• Recall prime numbers to 19.	• Establish whether a number up to 100 is a prime and recall prime numbers up to 19.
		• Recall all square numbers to 12 x 12.	• Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).
	• Identify and name all equivalent fractions which represent tenths.	• Identify and name all equivalent fractions which represent hundredths.	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
	• Recognise the per cent symbol. • Know that per cent relates to 'number of parts per hundred'.	• Write percentages as fractions (denominator is 100) (e.g. 72% = 72/100). • Write percentages as a decimal (e.g. 72% = 0.72).	• Recognise the per cent symbol (%) and understand the per cent relates to 'number of parts per hundred'. • Write percentages as a fraction with denominator 100, and as a decimal.
	• Recall that: - 2.5cm = 1 inch. - 1kg = approximately 2 pounds. • approximately half a litre		

	(0.5l) = 1 pint		
	• Know 180^0 as an angle is a straight line. • Know that a reflex angle is greater than 180^0 but less than 360^0.		
	• Know that each angle in a rectangle is 90^0. • Know that all angles in a rectangle add up to 360^0. • Know that parallel sides on a rectangle are the same length.		
6		• Write in words numbers to 10 000 000, using correct spelling.	
	• Identify prime numbers up to 100.	• Identify prime numbers > 100.	• Identify common factors, common multiples and prime numbers (>100).
	• Recall and identify equivalent fractions (in order to add and subtract them).		
	• Recall the decimal and percentage equivalents of halves, quarters and tenths.	• Recall and be able to show the decimal and percentage equivalents of thirds and fifths in a variety of contexts.	• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
			• Convert between miles and kilometres.