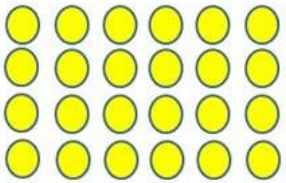
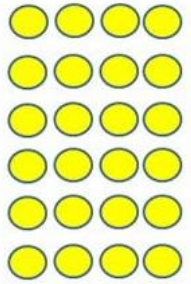
Number and number processes

Terms	Definitions	Illustrations
Addition	Finding the total of more than one amount. Addition is the inverse operation of subtraction.	14 + 11 = 25
Algorithm	A step by step written procedure used to perform a calculation in an efficient way. These procedures are of particular use when a calculation is too complex to be performed mentally. There are standard written methods for performing addition, subtraction, multiplication and division calculations. The exact way of writing down these calculations might vary slightly between establishments. It is important to reinforce the methods learners are used to using.	
Array	A rectangular arrangement of objects used to represent a number in a way that illustrates multiplication and division. Objects are arranged in rows and columns.	 4 x 6 = 24 (4 rows of 6)  6 x 4 = 24 (6 rows of 4)

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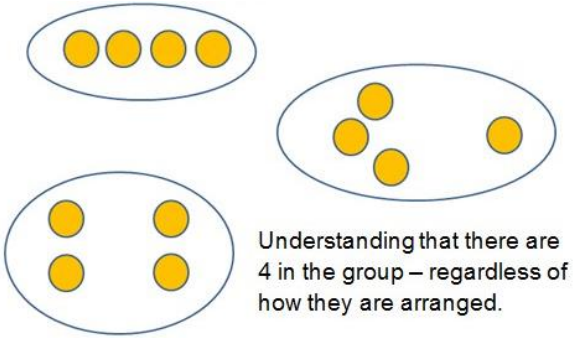
Associative law	Addition and multiplication calculations can be grouped in any way.	(6 + 3) + 4 = 6 + (3 + 4) (2 x 4) x 3 = 2 x (4 x 3)
Cardinality	The number of items in a set.	In a set of 5 coins, the cardinal number is 5.
Commutative law	Changing the order of the numbers in an addition or multiplication calculations does not affect the answer.	10 + 2 = 2 + 10 2 x 5 = 5 x 2
Composite number	A positive integer that can be divided exactly by whole numbers other than itself and 1.	12 can be divided exactly by 1, 2, 3, 4, 6 and 12 so 12 is a composite number.
Consecutive numbers	Numbers that are next to one another in numerical order.	15 and 16 352 and 353
Conservation of number	Understanding that the quantity of items in a set does not change due to how they are arranged.	 Understanding that there are 4 in the group – regardless of how they are arranged.

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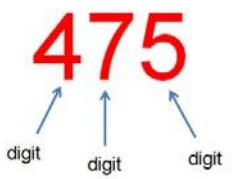
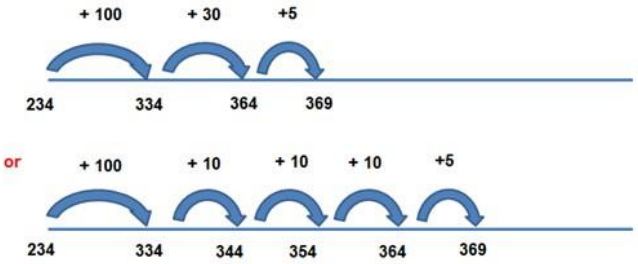
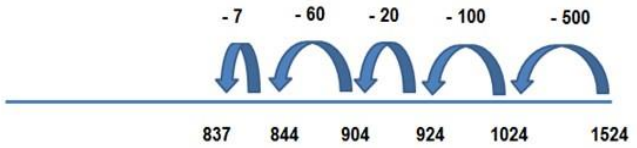
Digit	The symbols that are used to make numbers. In the decimal system, the digits 0 to 9 are used.	The number 475 has three digits. 
Distributive law	Multiplying a number by a group of numbers added together is the same as doing each multiplication separately.	3 x (2 + 4) = 3 x 2 + 3 x 4
Division	Sharing a quantity into a number of equal shares. Splitting a quantity into groups of an equal size. Division is the inverse operation of multiplication.	Share 12 counters amongst 6 people, each person will get 2 counters. Split 15 counters into groups of 5, there will be 3 groups.
Double facts	It is useful for doubles to become known facts. To double a number, it is multiplied by 2.	

Empty number line	A number line which can have any starting number. It can be used to add or subtract in steps that the learner finds comfortable. It can also be used for multiplication and division.	**234 + 135**  This is two examples of a method which can be used to solve the calculation but there are other methods. **1524 - 687**  This is an example of a method which can be used to solve the calculation but there are other methods.
Even number	An integer that, when divided by 2, will give another integer.	8 is even as 8 ÷ 2 = 4 11 is not even as 11 ÷ 2 = 4•5

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Integer	A number that can be written with no fractional part.	8, 0 and -3 are integers. 2•4 is not an integer.
Multiplication	Multiplication involving whole numbers can be thought of as repeated addition. Multiplication is the inverse operation of division.	4 x 3 is 4 lots of 3 or 3 + 3 + 3 + 3
Near doubles	Doubles facts can be used to find the solutions to near double calculations.	Double 8 is 16 so 8 + 7 is one less, 15.
Negative numbers	Numbers which are less than zero.	
Number bonds	The pairs of number which add together to make a particular number. It is useful to learn these facts to help with quick mental calculations.	The number bonds for 10 are 1+9, 2+8, 3+7, 4+6 and 5+5.
Odd number	An integer that, when divided by 2, will leave a remainder of 1.	11 ÷ 2 is 5 remainder 1 so 11 is an odd number
One to one correspondence	When counting, each object must be counted only once and as the number name is identified.	

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Order of operations	The set order in which arithmetic operations should be carried out when more than one type of operation is involved in a calculations. Calculations within brackets should be carried out first, followed by any calculation of powers or roots. Multiplications and divisions would be carried out next, followed by additions and subtractions.	
Ordinal numbers	These describe a position in an ordered set.	First, fourth, tenth.
Partitioning	To split a number into its component parts. This is useful when performing mental calculations.	16 can be partitioned into 10 and 6. 20 can be partitioned into 16 and 4. 17 x 17 can be partitioned into 17 x 10 and 17 x 7.
Place value	The relative value of different digits within a number. It is the position of a digit within a number that determines what value that digit represents. The use of zero as an empty place value holder is important.	238 is made up of 2 hundreds, 3 tens and 8 ones. 52•61 is made up of 5 tens, 2 ones, 6 tenths and 1 hundredth.
Prime number	A positive integer that can only be divided exactly by itself and 1. 1 is not a prime number.	
Product	The result of multiplying two or more numbers together.	

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Real number	A value of a continuous quantity that can represent a distance along a line. Real numbers include all fractions and numbers such as π, that cannot be written as fractions.	
Remainder	The amount left over when a quantity cannot be divided exactly.	17 ÷ 5 is 3 remainder 2.
Subitising	Recognising a quantity without counting.	
Subtraction	Counting back from a given number, an efficient strategy when subtracting a small amount. Finding the difference between two numbers, an efficient strategy when subtracting a number from a similar number. Subtraction is the inverse operation of addition.	To find 23 – 4, count back 4 from 23 to reach 19. To find 52 – 49, count back from 52 to 49 or count on from 49 to 52. In either direction, the difference is 3.
Sum	The result of adding two or more numbers.	
Whole numbers	The set of numbers that includes zero and the positive integers.	