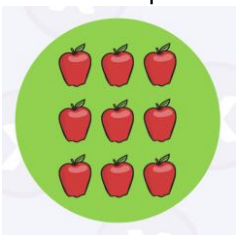
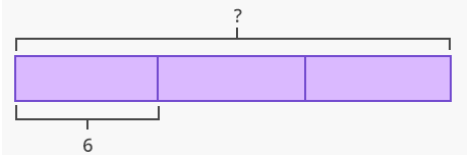
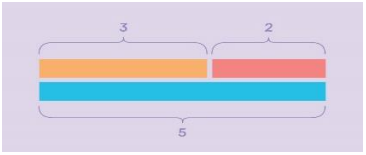
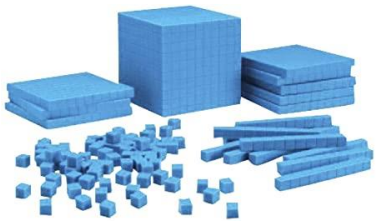
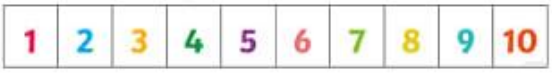
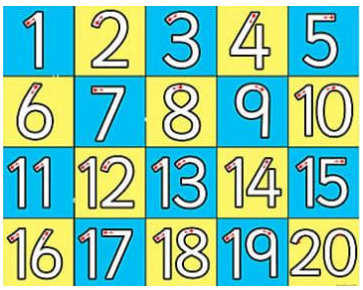
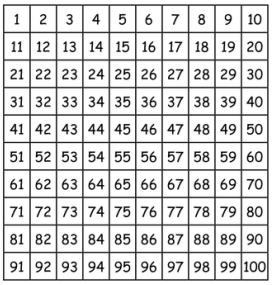
Calculation Policy Glossary

Below are the words and phrases used in the Kingslea Primary School Calculation Policy that may be unfamiliar due to their mathematical content or their specific use in school. Some definitions are supported with pictures.

Term used in calculation policy	Definition
array	An array in mathematics is an arrangement of objects, numbers or pictures in columns or rows. The purpose of an array is to help children understand multiplication and division.  4 x 6 = 24  6 x 4 = 24 
bar model	In mathematics, a bar model is a pictorial representation of a problem or concept where bars or boxes are used to represent the known and unknown quantities. Bar models are most often used to solve number problems with the four operations: addition and subtraction, multiplication and division.  
base 10	Base Ten Blocks are a maths resource that help young learners to understand how numbers relate to one another, specifically ones, tens, hundreds and thousands. They are also referred to as dienes.  They are called Base 10 because they are based on the place value number system in common use around the world.
commutative commutativity	**Commutativity** is used in mathematic equations and describes sums that can be moved around and will still give the same answer. 'Commutative' comes from the word 'commute' which means to move and travel around, so equations that are **commutative** have numbers that can be moved within the equation. Addition and multiplication are **commutative**. When two numbers are added or multiplied, this can be done in any order and the same answer will be obtained. Addition example: 3 + 2 = 5, 2 + 3 = 5; Multiplication example: 4 x 6 = 24, 6 x 4 = 24. Subtraction and division are not commutative as the answers will be different if numbers are swapped around.
conceptual understanding	Conceptual understanding is knowing more than isolated facts and methods. It is about understanding mathematical ideas, and having the ability to transfer this knowledge into new situations and apply it to new contexts.
concrete	The concrete stage is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life by allowing children to handle physical objects themselves. Every new abstract concept is learned first with a 'concrete' or physical experience.

concrete resources / concrete manipulatives	Objects that can be handled and manipulated to support the understanding of the structure of a mathematical concept. Materials such as Dienes (Base 10 materials), Cuisenaire, Numicon, pattern blocks and counting bears are all examples of concrete resources used in school.
Cuisenaire	Cuisenaire rods are mathematics learning aids that provide an interactive, hands-on way to explore mathematical concepts, such as the four operations, working with fractions and finding divisors. 
decimals	A decimal is a way of writing a number that is not whole. The number of tenths, hundredth, thousandths, etc. are represented as digits following a decimal point. The decimal point is placed at the right of the ones column. Each column after the decimal point is a decimal place Decimal numbers are 'in between' numbers. For example, 10.4 is in between the numbers 10 and 11. It is more than 10, but less than 11.
digit	A digit is any one of these symbols: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. For example, the number 23 is written with two digits, 2 and 3. A number is an amount of something. It can be written with one or more – or many – digits.
divisor	A divisor is a number that divides another number either completely or with a remainder.
dividend	A number to be divided by another number.
doubling facts	Double Facts are additions in which a number is added to itself. For example, 1 + 1, 2 + 2 etc. Internalising double facts are helpful building blocks in developing fluency in adding single digit numbers.
fact families	A collection of related addition and subtraction facts involving the same numbers. Most addition and subtraction fact families include two addition and two subtraction facts. For example, the addition/subtraction fact family for the numbers 2, 4, and 6 consists of the following: 2 + 4 = 6, 4 + 2 = 6 and 6 - 4 = 2, 6 - 2 = 4.
fluency	Fluency in maths is about developing number sense and being able to the most appropriate method for the task at hand. Being fluent in maths means a child can mentally use operations, apply procedures appropriately, problem solve, manipulate numbers, estimate, and think creatively with numbers.
formal written methods	Setting out working in columnar form. In multiplication, the formal methods are called short or long multiplication depending on the size of the numbers involved. Similarly, in division the formal processes are called short or long division.
grouping	Grouping involves collecting an amount into equal groups and counting how many groups can be made. When grouping in mathematics, the quotient represents the amount of groups within the shared quantity.
halving facts	Halving Facts are where a number is divided into two equal groups. Splitting a whole into two equal parts gives you a half. For example, 1 is half of 2, 2 is half of 4, etc.
hundred square	A hundred square is a square filled with numbers, from 1-100. The numbers are sequential. A hundred square is a type of number square. In a hundred square, each column has the same ones digit. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

inverse inverse calculation	In mathematics, the word **inverse** refers to the opposite of another operation. An **inverse calculation** reverses the effect of another operation. Addition and subtraction are inverse operations and multiplication and division are inverse operations. Addition and subtraction example: start with 7, then add 3 we get 10, now subtract 3 and we get back to 7. Multiplication and division example: start with 6, multiply by 2 we get 12, now divide by 2 and we get back to 6.
multiple	A number that may be divided by another number a certain number of times without a remainder. For example, 10 and 15 are both multiples of 5.
multiplier	The number that you are multiplying by. As we can multiply numbers in any order, the multiplier can also be referred to as a 'factor'.
multiplicand	The number that gets multiplied. As we can multiply numbers in any order, the multiplicand can also be referred to as a 'factor'.
number	A number is an amount of something. It can be written with one or more – or many – digits. Numbers can also be written with words.
Numberblocks	*Numberblocks* is a British children's CGI-animated TV series. The show teaches children numeracy including simple arithmetic. In school, we use associated resources to support our teaching of mathematics. 
number bonds	A pair of numbers with a particular total. For example, number bonds for ten are all pairs of whole numbers with the total 10 (0 and 10, 1 and 9, 2 and 8, 3 and 7, 4 and 6 and 5 and 5).
number line	A line where numbers are represented by points upon it.  Number lines can take different forms. For example, they can be vertical, have numbers on already (structures) or be blank (unstructured).
number track	A rectangular grid containing numbers or pictures and numbers. It is used as a visual resource used to assist in number operations. 
number square	A square filled with numbers. The numbers are normally sequential. It's common to see number squares with numbers from one to 20 and also from one to 100. The numbers are typed in numerals (1, 2, 3 etc). You might also see number squares called a '100 grid'.  

part-whole model part-part-whole	The part–whole model (sometimes called the part–part–whole model), is a simple pictorial representation of a problem that helps learners see the relationships between numbers. Children using this model will see the relationship between the whole number and the component parts; this helps learners make the connections between addition and subtraction. 
partition partitioning	Partitioning is a way of splitting numbers into smaller parts to make them easier to work with. Partitioning links closely to place value. For example, a child will be taught to recognise that the number 54 represents 5 tens and 4 ones, which shows how the number can be partitioned into 50 and 4.
place holder	A placeholder is a number that, as the name implies, holds a place. In mathematics, it is usually a zero which is representing that there is no value in a specific column.
place value counters	Place Value Counters are a resource used in school to support children transitioning from concrete learning, through to pictorial learning. They help children work with larger numbers as well as decimal numbers, whilst saving space and increasing understanding. 
place value grid	A standard place value grid or place value chart is a simple pictorial guide to support children's understanding of digit value in a number. The size and complexity of the place value grid will vary as a child progresses from Year 1 to Year 6. 
regroup regrouping	In mathematics, regrouping can be defined as the process of making groups of tens when carrying out operations like addition and subtraction with 2-digit numbers or larger. To regroup means to rearrange groups in to carry out an operation.
related facts	Number facts are basic addition, subtraction, multiplication and division calculations that children should learn to recall instantly with no working out (in other words, they need to learn them off by heart). These facts can be used to work out other 'similar' calculations – these are the related facts. For example, 4 + 5 = 9 can be used to work out 40 + 50
sharing	Splitting into equal parts or groups. When sharing in mathematics, the quotient represents the quantity of shared objects in each group.
stem sentences	A sentence stem is the beginning of a sentence. Think of the stem of a plant. It's not the whole plant, just the beginning of it. A stem sentence helps children get their sentence started.
vertical	Being vertical is an orientation where the top is always above the bottom. Vertical lines are always perpendicular to the horizontal lines.
1:1 correspondence	Counting with one-to-one correspondence is when the person counting touches each object and says the numeral name aloud, which can be considered a more complex skill than rote counting.