GLOSSARY OF TERMS
MATHEMATICS

This glossary captures some of the terminology used to describe student learning in **mathematics**.

This resource aims to provide parents with some definitions of ***key terms*** encountered in a child's written report or at parent-teacher interviews.

The **bold** terms are the **focus areas** as represented in NSW Mathematics Syllabus.

Word / Phrase	Definition
Additive Relations	Students apply and extend their repertoire of mental strategies for addition and subtraction. Concept of *equality* is foundational for solving equations and for developing algebraic reasoning skills
algorithm	step-by-step procedure to find a solution
angle	An angle is created when two straight lines intersect at a shared endpoint, known as the *vertex*. It measures the degree of rotation between the two lines that form it.
array	items arranged in rows and columns, where each column has the same amount, and each row contains the same amount
associative property	It does not matter how you group numbers you get the same result for example when *adding:* (3 + 5) + 2 is the same as (2 + 3) + 5 or when *multiplying:* (2 × 4) × 3 is the same as 2 × (4 × 3); because 8 x 3 = 24 and 2 x 12 = 24
capacity	the amount a container can hold (internal volume)
Chance	Students learn about the possibility of an event occurring. Early learning involves using language to describe the likelihood of an event happening. This develops into more complex skills using numerical values to describe the probability of an event occurring.
Combing and separating quantities	Combining and separating quantities refers to the ability to group quantities together (combine) or split them apart (separate). It involves understanding how quantities can be put together or broken apart to solve problems and manipulate numbers efficiently. Early foundational number concepts of addition and subtraction.
commutative property	two numbers can be added or multiplied in any order and the solution will be the same. For example, 5 + 4 = 4 + 5
data	a collection of facts or units of information
Data	Describing the data as well as creating data displays (e.g. graphs), develops concepts and skills in quantitative (numerical value) and spatial reasoning. Early data concepts include grouping objects according to characteristics into a data display.
decimal	a number that contains a decimal point; the decimal point separates the whole number from its decimal part
decimal part	the part of a number after the decimal point that is smaller than 1 e.g. 8.25

denominator	The denominator of a fraction is the 'bottom number' in a fraction, it shows *how many equal parts the whole is divided into.* for example: **¼** 4 is the denominator, the whole is divided into 4 equal parts, these are called quarters.
distributive property	Multiplying a number by a group of numbers added together is the same as doing each multiplication separately. for example, 3 x (2+4) is the same as 3x2 + 3x4
efficient strategies	effective methods for find solutions, applying flexible use of different approaches, finding the easiest most efficient way to a solution
equilateral triangle	3 equal sides and 3 equal angles
equivalent fractions	Fractions that have the same value, even though they may look different. for example, $\frac{5}{10}$ and $\frac{2}{4}$ are equivalent because they are both *half*
face	flat surface of a 3-dimensional object with only straight edges
factor	Numbers we multiply together to get another number. For example, 1, 2, 3 and 6 are *factors* of 6 (1x6, 2x3; but 4 and 5 are not factors of 6)
Forming groups	Sharing objects *equally* and then combining them back into one collection helps students understand how multiplication and division are related. Early concepts of making groups and sharing based on equality are important for understanding concepts of multiplication and division.
Geometric Measure	Geometric measure means measuring properties like length, area, volume, angles, and surface area. Early concepts include describing position, learning about length, the need for formal units of measure, and early concepts of fractions.
inverse operations	The operation that reverses the effect of another operation. Addition and subtraction are inverse operations: For example: *add* 2 to 8 and you get 10; *subtract* 2 and you get back to 8 Multiplication and division are inverse operations: For example: *multiply* 3 by 4 and you get 12; *divide* 12 by 4 and you get back to 3
isosceles triangle	A triangle with two equal sides and two equal angles.
many to one scale	represent elements of scale for example, 1 cm = 10 years.
mass	The amount of matter in an object. Mass is usually measured by grams, kilograms, and tonnes.
mental strategies	Methods we use to find solutions in our head, without needing to write down or use tools
metric	A system of measure for example, metre for length, kilogram for mass, second for time.
Multiplicative relations	Building on early concepts of Forming Groups, Multiplicative relations are those that rely on multiplication as a *one-to-many* structure. Developing understanding of the links between multiplication and division are important. As student develop concepts of multiplicative relations, they are moving away from earlier *less efficient* strategies such as repeated addition. For example, 4 + 4 + 4 becomes an understanding that there are *three* fours; we have four *three times;* 4 x 3 (or 3 x 4)

Non-spatial measure	Non-spatial measure refers to measuring things like time, temperature, weight, and money; things that are not directly related to space or geometry.
numerator	The numerator of a fraction is the 'top number' in a fraction, it shows *how many equal parts* of the whole (fractional parts) we have. for example: in the fraciton¼, 1 is the numerator, we have 1 equal part *out of* 4 equal parts.
on and off the decade	on decade 10, 20, 30, 40 etc off the decade 12, 22, 32, 42, 52 etc

order of operations	The rules that tell us which order we need to follow: 1. Solve inside parenthesis first () 2. Then do exponents x^2 or x^3 etc 3. Then multiply and divide from left to right 4. Then add and subtract left to right For example, 2 x (3x4) – 2 x8 = 2 x 12 – 2 x 8 = 24 – 16 = 8
partition	to divide a quantity into parts For example, 10 can be *partitioned* into 8 and 2; or 3 and 7, or 5 and 5, or 9 and 1 so on
partitioning	Partitioning involves breaking down a number into smaller, more manageable parts to help find a solution. For example, 35 + 20, partition 35 into 30 and 5 30 +20 = 50 +5 = 55
Partitioned Fractions	In Stage 2, partitioned fractions refer to fractions that are divided or partitioned into equal lengths or segments. This concept involves understanding how to divide a whole into equal-sized parts and represent fractions as a combination of these parts.
place value	The value of a digit is determined by its position in a number relative to the ones (or units) place. For example, in the number 24, the 4 denotes 4 ones, the 2 denotes 2 tens. It is important for students to develop flexible understanding of place value; in the number 924, the 4 denotes 4 ones, the 2 denotes 2 tens *or 20 ones*, and the 9 denotes 9 hundreds*, 90 tens or 900 ones*
polygon	A plane shape (two-dimensional) with straight sides.
polyhedron	A three-dimensional object with flat faces (each face is a polygon) Examples cube, pyramid, rectangular prism
probability	The chance that something happens; how likely it is that the event will occur.
product	the result when multiplying two or more numbers together for example, 6 x 3 = 18 18 is the product of 6 and 3
quotient	The result of dividing one number by another For example, 18 ÷ 6 = 3 3 is the quotient (18 is the dividend; 6 is the divisor, 3 is the quotient)
rates	A comparison of two related quantities, *this per that*. Example 3 cupcakes *per* person; 4 cars *per* minute, 15 apples *per* basket
rectangular prism	a solid (3-dimensional) object which has six faces that are rectangles

remainders	part 'left over' when dividing a number into equal groups for example, 10 ÷ 4 = 2 remainder 2
Representing whole numbers	Representing whole numbers involves showing numbers in different ways, using various mathematical representations such as numerals, words, diagrams, and models. Students are developing concepts of whole numbers and their properties, including place value, magnitude(size), and how numbers relate to each other. In Stage 3, students apply knowledge of place value to numbers of any size, including decimals.
scalene triangle	A triangle with all sides of different lengths. All angles are different sizes.
symmetry	two or more parts are identical after a flip, slide or turn
three-dimensional	having three dimensions – height, width, and depth, also known as 3D
Three - dimensional (3D) spatial structure	Understanding 3D spatial structure means grasping how objects and shapes are arranged in three-dimensional space. It involves knowing their positions, orientations, and relationships, as well as concepts like volume and perspective. Early concepts include developing language and mental images through handling and manipulating real 3D objects.
Two-dimensional (2D) spatial structure	The development of two-dimensional spatial structure includes an ability to identify, rotate, orient and visualise shapes. These concepts are important for understanding multiplication arrays, area, interpreting maps, visualising, and reasoning about geometry. Understanding shapes helps connect two-dimensional shapes to three-dimensional objects.
unit fraction	a fraction with numerator as 1 (e.g. ½, 1/3, ¼)
vertex	a meeting point of two lines that form an angle, where two sides of a two-dimensional shape meet
visualise	visualising refers to creating a mental image

For additional information about your child's learning in Mathematics, parents may like to refer to these guides from NSW Education Standards Authority (NESA)

Supporting your child Parent and Carer guide – Mathematics Kindergarten

Supporting your child Parent and Care guide – Mathematics Years 1-2

Supporting your child Parent and Care guide – Mathematics Years 3-6