

Mathematics: Level 3 NUMBER

Numbers can be partitioned and combined to solve more complex (multi step) problems with four operations

Numbers can be represented in a variety of ways incl fractions, decimals and percentages for representing small numbers

I can...	S	P	T	I know...	S	P	T
Use a range of mental strategies using partitioning and combining. These include : - <ul style="list-style-type: none"> o Place value $604 - 383 = ?$ as $60 - 38$ tens less one (219) o compensate $923 - 587 = ?$ as $923 - 600 + 13 = ?$ o reverse $923 - 587$ as $587 + ? = 923$ o Distributive e.g., 13×6 as $10 \times 6 + 3 \times 6$ o Associative e.g., 14×9 as $2 \times (7 \times 9) = ?$ o Reverse e.g., $36 \div 9$ as $4 \times 9 = 36$ 				Basic multiplication and division facts $0 \times 0 = 0$ to $9 \times 9 = 81$ and corresponding division facts.			
Find fractions of sets $\frac{3}{4} = \frac{6}{8}$, $\frac{2}{3}$ of 24 as $24 \div 3 \times 2 = 16$,				Fwd/bwd counting patterns	e.g., 1 000 000, 999 999, 999 998, beginning with any whole number		
Add/subtract fractions with same denominator $\frac{3}{4} + \frac{3}{4} = \frac{6}{4}$,				Multiples of one, ten, hundred, thousand 1250, 2250, 3250,??			
Convert improper fractions $\frac{17}{3} = 5 \frac{2}{3}$				701 000 results in 691 000 if 10 000 is taken from it. 43 560 is 43 559 if one is taken from it			
Convert halves, quarters, fifths, tenths and use them to solve % of amounts	e.g., 50% of 18 = half of 18 = 9			Sequences in tenths	e.g., 4.7, 4.8, 4.9, 5...		
				How many tenths, tens, hundreds, and thousands are in whole numbers.			
				Fractions are repeats of a unit fraction	e.g., $\frac{3}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$,		
				Fractions can be greater than 1 whole			
				Fractions have counting order if denominator is the same.			
				The size of the denominator affects the size of the parts.	Eg $\frac{2}{7} < \frac{2}{5} < \frac{2}{3}$.		
				Simple fraction/%	e.g., $\frac{1}{2} = 50\%$, $\frac{1}{10} = 10\%$, $\frac{1}{5} = 20\%$ and use this to work out non-unit fractions as % e.g., $\frac{3}{4} = 75\%$		

Mathematics: Level 3 ALGEBRA

Equations and Expressions: Equations show relationships of equality between parts on either side of the equal side.			Patterns and Relationships: Patterns and relationships can be used, represented and generalised in a variety of ways			
Write numerals for whole numbers to 1 000 000 at least.			Notice and talk about patterns/relationships and then can generalise by talking about properties that stay the same			
Show understanding of 4 operations and equal signs.			Can perform mental strategies	eg <ul style="list-style-type: none"> • commutative $7 \times 8 = 8 \times 7$, • associative $(2 \times 3) \times 4 = 2 \times (3 \times 4)$, • distributive $8 \times 7 = 8 \times 5 + 8 \times 2$, • inverse $6 \times 7 = 42$ so $42 \div 7 = 6$, • identifies for all four operations e.g., $17 \times 1 = 17$, $17 \div 1 = 17$ 		
Know which operation to use on a calculator if numbers are too big to use in my head			Find relationships to determine missing numbers	Eg $4 \times 12 = ? \times 6$ without calculating 4×12		
Can use: <ul style="list-style-type: none"> • empty number lines (add/sub), • arrays (mult/div), • double number lines (fractions and %) • double number lines (frac and percentages) 			Identify repeating element & predict using multiplicative thinking	e.g., @ \$ # every third shape is # so $32^{\text{nd}} = \$$		
Use formal algorithms for multi digit addition/subtraction			In number, identify consistent relationship between variables	e.g., 4,8,12,16 are all multiples of 4 or 4,7,11,14 is 3 added each time		
			Describe rules in my own words and find rules to find further terms.			
			Show patterns using tables, line graphs, diagrams.			

Mathematics: Level 3- MEASUREMENT

The attributes of an object can be measured against a standard scale.

I...	S	P	T
Quantify an attribute using units – same size, no gaps/overlaps. E.g. The pencil is 8cm long			
Am familiar with common units including square and cubic cm, m, Celsius, turns.			
Start to explore relationships between units e.g., 15cm = 150mm.			
Read linear scales			
Know that scales have a starting place, and the marks show the endpoint of units			
Use square units to measure areas			
Use cubes of the same size to measure volume.			
Apply whole number multiplication to become efficient at calculating area and volume			

Mathematics: Level 3 - POSITION AND ORIENTATION

The position, direction and pathway of objects can be described using coordinate systems

I can...		S	P	T
Give a location using co-ordinates				
Find locations given a co-ordinate,				
Use features to describe movement so get a person from A to B	e.g., using turns (right, left relative to orientation)			
Give approximate distances in m, km.				
Follow directions and show path I went on a map				
Use and follow compass directions,				

Mathematics: Level 3 -SHAPE

Shapes can be defined by their geometric properties.

I can...	S	P	T
Define characteristics of things as basis for sorting. <ul style="list-style-type: none">o Number of sideso Angleso Parallel or non-parallel sideso Equal or unequal side lengtho Angle sizeo Lines of symmetry.			
Know that prisms are solids with fixed cross-section and are classified by their cross-section.			
Draw objects using plan views or nets.			
Know that many nets can form the same solid			
Can recreate a model when given another person's drawing using plasticine, drawings, geometric shapes, toothpicks, straws etc			

Mathematics: Level 3 - TRANSFORMATION

Accurately describe the effects of transformations.

I can...	S	P	T
Compare the image of a shape with the original and describe the transformation. This can include a sequence of two transformations.			

Mathematics: Level 3 - STATISTICS

Telling the class story with supporting evidence.
Being a savvy consumer of data.

I	S	P	T
Use Pose-Plan-Data-Analyse-Conclusion (PPDAC) Pose questions, consider appropriate data for collection, gathering and sorting to develop answer.			
Gather and understand multivariate e.g., gender, age, height, eye colour, hours spent.			
Ask summary questions e.g., what is usual height of 10 yr olds?			
Ask relationship questions e.g., Do 11 yr olds go to bed later than 10 yr olds?			
Display category data as tally charts frequency tables Pictographs bar graphs strip graphs pie charts.			
Show whole number data as dot plots and stem & leaf graphs.			
Show Time-series data simple line graphs.			
Use computers to communicate my findings.			
Justify my choice of chart with reference to patterns.			
Know if a data display is the correct one for the type of data collected	e.g., pictographs and bar graphs highlight difference between frequencies of categories, while pie charts and strip graphs highlight proportions.		

Mathematics: Level 3 - PROBABILITY

Quantifying one-stage chance situations by deriving probabilities and probability distributions from theoretical models and/or estimating probabilities and probability distributions from experiments.

I can...		S	P	T
Recognise it is not possible to know the exact probability of something occurring in most everyday situations.				
Understand trials must be used to gain information about the situation and results of trial samples vary.				
Use systematic methods to find all possible outcomes	e.g. <ul style="list-style-type: none">o Listingo Tree diagrams e.g., coin toss, card draws, dice rolls.			
Accept that results from tests may not always be the same	e.g., toss coin 10 times and from this find that most times five heads do not come up.			