South Farnham School
The Continual Pursuit of Excellence
Part of the South Farnham Educational Trust

Maths Knowledge Organiser

Summer	Year 6	Strands covered:
		Number – PV, Number – A/S, Measure, Number – M/D, algebra, Geometry, Fractions

What prior knowledge should students have?

- add and subtract numbers mentally with increasingly large numbers
- add and subtract whole numbers with more than 4 digits, including using formal written methods
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths;
- read and write decimal numbers as fractions
- multiply proper fractions and mixed numbers by whole numbers
- use the properties of rectangles to deduce related facts and find **missing lengths and angles**

Key Vocabulary	Definition
BODMAS	B – Brackets, O – Order of powers or roots, D – Division, M – Multiplication A – Addition, and S – Subtraction. The BODMAS rule states that mathematical expressions with multiple operations need to be solved from left to right in the order of BODMAS.
Formulae	A formula is a mathematical rule or relationship that uses letters to represent amounts which can be changed – these are called variables.
Radius	The radius is the distance halfway across the circle. The radius is always half the length of the diameter.
Highest Common factors of fractions	If you can work out the highest common factor of the numerator and the denominator, you can express the fraction in its simplest form. For example, to simplify 18/24, we divide by the numerator and denominator by the HCF of 18 and 24 (6) to get 3/4.
Volume of cuboid	V=LBH The volume of the cuboid is the product of the length, breadth, and height.

What skills will students learn? (Disciplinary Knowledge)

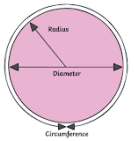
- To perform mental calculations using large numbers.
- To add and subtract whole numbers and decimals using the formal written method of addition and subtraction.
- To use simple formulae, collect like terms and multiply brackets.
- To use measuring tools and compasses to construct patterns inc radius of the circle and hexagons within the circle.
- To calculate and convert between standard units of capacity

What key knowledge will be taught? (Substantive Knowledge)

- How to multiply 1-digit numbers with up to 2 decimal places by 2-digit numbers.
- How to use knowledge of the order of operations to carry out calculations involving the four operations.
- How to express missing number problems algebraically and use simple formulae.
- How to use coordinates to translate shapes, predict missing coordinates and reflect shapes.
- How to use common factors to simplify fractions and use common multiples to express fractions in the same denomination.
- How to add and subtract fractions with different denominators and mixed numbers
- To calculate and compare volumes of cubes and cuboids using standard units of measurement.

Calculation guidance

Use known facts to multiply decimals.

$4 \times 3 = 12$
$4 \times 0{\cdot}3 = 1{\cdot}2$
$4 \times 0{\cdot}03 = 0{\cdot}12$

$$\begin{array}{r} 0 \cdot 5\ 3 \\ 8 \overline{)\ 4 \cdot {}^{4}2\ {}^{2}4} \end{array}$$