	Maths Subject Knowledge Organiser			
SFET South Farnham Educational Trust	**Autumn**	**Year 6**	Number – PV Number – A/S	**Strands covered:** Measure Number – M/D **Money** **Geometry** **Fractions**

What prior knowledge should students have?

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method.
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- read and write decimal numbers as fractions
- write percentages as a fraction with denominator 100 as a decimal fraction

Key Vocabulary

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Simplify	The process of replacing a mathematical expression by an equivalent one, that is simpler (usually shorter).
Translation	Translation is a geometrical transformation that occurs when a shape moves vertically or horizontally but not in any other way. It is not translation when a shape is rotated or enlarged, for example.
Reflection	An image or shape as it would be seen in a mirror.
Integer	An integer is a number with no decimal or fractional part and it includes negative and positive numbers, including zero.
Equivalent	Two or more numbers, expressions, or quantities with the same value.
Formula	A formula is a mathematical rule or relationship that uses letters to represent amounts which can be changed – these are called variables.

What skills will students learn? (Disciplinary Knowledge)

- How to order and compare wholes numbers to 10000000.
- How to measure and draw with a protractor.
- How to add and subtract mentally.
- How to estimate to check answers.
- How to solve multi-step problems deciding which operation to use and why.
- How to express missing number problems algebraically and use simple formulae.
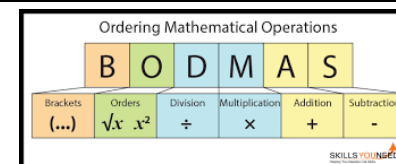
What key knowledge will be taught? (Substantive Knowledge)

- To simplify fractions and convert fractions to decimals and vice versa.
- To use the formal written method of short multiplication and division.
- To use the formal written method of addition and subtraction.
- To recognise, describe and build 3D shapes including nets.
- To add and subtract fractions with different denominators and mixed numbers.
- To use co-ordinates to describe position, predict missing co-ordinates, translate and reflect shapes.
- To identify the value of each digit in a number with 3 decimal places.
- To multiply and divide integers and decimals.
- To convert between different units of length using decimal notation.
- To recall and use equivalences between fractions, decimals and percentages.
- To use knowledge of the order of operations to carry out calculations.

Calculation Guidance

$$4 \overline{)2^25^16} = 064$$

$$5 \overline{)9^43^31} = 186\ 1/5$$

$$3\ 5\ 5\ 1\ 1\ .\ 0$$ with 14.6, 16, 21

Ordering Mathematical Operations

B O D M A S

Brackets	Orders	Division	Multiplication	Addition	Subtraction
(...)	$\sqrt{x}\ x^2$	÷	×	+	-

SKILLS YOUNEED