

NUMBER and MEASURES 3 (8 lessons)

YEAR 7

Supplement of examples - pages 28-31,42-45,82-87,92-111,228-231

	SUPPORT From the Y5 and Y6 teaching programmes	CORE From the Y7 teaching programme	EXTENSION From the Y8 teaching programme
<p>Number and measures 3</p> <p>Place value (42–45) Calculations (82–87, 92–103, 104–107, 110–111)</p> <p>Calculator methods (108–109) Measures (228–231)</p> <p>Solving problems (28–31)</p>	<ul style="list-style-type: none"> Understand and use the relationships between the four operations, and the principles (not the names) of the arithmetic laws. <i>U6, S6 U10, S1</i> Know multiplication facts up to 10×10. <i>U6, S5</i> Add several numbers. <i>U6, S3 & 4 U10, S1</i> Use doubling and halving. <i>U6, S1</i> Partition to multiply mentally $TU \times U$. <i>U6, S2 U15, S1</i> Extend written methods to: <ul style="list-style-type: none"> $HTU \times U$ and $U.1 \times U$; <i>U10, S2</i> $TU \times TU$; <i>U15, S3</i> $HTU \div U$. <i>U10, S3, 4</i> Divide £, p by a two-digit number to give £, p. Round up or down after division, depending on the context. <i>U15, S2</i> Develop calculator skills and use a calculator effectively. Use, read and write standard metric units of length, mass and capacity. <i>U11, S1, 2, 3 U3, S1, 2, 3</i> Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. <i>U11, S1, 3</i> Use all four operations to solve word problems, including time. <i>U2, S7 U11, S4</i> 	<ul style="list-style-type: none"> Round positive whole numbers to the nearest 10, 100 or 1000 and decimals to the nearest whole number or one decimal place. Understand addition, subtraction, multiplication and division as they apply to whole numbers and decimals; know how to use the laws of arithmetic and inverse operations. Know and use the order of operations, including brackets. Consolidate and extend mental methods of calculation to include decimals, fractions and percentages, accompanied where appropriate by suitable jottings; solve simple word problems mentally. Make and justify estimates and approximations of calculations. Multiply and divide three-digit by two-digit whole numbers; extend to multiplying and dividing decimals with one or two places by single-digit whole numbers. Check a result by considering whether it is of the right order of magnitude and by working the problem backwards. Carry out calculations with more than one step using brackets and the memory; use the square root and sign change keys. Use names and abbreviations of units of measurement to measure, estimate, calculate and solve problems in everyday contexts involving length, area, mass, capacity and time; convert one metric unit to another (e.g. grams to kilograms); read and interpret scales on a range of measuring instruments. Break a complex calculation into simpler steps, choosing and using appropriate and efficient operations, methods and resources, including ICT. Present and interpret solutions in the context of the original problem; explain and justify methods and conclusions, orally and in writing. 	<ul style="list-style-type: none"> Round positive numbers to any given power of 10; round decimals to the nearest whole number or to one or two decimal places. Recall products such as 0.7 and 6, and 0.03 and 8. Multiply and divide integers and decimals including by decimals such as 0.6 and 0.06; understand where to position the decimal point by considering equivalent calculations. Know rough metric equivalents of imperial measures in daily use. Give solutions to an appropriate degree of accuracy in the context of the problem.