

Maths Department

## Foundation Scheme of Work

Year	8 – Proportional reasoning	Term 1	
Stage		Description	
	Section A Prerequisites	<b>Section B</b> Multiplicative change	<b>Section C</b> Multiplying and dividing fractions
Emerging	<ul> <li>Have an understanding of place value and the importance of exchange.</li> <li>Students understand place value up to 3 decimal places and their relationship with fractions</li> </ul>	<ul> <li>Can add and subtract with an understanding of associative and commutative laws.</li> <li>Can use multiple representation to add and subtract.</li> </ul>	<ul> <li>Can multiply using different representations such as area and arrays.</li> <li>Can divide using different representations such as area and repeat multiplication.</li> </ul>
Developing	<ul> <li>Can use bar modelling to share amounts</li> <li>Can solve simple money problems</li> <li>Can use multiple representations (bar model, circles, words, ratio, double number line)</li> <li>Express a ratio as a fraction</li> <li>Can simplify fractions and show equivalence</li> </ul>	<ul> <li>Can simplify ratios involving integers, decimals and fractions.</li> <li>Can write as a ratio and corresponding fractions (compare to parts &amp; to whole)</li> <li>Can share into a ratio m : n</li> </ul>	<ul> <li>Understand what direct proportion means (e.g. double the amount, double the price)</li> <li>Recipes &amp; harder proportion problems (e.g. using ratio, double number lines)</li> <li>Can compare similar shapes and ratio</li> </ul>
Secure		<ul> <li>Can express a ratio in the form 1 : n &amp; n : 1</li> <li>Can share into a ratio 1 : n (Can show different representations, but can highlight the limits of bar modelling).</li> </ul>	<ul> <li>Can draw and use conversion graphs to represent currency, units of measure and width of square to perimeter.</li> <li>Can multiply fractions using different representations and strategies.</li> <li>Can divide fractions using multiple representations &amp; strategies – including the use of terminology such as reciprocals.</li> </ul>
Excellence		<ul> <li>Can investigate the relationship of ratio in shape, gradients of lines and pi.</li> <li>Demonstrating a depth of understanding and can apply this to problem solving questions.</li> </ul>	<ul> <li>Can solve complex problems involving proportion and ratio</li> <li>Show a full understanding of scale factors including drawing/interpreting scale diagrams.</li> </ul>