


Subject	Year	Month	
Mathematics	11	December	
Topic:			
Higher level algebra, functions and proof			8 lessons
Content (Intent)			
Prior Learning Year 10 Algebra the basics September Year 10 Surds September		Future Learning Year 12 Pure Chapter 1 Algebraic expressions Pure Chapter 2 Quadratics Pure Chapter 7 Algebraic Methods Year 13 Chapter 1 Algebraic Methods Chapter 2 Functions and Graphs	
Objectives <ul style="list-style-type: none"> Rationalise the denominator involving surds; Simplify algebraic fractions; Multiply and divide algebraic fractions; Solve quadratic equations arising from algebraic fraction equations; Change the subject of a formula, including cases where the subject occurs on both sides of the formula, or where a power of the subject appears; Change the subject of a formula such as $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$, where all variables are in the denominators; Solve 'Show that' and proof questions using consecutive integers ($n, n + 1$), squares a^2, b^2, even numbers $2n$, odd numbers $2n + 1$; Use function notation; Find $f(x) + g(x)$ and $f(x) - g(x)$, $2f(x)$, $f(3x)$ etc algebraically; Find the inverse of a linear function; For two functions $f(x)$ and $g(x)$, find $gf(x)$. 			
Pedagogical notes (implementation)		How will understanding be assessed & recorded (Impact)	
It is useful to generalise $\sqrt{m} \times \sqrt{m} = m$. Revise the difference of two squares to show why we use, for example, $(\sqrt{3} - 2)$ as the multiplier to rationalise $(\sqrt{3} + 2)$. Link collecting like terms to simplifying surds (Core 1 textbooks are a good source for additional work in relation to simplifying surds). Practice factorisation where the factor may involve more than one variable. Emphasise that, by using the LCM for the denominator, the algebraic manipulation is easier.		End of half term no End of Year 2nd mocks in Feb & March	
		How can parents help at home?	
		MathsWatch clips (Qualification GCSE) 207c, 210a, 210b 136, 190 193 214a, 214b, 215	
Further reading/discussion			
Reading / Enrichment	Literacy	Numeracy Links	Careers Links Computing Physicist Engineer Economist