Knowledge Rich Curriculum Plan

Year 12 Maths

Unit 1 – Algebraic Expressions

Maths Year 12	Unit: Algebraic expressions			
Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this students, need to already know that…*	Assessment
Lesson 1: Index laws/Negative and fractional indices Lesson Objective: To learn how to manipulate expressions using index laws.	• Students will know how to simplify expressions by multiplying and dividing integer powers. • Students will know how to simplify expressions involving negative powers. • Students will know how to simplify expressions involving fractional powers. • Students will know how to simplify expressions involving a mixture of negative and fractional powers.		• *Students need to be able to simplify algebraic expressions.* • *Students need to be able to add and subtract using negative numbers.* • *Students need to be able to multiply and divide by negative numbers.* • *Students need to be able to use the order of operations by using BIDMAS.* • *Students will need to know how to simplify expressions by multiplying and dividing integer powers.* • *Students need to be able to expand a single term over brackets.*	
Lesson 2: Expanding brackets/Factorising Lesson Objective: To learn how to expand brackets and factorise expressions.	• Students will know how to expand a single term over brackets and collect like terms. • Students will know how to expand the product of two or three expressions. • Students will know how to factorise linear, quadratic and simple cubic expressions. • Students will know how to factorise using the difference of two squares.		• *Students will need to be able to collect like terms.* • *Students will need to be able to multiply and divide integer powers.* • *Students will need to be able to multiply algebraic expressions.* • *Students need to under the difference between linear, quadratic and cubic expressions.* • *Students need to be able to find the highest common factor of two algebraic or more algebraic terms.* • *Students need to be able multiply and divide integer powers.* • *Students need to be able to recognise an expression which involves the difference of two squares.* • *Students need to under the difference between linear, quadratic and cubic expressions.*	
Lesson 3: Surds/Rationalising denominators Lesson Objective: To learn how to manipulate surds.	• Students will know how to simplify surds. • Students will know how to multiply and divide surds. • Students will know how to add and subtract surds. • Students will know how to expand brackets involving surds. • Students will know how to rationalise denominators using a single surd expression. • Students will need to know how to rationalise denominators using the appropriate conjugate.		• *Students will need to know how to expand single and double brackets.* • *Students will need to know how to simplify surds.* • *Students will need to know how to multiply surds.* • *Students will need to know how to add and subtract surds.* • *Students will need to know how to expand single and double brackets involving surds.*	