

Indices Level 5 Strand: Number and Algebra Time: 3 Weeks		 St Hilda's Collegiate School				
Key Competencies:	Achievement Objectives:	Learning Outcomes:				
Thinking <ul style="list-style-type: none"> • Problem solving using number strategies and knowledge. 	Number and Algebra <ul style="list-style-type: none"> • Use prime numbers, common factors and multiples and powers (including square roots). • Know and apply standard form, significant figures, rounding and decimal place value. 	<table border="0"> <tr> <td>Specific Strategies</td> <td>Resources</td> </tr> <tr> <td> <ul style="list-style-type: none"> • Challenges based on prime factors • Ten ticks activities as listed below </td> <td></td> </tr> </table>	Specific Strategies	Resources	<ul style="list-style-type: none"> • Challenges based on prime factors • Ten ticks activities as listed below 	
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Literacy: using language, symbols and texts: <ul style="list-style-type: none"> • Use the process of factorising and/or simplifying to solve problems • To express a number as a product of primes. • To recognise and to use index and surd form. 	Purpose <ul style="list-style-type: none"> • To be able to solve problems by independently choosing to factorise and/or simplify. 	Relevant tasks/activities/content <ul style="list-style-type: none"> • Using a factor tree to write a number as a product of primes. • Investigations/problems using prime factors and/or knowledge of indices in the method of solution. 				
Relating to others: <ul style="list-style-type: none"> • Working together to solve problems by cooperatively piecing together different parts of the method of solution carried out separately. 						

Key Vocabulary:

Index, Power, Exponent, Root, Standard Form, Prime, Factor, Multiple

Assessment:

Diagnostic What do they know? What can they know?	Formative What are they learning? What do they need to learn?	Summative What have they learned? Can students articulate how they learned it? Student evaluation/reflection
<ul style="list-style-type: none">• knowledge Pre-testing	<ul style="list-style-type: none">• Small, regular, marked activities within the unit providing regular individual feedback.	<ul style="list-style-type: none">• Class summative topic activity

Suggested Teaching Order

1. Expressions involving powers -number and algebraic bases
2. Squares, cubes (extend into area and volume, values and units) - number and algebraic expressions
3. Expressions involving mixed operations (BEDMAS)
4. Multiplying using indices-number and algebraic bases
5. Powers of 10 and standard form
6. An introduction to using a calculator including \exp , $()$, $\sqrt{\quad}$, x^y
7. Extension: zero as an index, exponential growth and decay curves.
8. Extension: fractional and negative indices