**Student Assessment Sheet – Integers, powers and roots**

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| **Objective** | **Before teaching** | | | | **Date of lesson/s** | **After teaching** | | | |
| **Limited** | **Developing** | **Secure** | **Extending** | **Limited** | **Developing** | **Secure** | **Extending** |
| Calculate factors and multiples. |  |  |  |  |  |  |  |  |  |
| Express numbers as products of their prime factors. |  |  |  |  |  |  |  |  |  |
| Recognise square and cube numbers and calculate their roots. |  |  |  |  |  |  |  |  |  |
| Calculate HCF and LCM of pairs of numbers. |  |  |  |  |  |  |  |  |  |
| Know and use the index laws for multiplication and division of positive integer indices. |  |  |  |  |  |  |  |  |  |
| Know that (ab)c = abc |  |  |  |  |  |  |  |  |  |
| Use index notation for negative integer indices. |  |  |  |  |  |  |  |  |  |
| Convert between ordinary and standard index form. |  |  |  |  |  |  |  |  |  |
| Know that n1/2 = √n and n1/3 = ³√n for any positive number n. |  |  |  |  |  |  |  |  |  |
| Use index notation and index laws for simple fractional powers such as 163/4. |  |  |  |  |  |  |  |  |  |
| Calculate with standard index form. |  |  |  |  |  |  |  |  |  |
| Simplify surds to the form a√b |  |  |  |  |  |  |  |  |  |
| Simplify surds, such as 4(3 + √3) and  (2 - √3)(4 + √3) in the form a + b√3 |  |  |  |  |  |  |  |  |  |
| Rationalise the denominator of a surd such as 2/√5. |  |  |  |  |  |  |  |  |  |
| Rationalise a denominator in the form a√b,  a + √b and a + b√c. |  |  |  |  |  |  |  |  |  |
| Construct an algebraic proof of number properties. |  |  |  |  |  |  |  |  |  |