STAGE 9: UNIT 1 CALCULATING

KEYWORDS AND DEFINITIONS

1	Power (of) The number of times a base number is multiplied by itself. e.g. $10^4 = 10 \times 10 \times 10 \times 10$
2	Root The inverse of raising a number to an index (power). e.g. √64 means what number times itself makes 64
3	Index Informs you how many times the base number multiplies itself. 2^5 means 2x2x2x2x2
4	Indices The plural of index
5	Standard Form A way of writing very large or small numbers using a number between 1 and 10 being multiplied by a power of 10. 0.0000246 — 2.46×10^{-5} 678,345.96 — 6.7834596×10^5
6	Inequality Not equal in size, amount or value e.g less than or greater than or not equal to $6 \neq 4$
7	Truncate A method of approximating a decimal by dropping all decimal places past a certain point without rounding. e.g. 3.14159265… becomes 3.1415
8	Round Simplifying a number to a certain place value to make it easier to calculate with. e.g. 3.14159265… rounded to 4 decimal places becomes 3.1416
9	Lower Bound (minimum) The lowest number a rounded value could have been.
10	Upper Bound (maximum) The highest number a rounded value could have been.
11	Interval A set of numbers that lie between 2 values e.g. 2 is the lowest integer and is included up to but not including 5 $2 \leq x < 5$
12	Decimal Place The position of a digit after the decimal point
13	Significant Figure A digit that has a meaningful place value. 1st significant figure, 3rd significant figure 0. 0 3 4 5 2nd significant figure

NOTATION

14	Standard form Digits, Power of 10 5326.6 = 5.3266 × 10^3 A Number — In Scientific Notation
15	Inequalities ≠ is not equal to > is greater than < is less than ≥ is greater than OR equal to ≤ is less than OR equal to

PRIOR KNOWLEDGE

16	Know the meaning of indices (powers)
17	Know the meaning of roots
18	Know the x and ÷ laws of indices
19	Understand and use standard form to write numbers
20	Round to a given number of decimal places or significant figures
21	Know the meaning of the inequality symbols

CORE SUCCESS CRITERIA

22	Calculate with positive indices
23	Use a calculator to evaluate numerical expressions involving indices.
24	Interpret a number written in standard form
25	Apply all 4 operations with standard form
26	Convert a near miss into standard form e.g. 23 x 10^7
27	Use a calculator effectively to input standard form and interpret displays
28	Understand the difference between truncating and rounding
29	Identify the lower and upper bounds of an amount that has been rounded
30	Apply inequalities to describe the range of values for a rounded value.
31	Solve problems involving upper and lower bounds