My mathematical journey

What do I need to remember from before?

Repeated multiplications and exponents (NP4)

Directed numbers (NP6)

Expressions (A1)

What will I learn about in this unit?

Adding and subtracting expressions

Multiplying and dividing expressions

Index laws

Forming expressions

Where does this lead?

Expanding and factorising brackets (A3)

Solving equations (A4)

Sequences (A7)

Quadratic expressions (A11)

Indices and surds (NP15)

Key words and symbols: what I need to say and write accurately

Word	Explanation
variable	a number that can change its value, represented by a letter such as x or a green tile
constant	a number that does not change, is fixed
operation	something that takes input numbers and turns them into output numbers, such as addition (including subtraction), multiplication (including division), exponentiation (including roots)
expression	a collection of constants, variables and operations e.g. $4x$, $2p - 5$ and $x^2 + 3x + 6$ are all expressions
term	the parts of an expression separated by $+$ or $-$. e.g. in the expression $4x - \frac{1}{2}y$, the terms are $4x$ and $\frac{1}{2}y$

Fingertip facts: what I need to learn by heart

The index laws

1. When we multiply powers with the same base, we can add their exponents.

$$x^7 \cdot x^3 = x^{10}$$

2. When we divide powers with the same base, we can subtract their exponents.

$$\frac{x^7}{x^3} = x^4$$

3. When we find a power of a power, we can multiply the exponents together.

$$(x^2)^3 = x^6$$