*Mathswatch clip in brackets
What will I learn about in this unit?

Repeated multiplication
Powers and roots
(MW N25)
Prime numbers (MW N30a)
Composing and decomposing primes
(MW N30b)

Where does this lead?
Order of operations (NP5)
Directed numbers (NP6)
Quadratics (A11)
Index laws (NP15)
Exponential growth (NP16)

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


The "radical" or "root" symbol: $\sqrt{ }$
Fingertip facts: what I need to learn by heart
The first fifteen square numbers:

| Square <br> number | $1^{\text {st }}$ | $2^{\text {nd }}$ | $3^{\text {rd }}$ | $4^{\text {th }}$ | $5^{\text {th }}$ | $6^{\text {th }}$ | $7^{\text {th }}$ | $8^{\text {th }}$ | $9^{\text {th }}$ | $10^{\text {th }}$ | $11^{\text {th }}$ | $12^{\text {th }}$ | $13^{\text {th }}$ | $14^{\text {th }}$ | $15^{\text {th }}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Value | 1 | 4 | 9 | 16 | 25 | 36 | 49 | 64 | 81 | 100 | 121 | 144 | 169 | 196 | 225 |

The first ten cube numbers:

| Cube <br> number | $1^{\text {st }}$ | $2^{\text {nd }}$ | $3^{\text {rd }}$ | $4^{\text {th }}$ | $5^{\text {th }}$ | $6^{\text {th }}$ | $7^{\text {th }}$ | $8^{\text {th }}$ | $9^{\text {th }}$ | $1^{\text {th }}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Value | 1 | 8 | 27 | 64 | 125 | 216 | 343 | 512 | 729 | 1000 |

The prime numbers less than 100:

