Blurt it

Step 1

Name _____ **Date** _____

1. Cover your notes and put your phone face down.
2. Set a timer for 5 minutes.
3. Write down everything you remember about indices, standard form, and surds: methods, key words, examples, and mistakes to avoid. Diagrams count too.

Stuck? Start with one of these: index law · standard form · reciprocal

When the timer ends, turn over and check what you remembered.

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Check it, fix it, space it

Steps 2, 3 and 4

Check it

Tick each idea you wrote down, even in your own words.

- [ ] Multiply powers of the same base: add the indices
- [ ] Divide powers of the same base: subtract the indices
- [ ] Raise a power to a power: multiply the indices
- [ ] The index laws only work when the bases are the same
- [ ] Any non-zero number to the power 0 equals 1, not 0
- [ ] A negative index means a reciprocal, not a negative number
- [ ] Standard form: a number at least 1 and less than 10, multiplied by a power of 10
- [ ] Convert between ordinary numbers and standard form
- [ ] Numbers smaller than 1 have a negative power of 10
- [ ] Compare numbers in standard form by looking at the power of 10 first
- [ ] Multiply or divide: deal with the numbers, then the powers of 10, then readjust
- [ ] Add or subtract: change to ordinary numbers or matching powers of 10 first
- [ ] Use standard form in real contexts, such as very large or very small measurements

Higher only

- [ ] A power of 1 over n means the nth root
- [ ] A fractional power m over n: take the nth root, then raise to the power m
- [ ] Simplify a surd using its largest square factor, for example $\sqrt{12} = 2\sqrt{3}$
- [ ] Multiply and divide surds: $\sqrt{a} \times \sqrt{b} = \sqrt{(ab)}$ and $\sqrt{a} \div \sqrt{b} = \sqrt{(a \div b)}$
- [ ] Add or subtract surds only when the surd part matches: $\sqrt{a} + \sqrt{b}$ is not $\sqrt{(a + b)}$
- [ ] Rationalise $1 \div \sqrt{a}$ by multiplying top and bottom by $\sqrt{a}$

Key words to use: index · power · exponent · base · index law · reciprocal · standard form
ordinary form · coefficient · surd · rational number · irrational number · rationalise · simplify

I remembered _____ out of 13. **Higher only: _____ out of 6.**

Fix it

Pick 3 ideas you missed. Look them up, then write each one correctly.

1	2	3

Space it

Blurt again on a fresh sheet. Gaps help you remember for longer.

Tomorrow	In 3 days	In a week
Date _____	Date _____	Date _____
Score _____ / 13	Score _____ / 13	Score _____ / 13
Higher only _____ / 6	Higher only _____ / 6	Higher only _____ / 6

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