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| **Core Knowledge Map** |
| Subject: Mathematics | Year: 10 | Term: Autumn 1 |
| What are we learning? |
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| How will I be assessed  |
| Retrieval Tasks, Exit Tickets, End of term test. |
| Big questions: |
| Can You….?* Define an irrational number?
* Simplify √8 and $5\sqrt{2}+3\sqrt{18}+10\sqrt{50}$
* Rationalise: $\frac{1}{\sqrt{3}-1}$ and $\frac{1}{\sqrt{3}}$
 |
| How does this build on previous learning? | How will this link to my future learning? |
| * Calculating powers and roots
* Knowing square and cube numbers
* Using basic index rules
 | * Surds will appear in many future topics in GCSE such as in area and volume problems so you will need to be fluent in using them in calculations.
* Both surds and indices are used extensively at A Level
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| Core knowledge: | Key vocabulary: |
| An **irrational** number is a number that cannot be written in the form $\frac{a}{b} $where a and b are integers.A **surd** is an irrational number.**Rules** of indices:* $n^{a}×n^{b}= n^{a+b}$
* $n^{a}÷n^{b}= n^{a-b}$
* $\left(n^{a}\right)^{b}=n^{ab}$

**Know that**, n0 = 1 and $n^{-1}=\frac{1}{n} $for positive integers n as well as, $n^{\frac{1}{2}}=\sqrt{n}$ and $n^{\frac{1}{3}}=\sqrt[3]{n}$ for any positive number n | Index (Indice)SurdFactorMultipleLowest Common Multiple (LCM)Highest Common Factor (HCF)SimplifyIrrationalRationaliseStandard FormSquare rootRoot |
| Need more help? Use the Sparx Independent Learning Codes above |