Home-School Learning Collaboration – Mathematics

Topics in this cycle:	Taught: Spring 2	Year Group: 8

Key knowledge/concepts to be learnt ('Tell me about….')	Websites/blogs/YouTube links and further reading to deepen and consolidate learning
Fractions and Percentages: • Fractions, Decimal, Percentage conversion • Finding FDP of amounts without a calculator • Finding FDP of amounts with a calculator	https://vimeo.com/492449530 https://vimeo.com/507639642 https://vimeo.com/505246845
Indices • Add and Subtract expressions with indices • Multiply and divide expressions with indices • Addition law for indices • Subtraction law for indices • Addition and subtraction laws for indices • Powers of powers • Negative indices • Fractional indices	https://vimeo.com/498290804 https://vimeo.com/501778472 https://vimeo.com/501778353
Standard Form/Number sense • **Inves**tigate positive and negative powers of 10 • Compare/order numbers in Standard Form • Calculate with numbers in Standard Form • Rounding • Estimating answers/money problems • BIDMAS • Converting units of lengths	https://vimeo.com/519965759 https://vimeo.com/519967116 https://vimeo.com/519967527 https://vimeo.com/525460054 https://vimeo.com/525458276

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Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
Index	It tells you how many times a number (base) needs to be multiplied by itself	
Power	Another word for index	
Exponent	Another word for index	
Standard Form	Is used to write miniscule and massive numbers	
Numerator	Tells you how many parts we are interested in	
Denominator	Tells you how many equal parts something was split into	
Equivalent	The same in value	
		Family Learning Opportunities
		Support your child at completing their homework and to boost SparxMaths XP level. **Fractions and Percentages:** • **Find an original amount when a percentage is given** Is the original value greater than or less than the given amount? What percentage is the original amount? How can we represent this using a bar model? From the percentage given, what other percentages can we easily work out? How can we build on these to find 100%? • **Complex percentages:**

		How can you tell if a question involves finding an amount before a percentage change? How does this affect your approach to the question? **Indices** • What is the difference between a base and a power? • When dividing terms with the same base, why do you subtract the powers? Why does this rule only work when the bases are the same? • What is the same and what is different about $28 \div 2^2$ and 28 **Standard Form/Number sense:** • **Understand negative indices:** Will a number raised to a negative power always, sometimes or never have a negative value? How does working out negative powers relate to the subtraction law for dividing indices? How do you enter negative powers on a calculator? • **Understand fractional indices:** How does the addition law for indices help us work out the meaning of "to the power half"? Give an example to show "to the power half" is not the same as "divide by 2"? • **Finding error interval:** What is the smallest number that rounds to (e.g.) 16 to the nearest integer? Why isn't 16.4 the largest number that rounds to 16 to the nearest integer? What's the difference between < and ≤? How does this affect how we write error intervals? • **Convert metric units of area:** Why is it that (e.g.) $1\ cm^2 \neq 10\ mm^2$?

		How do we find the area of a…? What happens to all the dimensions if we change them from (e.g.) m to cm? Why can't we multiply 30 cm by 5 m without converting first? **More:** Find out why we use need Standard Form: https://youtu.be/uaGEjrADGPA Explore converting of units of area: https://vimeo.com/526174362