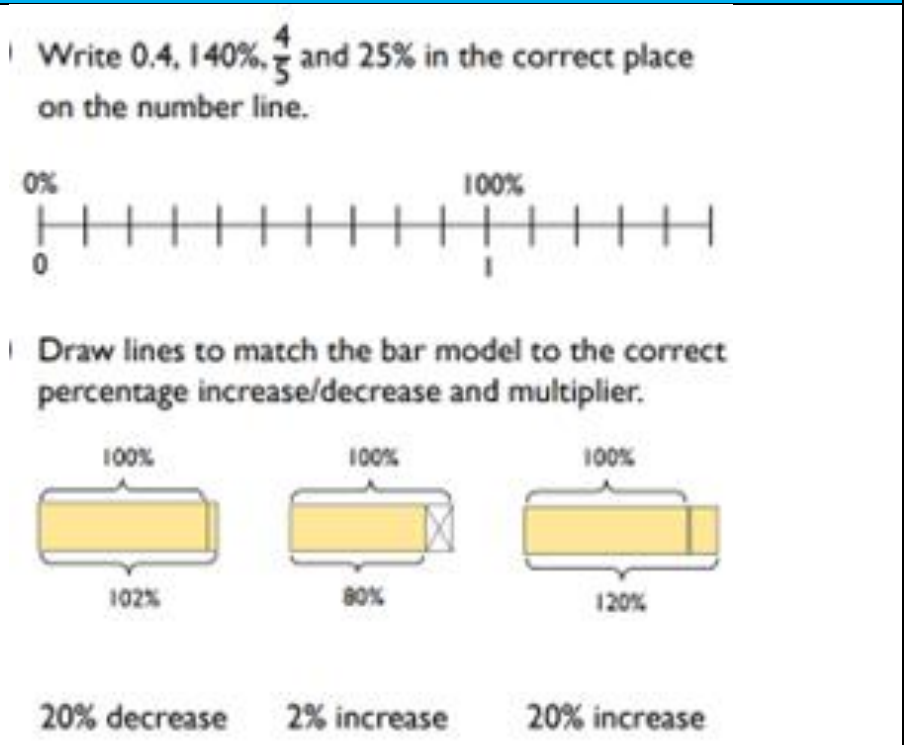
Home-School Learning Collaboration – Mathematics

Topics in this cycle:	Taught: Spring 2	Year Group: 7

Key knowledge/concepts to be learnt ('Tell me about….')	Websites/blogs/YouTube links and further reading to deepen and consolidate learning
Operations with directed numbers • Ordering of directed numbers • Add/subtract directed numbers • Multiply/divide directed numbers • Roots of positive numbers	https://vimeo.com/518994953 https://vimeo.com/510353138 https://vimeo.com/510353138 https://vimeo.com/516391970 https://vimeo.com/518995446
Addition and subtraction of fractions • Finding FDP of amounts without a calculator • Finding FDP of amounts with a calculator	https://vimeo.com/507639642 https://vimeo.com/505246845
Perimeter and Area • Convert metric units of length • Perimeter of a polygon • Perimeter of a compound shape • Area of a triangle • Area of a trapezium • Solve problems with perimeter and area	https://www.youtube.com/watch?v=xCdxURXMdFY https://www.youtube.com/watch?v=AAY1bsazcgM

Home-School Learning Collaboration – Mathematics

Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
Inverse operation	Inverse of addition is subtraction; inverse of division is multiplication…	
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	
Commutative	Means that numbers in calculation can be swapped around and the answer will be the same	**Family Learning Opportunities**
Numerator	Tells you how many parts we are interested in	
Denominator	Tells you how many equal parts a value was split into	
Fraction	A part of a whole	
Directed numbers	Positive and negative numbers	

Evaluate	Find numerical value	
		Support your child at completing their homework and to boost SparxMaths XP level. **Discuss the following questions:** **Operations with directed numbers:** • **Representations of directed number:** How far is -3 from zero? How far is 3 from 0? How are they different? What does this tell us about positive and negative numbers? (If using bead strings, they can be moved to emphasise the reflection about 0) • **Order directed numbers:** Is ordering temperatures from hottest to coldest, putting them in ascending or descending order? Where would $+\frac{1}{4}$ be on the number line? Is it closer to 0 or 1? How does this help us to put $-\frac{1}{4}$ on the number line? Between which two consecutive integers does −1.5 lie? • **Perform calculations that cross zero:** How could you use the number line to help perform 4-8? What is 4 − 4? What is −4 + 4? What do you notice? How is $-3m + 5m$ different from −3 + 5? How are they the same? • **Add directed numbers:** Why is adding a negative the same as subtracting? Why is 100 + − 102 an easy calculation despite the large numbers? How does partitioning help? Give an example to show the statement “Two negatives make a positive” is wrong

		• **<u>Subtracting directed numbers:</u>** Using the manipulatives, what happens to the total when I take away 2 negatives? What happens when the lowest score is removed? Does the total increase or decrease? What happens when you subtract a negative number from a positive total? How can you represent this visually? • **<u>Multiplication with directed numbers:</u>** How could we use the number line to answer the question 3 x -2? If 3 × −2 = −6, what is −3 × −2? How do you know? Why is −3 × 5a equal to 3 × −5a? What other calculations give the same answer? • **<u>Using a calculator for directed numbers:</u>** Explain how to use the + - on a calculator. How is it different from the − button? What is the difference between -2.3^2 and $(-2.3)^2$? If there is no sign written in front of a number, is it positive or negative? • **<u>Using order of operations:</u>** What does it mean when there is a number directly in front of a bracket e.g. 3(6 + 4)? What's the difference between -6^2 and $(-6)^2$? Does a negative number change the order of operations?