

Scheme of Learning: Year 7 Spring Term

Topic Sequence: Applications of Number

6	7	8
Solving problems with addition and subtraction	Solving problems with multiplication and division	Fractions and Percentages of amounts

Topic Overview: Solving problems with multiplication and division

This block focuses on the key concept of working out fractions and percentages of quantities and the links between the two. This is studied in depth in Year 8^{SEP}.

Learning Sequence:

Fractions of amounts:

This step provides an opportunity for students to consolidate and revisit their prior understanding and attempt increasingly difficult problems. In order to aid understanding students will be able to represent and see the problem with a bar model. They will use comparison bar models to look at e.g. one-third of 90 and two-thirds of 45.

Find the whole:

Bar models are used for 'working backwards' to find the whole given a particular fraction, either unit or non-unit. As with the previous step, they help make sense of the process involved rather than attempting rote memorisation of division/multiplication by the numerator and denominator. Once the whole is found, other fractions can be easily found. Students will be challenged by considering fractions of increasingly complex expressions.

Percentage of amounts: mental

Students will have met finding percentages of an amount before. They are likely to have focused on finding multiples of 5% and 10%, and many will be used to 'build-up' methods from key percentages. Alternative methods will be explored and discussing when which method would be appropriate e.g. 95% is best found by subtraction from the whole.

Percentage of amount: Calc

Students will not have used a calculator to find percentages so this is a good opportunity to explore the variety of methods available, including the percentage button. In particular, students will consider when a calculator method is preferable to a mental method. Real life percentage problems will be discussed such as interest rates, commission charges etc.

Percentages over 100%

As students understand percentages as 'out of a hundred' there is often confusion about going over 100%. Discussion will be had as to when it is and isn't appropriate to have percentages over 100%. Bar models will then support finding the total percentage and the decimal conversion. This step is covered again in the core strand in Year 8.

Sequence of Learning:		Topic Resources:	
1	Find a fraction of a given amount	Knowledge Maps:	FDP conversion Percentages Fractions
2	Use a given fraction to find the whole and/or other fractions		
3	Find a percentage of a given amount using mental methods	Assessment:	
		Knowledge:	End of Topic test
4	Find a percentage of a given amount using a calculator	Application of Knowledge:	Termly mixed topic assessment
5	Solve problems with fractions greater than 1 and percentages greater than 100% (H)	Supportive Reading:	
		Any supported reading listed here	Sparx Maths www.sparxmaths.co.uk
			Corbett Maths : www.corbettmaths.com
			AQA Revision Guide