Topic Sequence: Proportions and proportional change

8	9	10	11
Ratio and fractions	Percentages and Interest	Probability	Rates

Topic Overview: Percentages

This block builds on KS3 work on ratio and fractions, highlighting similarities and differences and links to other areas of maths including both algebra and geometry. The focus is on reasoning and understanding notation to support the solution of increasingly complex problems that include information presented in a variety of forms

Learning Sequence:

Compare quantities using a ratio(R): Students review expressing information in a ratio and consider why when units are not the same, it is important to use equivalent units.

Link ratio and fractions(R): When looking at a ratio, it is important for students to look at both the relationships between the parts and the relationships to the whole

Share in a ratio(R): Students should be familiar with this step from KS3 and this is a recap step

Link ratio and graphs (R): This step reviews the idea of direct proportion met at KS3, and how this links to graphical representation. Students revisit the notion of gradient and see how this links to the ratio of the pair of values y/x. Values not in direct proportion do not produce a constant ratio

Currency conversion: This small step gives students the opportunity to revisit reading information from graphs and also gives them the opportunity to reinforce their understanding and use of multiplicative reasoning.

Ratio in the form 1:n and n:1: Students consider writing ratio in unit form and how this helps to compare ratio

Solving 'best buy' problems: Students compare prices to find best value, using different methods to compare and considering efficiency of these methods in different scenarios

Combine a set of ratio: In order to compare ratio, students need to be secure in finding the lowest common multiple and in working with equivalent ratio.

Link ratio to algebra: This step explores both the use of algebraic notation within ratio ad the linking of ratio questions to problems that need to be tacked through forming and solving equation. If the ratio a:b and c:d are equal then the key concept that $\frac{a}{b} = \frac{c}{d}$ is often useful to solve complex looking problems

Ratio in area and volume problems (H): Students have explored the effect of enlargement on the areas and volumes of similar shapes earlier this year, looking at squaring and cubing scale factors. This is an opportunity to revisit this learning using ratio notation alongside that of scale factors. It can also be an opportunity to revisit area problems and those involving Pythagoras' theorem and trigonometry.

Sequence of Learning:

1	Compare quantities using a ratio(R):
2	Link ratio and fractions(R):
3	Share in a ratio(R):
4	Link ratio and graphs (R):
5	Currency conversion:
6	Ratio in the form 1:n and n:1:
7	Solving 'best buy' problems
8	Combine a set of ratio
9	Link ratio to algebra
10	Ratio in area and volume problems (H):

Topic Resources:

Knowledge Maps:	Ratio Scale

Assessment:

Knowledge:	End of topic assessment
Application of Knowledge:	Termly summative assessment

Supportive Reading:

Any supported reading listed here	Sparx Maths www.sparxmaths.co.uk
	Corbett Maths : www.corbettmaths.com
	AQA Revision Guide