National Centre for Excellence in the Teaching of Mathematics

Ratio and Proportion with Reasoning

Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
					What else do you know? In a flower bed a gardener plants 3 red bulbs for every 4 white bulbs. How many red and white bulbs might he plant? If she has 100 white bulbs, how many red bulbs does she need to buy? If she has 75 red bulbs, how many white bulbs does she need to buy? If she wants to plant 140 bulbs altogether, how many of each colour should she buy? **Do, then explain** Purple paint is made from read and blue paint in the ratio of 3:5. To make 40 litres of purple paint how much would I need of each colour? Explain your thinking.
					solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
					What else do you know? 88% of a sum of money = £242. Make up some other statements. Write real life problems for your number sentences. **Undoing** I think of a number and then reduce it by 15%. The number I end up with is 306. What was my original number? In a sale where everything is reduced by 15% I paid the following prices for three items. £255, £850, £4.25 What was the original selling price?
					solve problems involving similar shapes where the scale factor is known or can be found
					Unpicking A recipe needs to include three times as much apple than peach. The total weight of apples and peaches in a recipe is 700 grammes. How much apple do I need?

Ratio and Proportion with Reasoning

					solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
					Other possibilities A 50 seater coach travels to the match. Most of the seats are taken. Junior tickets cost £13 and Adult tickets cost £23. The only people on the coach are Juniors and Adults. The total amount paid for tickets is approximately £900 How many people on the coach were adults and how many were juniors?