Multiplicative Reasoning 5.3	Length of unit: **3 weeks**	Week beg:	Year:5	Teacher:

Success criteria	**Prior Learning:**	**Resources**
Pupils can solve problems involving multiplication and division in different contexts, appropriately choosing and using number facts, understanding of place value and mental and written methods. They can explain their decision making and justify their solutions.	Check that children can already • count in multiples of 6, 7, 9, 25 and 1000 • recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations • multiply two-digit and three-digit numbers by a one-digit number using formal written layout • solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling and harder correspondence problems such as *n* objects are connected to m objects • solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number • solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Maths vocabulary book Using and Applying in every maths lesson Assessment through guided maths Think Maths! Pitch and Expectations Y5 and Y6 Mind the Gap (L3 to L4) Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available on M drive) Securing Level 4 and Securing Level 5 documents (available on M drive)) Errors and Misconceptions in Maths at KS2

Guidance

Pupils practise and extend their use of the formal written methods of short multiplication and short division. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.

Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example 98 ÷ 4 = 98/4 = 24 r 2 = 24 ½ = 24.5 ≈ 25).

Pupils use all four operations in problems involving time and money, including conversions (for example days to weeks, leaving the answer as weeks and days).

Learning objectives Pupils should be taught to: Multiplication and division ● identify multiples and factors, including finding all factor pairs, and common factors of two numbers ● multiply numbers up to 4 digits by a one-digit number using a formal written method ● multiply and divide numbers mentally drawing upon known facts ● divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context ● multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 ● solve problems involving multiplication and division including using their knowledge of factors and multiples ● solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign Measurement ● use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation including scaling	**Pupil outcomes:** I can explain and represent different ways of solving 216m ÷ 4 and 220m x 5, give reasons for which would be the most efficient and suggest contexts where these calculations might be needed. I can explain and represent why the solution to 83 ÷ 6 is different in the two contexts; '83 people need to travel in taxis that each carry 6 people, how many taxis do you need?' and '83 eggs have been collected, how many boxes of 6 can be filled?'