| **Multiplicative Reasoning 4.13** | Length of unit: **3 weeks** | Week beg: | Year:4 | Teacher: |
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| **Success criteria** | **Prior Learning:** | **Resources** |
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| Pupils can solve problems involving multiplication, division and fractions in different contexts, appropriately choosing and using number facts, understanding of place value and counting and mental and written methods, explain their decision making and justify their solutions. | Check that children can already<br>• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number<br>• recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br>• solve problems that involve all of the above (fractions)<br>• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br>• write and calculate mathematical statements for multiplication and division using the multiplication tables that students know, including for two-digit numbers times one-digit numbers using mental and progressing to formal written methods<br>• solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects<br>• count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10<br>• know the number of seconds in a minute and the number of days in each month, year and leap year | Maths vocabulary book<br>Using and Applying in every maths lesson<br>Assessment through guided maths<br>Think Maths!<br>Pitch and Expectations Y4 and Y5<br>Mind the Gap (L3 to L4)<br>Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available online)<br>Securing Level 3 and Securing Level 4 documents |

**Guidance**

Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.

Pupils practise mental methods and extend this to three- digit numbers to derive facts, (for example, 600 ÷ 3 = 200 can be derived from 2 × 3 = 6).

Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4).
They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 × 6 × 5 = 10 × 6 = 60.

Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the number of choices of a meal on a menu, or three cakes shared equally between 10 children.

Pupils understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths.

| Learning objectives | Pupil outcomes: |
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| **Pupils should be taught to:**<br><br>Number and place value<br>● count in multiples of 6, 7, 9, 25 and 1000<br><br>Multiplication and division<br>● recall multiplication and division facts for multiplication tables up to 12 × 12<br>● 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<br>● recognise and use factor pairs and commutativity in mental calculations<br>● multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br>● 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.<br><br>Fractions (including decimals)<br>● 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<br><br>Measurement<br>● solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. | I can explain and represent different ways of solving “Daniel is celebrating his ninth birthday. His Gran has been saving £3 for him every month since he was born. How much money has she saved?” and give reasons for which would be the most efficient.<br><br>I can explain and represent different ways of solving “Daniel is going on holiday in 98 days. How many weeks is it until he leaves?” and give reasons for which would be the most efficient. |