Multiplicative Reasoning 3.13	Length of unit: **3 weeks**	Week beg:	Year: 3	Teacher:

Success criteria

Pupils can explain and represent multiplication as both repeated addition and scaling, and division as both sharing (including finding fractions), and grouping. They use this understanding to derive facts and solve problems including two digit by one digit multiplications.

Prior Learning:

- count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the
- multiplication tables and write them using the multiplication (3), division (4) and equals (5) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- find different combinations of coins to equal the same amounts of money
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day
- recognise, find, name and write fractions 1⁄3, ¼, 2⁄4 and ¾ of a length, shape, set of objects or quantity
- write simple fractions for example, ½ of 6 5 3 and recognise the equivalence of 2/4 and ½

Resources

Maths vocabulary book

Using and Applying in every maths lesson

Assessment through guided maths

Think Maths!

Pitch and Expectations Y3

Models and Images

Overcoming Barriers to Learning L2 to L3/L3 to L4

Securing Level 3/Level 4

Guidance

Pupils develop efficient mental methods, for example, using commutativity and associativity (for example, 4 × 12 × 5 = 4 × 5 × 12 = 20 × 12 = 240) and multiplication and division facts (for example, using 3 × 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (for example, 30 × 2 = 60, 60 ÷ 3 = 20 and 20 = 60 ÷ 3).

Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.

Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which *m* objects are connected to *n* objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).

Pupils continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.

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Learning objectives	Pupil outcomes:
Pupils should be taught to: Number and place value ● count from 0 in multiples of 4, 8, 50 and 100 Multiplication and division ● recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ● write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods ● solve problems, including missing number problems, involving multiplication and division; solve positive integer scaling problems and correspondence problems in which n objects are connected to m objects. Fractions ● 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 ● recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators ● solve problems that involve all of the above. Measurement ● know the number of seconds in a minute and the number of days in each month, year and leap year.	I can explain and represent different efficient ways of solving £28 × 8 and £75 ÷ 3 using my known facts and understanding, and suggest different contexts where these calculations might arise.