Multiplicative reasoning 3.8	Length of unit: **3 weeks**	Week beg:	Year: 3	Teacher:

Success criteria	**Prior Learning:**	**Resources**
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.	Check that children can already; • 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 (×), division (÷) and equals (=) 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 $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity • write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	Maths vocabulary book Using and Applying in every maths lesson Assessment through guided maths Think Maths! Pitch and Expectations Y3 Overcoming Barriers to Learning – L2 to 3 and L3 to 4 Securing Level 3 and Securing Level 4 documents Models and Images (available online and on CD in maths resource book cupboard)

Guidance

Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they connect the 2, 4 and 8 multiplication tables.

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 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).

The comparison of measures includes simple scaling by integers (for example, a given quantity or measure is twice as long, or five times as high) and this connects to multiplication.

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

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 ● 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. 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 of 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	I can explain and represent dhow to share seven bars of chocolate between ten friends and justify the solution. I can explain and represent how to find a third of 18kg and record a matching number sentence.