

Multiplicative reasoning 4.8

Length of unit:
3 weeks

Week beg:

Year:4

Teacher:

Success criteria

Pupils can explain the relationship between multiplication, division and fractions. They use this understanding to derive facts and solve problems.

Prior Learning:

Check that children can already

- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- 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 (fractions)
- 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 students 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, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
- count up and down in tenths; recognize that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- know the number of seconds in a minute and the number of days in each month, year and leap year

Resources

- Maths vocabulary book
- Using and Applying in every maths lesson
- Assessment through guided maths
- Think Maths!
- Pitch and Expectations Y4 and Y5
- Mind the Gap (L3 to L4)
- Overcoming Barriers to Learning – L3 to 4 and L4 to 5 (available online)
- Securing Level 3 and Securing Level 4 documents

Guidance

Pupils understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths.
See also guidance for 4.3.

Learning objectives

Pupils should be taught to:

Number and place value

- count in multiples of 6, 7, 9, 25 and 1000

Multiplication and division

- 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
- 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

Fractions (including decimals)

- 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

Measurement

- solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

Pupil outcomes:

I can explain and represent how many different sandwiches can be made with three types of bread and five types of fillings, how many bags of crisps are salt and vinegar in a box of 100 if they form $\frac{2}{5}$ of the box and what happens if you share four bars of chocolate fairly between seven people.