

# Number: Fractions (including Decimals and Percentages)

**Key of text colours**  
 EYFS Development Matters (DM) Objectives & NC Objectives  
 Key concepts that create solid foundations in EYFS to build upon for the NC Objectives  
 NC Objective appears elsewhere within the same topic progression document  
 NC Objective also appears in another topic progression document

| COUNTING IN FRACTIONAL STEPS  |     |   |  |  |   |   |        |
|---|-----|---|--|--|---|---|--------|
| EYFS  | ELG | Year 1  | Year 2   | Year 3   | Year 4  | Year 5  | Year 6 |
| beginning to use the term “half” and understand it means sharing into 2 equal parts |     |   | <i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i> | count up and down in tenths  | count up and down in hundredths   |   |        |
| RECOGNISING FRACTIONS   |     |   |  |  |   |   |        |
|   |     | recognise, find and name a half as one of two equal parts of an object, shape or quantity     | 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     | recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators  | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence) |        |
|   |     |   |  | 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 name a quarter as one of four equal parts of an object, shape or quantity |  | recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators                            |   |   |        |

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| COMPARING FRACTIONS   |  |  |   |  |   |  |  |
|---|--|--|---|--|---|--|--|
|   |  |  |   | compare and order unit fractions, and fractions with the same denominators       |   | compare and order fractions whose denominators are all multiples of the same number                                      | compare and order fractions, including fractions >1  |
| COMPARING DECIMALS  |  |  |   |  |   |  |  |
|   |  |  |   |  | compare numbers with the same number of decimal places up to two decimal places | read, write, order and compare numbers with up to three decimal places   | identify the value of each digit in numbers given to three decimal places                                    |
| ROUNDING INCLUDING DECIMALS                                 |  |  |   |  |   |  |  |
|   |  |  |   |  | round decimals with one decimal place to the nearest whole number               | round decimals with two decimal places to the nearest whole number and to one decimal place                              | solve problems which require answers to be rounded to specified degrees of accuracy                          |
| EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES) |  |  |   |  |   |  |  |
|   |  |  | write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ . | recognise and show, using diagrams, equivalent fractions with small denominators | recognise and show, using diagrams, families of common equivalent fractions     | identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths | use common factors to simplify fractions; use common multiples to express fractions in the same denomination |
|   |  |  |   |  | recognise and write decimal equivalents of any number of tenths                 | read and write decimal numbers as fractions (e.g. 0.71 = $\frac{71}{100}$ )  | associate a fraction with division and calculate decimal   |

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|  |  |  |  |   |  |   |   |
|--|--|--|--|---|--|---|---|
|  |  |  |  |   | or hundredths  | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents   | fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$ )                                       |
|  |  |  |  |   | recognise and write decimal equivalents to $\frac{1}{4}$ ; $\frac{1}{2}$ ; $\frac{3}{4}$ | recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction                               | recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.    |
| <b>ADDITION AND SUBTRACTION OF FRACTIONS</b> |  |  |  |   |  |   |   |
|  |  |  |  | add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ ) | add and subtract fractions with the same denominator                                     | add and subtract fractions with the same denominator and multiples of the same number   | add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions |
|  |  |  |  |   |  | recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements $> 1$ as a mixed number (e.g. $\frac{2}{5}$<br>$+ \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ ) |   |

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## MULTIPLICATION AND DIVISION OF FRACTIONS

|  |  |  |  |  |  |   |   |
|--|--|--|--|--|--|---|---|
|  |  |  |  |  |  | multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ ) |
|  |  |  |  |  |  |   | multiply one-digit numbers with up to two decimal places by whole numbers   |
|  |  |  |  |  |  |   | divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$ )   |

## MULTIPLICATION AND DIVISION OF DECIMALS

|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  | multiply one-digit numbers with up to two decimal places by whole numbers                        |
|  |  |  |  |  |  | find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths | multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places |

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|------------------------|--|--|--|--|---|---|---|
|                        |  |  |  |  |   |   | identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places |
|                        |  |  |  |  |   |   | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$ )                        |
|                        |  |  |  |  |   |   | use written division methods in cases where the answer has up to two decimal places   |
| <b>PROBLEM SOLVING</b> |  |  |  |  |   |   |   |
|                        |  |  |  | solve problems that involve all of the above | solve problems involving increasingly harder fractions to calculate quantities, and | solve problems involving numbers up to three decimal places |   |

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|  |  |  |  |  | fractions to divide quantities, including non-unit fractions where the answer is a whole number |  |  |
|  |  |  |  |  | solve simple measure and money problems involving fractions and decimals to two decimal places. | solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{5}$ , $\frac{2}{5}$ , $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25. |  |