

|  |
| --- |
| **Progression of Skills in: Fractions (including Decimals and Percentages)** |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **COUNTING IN FRACTIONAL STEPS** | | | | | | | |
| **Skill** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | | **Year 6** |
| **COUNTING IN FRACTIONAL STEPS** |  |  | *Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)* | count up and down in tenths | count up and down in hundredths |  | |  |
|  | **RECOGNISING FRACTIONS** | | | | | | | |
| **RECOGNISING FRACTIONS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
| Recognising part and whole | recognise, find and name a half as one of two equal parts of an object, shape or quantity | recognise, find, name and write fractions 1/3, 1/4, 2/4 and 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) |  |
| Understand that objects can be divided into parts | recognise, find and name a quarter as one of four equal parts of an object, shape or quantity |  | recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. |  | |  |  |
|  |  |  |  | recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators |  | |  |  |
|  | **COMPARING FRACTIONS** | | | | | | | |
| **COMPARING FRACTIONS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  | 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** | | | | | | | |
| **COMPARING DECIMALS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  |  | 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** | | | | | | | |
| **ROUNDING INCLUDING DECIMALS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  |  | 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)** | | | | | | | |
| **EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  | write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 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 or hundredths | | read and write decimal numbers as fractions (e.g. 0.71 = 71/100) | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) |
|  |  |  |  |  | | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents |  |
|  |  |  |  | recognise and write decimal equivalents to 1/4; 1/2; 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. |
|  | **ADDITION AND SUBTRACTION OF FRACTIONS** | | | | | | | |
| **ADDITION AND SUBTRACTION OF FRACTIONS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
| Add two halves of an object to make the whole | Add two halves of an object to make the whole |  | add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 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. 2/5 + 4/5 = 6/5 = 11/5) |  |
|  | **MULTIPLICATION AND DIVISION OF FRACTIONS** | | | | | | | |
| **MULTIPLICATION AND DIVISION OF FRACTIONS** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  |  |  | | 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. 1/4 × 1/2 = 1/8) |
|  |  |  |  |  | |  | multiply one-digit numbers with up to two decimal places by whole numbers |
|  |  |  |  |  | |  | divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6 ) |
|  | **MULTIPLICATION AND DIVISION OF DECIMALS** | | | | | | | |
| **ADDITION AND SUBTRACTION OF FRACTIONS** | **reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  |  |  | |  | multiply one-digit numbers with up to two decimal places by whole numbers |
|  |  |  |  | find the effect of dividinga 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 |
|  |  |  |  |  | |  | 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. 3/8) |
|  |  |  |  |  |  | |  | use written division methods in cases where the answer has up to two decimal places |
|  | **PROBLEM SOLVING** | | | | | | | |
| **PROBLEM SOLVING** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | | **Year 5** | **Year 6** |
|  |  |  | solve problems that involve all of the above | 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 | | solve problems involving numbers up to three decimal places |  |
|  |  |  |  | solve simple measure and money problems involving fractions and decimals to two decimal places. | | solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25. |  |