## Examples of what children should be able to do, in relation to each (boxed) Programme of Study statement

**use common factors to simplify fractions; use common multiples to express fractions in the same denomination**

Children should be able to recognise that a fraction such as 5⁄20 can be reduced to an equivalent fraction of ¼ by dividing both numerator and denominator by the same number [cancelling] They should also be familiar with identifying fractions in different units. E.g. what fraction is 20 pence of two pounds? Of four pounds etc…

**compare and order fractions, including fractions >1**

Children should be able to:

i] Position fractions on a number line; e.g. mark fractions such as 7⁄5 , 11⁄20 , 18⁄12 on a number line graduated in tenths

ii] Answer questions such as: What number is half way between 5 ¼ and 5 ½ ?

iii] Which is larger, ⅓ or ⅖? Explain how you know.

**associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. ⅜)**

Children should be able to find fractions of numbers and quantities;

i] What fraction of £1 is 35p, … 170p ?

ii] Write 23⁄100 of 4 kilogrammes in grams

iii] What fraction of 1 litre is 413 ml?

Convert a fraction to a decimal using known equivalent fractions:

i] ¼ = 0.25

ii] ⅖ = 0.4

Explain how much pizza each person would get if they divided 4 pizzas between 5 people, as a fraction and a decimal

**add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions**

Children should be able to solve practical problems such as;



Here is a chocolate bar.

William eats 3 pieces and Amber eats 2 pieces. What fraction of the chocolate bar remains?

Joe has some pocket money. He spends three-quarters of it. He has fifty pence left. How much pocket money did he have?

**multiply simple pairs of proper fractions, writing the answer in its simplest form, (e.g. ¼ × ½ = ⅛)**

Children should be able to:

i] Recognise that ¼ of 12, ¼ x 12 and 12 divided by 4 are equivalent

ii] Use cancellation to simplify the product of a fraction and an integer

eg ⅕ x 15 = 3

⅖ x 15 = 2 x ⅕ x 15 = 2x3 = 6

ii] Work out how many ½s in 15, how many ⅖s in 15, how many 2/5s in 1 etc.

**divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙ )**

Children should be able to:

Decide whether they would prefer to share ½ of a pizza with 2 people or ¾ of a pizza with 4 people and explain why.

**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**

Children should be able to identify the value of each digit in the number 17.036 and multiply and divide this by 10.100 and 1000

**multiply one-digit numbers with up to two decimal places by whole numbers**

Children should be able to calculate the answer to questions such as;

What is 3.86 multiplied by nine?

**use written division methods in cases where the answer has up to two decimal places**

Children should be able to calculate 601 divided by 36, to two decimal places

**solve problems which require answers to be rounded to specified degrees of accuracy**

Children should be able to solve problems such as;

Four friends win £48,623. The money is to be shared equally between them – how much will each person receive?

107 pupils and teachers need to be taken to the theatre. How many 15-seater minibuses will be required?

How many boxes of 60 nails can be filled from 340 nails?

**recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.**

Children should be able to put a ring around the percentage that is equal to three-fifths;

20% 30% 40% 50% 60%

As well as circle the two fractions that are equivalent to 0.6.

6⁄10 1⁄60 60⁄100 1⁄6

## Non-Statutory Guidance

Pupils should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other (for example,½ + ⅛ = ⅝ ) and progress to varied and increasingly complex problems.

Pupils should use a variety of images to support their understanding of multiplication with fractions. This follows earlier work about fractions as operators (fractions of), as numbers, and as equal parts of objects, for example as parts of a rectangle.

Pupils use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity (for example, if ¼ of a length is 36cm, then the whole length is 36 × 4 = 144cm).

They practise calculations with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.

Pupils can explore and make conjectures about converting a simple fraction to a decimal fraction (for example, 3 ÷ 8 = 0.375). For simple fractions with recurring decimal equivalents, pupils learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context. Pupils multiply and divide numbers with up to two decimal places by one-digit and two-digit whole numbers. Pupils multiply decimals by whole numbers, starting with the simplest cases, such as 0.4 × 2 = 0.8, and in practical contexts, such as measures and money.

Pupils are introduced to the division of decimal numbers by one-digit whole number, initially, in practical contexts involving measures and money. They recognise division calculations as the inverse of multiplication.

Pupils also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. This includes rounding answers to a specified degree of accuracy and checking the reasonableness of their answers.