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

**recall multiplication and division facts for multiplication tables up to 12 × 12**

Children should be able to:

Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.

e.g. One orange costs nineteen pence. How much will three oranges cost?

What is twenty-one multiplied by nine?

How many twos are there in four hundred and forty?

**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**

Children should be able to:

Pupils practise mental methods and extend this to three-digit numbers to derive facts, for example 200 × 3 = 600 into 600 ÷ 3 = 200.

e.g. Divide thirty-one point five by ten.

Ten times a number is eighty-six. What is the number?

**recognise and use factor pairs and commutativity in mental calculations**

Children should be able to:

Pupils write statements about the equality of expressions (e.g. use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations e.g. 2 x 6 x 5 = 10 x 6.

e.g. Understand and use when appropriate the principles (but not the names) of the commutative, associative and distributive laws as they apply to multiplication:

Example of commutative law 8 × 15 = 15 × 8

Example of associative law 6 × 15 = 6 × (5 × 3) = (6 × 5) × 3 = 30 × 3 = 90

Example of distributive law 18 × 5 = (10 + 8) × 5 = (10 × 5) + (8 × 5) = 50 + 40 = 90

**multiply two-digit and three-digit numbers by a one-digit number using formal written layout**

**solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects**

Children should be able to:

Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.

e.g. 185 people go to the school concert. They pay £l.35 each. How much ticket money is collected?

Programmes cost 15p each. Selling programmes raises £12.30. How many programmes are sold?

## Non-Statutory Guidance

Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.

Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).

Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers

Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60.

Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.