

## Calculation Progression document

### Addition

#### Year 3

Use of number line for calculations bridging 100.

To use a 200 grid to help counting in tens and bridging 100.

Use of **partitioning method** with calculations that bridge 100.

Introduce the **expanded written method** with calculations presented both horizontally and vertically (in columns).

Starting with calculations that don't bridge across tens or hundreds.

Introduction of the **formal written method** – adding numbers with up to 3 digits.

#### Year 4

Consolidation of year 3.

Introduce addition of 4d + 3d numbers and decimals.

Add numbers with up to 4 digits using the **formal written methods** of column addition where appropriate.

#### Year 5

Continue to develop the **formal written method** with larger numbers and decimal numbers, using the language of place value to ensure understanding.

Ensure digits that have been 'carried' are recorded under the line in the correct column.

Use the **formal written method** for addition of decimal numbers, ensuring decimal points are lined up.

#### Year 6

Continue to practise and use the **formal written method** for larger numbers and decimals and to be able to use these methods when solving problems.

### Division

#### Year 3

Ensure confidence of Year 2.

To be able to write and calculate mathematical statements for division using the multiplication tables that they know.

Including 2d / 1d numbers.

#### Year 4

Divide 2d and 3d numbers by a 1d number using the **formal written method**.

Introduction of **remainders** using **modelling** and **partitioning**. This will lead into **formal written method** of short division. Remainders are not specifically referred to until Year 5 in the National Curriculum.

#### Year 5

Continue to practise **the formal written method** with whole numbers and remainders.

Expressing remainders as a fraction.

#### Year 6

Consolidation of short division

Moving on to dividing a 2d number using **formal method of long division**.

Expressing remainder as a fraction or decimal.

### Multiplication

#### Year 3

**Partitioning** method for multiplication of a 2d by a 1d number.

**Grid method**, leading into **expanded short division**.

Ensure children use multiplication facts to support this process and that they understand the true values they are multiplying.

#### Year 4

**Grid method** for 2d x 1d

**Expanded short multiplication**, progressing to **formal written method** of 2d and 3d numbers by 1d numbers.

#### Year 5

Continue building on **formal method of short division**.

**Grid method** 2d x 2d

**Expanded long multiplication** (2d multiplied by a teen number)

**Expanded long multiplication** (2d x 2d), leading into **formal written method**.

#### Year 6

**Grid method** ( decimal number multiplied by a 2d number)

Multiplying numbers of 4 d by a 1 or 2d number using a **formal written method**. Including long multiplication for 2d numbers.

## **Subtraction**

### **Year 3**

Use of a number line with calculations that bridge 100

Introduction of the **expanded written method, partitioning** numbers.

Subtract numbers with up to 3d, using **formal written method** of column subtraction. Introducing **decomposition/exchange** when confident.

### **Year 4**

Subtract numbers with up to 4 digits using the **formal written method** of **columnar subtraction**.

### **Year 5**

Subtract whole numbers with more than 4 digits including using the **formal written method**. Moving onto larger numbers and decimal numbers.

### **Year 6**

To continue practising and using the **formal written method** for larger numbers and decimals and to use these methods for solving problems.