



## Maths Calculation Policy – The Forge Short Stay School (GCSE Foundation Level)

### 1. Introduction

This policy supports all pupils, including those with additional needs, in learning how to calculate confidently and accurately. The nature of The Forge school means that, on entry, many pupils have gaps in their knowledge due to the challenges they have faced inside and outside of education. Our aim is to promote independence, consistency, and a clear understanding of number and operations. This will enable all pupils to have a greater understanding of maths inside and outside of school.

### 2. Aims

- To support the teaching of consistent methods for addition, subtraction, multiplication, and division.
- To use visual strategies, manipulatives, and structured steps to reinforce concepts.
- To link learning with GCSE content and real-life applications.
- To promote confidence and reduce anxiety around maths.

### 3. Approaches by Operation

#### A. Addition

##### Method: Column Addition

- Line up digits by place value (units, tens, hundreds).
- Add from right to left.
- Carry over any value over 10 to the next column.

**Visual Aid:** Use base-10 blocks or place value grids.

**Example:**

$$\begin{array}{r} 45 \\ + 36 \\ \hline 81 \end{array}$$

## B. Subtraction

### Method: Column Subtraction with Decomposition

- Line up by place value.
- Subtract from right to left.
- If the top digit is smaller, borrow from the next column.

**Visual Aid:**  Number lines, counters, or borrowing with place value mats.

**Example:**

$$\begin{array}{r} 63 \\ - 27 \\ \hline 36 \end{array}$$

## C. Multiplication

### Method: Long Multiplication

- Multiply the ones digit of the bottom number by each digit of the top number.
- Write the result underneath.
- Multiply the tens digit (or next place value) and remember to place the answer one position to the left.
- Add all the rows together.

**Visual Aid:**  Use place value charts or colour-coded rows for clarity.

**Example:**

$$\begin{array}{r} | \quad 23 \\ \times \quad 4 \\ \hline 92 \\ \\ 23 \\ \times 14 \\ \hline 92 \quad (23 \times 4) \\ +230 \quad (23 \times 10) \\ \hline 322 \end{array}$$

## D. Division

### Method: Short Division (Bus Stop Method)

- Divide each digit step by step.
- Carry remainders to the next digit.

**Visual Aid:** ÷ Numicon, bead strings, repeated subtraction on number lines.

**Example:**

$$84 \div 4 = 21$$

$$4 \text{ into } 8 = 2$$

$$4 \text{ into } 4 = 1$$

#### 4. GCSE Foundation Links

- Emphasis on fluency with number operations.
- Worded problems included in practice (e.g., “How much change?” or “How many packs?”).
- Time spent weekly on exam-style questions using these methods.

#### 5. Supporting SEN Learners

- Use of coloured overlays and large print.
- Chunked instructions and key vocabulary (e.g., “total”, “difference”).
- Opportunities for repetition and hands-on practice.
- Peer scaffolding and TA support when needed.

#### 6. Assessment

- Use ongoing observation, mini quizzes, and end-of-topic reviews.
- Target: Pupils should demonstrate at least two clear, independent methods per operation by Year 11.