



At St Augustine's we believe that there is value in children using different methods, which include making the connection between methods. We challenge our children to explain why a specific method may or may not work and, at times, allow them to discover the most efficient method through exploration. We recognise, however, that there is a need for a set of clear procedures for written methods which children are given time to master throughout their primary school years. To ensure that the taught methods will best suit our learners into Key Stage 3, we have made some minor adaptations to the Power Maths Calculation- specifically in the way in which the methods are set out.

### Key Changes to Calculation Policy

#### Formal Written Method for Addition

Rationale: As children progress, they may choose to use column addition to add multiple values. By having the extra line underneath, children have become confused when putting a third addend. Furthermore, we aim to cut down on "steps" that may not add to children's understanding and removing the line underneath allowed us to do this. Renaming is then moved to the top and encouraged to be written clearly in line with the place value.

$$\begin{array}{r} 23405 \\ + 7892 \\ \hline 31297 \end{array}$$

Power Maths:

$$\begin{array}{r} 11 \\ 23405 \\ + 7892 \\ \hline 31297 \end{array}$$

St Augustine's Adaptation:

#### Formal Written Method for Subtraction

Rationale: It was noticed that children were not seeing the renamed "10" or "100" as such but as just a "1" when subtracting with renaming. This would sometimes call children to add on the "1" as done in addition. In order to reiterate this exchange and how it is different from addition as presented in our methods above, we made the adjustments shown below.

$$\begin{array}{r} 24902 \\ - 243 \\ \hline 2259 \end{array}$$

Power Maths:

$$\begin{array}{r} 9 \\ 4012 \\ 2802 \\ - 243 \\ \hline 2259 \end{array}$$

St Augustine's Adaptation:

### Formal Written Method for Multiplication

Rationale: Many children find it difficult to keep their work (and thus thinking) organised when writing the renamed amount under the answer as there is a second line of working out for multiplying by two digit numbers. In addition to this, writing the number to side of the place value causes some ambiguity as to which place value the digit was in.

$$\begin{array}{r} 136 \\ \times \quad 6 \\ \hline 816 \\ \hline \end{array}$$

Power Maths:

$$\begin{array}{r} 1274 \\ \times \quad 32 \\ \hline 2548 \\ 38220 \\ \hline 40768 \\ \hline \end{array}$$

$$\begin{array}{r} 28 \\ 136 \\ \times \quad 6 \\ \hline 816 \\ \hline \end{array}$$

St Augustine's Adaptation:

$$\begin{array}{r} 28 \\ \times 1 \\ \hline 1274 \\ \times \quad 32 \\ \hline 12548 \\ 38220 \\ \hline 40768 \\ \hline \end{array}$$

### Placement of a Decimal Point for Place Value Chart and when Calculating with Decimals

Rationale: For multiplication with a decimal, if children were to use an individual grid box for the decimal, it could cause confusion. By teaching children that the decimal goes on the line separating the ones place and the tenths place, every time that they write a decimal, children will not have to change their presentation later on. This will also reinforce that a decimal point doesn't have a place value.

Th	H	T	O	•	Tth
			2	•	5
		2	5	•	
	2	5	0	•	
2	5	0	0	•	

Power Maths:

		.		
6	8	.	6	4

$$\begin{array}{r} 2.5 \\ 25. \\ 250. \\ 2500. \\ \hline \end{array}$$

Saint Augustine's:

$$\begin{array}{r} 68.64 \\ \hline \end{array}$$

Formal Written Method for Multiplying Decimals by Whole Numbers

Rationale: A decimal point does not “drop down” when multiplying a decimal by a decimal; therefore, we chose this method to reinforce that you multiply as whole numbers first, then adjust the value to represent the answer being 10, 100 or 1000 times smaller, or as appropriate. We also connect this to multiplying fractions as when multiplying fractions there does not need to be common denominators because the two values are not being combined together. Instead, “lots of” are being made.

	7	5	
x		0	8
	6	0	0
		4	

Power Maths:

$$75 \times 0.8 = 60$$

$$\begin{array}{r} 75 \\ \times 0.8 \\ \hline 600 \end{array} \xrightarrow{-10} \begin{array}{r} 75 \\ \times 8 \\ \hline 600 \end{array} \xrightarrow{-10} \begin{array}{r} 75 \\ \times 0.8 \\ \hline 60.0 \end{array}$$

St Augustine's:

Additional Method to Assist our Learners with Short Division (Not a formal method)