

# Year 6

## Bootham Maths Guide

As a school, we learn through a mathematics mastery approach through cumulative mastery of essential knowledge and skills. This approach embeds a deeper understanding through targeted rehearsal; exploration of a concepts by utilising concrete, pictorial and abstract approaches and application to real life examples.

### The Bootham Mastery Approach

#### Fluency

We start every lesson by consolidating knowledge through retrieval practice; this is further supported through home learning.

#### Conceptual Exploration

We develop a deep understanding of a concept by investigating what it is and is not through reasoning, models and real-life examples.

#### Application

Children are given opportunities to expand and develop their number fluency through a wide variety of reasoning, problem-solving tasks and theme days.

### Home Learning

#### Times Table Rockstars

All children will be given a Times Table Rockstars account. Table Rockstars focuses on multiplication and division, through fun and interactive games.

#### KIRFS

Each term, the children will have a set of number facts, which are fundamental to the rest of the curriculum. These will be explored in class but need to be rehearsed at home to ensure accurate recall.

#### Weekly rehearsal

The children will receive weekly homework consisting of 19 questions and a challenge. All the content will have already been taught, and this acts as another form of rehearsal to gain deeper understanding.

### Times Table Rockstars- Game Modes

#### Garage

The questions in this room are set by the teacher and will focus on specific questions. The children gain 10 coins for each question they get correct this is not a timed game.

#### Studio

The questions are formulated by the programme and will be a mixture of facts the children need to focus on and ones they know. Studio also gives the children a "Rock Status" focused on speed and accuracy.

#### Soundcheck

Soundcheck consists of 20 questions and the children have a 5 second time limit to answer each question. The children earn 5 coins for each question they get right.

# How best to support your child at home.

The best way to support your child at home in Year 5 and 6 is to make sure they have a secure understanding and recall of their times tables; they have a secure understanding of decimal numbers and they can read numbers up to a million.

**How do I know if my child has a secure understanding of their times tables?**

Can they make links to calculating area and volume?

Can they find multiples and factors?

Can they combine facts, i.e.  $17 \times 5$  is  $7 \times 5$  and  $10 \times 5$ ?

If they know  $8 \times 3$   
Can they work out  $800 \times 30$ ?

Can they make links to fractions, i.e.  $\frac{1}{3}$  of 12?

Can they find square and cube numbers?

## How can we practice their KIRFS at home?



### Make links

Use concrete equipment and link to real life examples, for example, using money to understand decimal numbers.



### Play games

Use dice, counters or cards- make it fun!

- Roll two dice and multiply together
- Take turns in turning over cards, who can get to 100 quickest



### Little and often

The best way to support is little and often. Use key down time, like car journeys, to count together.





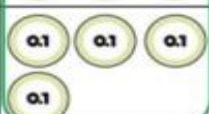

## Year 6 calculations

### Addition and Subtraction

HTh	TTh	Th	H	T	O
100,000		1,000 1,000 1,000 1,000	100 100 100	10 10	1 1 1 1 1 1 1 1
	10,000 10,000 10,000 10,000 10,000 10,000	1,000	100 100 100 100 100 100 100	10 10 10	1

1	0	4	3	2	8
+	6	1	7	3	1
<hr/>					
1	6	6	0	5	9








1

Ones	Tenths	Hundredths
		
		



$$\begin{array}{r} 3.65 \\ + 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$

In Year 6, we use column addition. The children will use concrete place value counters to understand “carrying across”. It is important the children understand the value of each digit and line them up in place value columns, as the children will also be using column addition for decimal numbers.

HTH	TTH	Th	H	T	O
		 			

	2	9	<del>3</del> <sub>4</sub>	<sup>1</sup> 3	8	2
-	1	8	2	5	0	1
	1	1	1	8	8	1

Ones ●	Tenths	Hundredths

$$\begin{array}{r} \overset{4}{\cancel{5}}.\overset{1}{\cancel{4}}3 \\ - 2.7 \\ \hline 2.73 \end{array}$$

In Year 6, we use column subtraction. The children will use concrete place value counters to understand exchanging. It is important the children understand the value of each digit and line them up in place value columns, as the children will also be using column subtraction for decimal numbers.

# Year 6 calculations

## Multiplication and Division

Th	H	T	O
	2	3	4
×		3	2
<hr/>			
	4	6	8
<sup>1</sup> 7	<sup>1</sup> 0	2	0
<hr/>			
7	4	8	8

TTh	Th	H	T	O
	2	7	3	9
×			2	8
<hr/>				
<sup>2</sup> <sub>2</sub>	<sup>1</sup> <sub>5</sub>	<sup>9</sup> <sub>3</sub>	<sup>1</sup> <sub>7</sub>	2
<sup>5</sup> <sub>1</sub>	4	<sup>7</sup> <sub>1</sub>	8	0
<hr/>				
7	6	6	9	2

		0	3	6
	12	4	<sup>4</sup> <sub>3</sub>	<sup>7</sup> <sub>2</sub>

432 ÷ 12 = 36

7,335 ÷ 15 = 489

	0	4	8	9
15	7	<sup>7</sup> <sub>3</sub>	<sup>13</sup> <sub>3</sub>	<sup>13</sup> <sub>5</sub>

15	30	45	60	75	90	105	120	135	150
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In Year 6, we use formal methods for multiplication and division. Watch the below videos for step by step instructions.

<https://www.youtube.com/watch?v=q3Jk6W4oDgw>

<https://www.youtube.com/watch?v=dNSrfoYLQZU>