

“Early achievement and mastery in maths is a strong predictor for later academic success in all subjects.”

An Overview of the Numeracy Curriculum for KS2

To include:

- Curriculum objectives
- Breakdown of formal methods of calculation
- Reasoning with mathematics
- Great websites and helpful links

The Curriculum

The curriculum is broken down in to 3 main areas of numeracy and teaching:

- Fluency
- Reasoning
- Problem Solving

What do these mean?

Fluency

Children to fluently remember number facts with ease and confidence.

This takes practice and patience.

$$100 - 42$$

$$32 + 54$$

40 divided by 5

$$6 \times 8$$

1/5 of 35

$$£3.00 - 1.43$$



Reasoning

Children to explain their thinking about a problem and show how they know.

What do you think?

Prove it?

I A football and toy train together weigh 360g.



Three footballs and two toy trains weigh 810g.



Find the weight of a toy train.

Problem Solving

Children to use a variety of numeracy skills to solve open ended and more challenging problems.

How many solutions can you find to these two alphanumeric?

Each of the different letters stands for a different number.

$$\begin{array}{r} \text{ONE} \\ +\text{ONE} \\ \hline \text{TWO} \\ \hline \end{array}$$

$$\begin{array}{r} \text{TWO} \\ +\text{TWO} \\ \hline \text{FOUR} \\ \hline \end{array}$$

Curriculum Objectives

By the end of Year 6, it is our hope that the children feel confident in applying all of these skills.

SATS

- Arithmetic Paper: testing formal methods and fluency
- Reasoning papers 1 & 2: testing the children's ability to work through word problems and use their knowledge to explain their thinking.

Formal Methods of Calculation

There are four methods that curriculum dictates the children must learn to use and apply.

Column Addition

Starting at the end of Year 2, children will learn to progressively add larger numbers together using a column.

E.g. $7948 + 1223$

Th	H	T	U	
7	9	4	8	
1	2	2	3	+
<hr/>				
9	1	7	1	
<hr/>				
1		1		



Carrying

Column Subtraction

From Year 3, similarly to column addition, the children will use a column to take numbers away.

E.g. $72 - 16$

The diagram illustrates the subtraction $72 - 16$ in a columnar format. The numbers are arranged as follows:

$$\begin{array}{r} 72 \\ - 16 \\ \hline 16 \end{array}$$

A green '6' is written above the '7' with a green diagonal line through it, and a green '1' is written above the '2'. A red arrow points from the right towards the '7' and '2' columns, with the word "Exchanging" written inside it, indicating the process of borrowing 10 from the tens column to make 12 in the ones column.

Short & Long Multiplication

Short multiplication is where you are multiplying by a one digit number.

E.g. 24×6

24×6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \hline 2 \end{array}$$



Carrying

Short & Long Multiplication

Long Multiplication is where you are multiplying by more than a one digit number.

E.g. 124×26

124×26 becomes

$$\begin{array}{r} 1 2 \\ \mathbf{1} \mathbf{2} \mathbf{4} \\ \times \mathbf{2} \mathbf{6} \\ \hline \mathbf{7} \mathbf{4} \mathbf{4} \\ \mathbf{2} \mathbf{4} \mathbf{8} \mathbf{0} \\ \hline \mathbf{3} \mathbf{2} \mathbf{2} \mathbf{4} \\ \hline \mathbf{1} \mathbf{1} \end{array}$$



Place Holder

Answer: 3224

Short and Long Division

Short division is when you divide a number by a single digit number.

432 ÷ 5 becomes

$$\begin{array}{r} 86 \text{ r} 2 \\ 5 \overline{) 432} \end{array}$$

Short and Long Division

Long division is when you divide a number and write down the page to show

Long division

432 ÷ 15 becomes

$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{300} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

Answer: 28 remainder 12

432 ÷ 15 becomes

$$\begin{array}{r} 28 \\ 15 \overline{) 432} \\ \underline{300} \quad 15 \times 20 \\ 132 \\ \underline{120} \quad 15 \times 8 \\ 12 \end{array}$$

$$\frac{\cancel{12}}{\cancel{15}} = \frac{4}{5}$$

Answer: $28 \frac{4}{5}$

432 ÷ 15 becomes

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{300} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

Answer: 28.8

Recap of the formal methods

Column Addition

Th	H	T	U	
7	9	4	8	
1	2	2	3	+
9	1	7	1	
1		1		

Column Subtraction

6	7	12	
	5	6	-
	1	6	

Long & Short Division
Multipl.

432 ÷ 15 becomes

		2	8	
1	5	4	3	2
		3	0	0
		1	3	2
		1	2	0
		1	2	2

15×20

15×8

Long & Short

24 × 16 becomes

		2	
		2	4
×	1	6	
2	4	0	
1	4	4	
3	8	4	

What can you do at home?

Basic skills – telling the time, talking about money and change, playing with measurements (height, mass, volume), on the spot times tables, number bonds to 10/20/100.

Homework – opportunity to talk with your children and challenge them. How do you know that? Explain. Teach me!

Importance – discuss the importance, share and encourage.

Useful Websites/links/help

Education City: <https://ec1.educationcity.com>

Nrich: <http://nrich.maths.org/>

My Maths: <https://www.mymaths.co.uk>

Apps: Maths Splat; Maths Sumo; Puffin Academy; Logic Squares; Telling Time.

OUR website! Check out our videos for the formal methods.

Any questions?

Thank you for listening!

If you did have any
questions then please
come and see me at the
end.

