MATHS AT SEC

EYFS FRAMEWORK

Mathematics

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

NATIONAL CURRICULUM YEAR 1

Year 1 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number

- count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens

- given a number, identify one more and one less

- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

- read and write numbers from 1 to 20 in numerals and words.

NATIONAL CURRICULUM YEAR 2

Year 2 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward

- recognise the place value of each digit in a two-digit number (tens, ones)

- identify, represent and estimate numbers using different representations, including the number line

- compare and order numbers from 0 up to 100; use <, > and = signs

- read and write numbers to at least 100 in numerals and in words

- use place value and number facts to solve problems.

NATIONAL CURRICULUM YEAR 3

Year 3 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number

- recognise the place value of each digit in a three-digit number (hundreds, tens, ones)

- compare and order numbers up to 1000

- identify, represent and estimate numbers using different representations

- read and write numbers up to 1000 in numerals and in words

- solve number problems and practical problems involving these ideas.

NATIONAL CURRICULUM YEAR 4

Year 4 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to

- count in multiples of 6, 7, 9, 25 and 1000

- find 1000 more or less than a given number

- count backwards through zero to include negative numbers

- recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)

- order and compare numbers beyond 1000

- identify, represent and estimate numbers using different representations

- round any number to the nearest 10, 100 or 1000

- solve number and practical problems that involve all of the above and with increasingly large positive numbers

- read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

NATIONAL CURRICULUM YEAR 5

Year 5 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit

- count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000

- interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000

- solve number problems and practical problems that involve all of the above

- read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

NATIONAL CURRICULUM YEAR 6

Year 6 programme of study

Number – number and place value

Statutory requirements

Pupils should be taught to:

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- use negative numbers in context, and calculate intervals across zero
- solve number and practical problems that involve all of the above.

Intent:

It is our intent that all pupils, regardless of background, needs or abilities will at each stage of learning acquire new mathematical skills. We want to ensure our pupils have access to a high quality maths curriculum that is both challenging and enjoyable. Pupils will be provided with a variety of mathematical opportunities which will enable them to make connections needed to enjoy greater depth of learning. We want to develop independent learners with inquisitive minds who have a secure mathematical foundation which can be used in their everyday life.

OUR ETHOS

Implementation:

Teachers use the National Curriculum for the teaching objectives.

A Maths Termly format for the teaching of maths is followed to develop number bonds and place value first so that it can be used in different areas of the maths curriculum during the year.

Teachers use a wide variety of resources to support delivery of the National Curriculum objectives-White Rose Maths, Focus Maths, Oxford Mastery, NCTEM, Classroom Secrets, Maths No Problem and Nrich.

In addition, daily '20 Minute Maths' takes place to develop mental maths skills and revisit previous learning. This is mainly number bond skills and /or the use of Times Table Rockstars.

Key mathematical vocabulary is explained and used.

Use of 'Maths Working Walls' to support learning.

Regular opportunities to reason and problem solve.

Pupils supported in small groups or 1:1 when necessary to develop further understanding, address misconceptions and reduce any gaps in learning.

A wide variety of equipment is available for pupils to support their learning.

Fluency is developed through practising key skills, repetition, reinforcing and revising.

Pupils given opportunities to work independently, in pairs or small groups to solve problems which require them to persevere and develop resilience.

MATHS

St Edmund Campion

Counting						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Confidently subitise up to 5 Recognise 0 Recognise the composition of numbers beyond 10. Order and write numbers to 20. Count to 20 and beyond Begin to recognise counting patterns beyond 10	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count , read and write numbers to 100 in numerals: count in multiples of 2, 5's and 10's	Count in steps of 2, 3, and 5 from 0, and in 10's from any number, forwards and backwards.	Count in multiples of 4, 8, 50 and 100: find 10 or 100 more or less than a given number.	Count in multiples of 6, 7, 9, 25 and 1000. Find 100 more or less than a given number. Count backwards through zero to include negative numbers.	Count forwards and backwards in steps of powers of 10 for any number given up to 1,000,000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.	Use negative numbers in context and calculate intervals across zero.

Place Value

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
		Recognise the place value of each digit in a 2 digit number. Compare and order numbers from 0 up to 100: use < > and = signs.	Recognise the place value of each digit in a 3 digit number. Compare and order numbers to 1000.	Recognise the place value of each digit in a 4 digit number. Order and compare numbers beyond 1000. Compare numbers with the same number of decimal places up to 2 decimal places. Round any number to the nearest 10, 100 or 1000.	Read, write and compare numbers up to 1,000,000 and determine the value of each digit. Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000.	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Round any whole number to a required degree of accuracy.

Representing number

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Order and write numbers to 20 Confidently use a 10 frame to represent a number	Identify, and represent numbers using objects and pictorial representations including the number line & use	Identify, represent and estimate numbers using different representations including the number lines.	Identify, represent and estimate numbers using different representations. Read and write numbers up to	Identify, represent and estimate numbers using different representations. Read, Roman numerals to 100 (I	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
Represent patterns in numbers up to 10.	the language of equal to, more than, less than, (fewer), most, least. Read and write numbers 1 to 20 in numerals and words. Read, write and interpret mathematical statements involving addition +, subtraction -, and equals = signs.	Read and write numbers to at least 100 in numerals and in words.	1000 in numerals and in words, tell and write the time from an analogue clock, including using Roman numerals from i to xii, and 12 and 24 hour clock.	to C) and know over time, the numeral system changed to include the concept of zero and place value.	Recognise and use square numbers and cube numbers, and the notation fro squared (²) and cubed (³)	

Year 5 – Yearly Overview

EXAMPLE

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**Place Value** Counting in 10s, 100s, 1000s, 10000s and 100000s Compare and order numbers to one million Negative numbers Roman numerals to 1000			**Addition and Subtraction** Add / subtract whole numbers with more than 4 digits Inverse operation Multi-step problems		**Multiplication and Division** Multiples, Factors, Common factors Prime numbers, Square numbers, Cube numbers Multiply and divide by 10, 100 and 1000 Multiples of 10, 100 and 1000			**Measurement: Perimeter and Area** Measure and calculate perimeter Area of rectangles Area of compound shapes Area of irregular shapes		**Fractions** Equivalent fractions Improper fractions to mixed numbers Mixed numbers to improper fractions Number sequences Compare and order fractions less than 1 Compare and order fractions greater than 1	
ARITHMETIC (20 min maths)												
Spring	**Statistics** Read an interpret line graphs Draw line graphs Use line graphs to solve problems Read and interpret tables Two-way tables timetables		**Multiplication** Multiply 4 digits by 1 digit Multiply 2 digits (area model Multiply 2 digits by 2 digits Multiply 3-digits by 2-digits Multiply 4-digits by 2-digits		**Geometry** Regular and irregular polygons Reasoning about 3-D shapes	**Fractions** Add and subtract fractions Add fractions within 1 Add 3 or more fraction Add mixed numbers		**Geometry** Position in the first quadrant Translation and reflection with coordinates		**Division** Divide 4-digits by 1-digit Divide with remainders	**Geometry** Measure angles in degrees Measuring with a protractor Drawing lines and angles accurately Calculating angles on a straight line Calculating angles around a point Calculating lengths and angles in shapes	
ARITHMETIC (20 min maths)												
Summer	**Decimals** Decimals up to 2 d.p. Decimals as fractions (1) Understand thousandths Thousandths as decimals Rounding decimals Order and compare decimals		**Measurements** Kilograms and kilometres Millimetres and millilitres Metric units Imperial units Converting units of time Timetables		**Fractions** Subtract mixed numbers Subtract – breaking the whole Subtract 2 mixed numbers Multiply unit fractions by an integer Multiply non-unit fractions by an integer Multiply mixed numbers by integers Fraction of an amount Using fractions as operators		**Decimals** Adding / subtracting decimals within 1 Complements to 1 Adding decimals – crossing the whole Adding / subtracting decimals with the same number of decimal places Adding / subtracting decimals with a different number of decimal places Adding and subtracting wholes and decimals Decimal sequences Multiplying decimals by 10, 100 and 1,000 Dividing decimals by 10, 100 and 1,000			**Measurements (Volume)** What is volume? Compare and estimate volume and capacity	**Percentages** Understand percentages Percentages as fractions and decimals Equivalent F.D.P.	**Assessment and Review**
ARITHMETIC (20 min maths)												

MTP EXAMPLE

Prior learning Identified before each block of lessons

Autumn 1	Objective	Activities	Resources
Prior Learning: • Recognise the place value of each digit in a 3 digit number (Year 3) • Compare and order numbers to 1000 (Year 3)			
Pre-learning Place Value	Recognise the place value of each digit in a 3 digit number (Year 3 revisit)	Represent numbers up to 1000s using Base 10 and counters Partition numbers into 100s, 10s, 1s and understand the relationship between them	Interactive resources from server White Rose NRICH Classroom secrets Base 10 bars and counters
Prior Learning: • Recognise the place value of each digit in a 3 digit number (Year 3) • Compare and order numbers to 1000 (Year 3)			
1. Place Value	Compare and order numbers to 1000 (Year 3 revisit) Round any number to the nearest 10, 100 or 1000	Number lines to 1000 Round to the nearest 10 Round to the nearest 100 Count in 1000s	Interactive resources from server White Rose NRICH Classroom secrets Number line
Prior Learning: • Add and subtract numbers with up to 4 digit numbers using the formal methods of columnar addition and subtraction where appropriate (Year 3)			
2. Addition and Subtraction	Add and subtract numbers with up to 4 digit numbers using the formal methods of columnar addition and subtraction where appropriate (revisit)	Add two 3-digits no exchange Add two 3-digits exchange Subtract 3-digits Partitioning	Interactive resources from server White Rose NRICH Classroom secrets

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WORK EXAMPLE

20 Minute Maths 11th – 18th May

Monday
Multiply these 4 digit numbers:
Calculate each product.

7747	3468	2429
× 696	× 571	× 482
5391912 ✓	1980229 ✓	1170778 ✓

6329	2913	9547
× 721	× 631	× 923
4563209 ✓	1873569 ✓	8811881 ✓

5340	9966	9035
× 470	× 568	× 863
2509800 ✓	5660688 ✓	7797205 ✓

4881	8643	6240
× 255	× 912	× 201
1244655 ✓	7882416 ✓	1254240 ✓

Tuesday
1. $2^2 = 4$ ✓
2. $4^2 = 16$ ✓
3. $5^2 = 25$
4. $7^2 = 49$
5. $9^2 = 81$ ✓
6. $2^3 = 8$ ✓
7. $5^3 = 125$ ✓
8. $1^3 = 1$ ✓
9. $12^2 = 144$ ✓
10. $8^2 = 64$ ✓

Wednesday
Divide these 4 digit numbers:
1. $1047 ÷ 3 = 349$ ✓
2. $2456 ÷ 4 = 614$ ✓
3. $3295 ÷ 5 = 659$ ✓
4. $2784 ÷ 4 = 696$ ✓
5. $1011 ÷ 3 = 337$ ✓
6. $2780 ÷ 5 = 556$ ✓
7. $1564 ÷ 2 = 782$ ✓
8. $2244 ÷ 4 = 561$ ✓
9. $1944 ÷ 3 = 648$ ✓
10. $3150 ÷ 5 = 630$ ✓

Thursday
Find the perimeter:

1) 10cm / 10cm / 10cm / 10cm — 40cm ✓
2) 15cm / 7cm / 15cm / 7cm — 44cm ✓
3) 5cm / 2cm / 3cm / 5cm / 2cm — 17cm ✓
4) 10cm / 2cm / 2cm / 10cm / 2cm — 24cm ✓
5) 13cm / 8cm / 13cm — 42cm ✓
6) 9cm / 14cm / 14cm / 9cm — 46cm ✓
7) 13cm / 18cm / 14cm / 14cm — 64cm ✓

Friday
Look out for the operation: You have to subtract and add:

1) $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$ ✓
3) $\frac{5}{9} - \frac{4}{9} = \frac{1}{9}$ ✓
5) $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$ ✓
7) $\frac{4}{15} + \frac{3}{15} = \frac{7}{15}$ ✓
9) $\frac{3}{4} - \frac{2}{4} = \frac{1}{4}$ ✓
11) $\frac{13}{20} - \frac{6}{20} = \frac{7}{20}$ ✓
13) $\frac{7}{20} + \frac{6}{20} = \frac{13}{20}$ ✓
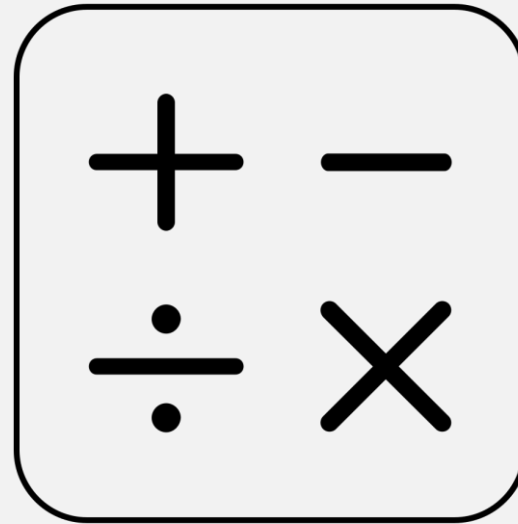15) $\frac{3}{14} + \frac{8}{14} = \frac{11}{14}$ ✓

TTROCKSTARS

Rank	Name	Rockname	Initial Studio Speed ⓘ	Current Studio Speed ⓘ	Rock Status	Lifetime Earnings ⓘ	Maths Band	Pastoral Band	Year Group
1	Lucian Zielinski	Godzilla Talley	6.98	0.42	Rock Hero	4,397,448	5O	-	Year 5
2	Clarice Man	Queen Michele	2.01	0.57	Rock Hero	511,830	6S	-	Year 6
3	Kaylyn Young	Christy Pryor	1.69	0.66	Rock Hero	731,179	6S	-	Year 6
4	Chislon Shadrach	Oscar Radke	8.22	0.67	Rock Hero	1,119,091	6S	-	Year 6
5	Oran Doherty	Hardrock Egg	4.32	0.67	Rock Hero	1,032,759	5J	-	Year 5
6	Jenson Snowden	Nina Old Gal O'Rock	8.11	0.72	Rock Hero	188,739	5O	-	Year 5
7	Santino De Rosa	Ziggy Dunn	5.71	0.74	Rock Hero	928,699	6S	-	Year 6

OUR ETHOS

Impact:

- Pupil's books show a variety of activities.

- Pupils are developing skills where they can articulate their findings, verbally, pictorially and in written form.

- Feedback and misconceptions are addressed so that pupils are supported to be the best mathematicians they can be, as well as prepare them to use maths in everyday situations.

- Pupils make progress throughout the year and key stages to meet or exceed age related progress.

- Pupils are confident mathematicians and enjoy maths.

THANK YOU FOR YOUR TIME