



Forefield Junior School is a ***P.R.O.U.D.*** school built on ***Passion*** and ***Respect***, where ***Opportunities*** can be seized by ***Unique*** and ***Determined*** learners.

PROUD to be ***FOREFIELD***



Subject Leader Report: Mathematics

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

Our Aims are:

- to provide the opportunity for children to develop the practical skills and understanding as outlined in the National Curriculum for Mathematics
- to develop the children's mental arithmetic skills and mental methods to help children observe the patterns and relationships of mathematics

- to encourage the use of mathematical language in order to discuss, explain and express ideas and to interpret results
- to develop the creativity and flexibility of mind to investigate and problem solve
- to encourage children to work both independently and collaboratively and be able to select appropriate strategies, materials and equipment for tasks set
- to help children develop their use of computing within the context of mathematics
- to help children to experience success and enjoyment from mathematical study in order to develop a confident and positive approach to the subject.
- to achieve their full potential.

The Mathematics Curriculum

Curriculum Intent – What are we trying to achieve through our curriculum?

An ambitious scheme of work that challenges all pupils

All group teams use the White Rose Mathematics scheme of work that promotes reasoning, problem solving, perseverance and opportunities for collaborative learning. Opportunities to embed fluency are built in to all topics. Full curriculum coverage is ensured through monitoring and book scrutiny. Year group planning meetings are used to discuss the pitch of lessons for different ability groups. Pre-learning tasks inform the subject content and depth of future topics. The Scheme of Work is adjusted for individual classes and the year group as a whole according to the needs of the children in each class. Assessment for Learning questions and key vocabulary are included in lesson planning to inform pupil questioning.

Co-coaching sessions are used to discuss the pedagogy of forthcoming topics. We share different strategies, resources and assessment for learning tools to ensure all teachers are constantly sharing and developing knowledge, skill and understanding.

Transition meetings and cross phase lesson observations ensure KS2 starts where KS1 left off. This is monitored through monitoring and book scrutiny.

Problem-solving questions are not restricted to worded problems.

Inspiring and exciting students

We aim to make learning exciting. We encourage resilience by rewarding and celebrating perseverance rather than just the correct answer. This is monitored through learning walks and lesson observations.

We promote independence by providing concrete materials and visual prompts that children can access without needing recourse to a teacher.

Students develop perseverance as a result of regular exposure to low threshold – high ceiling tasks, opportunities to work collaboratively and a classroom culture that values making mistakes as a step towards new learning.

Teachers give children thinking time when responding to questions.

Embedding the skills pupils have been taught

Every lesson in the White Rose Scheme of learning starts with questions designed to embed previous learning so that children know more and remember more.

Opportunities are sought to make links with mathematics in the wider curriculum. Some examples include:

- interpreting/drawing graphs
- investigating populations
- reading and interpreting problems
- presenting and explaining reasoning
- measuring using Newton meters, measuring cylinders, stop watches and weighing scales

interpreting scales and calculating distances
searching for and describing patterns

Implementation - How is our curriculum delivered?

Embedding Quality Teaching and Learning

Teachers use a range of assessment for learning strategies in every lesson to allow all children to demonstrate what they can do and to allow increased thinking time when responding to the teacher's questions.

Strategies might include:

- ‘show me’ tools (individual whiteboards, numbers up etc)
- group discussions
- talking partners
- pre-learning and post learning tasks

Year 3 teachers from the Juniors and Year 2 teachers from the Infants met to develop and enhance transition from KS1 to KS2. In the spring term plans for KS1 teachers to visit Year 3 lessons and in the summer term for Y3 teachers to visit Year 2 lessons were impacted by staff absence.

Year group planning meetings are used to discuss the pitch of lessons for different ability groups. Pre-learning tasks inform the subject content and depth of future topics. The use of concrete materials is embedded in lessons throughout the Key Stage to support deep learning. High quality concrete materials across all areas of the mathematics curriculum are available to support the CONCRETE - PICTORIAL - ABSTRACT approach which is fundamental to teaching for mastery.

Written feedback

We have developed a marking system that clearly identifies areas of success and areas for development. All children have access to a copy of the code which is displayed in the classroom and in their exercise book. Children are expected to respond to the different elements of the code in different ways in response to the teacher's feedback.

Children are given sufficient time to respond to the teacher's feedback.

Supporting teachers to deliver excellence

Online training from White Rose Mathematics has supported the development of the CPA approach. It focused on the use of concrete materials to embed deep learning and to underpin learning - teaching structures before procedures. Further training on 'Thinking through Variation' and 'Mathematical Talk and Questioning' are planned for this academic year.

Learning walks, lesson observations and pupil questionnaires are used as a means to monitor engagement in lessons. Lesson observations in Mathematics have taken place in September 2022.

Organisation of the Curriculum

YEAR 3

Autumn	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Number – Place Value			Number - addition and subtraction					Number – multiplication and division				Consolidation	
Spring	15	16	17	18	19	20	21	22	23	24	25	26		
	Number – multiplication and division			Measurement – length and perimeter			Number - fractions			Measurement – mass and capacity				
Summer	27	28	29	30	31	32	33	34	35	36	37	38	39	
	Number - fractions		Measurement - money		Measurement - time			Geometry		Statistics				

YEAR 4

Autumn	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Number – Place Value				Number – addition and subtraction			Measurement - area		Number – multiplication and division			Consolidation	
Spring	15	16	17	18	19	20	21	22	23	24	25	26		
	Number – multiplication and division			Measurement– length and perimeter		Number – fractions				Number - decimals				
Summer	27	28	29	30	31	32	33	34	35	36	37	38	39	
	Number – decimals		Measurement - money		Measurement - time		Statistics		Geometry – properties of shapes		Geometry - position and direction			

YEAR 5

Autumn	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Number – Place Value			Number - addition and subtraction		Number - multiplication and division			Number – fractions					Consolidation
Spring	15	16	17	18	19	20	21	22	23	24	25	26		
	Number - multiplication and division			Number – fractions		Number – decimals and percentages			Measurement – perimeter and area		Statistics			
Summer	27	28	29	30	31	32	33	34	35	36	37	38	39	
	Geometry – properties of shapes			Geometry - position and direction		Number – decimals and percentages			Number – negative numbers	Measurement – converting units, volume		Measurement – volume		

YEAR 6

Autumn	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Number – Place Value		Number – addition, subtraction, multiplication and division					Number – fractions, decimals percentages			Measurement	Geometry		
Spring	15	16	17	18	19	20	21	22	23	24	25			
	Number – ratio and proportion		Algebra		Number - decimals		Number - decimals and percentages		Measurement – area, perimeter and volume				Statistics	
Summer	26	27	28	29	30	31	32	33	34	35	36	37	38	39
	Revision and consolidation				SATs	Ambleside	Statistics		Algebra		Geometry			

Impact

SATs results – results in 2020 and 2021 were based on Teacher Assessments.

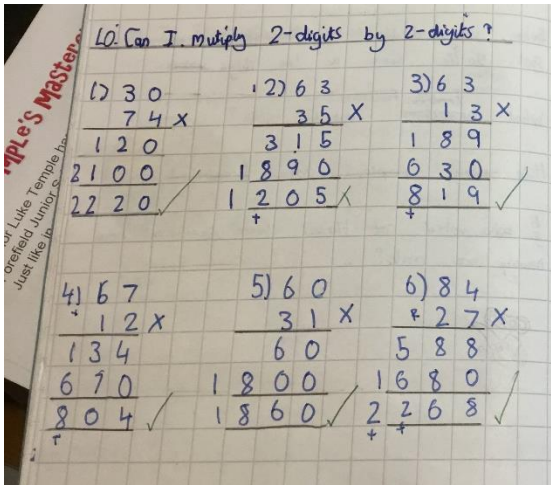
	% Below Expected Standard	% At Expected Standard	% Achieving a High Score	% At Expected Standard National
2018	21%	79%	18%	76%
Progress	-2.3			
2019	18%	82%	28%	79%
Progress	-0.99			
2022	26%	74%	30%	71%
Progress	-0.2			

Assessment

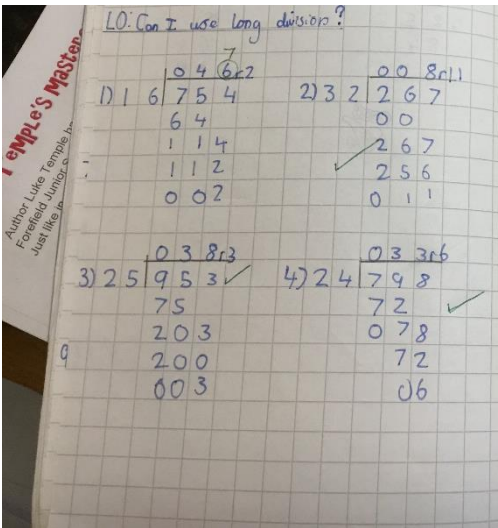
	Autumn Term	Spring Term	Summer Term
TESTING	NFER tests • Arithmetic • PSR 1 • PSR2	NFER tests • Arithmetic • PSR 1 • PSR2	NFER tests • Arithmetic • PSR 1 • PSR2
ANALYSIS	Teacher Assessment	Teacher Assessment	Teacher Assessment

	Pupil Progress meetings	Pupil Progress meetings	Pupil Progress meetings
REPORTING	Parents' evening	Parents' evening	End of year report

Book Scrutiny



I am looking for evidence of regular fluency exercises in mental and written arithmetic.



Shade in the multiples of 6 on a 100 square.

What do you notice about the numbers either side of every multiple of 6?

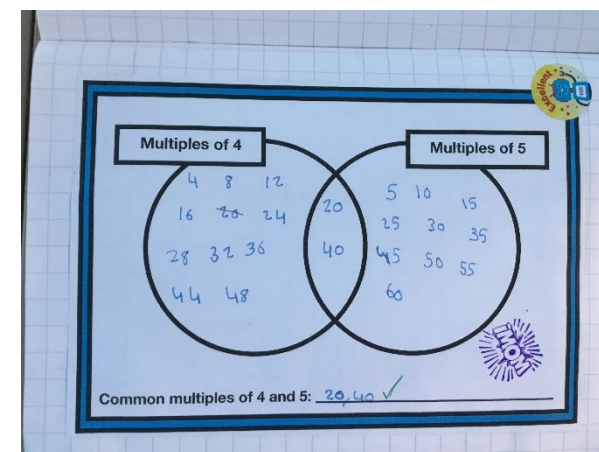
Eva says, I noticed there is always a prime number next to a multiple of 6

Is she correct?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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I am looking for evidence that problems are presented and recorded in a variety of ways.



Can I show what I have learnt about ratio?

Activity 1 Have a think

For every 3 yellow counters, there's 2 red counters.

If there are 6 red counters, how many yellow counters are there? 9

If there are 18 yellow counters, how many red counters are there? 12

Y	R
3	2
6	4
9	6
12	8
15	10
18	12

1) For every 3 sheep there are 6 cows.

2) For every 2 cows there are 1 sheep.

2 Circle groups to match the statements.

a) For every 1 football there are 3 tennis balls.

b) For every 2 cars there are 5 bicycles.

3) For every 6 squares there are 3 circles.

For every 6 squares there are 2 triangles.

For every 1 square there is $\frac{1}{2}$ circle.

3 Match the amounts that are equal. Fill in the missing digits.

460p, 420p, 406p, 462p, 426p

£1.4 and 40p, £4 and 62p, £4 and 6p, £4 and 20p, £4 and 26p

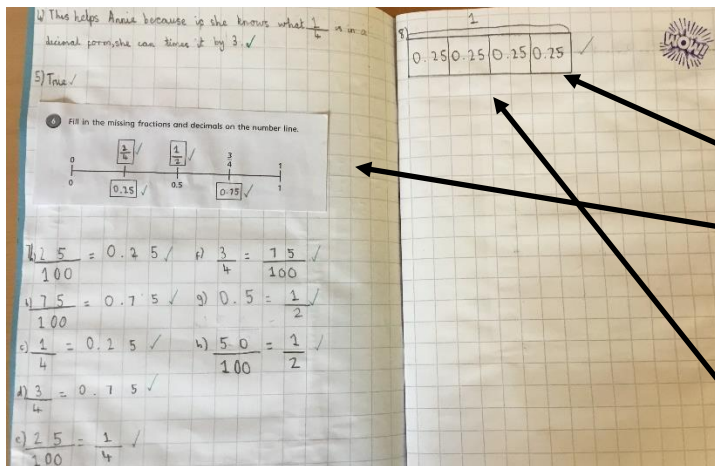
£4.62, £4.06, £4.20, £4.26, £4.60

4 Match the person to the correct amount.

Ron: I have a note and some coins. £1.19

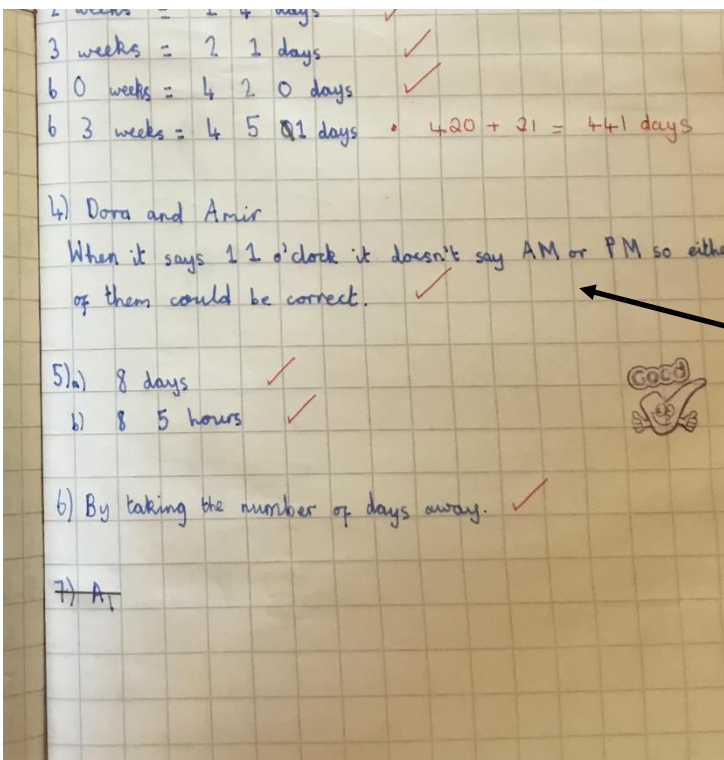
Rosie: I have more than Ron. £10.03

Jack: I have the most money. £6.27

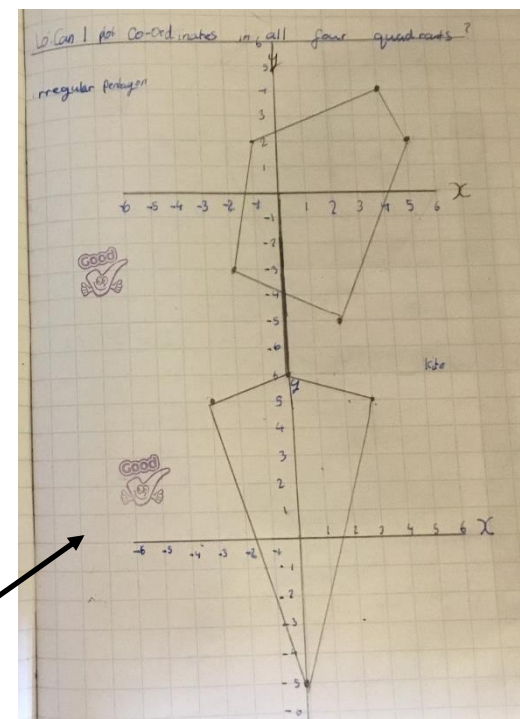


I am looking for evidence that children are introduced to and use different models to represent numbers.

I am looking for evidence that children are expected to measure and draw accurately on a regular basis.



A particular strength of White Rose mathematics is the regularity of 'explain how you know questions' which develop the ability to use mathematical language.



Enrichment Opportunities

Mathematics within the wider curriculum

Book scrutiny demonstrates use of mathematics in the following subjects:

- Science
- Geography
- Computing
- History

All children have access to TT Rockstars through an online subscription.

British Values

At Forefield Junior School, we understand clearly our responsibility in preparing children for their next stage of education and for the opportunities, responsibilities and experiences of later life, laying the foundations so that they can take their place successfully in modern British society. We promote a respect for and understanding of different faiths, cultures and lifestyles. The spiritual, moral, social and cultural development of each child is central to everything that we do as a school and central to our vision of “Passion, Respect, Opportunity, Unique and Determined”. This is evidenced through our teaching and learning, our inclusive environment and through the many opportunities provided for our children to understand Democracy, Law, Liberty, Mutual Respect and Tolerance.

Mathematics Action Plan 2022 - 2023

Objective	Actions	Resources/Time frame
Ensure that staff are enabled to deliver the most effective teaching to develop reasoning and problem solving skills.	Thinking through Variation training	Thinking through Variation training - online training course from White Rose Mathematics Autumn term
	Mathematical Talk and Questioning training	Mathematical Talk and Questioning online training course from White Rose Mathematics Spring term
Ensure that pupils are able to apply mathematical knowledge, concepts and procedures appropriately for their age – identifying and supporting pupils to ‘catch-up’ key skills through targeted interventions.	Filling the gaps intervention for Y6 children	L Cain 1 x 30 mins per week M Croot 1 x 30 mins per week D Wood 1 x 30 mins per week
	Multiplication and divisions facts intervention for Y5 children based on results of Y4 Tables check	J. Burr 4 x 30 mins per week S Schwartz 1 x 30 mins per week

Objective	Actions	Resources/Time frame
	Multiplication and divisions facts intervention for Y4 children based on results of times tables assessment September 2022.	J. Hill 1 x 30 mins per week L. Summers 1 x 30 mins per week E. Gerrard 1 x 30 mins per week
	Mathematical fundamentals intervention for Y3 children	J. Burr 3 x 30 mins per week

Presented to governors 16th November 2022

S Russell