Challenge, Equality & Opportunity

MATHS

Whole School Curriculum Intent:

We can build knowledge and skills	We are creative	We are resilient	We understand ourselves and each Other
We strive for all of our children to have competency in the basic skills of reading, writing, maths and communication to underpin their learning, give them access to the broader curriculum and build their confidence as learners. We want our children to know more, remember more and be able to do more as a result of every learning experience across the curriculum. 	We want our children to be creative in their thinking so that they use their knowledge and skills to solve problems and create new knowledge, skills, thoughts and objects which give them enjoyment and inspire them to take their learning further. 	We need our children to develop independence and resilience so that they are able to grow as thinkers and learners. 	We aim for our children to develop empathy, awareness, respect and tolerance in-keeping with the school's No Outsiders values. We also want all of our children to understand themselves and be ready for the next steps in their education and the wider world. 

What does this look like?			
Achieve well in reading, writing and communication, including being at the age related expectation in early reading and phonics. Can build on previous learning. Can access new learning experiences. Value and enjoy success in the core subjects. Choose reading and use reading effectively. Apply maths, reading, writing and communication across the curriculum.	Reflect, adapt and develop ideas. Explore concepts. Make links across the curriculum. Ask questions and are curious. Use initiative. Hypothesise and generate ideas Communicate learning. Direct own learning through range of skills. Can argue and use evidence.	Bounce back and try again. Try new things and take risks. Manage their own things, time and learning as appropriate. Engage with extra-curricular activities. Solve problems through perseverance. Work towards a goal.	Listen to others. Can work in a group and cooperate with others. Assess own success and learning. Take turns and are patient. Use manners and are polite in interactions with everyone. Can manage emotions and support others. Show respect. Are kind and begin to show compassion. Can follow the Golden Rules. Can express themselves.

Mathematics Intent

We can build knowledge and skills

Aim for all of our children to love to learn, become resilient, fluent mathematicians and who have the ability and skills to tackle a variety of problem solving activities.

Provide a curriculum which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful throughout their lives.

Incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving.

Value a maths curriculum that is creative and engaging where children can access and master the curriculum and make significant progress in this subject.

Provide opportunities for children to revisit prior learning and build their knowledge and skills through a fluid and progressive curriculum.

We are Creative

Deliver a curriculum that allows pupils to be part of creative and engaging lessons allowing them to explore maths in depth, using mathematical vocabulary to reason and explain their workings.

Learn to construct informed responses that involve thoughtful selection and organisation of relevant mathematical information.

Appreciate patterns and connections. Rather than seeing it as purely knowledge, rules and answers that are either right or wrong. By developing creativity in maths, we enable children to apply their knowledge in the real world.

Opportunities to work with open-ended problems, to discuss and share ideas and strategies, appreciating that there are often different solutions to the same problems.3

We are Resilient

Encourage resilience, perseverance and an acceptance that struggle is often a necessary step in learning.

Use a wide vocabulary of appropriate and accurate mathematical terms.

Ask and answer questions with confidence drawing on previous learning and experiences in Maths.

Offer questions that may challenge their own views and thinking, or that of others.

Inspiring children by creating challenging opportunities which can be worked on to an end-point creating a sense of achievement, self-satisfaction and ultimately success.

We Understand Ourselves and Each Other

Work collaboratively to develop communication skills and critical thinking skills.

Give children the language, experience and knowledge to evaluate their own work and the work of others.

Provide learning opportunities through social contexts to allow collaborative learning which helps to maintain intrinsic motivation and in turn provides satisfaction and pride in working things out together.

Evaluate and re-evaluate opinions, adjusting points of view if appropriate, in the light of subsequent learning and additional evidence.

Mathematics Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at Havannah First School are reflected within each maths lesson. These principles and features characterise this approach and convey how our curriculum is implemented:

Teachers reinforce an expectation that **all** children are capable of achieving high standards in Mathematics.

•The large majority of children progress through the curriculum content at the same pace.

• Differentiation is achieved by emphasising deep knowledge and through individual support and intervention.

Early Years is at the start of the mathematical journey and the focus is on developing a strong sense of number and a recognition of maths being all around us. Pattern spotting, subitising and making maths are key areas that are an integral part of everything that is developing in early maths. Maths in the Early Years takes place both indoors and outdoors through a wide range of practical activities. Children then have the opportunity to apply and explore these concepts though continuous provision as well as adult directed tasks.

In KS 1 and 2, Maths is taught 5 times in a week. Schemes of learning are based on the White Rose Maths Schemes of Work and support our school's mastery approach to teaching and learning and are consistent with the aims and objectives of the National Curriculum. Number is at the heart of our schemes of learning and a significant

amount of time is spent reinforcing number in order to build competency and allow and ensure children can confidently access the rest of the curriculum. We aim for children to stay within the required Key Stage so that children acquire depth of knowledge in each topic. Opportunities to re-visit previously learnt skills are built into planning. Children can progress through schemes of learning as a whole group, encouraging children of all abilities to support each other in their learning. Research shows that all children, when introduced to a new concept, should have the opportunity to build competency by following the CPA approach which features throughout the children's pathway of learning. Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing. Alongside concrete resources, children should work with pictorial representations, making links to the concrete. Visualising a problem in this way can help children to reason and to solve problems. With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods. Every block in the schemes of learning is broken down into manageable small steps (See progression maps of small steps attached).

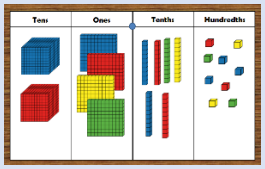
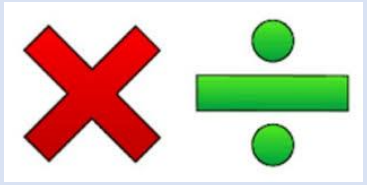
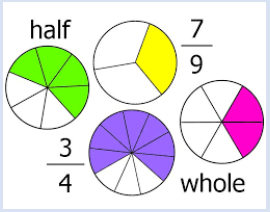
Across the school from Year 1 to Year 4 children work in mixed ability groups. Flexible groupings are used to provide support for children according to assessment information. Children have opportunities to work independently, within pairs or as a group. The vast majority of children progress through the curriculum at a similar pace. This enables the most able to deepen their subject knowledge through rich sophisticated problems, while the lower ability children are able to continue to develop their fluency and reasoning skills as well as given opportunities to solve mathematical problems. SEN children will predominantly be covering the curriculum content of their year group. Their learning will be supported through the use of models, scaffolds and practical apparatus. Specific targets are set which focus on a gap in their learning. Additional work will be set to support the child in meeting this target. Staff will support these children at points within their learning.

Mathematical topics are taught in blocks based on the White Rose Maths Hub, to enable the achievement of 'mastery' over time (Long Term Planning). These are designed to ensure coverage and progression. Teaching is underpinned by methodical curriculum design (Medium Term Planning) and supported by carefully crafted lessons with small steps which are carefully sequenced and built upon systematically (Short Term Planning) and resources to foster deep conceptual and procedural knowledge. The design of the 12 week blocks allows flexibility within each term so teachers can work on misconceptions or small steps can be re-visited or given more time if necessary.

Carefully designed variation within the start of a lesson builds fluency and understanding of underlying mathematical concepts. Teachers use careful questions to draw out children's discussions and their reasoning skills which are applied in activities. Tasks are then designed which allow children to apply their fluency and reasoning skills to solve mathematical problems. Concrete manipulatives are available in every classroom and are accessible for children to use as directed or independently. Children are encouraged to use the correct mathematical vocabulary and use their reasoning skills when answering questions. Teachers and TAs move around the classroom and actively respond, challenge and support children with their learning. Working walls are used to display strategies that are being used and include the key vocabulary being taught in that unit. Additional time, outside of lessons - Flashback 4 and MATHS BLAST are used to support, retrieve and recall previous learning using arithmetic strategies in number with a strong emphasis on multiplication.

Questioning, marking and feedback of work helps to identify those children who need further support, provides opportunities to address misconceptions and also allows children to make corrections or complete next step challenges. This allows the vast majority of children to continue to work at a similar pace.

Challenge, Equality & Opportunity

Number & Place Value	Addition & Subtraction	Multiplication & Division	Fractions
			
Measurement	**Geometry - Shape**	**Geometry - Position & Direction**	**Statistics**
			

Challenge, Equality & Opportunity

Reception

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Getting to Know You Opportunities for settling in, introducing the areas of provision and getting to know the children. Key times of day, class routines. Exploring the continuous provision inside and out. Where do things belong? Positional language		MATCH, SORT AND COMPARE		TALK ABOUT MEASURE AND PATTERNS		It's me 1,2,3		Circles and triangles	1,2,3,4,5		Shapes with 4 sides
ALIVE IN 5 MASS AND CAPACITY		MASS AND CAPACITY	GROWING 6,7,8		LENGTH, HEIGHT AND TIME		BUILDING 9 AND 10			EXPLORE 3-D SHAPES	
TO 20 AND BEYOND		HOW MANY NOW?	MANIPULATE, COMPOSE AND DECOMPOSE		SHARING AND GROUPING		VISUALISE, BUILD AND MAP			MAKE CONNECTIONS	CONSOLIDATION

Challenge, Equality & Opportunity

YEAR 1

	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	Number: Place Value – Within 10					Number: Addition & Subtraction – within 10					Geometry: Shape	Consolidation Assessment
Spring	Number: Place Value (within 20)			Number: Addition & Subtraction- (within 20)		Number: Place Value (within 50)			Measurement: Length and Height		Measurement : Mass and Volume	Assessment
Summer	Number: Multiplication and Division (Reinforce multiples of 2, 5 and 10 included)			Number: Fractions		Geometry: Position & Direction	Number: Place Value (within 100)		Measurement : Money	Measurement: Time		Assessment

Challenge, Equality & Opportunity

YEAR 2

	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	**Number: Place Value**				**Number: Addition & Subtraction**					**Geometry: Properties of Shape**		**Assessment**
Spring	**Measurement: Money**		**Number: Multiplication and Division**					**Measurement: Length and Height**		**Measurement: Mass, Capacity and Temperature**		**Consolidation Assessment**
Summer	**Number: Fractions**				**Measurement: Time**		**Statistics**		**Geometry: Position and Direction**		**Consolidation Assessment**	

Challenge, Equality & Opportunity

YEAR 3

	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	Number: Place Value			Number: Addition & Subtraction					Number: Multiplication and Division			Consolidation Assessment
Spring	Number: Multiplication and Division			Measurement: Length and Perimeter			Number: Fractions			Measurement: Mass and Capacity		Consolidation Assessment
Summer	Number: Fractions		Measurement: Money		Measurement: Time			Geometry: Properties of Shape		Statistics		Consolidation

Challenge, Equality & Opportunity

YEAR 4

	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	Number: Place Value				Number: Addition & Subtraction			Measures: Area	Number: Multiplication and Division			Consolidation Assessment
Spring	Number: Multiplication and Division			Measurement: Length and Perimeter	Number: Fractions					Number: Decimals		Consolidation Assessment
Summer	Number: Decimals		Measurement: Money		Measurement: Time		Consolidation x tables	Geometry: Properties of Shape		Statistics	Geometry: Position and Direction	Consolidation Assessment

Maths Curriculum Map – Reception

Core Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Match, sort and compare • Match objects Match pictures and objects • Identify a set • Sort objects to a type • Explore sorting techniques • Create sorting rules Compare amounts **Talk about measure and pattern** • Compare size • Compare mass • Compare capacity • Explore simple patterns • Copy and continue simple patterns • Create simple patterns	**It's me – 1,2,3** • Find 1, 2 and 3 Subitise 1, 2 and 3 • Represent 1, 2 and 3 • 1 more • 1 less Composition of 1, 2 and 3 **Circles and Triangles** • identify and name circles and triangles • Compare circles and triangles • Shapes in the environment • Describe position **1,2,3,4,5** • Find 4 and 5 • Subitise 4 and 5 Represent 4 and 5 • 1 more 1 less Composition of 4 and 5 Composition of 1–5 **Shapes with 4 sides** • identify and name shapes with 4 sides • Combine shapes with 4 sides • Shapes in the environment • My day and night	**Alive in 5** • Introduce zero • Find 0 t0 5 • Subitise 0 to 5 • Represent 0 to 5 • 1 more • 1 less • Composition • Conceptual subitising to 5 **Mass and Capacity** • Compare mass • Find a balance • Explore capacity • Compare capacity **Growing 6,7,8** • Find 6,7 and 8 • Represent 6,7 and 8 • 1 more • 1 less • Composition of 6, 7 and 8 • Make pairs odd and even • Double to 8 (find a double) • Double to 8 (make a double) • Combine 2 groups • Conceptual subitising	**Length, Height and Time** • Explore length • Compare length • Explore height • Compare height • Talk about time • Order and sequence time **Building 9 and 10** • Find 9 and 10 • Compare numbers to 10 • Represent 9 and 10 • Conceptual subitising to 10 • 1 more • 1 less • Composition to 10 • Bonds to 10 (2 parts) • Make arrangements of 10 • Bonds to 10 (3 parts) **Explore 3-D Shapes** • Recognise and name 3-d shapes • Find 2-d shapes within 3-d shapes • Use 3-d shapes for tasks • 3-d shapes in the environment • Idnetify more complex patterns • Patterns in the environment	**To 20 and beyond** • Build numbers beyond 10 (10-13) • Continue patterns beyond 10 (10-13) • Build numbers beyond 10 (14-20) • Continue patterns beyond 10 (14-20) • Verbal counting beyond 20 • Verbal counting patterns **How many now?** • Add more • How many did I add? • Take away • How many did I take away? **Manipulate, compose and decompose** • Select shapes for a purpose • Rotate shapes • Manipulate shapes • Explain shape arrangements • Compose shapes • Decompose shapes • Copy 2-d shape pictures • Find 2-d shapes within 3-d shapes	**Sharing and Grouping** • Exploring sharing • Sharing • Explore grouping • Grouping • Even and odd sharing • Play with and build doubles **Visualise, build and map** • Identify units of repeating patterns • Create own pattern rules • Explore own pattern rules • Replicate and build scenes and constructions • Visualise from different positions • Describe positions • Give instructions to build • Explore mapping • Represent maps with models • Create own maps and plans from story situations **Make connections** • Deepen understanding • Patterns and relationships

Maths through Daily Routines	Number and Place Value (Securing Numbers, Ordering and Comparing): Counting forwards and backwards in 1s to 20 - teen numbers; Order a set of consecutive numbers to 10, subitising to 10. Addition and Subtraction (Multiples): Partitioning 3 or 4 objects in different ways; Number bonds to 5; Knowing 1 more / less than numbers to 5 / 10; Counting all-combining groups; Counting on to add from any number; Knowing 1 less than numbers to 5; Counting back to subtract Multiplication and Division (Doubling Numbers / Near Doubles): Double numbers to 5; Halve even numbers up to 10 by sharing
Vocabulary introduced in Reception	Number and Place Value: **number, zero 1-20 count on/back lots, more, few, fewer, compare, sort, order, before, after, less, many, most, the same as, ones, pair** Addition and Subtraction: **add, more, altogether, takeaway, number line, one more, one less, equals, equal to, double, half, how many? make, total** Fractions: **double, half, whole** Measure: **days of the week, week, month, year, weekend, birthday, holiday, morning, afternoon, evening, night, midnight, bedtime, dinnertime, playtime, today, yesterday, tomorrow, before, after, next, last, now, soon, early, late, quick, fast, slow, old, new, watch, clock, always, never, first, size, weight, capacity, time, money long, longer, longest, short, shorter, shortest, heavy, light, empty, full, tall, small, large, thick, thin, low, deep, ruler, far, near, holds, container, weigh, weighs coin, buy, sell, pay, price, how many?** Multiplication and Division: **times, counting in ones, twos, fives, tens, lots of, groups of, once, twice, five times sharing, share, set, group, left, left over** Geometry (Position and Direction): **position, distance, after, before, in, on, inside, under, on top of, behind, next to, above, below, top, bottom, side, outside, around, underneath, in front, front, back, before, middle, up, down, forwards, backwards, across, close, far, along, to, from, slide, roll, turn, stretch, bend, move.** Geometry (Properties of Shape): **shape, group, sort, round, flat, straight, make, build, draw. square, circle, triangle, cube, cuboid, sphere** General / Problem Solving: **listen, join in, say, think, imagine, remember, start from, start with, start at, look at, point to, put, place, fit, change, split, carry on, what comes next? find, choose, collect, use, make, build, tell me, pick out, talk about, explain, show me read, write, finish, copy, colour, tick, cross, draw, draw a line between, join (up), ring, arrow, count, work out, answer, fill in, check, in order, every, each.**
15 Minute Maths in Reception	**MASTERING NUMBER PROGRAMME**

Maths Curriculum Map – Year 1

Core Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Number: Place Value (within 10) • Sort objects • Count objects • Count objects from a larger group • Represent objects • Recognise numbers as words • Count on from any number • 1 more • Count backwards within 10 • 1 less • Compare groups by matching Fewer, more, same • Less than, greater than, equal to • Compare numbers • Order objects and numbers • The number line	**Number: Addition and Subtraction (within 10)** • Introduce parts and wholes Part-whole model • Write number sentences • Fact families – addition facts Number bonds within 10 • Systematic number bonds within 10 • Number bonds to 10 • Addition – add together • Addition – add more • Addition problems • Find a part • Subtraction – find a part • Fact families – the eight facts Subtraction – take away/cross out (How many left?) • Take away (How many left?) Subtraction on a number line Add or subtract 1 or 2 **Geometry: Shape** • Recognise and name 3-D shapes • Sort 3-D shapes • Recognise and name 2-D shapes • Sort 2-D shapes • Patterns with 2-D and 3-D shapes	**Number: Place Value (within 20)** • Count within 20 Understand 10 Understand 11, 12 and 13 • Understand 14, 15 and 16 • Understand 17, 18 and 19 • Understand 20 • 1 more and 1 less • The number line to 20 Use a number line to 20 • Estimate on a number line to 20 • Compare numbers to 20 • Order numbers to 20 **Number: Addition and Subtraction (within 20)** • Add by counting on within 20 • Add ones using number bonds • Find and make number bonds to 20 • Doubles • Near doubles • Subtract ones using number bonds • Subtraction – counting back • Subtraction – finding the difference • Related facts Missing number problems	**Number Place Value (within 50)** • Count from 20 to 50 • 20, 30, 40 and 50 • Count by making groups of tens • Groups of tens and ones • Partition into tens and ones • The number line to 50 • Estimate on a number line to 50 • 1 more, 1 less **Measurement: Length and Height** • Compare lengths and heights • Measure length using objects • Measure length in centimetres **Measurement: Mass and Capacity** • Heavier and lighter Measure mass Compare mass • Full and empty Compare volume Measure capacity Compare capacity	**Number: Multiplication and Division** • Count in 2s • Count in 10s • Count in 5s • Recognise equal groups Add equal groups • Make arrays • Make doubles • Make equal groups – grouping • Make equal groups – sharing **Number: Fractions** • Recognise a half of an object or a shape • Find a half of an object or a shape • Recognise a half of a quantity • Find a half of a quantity Recognise a quarter of an object or a shape • Find a quarter of an object or a shape Recognise a quarter of a quantity • Find a quarter of a quantity **Geometry: Position and Direction** • Describe turns • Describe position – left and right • Describe position – forwards and backwards Describe position – above and below • Ordinal numbers	**Number: Place Value (within 100)** • Count from 50 to 100 tens to 100 • Partition into tens and ones • The number line to 100 • 1 more, 1 less Compare numbers with the same number of tens • Compare any two numbers **Measurement: Money** • Unitising • Recognise coins Recognise notes • Count in coins **Measurement: Time** • Before and after • Days of the week • Months of the year Hours, minutes and seconds • Tell the time to the hour • Tell the time to the half hour

<table>
<tr><td>Vocabulary introduced in Year 1</td><td colspan="4"><u>Number and Place value:</u> 20-100 count (on/up/to/from/ down), least, fewest, smallest, greater, lesser, equal to, odd, even, units, tens, ten more/less, digit, numeral, figure(s), compare (In) order/a different order, size, value, between, halfway between, above, below.
<u>Addition and subtraction:</u> number bonds, addition, plus, sum, greater, inverse, near double, halve, is the same as, (including equals sign), difference between, how many more to make..?, how, many more is…than..?, how much more is..? subtract, minus, how many fewer is…than..?, how much less is..?
<u>Fractions:</u> whole, equal parts, four equal parts, one half, two halves, a quarter, two quarters.
<u>Measurement:</u> size, bigger, larger, length, width, height, depth, taller, tallest, high, higher, highest, wide, narrow, shallow, close, Metre, metre stick. half full, balances, heavier, heaviest, lighter, lightest, scales.
<u>Measurement (Time):</u> Seasons (Spring, Summer, Autumn, Winter) quicker, quickest, quickly, faster, fastest, slower, slowest, slowly, older, oldest, newer, newest, takes longer, takes less time, hour, o clock, half past, hands, how long ago? how long will it be to…? how long will it take to…? how often? often, sometimes, usually, once, twice, second, third etc, estimate, close to, about the same as, just over/under, too many/few, not enough, enough. spend, spent, change, dear(er), costs more, costs less, cheaper, costs the same as, how much?
<u>Multiplication and Division:</u> odd, even, count in twos, fives, tens, (forwards from/backwards from), how many times?, multiple of, multiply, multiply by repeated addition, array, row, column, halve, share equally, group in pairs, threes, etc. equal groups of, divide, divided by
<u>Geometry (Position and Direction):</u> over, beside, opposite, apart, between, edge, centre, corner, direction, journey, left, right, sideways, near, through, towards, away from, movement, whole turn, half turn.
<u>Geometry (Properties of Shape):</u> pyramid, cone, cylinder. curved, hollow, solid, corner (point, pointed) face, side, edge.
<u>General / Problem Solving</u>: arrange, rearrange, change over, separate, continue, repeat, describe, explain, record, trace, complete, shade, same number(s)/different number(s)/missing number(s) number facts, same way, different way, best way, another way, in a different order, not all.</td></tr>
<tr><td rowspan="2">15 Minute Maths in Year 1 MASTERING NUMBER

(Multiplication)</td><td colspan="4"><u>MASTERING NUMBER PROGRAMME</u></td></tr>
<tr><td><u>Multiplication</u>
Count in 2s to 24 link even and odd numbers
Count in 10s in order up to 120</td><td><u>Multiplication</u>
Count in multiples of 5 up to 60
Count in 2s and 10s</td><td><u>Multiplication</u>
Count in multiples of 10, 2 and 5 fluently</td><td><u>Multiplication</u>
Count in multiples of 10, 2 and 5 fluently</td></tr>
</table>

Maths Curriculum Map – Year 2

Core Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Number: Place Value • Numbers to 20 • Count objects to 100 by making 10s • Recognise tens and ones • Use a place value chart • Partition numbers to 100 Write numbers to 100 in words • Flexibly partition numbers to 100 • Write numbers to 100 in expanded form Small steps • 10s on the number line to 100 • 10s and 1s on the number line to 100 • Estimate numbers on a number line • Compare objects • Compare numbers • Order objects and numbers • Count in 2s, 5s and 10s • Count in 3s **Number: Addition and Subtraction** • Bonds to 10 • Fact families - addition and subtraction bonds within 20 • Related facts • Bonds to 100 (tens) • Add and subtract 1s • Add by making 10 • Add three 1-digit numbers • Add to the next 10 • Add across a 10 • Subtract across 10 Subtract from a 10 Subtract a 1-digit number from a 2-digit number (across a 10) • 10 more, 10 less	**Number: Addition and Subtraction** • Add and subtract 10s Add two 2-digit numbers (not across a 10) • Add two 2-digit numbers (across a 10) • Subtract two 2-digit numbers (not across a 10) • Subtract two 2-digit numbers (across a 10) Mixed addition and subtraction • Compare number sentences • Missing number problems **Geometry: Properties of Shape** • Recognise 2-D and 3-D shapes • Count sides on 2-D shapes • Count vertices on 2-D shapes • Draw 2-D shapes • Lines of symmetry on shapes • Use lines of symmetry to complete shapes Sort 2-D shapes • Count faces on 3-D shapes • Count edges on 3-D shapes • Count vertices on 3-D shapes • Sort 3-D shapes • Make patterns with 2-D and 3-D shapes	**Measurement: Money** • Count money – pence • Count money – pounds (notes and coins) • Count money – pounds and pence • Choose notes and coins Make the same amount Compare amounts of money • Calculate with money Make a pound • Find change • Two-step problems **Number: Multiplication and Division** • Recognise equal groups • Make equal groups • Add equal groups • Introduce the multiplication symbol • Multiplication sentences • Use arrays • Make equal groups – grouping • Make equal groups – sharing • The 2 times-table • Divide by 2 • Doubling and halving • Odd and even numbers	**Number: Multiplication and Division** • The 10 times-table • Divide by 10 • The 5 times-table • Divide by 5 • The 5 and 10 times-tables **Measurement: Length and Height** • Measure in centimetres • Measure in metres • Compare lengths and heights • Order lengths and heights • Four operations with lengths and heights **Measurement: Mass, Capacity and Temperature** • Compare mass • Measure in grams • Measure in kilograms • Four operations with mass • Compare volume and capacity • Measure in millilitres Measure in litres • Four operations with volume and capacity • Temperature	**Number: Fractions** • Introduction to parts and whole • Equal and unequal parts Recognise a half Find a half • Recognise a quarter Find a quarter Recognise a third • Find a third • Find the whole • Unit fractions • Non-unit fractions • Recognise the equivalence of a half and two-quarters Recognise three-quarters • Find three-quarters Count in fractions up to a whole **Measurement: Time** • O'clock and half past • Quarter past and quarter to • Tell the time past the hour • Tell the time to the hour • Tell the time to 5 minutes • Minutes in an hour • Hours in a day	**Statistics** • Make tally charts • Tables • Block diagrams • Draw pictograms (1–1) Interpret pictograms (1–1) • Draw pictograms (2, 5 and 10) • Interpret pictograms (2, 5 and 10) **Geometry: Position and Direction** • Language of position Describe movement Describe turns • Describe movement and turns • Shape patterns with turns

Vocabulary introduced in Year 2	**Number and Place Value:** numbers to one hundred, hundreds, partition, recombine, hundred more/less, represents, exchange, **Statistics:** count, tally, sort, vote, graph, block graph, pictogram, represent group, set, list, table label, title most popular, most common, least popular, least common **Fractions:** three quarters, one third, a third, equivalence, equivalent. **Measurement:** quarter past/to, fortnight temperature (degrees) m/cm, g/kg, ml/l **Multiplication and Division:** count in multiples of 3 **Geometry (Position and Direction):** rotation, clockwise, anticlockwise, straight line, ninety degree turn, right angle. **Geometry (Properties of shape):** smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern, vertices, vertex. pentagon, hexagon, octagon, circular, triangular, right angle. **General/Problem Solving:** predict, describe the pattern, describe the rule, find, find all, find different, investigate.					
15 Minute Maths in Year 2 MASTERING NUMBER (Multiplication)	**MASTERING NUMBER PROGRAMME**					
	Multiplication **Consolidate 2,5,10 in order up to 12X**	**Multiplication** **Count fluently from 0 in 2,5 and 10** **Recall multiples of 10 up to 12x10 in any order including missing numbers and division facts**	**Multiplication** **Recall multiples of 2 up to 12x2 in any order including missing numbers and division facts** **Recall multiples of 10 fluently**	**Multiplication** **Recall multiples of 5 up to 12x5 in any order including missing numbers and division facts** **Recall multiples of 2 fluently including division facts**	**Multiplication and Division** **Multiplication sentences using x symbol** **Make doubles** **Make equal groups-sharing and grouping** **Divide by 2** **Odd and even numbers** **Multiplication** **Count in multiples of 4 up to 12x4 in order from 0 – Relate to doubling 2** **Recall multiples of 2 fluently including division facts** **Recall multiples of 5 fluently including division facts**	**Multiplication** **Count in multiples of 4 up to 12x4 in order from 0** **Recall multiples of 5 up to 12x5 fluently and related division facts**

Maths Curriculum Map – Year 3

Core Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Number: Place Value • Represent numbers to 100 • Partition numbers to 100 • Number line to 100 • Hundreds • Represent numbers to 1,000 • Partition numbers to 1,000 • Flexible partitioning of numbers to 1,000 • Hundreds, tens and ones • Find 1, 10 or 100 more or less • Number line to 1,000 • Estimate on a number line to 1,000 • Compare numbers to 1,000 • Order numbers to 1,000 • Count in 50s **Number: Addition and Subtraction** • Apply number bonds within 10 • Add and subtract 1s • Add and subtract 10s • Add and subtract 100s • Spot the pattern • Add 1s across a 10 • Add 10s across a 100 • Subtract 1s across a10 • Subtract 10s across a 100 • Make connections • Add two numbers (no exchange) • Subtract two numbers (no exchange) • Add two numbers (across a 10) • Add two numbers (across a 100) •	**Number: Addition and Subtraction** • Subtract two numbers (across a 10) • Subtract two numbers (across a 100) • Add 2-digit and 3-digit numbers • Subtract a 2-digit number from a 3-digit number • Complements to 100 • Estimate answers • Inverse operations • Make decisions **Number: Multiplication and Division** • Multiplication – equal groups • Use arrays • Multiples of 2 • Multiples of 5 and 10 Sharing and grouping Multiply by 3 • Divide by 3 • The 3 times-table Multiply by 4 • Divide by 4 • The 4 times-table Multiply by 8 • Divide by 8 • The 8 times-table • The 2, 4 and 8 times-tables	**Number: Multiplication and Division** • Multiples of 10 • Related calculations • Reasoning about multiplication • Multiply a 2-digit number by a 1-digit number – no exchange • Multiply a 2-digit number by a 1-digit number – with exchange • Link multiplication and division • Divide a 2-digit number by a 1-digit number – no exchange • Divide a 2-digit number by a 1-digit number – flexible partitioning • Divide a 2-digit number by a 1-digit number – with remainders • Scaling • How many ways? **Measurement: Length and Perimeter** • Measure in metres and centimetres • Measure in millimetres • Measure in centimetres and millimetres Metres, centimetres and millimetres • Equivalent lengths (metres and centimetres) • Equivalent lengths (centimetres and millimetres) • Compare lengths • Add lengths • Subtract lengths • What is perimeter? • Measure perimeter • Calculate perimeter	**Number: Fractions** • Understand the denominators of unit fractions • Compare and order unit fractions • Understand the numerators of non-unit fractions • Understand the whole • Compare and order non-unit fractions • Fractions and scales • Fractions on a number line • Count in fractions on a number line • Equivalent fractions on a number line • Equivalent fractions as bar models **Measurement: Mass and Capacity** • Use scales • Measure mass in grams • Measure mass in kilograms and grams • Equivalent masses (kilograms and grams) • Compare mass • Add and subtract mass • Measure capacity and volume in millilitres • Measure capacity and volume in litres and millilitres • Equivalent capacities and volumes (litres and millilitres) • Compare capacity and volume • Add and subtract capacity and volume	**Number: Fractions** • Add fractions • Subtract fractions • Partition the whole Unit fractions of a set of objects • Non-unit fractions of a set of objects • Reasoning with fractions of an amount **Measurement: Money** • Pounds and pence • Convert pounds and pence • Add money • Subtract money • Find change **Measurement: Time** • Roman numerals to 12 • Tell the time to 5 minutes • Tell the time to the minute • Read time on a digital clock • Use am and pm • Years, months and days • Days and hours • Hours and minutes – use start and end times • Hours and minutes - use durations • Minutes and seconds • Units of time • Solve problems with time	**Geometry: Properties of Shape** • Turns and angles • Right angles • Compare angles Measure and draw accurately • Horizontal and vertical Parallel and perpendicular Recognise and describe 2-D shapes • Draw polygons Recognise and describe 3-D shapes • Make 3-D shape **Statistics** • Interpret pictograms • Draw pictograms • Interpret bar charts • Draw bar charts • Collect and represent data • Two-way tables

Vocabulary introduced in Year 3	Number and Place Value: numbers to 1,000 **Addition and subtraction:** column addition and subtraction Fractions: numerator, denominator, unit fraction, non-unit fraction, compare and order, tenths Measurement: leap year twelve-hour/24- hour clock, am/pm, century roman numerals I-XII mm Multiplication and Division: count in multiples of 4, 8 and 11, product, scale up Geometry (Position and Direction): greater/less than 90 degrees orientation (same orientation, different orientation), north, south, east, west Geometry (Properties of Shape): horizontal, vertical, perpendicular and parallel lines. perimeter hemi-sphere, prism, semi-circle Statistics: chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis, axes diagram					
10 Minute Maths in Year 3 (MATHS BLAST) Retrieval/ Arithmetic Fluency (Multiplication)	Number and Place Value (Securing Numbers, Ordering and Comparing): **Count in 100, 10s, 1s from any number to 1000;** **Order a set of random numbers to 1000;** **Compare numbers using symbols < > and = up to 1000** Number and Place Value (Counting): **Add 100 to any 2 / 3digit number** e.g., 45 + 100, 145 + 100; **Add multiples of 100 to any 2 / 3 digit number** 45 + 200, 145 + 200, 145 + 700 (regrouping) Counting **Count from 0 in multiples of 4,8,50 and 100** **Find 10 or 100 more or less than a given number** Multiplication **Count in multiples of 2 up to 12x2 in any order including missing numbers and division facts.** **Count in multiples of 4 up to 12x4 in order from 0 with growing fluency**	Addition and Subtraction (Multiples): **Add any multiple of 10 to a 2/3 digit number** e.g. 153 + 20, 153 + 70 (regrouping); **Subtract any multiple of 10 from a 2/3 digit number,** e.g. 153 – 20, 153 – 70 (regrouping) **Counting in 10s** e.g. Use number bonds/partitioning 153 – (50 + 20); **To subtract many amounts, combine to add first in context**. Eg £1 - (20p – 30p), £1 – 50p Multiplication **Recall multiples of 4 up to 12x4 in any order, missing numbers and division facts** **Introduce (relating to 4) and begin to count multiples of 8 from 0 to 12x8**	Addition and Subtraction (Adding / Subtracting 10's, 100's, 1000's): **Add 10 to any number**, 43 + 10, 143 + 10, **Add multiples of 10 to any number** e.g. 43+ 30 (no regrouping), 43 + 70 (regrouping), 143 + 30 (no regrouping), 143 + 70 (regrouping); **Explain effects of adding 10. Why do 1s not change when adding 10s? When will 100s change?;** **Add near multiples of 10** e.g. + 99, 31, 29 etc including in simple money context e.g. 99p, £1.99 Multiplication **Recall multiples of 4 up to 12x4 in any order, missing numbers and division facts** **Count in multiples of 8 to 12x8 in any order**	Addition and Subtraction Mental (+ -) **Add and subtract numbers mentally, including:** • A three digit number and 1s • A three digit number and 10s • A three digit number and 100s Multiplication **Recall multiples of 4 up to 12x4 in any order, missing numbers and division facts** **Count in multiples of 8 to 12x8 in any order**	Multiplication and Division (Doubling Numbers / Near Doubles): **Doubles of multiples of 10/near10s 60 + 60, 60 + 70;** **Review doubling/halving multiples of 10 with odd number of 10s by partitioning and recombining** e.g. half of 30, 50, 70, 30 = 20+10, Half is 10 + 5 = 15; **Double simple 3 digit numbers (multiples of 10, 50, 100)** e.g. double 200, double 250 Multiplication **Recall multiples of 4 up to 12x4 in any order, missing numbers and division facts** **Recall multiples of 8 up to 12x8 in any order, missing numbers and division facts**	Fractions and Decimals **Count up and down in tenths** **Add and subtract fractions with the same denominator within one whole** Multiplication and Division (Order of Operations): **Multiplication and division of whole numbers by 10 exploring the effect of moving digits** e.g. 6 x 10, 10 x 10, 16 x 10; **Use known facts to multiply and divide by multiples of 10** e.g. 6 x 3, 6 x 30 **Knowledge of doubling** e.g. double 4x table = 8x;; **Link to measure and reading scales** e.g. 50p x 2 = £1.00, £50 x 2 = £100, 25p x 4 = £1.00 £25 x 4 = £100, 20p x 5 = £1.00 , 1000g = 1kg 1000ml = 1l , 1000cm = 1km, 1000 ÷ 2 = 500 1000 ÷ 4 = 250, ½ l/kg/km = 500, ¼ l/kg/km = 250, ¾ l/kg/km = 750 Multiplication **Recall multiples of 8 up to 12x8 in any order, missing numbers and division facts** **Introduce counting in 3s and multiples of 3**

Maths Curriculum Map – Year 4

Core Curriculum	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Number: Place Value • Represent numbers to 1,000 • Partition numbers to 1,000 • Number line to 1,000 • Thousands • Represent numbers to 10,000 Partition numbers to 10,000 • Flexible partitioning of numbers to 10,000 • Find 1, 10, 100, 1,000 more or less Number line to 10,000 • Estimate on a number line to 10,000 Compare numbers to 10,000 • Order numbers to 10,000 • Roman numerals • Round to the nearest 10 • Round to the nearest 100 • Round to the nearest 1,000 • Round to the nearest 10, 100 or 1,000 **Number: Addition and Subtraction** • Add and subtract 1s, 10s, 100s and 1,000s • Add up to two 4-digit numbers – no exchange • Add two 4-digit numbers – one exchange • Add two 4-digit numbers – more than one exchange • Subtract two 4-digit numbers – no exchange • Subtract two 4-digit numbers – one exchange • Subtract two 4-digit numbers – more than one exchange • Efficient subtraction • Estimate answers • Checking strategies	**Measurement: Area** • What is area? • Count squares • Make shapes • Compare areas **Number: Multiplication and Division** • Multiples of 3 • Multiply and divide by 6 • 6 times-table and division facts • Multiply and divide by 9 • 9 times-table and division facts • The 3, 6 and 9 times-tables • Multiply and divide by 7 • 7 times-table and division facts • 11 times-table and division facts • 12 times-table and division facts • Multiply by 1 and 0 • Divide a number by 1 and itself • Multiply three numbers	**Number: Multiplication and Division** • Factor pairs • Use factor pairs • Multiply by 10 • Multiply by 100 • Divide by 10 • Divide by 100 • Related facts – multiplication and division • Informal written methods for multiplication • Multiply a 2-digit number by a 1-digit number • Multiply a 3-digit number by a 1-digit number • Divide a 2-digit number by a 1-digit number (1) • Divide a 2-digit number by a 1-digit number (2) • Divide a 3-digit number by a 1-digit number • Correspondence problems • Efficient multiplication **Measurement: Length and Perimeter** • Measure in kilometres and metres • Equivalent lengths (kilometres and metres) • Perimeter on a grid • Perimeter of a rectangle • Perimeter of rectilinear shapes • Find missing lengths in rectilinear shapes • Calculate perimeter of rectilinear shapes • Perimeter of regular polygons • Perimeter of polygons	**Number: Fractions** • Understand the whole • Count beyond 1 • Partition a mixed number • Number lines with mixed numbers • Compare and order mixed numbers • Understand improper fractions • Convert mixed numbers to improper fractions • Convert improper fractions to mixed numbers • Equivalent fractions on a number line • Equivalent fraction families • Add two or more fractions • Add fractions and mixed numbers • Subtract two fractions • Subtract from whole amounts • Subtract from mixed numbers **Number: Decimals** • Tenths as fractions • Tenths as decimals • Tenths on a place value chart • Tenths on a number line • Divide a 1-digit number by 10 • Divide a 2-digit number by 10 • Hundredths as fractions • Hundredths as decimals • Hundredths on a place value chart • Divide a 1- or 2-digit number by 100	**Number: Decimals** • Make a whole with tenths • Make a whole with hundredths • Partition decimals • Flexibly partition decimals • Compare decimals • Order decimals • Round to the nearest whole number • Halves and quarters as decimals **Measurement: Money** • Write money using decimals • Convert between pounds and pence • Compare amounts of money • Estimate with money • Calculate with money • Solve problems with money **Measurement: Time** • Years, months, weeks and days • Hours, minutes and seconds • Convert between analogue and digital times • Convert to the 24-hour clock • Convert from the 24-hour clock	**Geometry: Properties of Shape** • Understand angles as turns • Identify angles • Compare and order angles • Triangles Quadrilaterals • Polygons • Lines of symmetry • Complete a symmetric figure **Statistics** • Interpret charts Comparison, sum and difference • Interpret line graphs • Draw line graphs **Geometry: Position and Direction** • Describe position using coordinates • Plot coordinates • Draw 2-D shapes on a grid • Translate on a grid • Step 1 Describe position using coordinates Step 2 Plot coordinates Step 3 Draw 2-D shapes on a grid Step 4 Translate on a grid Step 5 Describe translation on a grid Describe translation on a grid

Vocabulary introduced in Year 4	**Number and Place value:** tenths, hundredths, numeral decimal places round (to nearest) thousand more / less negative integers count through zero roman numerals I to C **Multiplication and Division:** count in multiples of 6, 7, 9, 12, inverse, derive division facts **Fractions:** equivalent fractions and decimals, decimal point, decimal fraction hundredths **Geometry (Position and Direction):** co-ordinates translation, translate, quadrant x-axis, y-axis **Geometry (Properties of Shape):** area, net rectilinear adjacent quadrilaterals: (rhombus, parallelogram, trapezium, trapezoid, kite). heptagon, polygon, tetrahedron, polyhedron, cylindrical triangles (isosceles, scalene) right angle, acute angle, obtuse angles **Measurement:** convert, noon **Statistics:** continuous data, line graphs						
10 Minute Maths in Year 4 (MATHS BLAST) Retrieval/ Arithmetic Fluency (Multiplication)	**Number and Place Value (Securing Numbers, Ordering and Comparing):** **Count in 1s across boundaries 1000, 10,000, 100,000;** **Order a set of random numbers to 100,000; Compare numbers using symbols < and < up to 100,000** **Counting** **Count in multiples of 6,7,9, 25 and 1000** **Find 1000 more or less than a given number through zero to include negative numbers** **Multiplication** **Recall multiples of 3, 4 and 8 up to 12 x in any order including missing numbers and related division facts fluently** **Fluently count in 6s up to 12x6**	**Number and Place Value (Counting): Count in 10, 100s, 1000s forwards and backwards across boundaries 1000, 10,000, 100,000; What is 10, 100, 1000 more/less than ….?; Round any number to the nearest 10, 100 or 1 000;** **Addition and Subtraction (Multiples):** **Add any multiple of 10 to a 4-digit number** e.g.,2153 + 20, 2153 + 70 (regrouping); **Add any multiple of 100 to a 4-digit number** e.g.2153 + 100, 2153 + 300, 2153 + 900 (regrouping) **Written (+ -)** **Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate** **Multiplication** **Introduce 6s in order up to 12x6 Relate to multiples of 3** **Fluently count in 9s in order up to 12x9**	**Fractions and decimals** **Count up and down in hundredths** **Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten** **Written (+ -)** **Multiply two and three digit numbers by a one digit number using formal written layout** **Multiplication** **Recall multiples of 6 in any order missing boxes and division** **Recall multiples of 9 and order including missing numbers and division facts fluently** **Fluently count in 7s in order up to 12x7**	**Multiplication and Division (Doubling Numbers / Near Doubles): Near doubles to multiple of 10** e.g., 60 + 59; **Double simple 3-digit numbers by recall of known facts or partitioning and recombining (multiples of 10, 50, 100)** e.g. double 200, double 250, double 220, half of 140. **Multiplication and Division (Order of Operations):** **Multiplication and division of whole numbers by 10 and 100 and multiples** of e.g.,6 x 100, 10 x 100.. **Distributive law** e.g.,39 x 7= 30 x 7+ 9 x 7; **Associative law and reordering calculations to make it easier, expressing equal calculations** e.g. 2 x 6 x 5 = 10 x 6; **Multiply by 50 by multiply by 100 and halving** e.g. 23 x 50= half of 23 x 100; **Know all the table facts and the related division facts** e.g. 500 x 2 = 1000, 1000 ÷ 2 = 500, 250 x 4 = 1000, 1000 ÷ 4 = 250, 200 x 5 = 1000, 1000 ÷ 5 = 200; **Multiplication** **Recall multiples of 7 and order including missing numbers and division facts fluently** **Fluently count in 11s in order up to 12x12**	**Number and Place Value (Counting):** **Round decimals with one decimal place to the nearest whole number** **Multiplication and Division (Rounding and Adjusting): Rounding and adjusting decimals in context of money** e.g, 3 items costing 99p or £1.99 **Mental / Written (x ÷)** **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1;** **Multiply together three numbers** **Recognise and use factor pairs and commutativity in mental calculations** **Multiplication** **Recall multiples of 7 and 11 in any order.** **Fluently count in 12s** **MULTIPLICATION TABLES CHECK**	**Fractions and decimals** **Add and subtract fractions with the same denominator** **Find the effect of dividing a one or two digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths** **Count up and down in hundredths;** **compare numbers with the same number of decimal places up to two decimal places;** **round decimals with one decimal place to the nearest whole number;** **recognise and write decimal equivalents of any number of tenths or hundredths,** **recognise and write decimal equivalents to 1/4; 1/2; 3/4** **Multiplication** **Recall multiples of 12 in any order.** **END OF YEAR SECURE IN ALL 12 TIMES TABLES**

A Typical Maths Lesson at Havannah First School

Each KS1 and 2 lesson typically, but not exclusively, follows the following format:

1. Flashback 4 (Daily retrieval – questions based on last lesson, last week, two weeks ago and further back)
2. Starter Activity – Practice skills needed for main activity – introduce key vocabulary.
3. Prime and Tether - Talk activity – what do the children know/build on previous knowledge.
4. Open questioning task - to engage all learners (discussion of strategies)
5. Misconception question – a question that shows a common misconception.
6. Progress to different questions which encourages reasoning/strategies – e.g. How do you know? What's the same and what's different, missing lengths or representations, True or False etc…
7. Independent Practice – Fluency/Reasoning and Problem Solving questions in book.
8. Recap of lesson/Self marking and discussions.
9. Maths Blast - Fast recall (retrieval) of previous term's content (knowledge and skills). Maths Blast might be taught discretely at the start of the school day.

Lessons often follow the 'Ping Pong' strategy of 'I do – You do'

If individual or groups of children are not ready to move on then opportunities are built in later that day (post/pre –teach) or next lesson if necessary, to address misconceptions of the small step.

Lesson structures can vary to suit the content and the objective.

Children will largely work within the classroom setting although outdoor learning is encouraged if it supports mathematical learning.

Vocabulary is built upon and used in each lesson. Expectations of the vocabulary that is expected to be learned and used is also included as part of the Medium Term Curriculum Maps.

Marking is used to identify errors and misconceptions which can be addressed in future planning – there is little purpose in over-marking and it is not encouraged.

End of block units and End of Term Assessments are used to assess whether children have retained small steps knowledge, skills and understanding in their longer term memory and opportunities are planned to discuss or even re-visit common errors or misconceptions.

SOURCES OF SUPPORT, INFORMATION AND GUIDANCE FOR TEACHERS

https://whiterosemaths.com/

https://www.ncetm.org.uk/teaching-for-mastery/

https://nrich.maths.org/teacher-primary

https://www.iseemaths.com/

https://numbersensemaths.com/

https://ttrockstars.com/

https://www.learningblocks.tv/numberblocks/home

https://www.mathsisfun.com/

https://mathsframe.co.uk/