HILL FARM PRIMARY SCHOOL

Mathematics Curriculum



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1. Intent

At Hill Farm, we believe that every child should be excited by and talk passionately about Maths. We aim to deliver a rich and engaging mathematics curriculum, which supports the development of children's fluency, reasoning and problem solving skills, in line with the National Curriculum 2014. Our aim is to cultivate confident, independent mathematicians. Through regular practice, we enable our pupils to secure arithmetic skills, such as knowing times tables by heart. Problem solving is threaded throughout our daily lessons in order to develop our pupils as critical thinkers. We introduce new mathematical concepts using the concrete, pictorial, abstract (CPA) approach to learning where new skills are modelled with accessible apparatus, visual prompts and high quality resources. We encourage children to work collaboratively, prompting mathematical talk and developing rich vocabulary. Key values such as determination, cooperation and resilience are developed throughout every Maths lesson, enabling children to feel confident enough to challenge themselves and learn from their mistakes.

2. Implementation

The National Curriculum aims in Maths are to ensure that all pupils:

• become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

• **reason** mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

• can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

3. Curriculum Content Coverage

Early Years:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	Getting to Know You			Just Like Me!			It's Me 1 2 3!			Light and Dark			Consolidation	
Spring	Alive in 5!			Growing 6, 7, 8			Building 9 and 10			Consolidation				
Summer	To 20 and Beyond			First Then Now			Find My Pattern			On The Move				

Key Stage 1

Throughout Year 1 and Year 2, pupils will be taught about whole numbers, counting and place value, working with numbers up to 100. Pupils should begin to develop their confidence and mental fluency, using practical resources to support their understanding. They will be taught to apply numbers up to 100 across the four operations and through different measures including length, mass, capacity/volume, time and money. Pupils will develop their ability to recognise, describe, draw, compare and sort different shapes. By the end of year 2, pupils should know and be fluent with their number bonds to 20.

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 and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	

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 and Subtraction					Measurement: Money		Number: Multiplication and Division	Consolidation
Spring	Number: Multiplication and Division				Statistics		Geometry: Properties of Shape		Number: Fractions			
Summer	Measurement: Length and Height		Geometry: Position and Direction		Consolidation and problem solving		Measurement: Time		Measurement: Mass, Capacity and Temperature			Consolidation

Lower Key Stage 2

Across Year 3 and Year 4, pupils will become increasingly fluent with whole numbers up to and including 1000, applying them across all four calculations and including the concept of the place holder. When secure with this number fluency, pupils will develop efficient written and mental methods, performing calculations accurately across a range of problems including those with simple fractions and decimals. Pupils will be taught to analyse shapes and their properties, and confidently describe the relationships between them. They will learn to use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 times tables showing readiness for the National Multiplication Checks.

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

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 and Subtraction			Measurement: Length and Perimeter		Number: Multiplication and Division		
Spring	Number: Multiplication and Division			Measurement: Area	Number: Fractions				Number: Decimals			Consolidation
Summer	Number: Decimals		Measurement: Money		Measurement: Time		Statistics	Geometry: Properties of Shape		Geometry: Position and Direction		Consolidation

Upper Key Stage 2

Across Year 5 and Year 6 pupils will extending their understanding of the number system and place value to include larger integers up to 10 million in year 6. Children will be taught to make connections between multiplication and division with fractions, decimals, percentages and ratio. With this confidence in number, pupils will be developing their ability to solve a wider range of problems, using their efficient written and mental methods of calculation. In year 6, pupils are introduced to the language of algebra as a means for solving a variety of problems. In geometry, pupils will classify shapes with increasingly complex geometric properties and they will learn the vocabulary they need to describe them. By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Year 5:

	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 and Subtraction		Statistics		Number: Multiplication and Division			Measurement: Perimeter and Area	
Spring	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
Summer	Consolidation	Number: Decimals			Geometry: Properties of Shape			Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume

Year 6:

	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, Multiplication and Division				Number: Fractions					Geometry: Position and Direction
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Statistics
Summer	Geometry: Properties of Shape			Consolidation or SATs preparation		Consolidation, investigations and preparations for KS3						

Links in Theme are made explicit on the Theme overviews for each topic.

4. Skills Progression

We follow the National Curriculum skills progression (as outlined in White Rose).

https://assets.whiterosemaths.com/fixed/wrm/2019/11/National-Curriculum-Progression-Primary.pdf

5. Vocabulary Progression

Key vocabulary is to be taught within every lesson and revisited as often as necessary/possible to ensure that it is fully embedded and learnt. The vocabulary progression can be found within the Castle Phoenix Trust **Mathematics vocabulary document**, which clearly identifies age-appropriate vocabulary for each area of Mathematics.

Teachers use this document when planning, including key vocabulary on their weekly planning document, which is explicitly taught in lessons.

6. Building On/ Leading To…

Children complete Flashback tasks regularly at the start of their Maths lessons. These Flashbacks recap learning from previous lessons in the block as well as from previous blocks and Year groups.

White Rose Maths also incorporates recap lessons, securing previous learning before moving on and continuing to develop new concepts.

The 'Ready to progress' document can also be used as reference when planning lessons. This enables teachers to ensure that key small steps have been achieved before moving the learning forward.

https://assets.whiterosemaths.com/fixed/wrm/2021/07/Ready-to-progress-criteria-links-FINAL.pdf

7. School Values/ British Values

Hill Farm is an accredited Values based Education (VbE) school. Our values are threaded through all we do as we teach and inspire children and adults to adopt and live positive human values to create an exceptional environment for teaching and learning. We define a value as a principle which guides our thinking and behaviour.

In Mathematics, the children use the 3Rs to support them with their learning :

1) Reflect- think about what they already know and what they have learned today.

2) Resources- what resources could they use to help them?

3) Request- ask for help from their peers or from an adult if needed.

In all Maths lessons, we encourage the children to develop independence through the 'I, We, You' lesson structure that we use. Regular problem solving activities enable children to demonstrate determination and reflection, and in order to make links in Maths, children need to show curiosity.

	Values	British Values
L Live without harm	Patience Trust Peace Humble	Rule of law
E Equal opportunities	Respect Empathy Tolerance Responsibility	Tolerance
A Altruism	Care Love Generosity kindness	Mutual Respect
R Resourcefulness	Courage Determination Curiosity Independence	Individual liberty
N Navigate the world	Reflection Resilience Ambition Gratitude	Democracy

8. Oracy

As part of our Trust Ambitions, we are committed to improving the oracy skills of our children and creating a learning environment where pupils become confident communicators with the aim of improving their social mobility. As a school, we acknowledge that Oracy needs to be taught within all subjects and requires application within a range of contexts. We also understand that oracy can be used to elevate learning and understanding across the curriculum and can result in engaged learners who apply their knowledge in deeper ways and create a dialogue between their peers and teacher which can foster a love of the topic.

In order to equip the children to 'talk' mathematically and to be able to reason effectively, we ensure that subject specific vocabulary is taught in every lesson and that the children have the opportunity to use this vocabulary. We encourage children to talk about their Maths by providing scaffolds, such as general sentence stems:

* I agree/disagree with _____ because …

* I noticed that …

* I know this is true/false because …

* My strategy was …

* I know which operation to use because …

* I got a different answer because …

* I changed my mind because …

* It might be _____ because …

Teachers also plan and teach specific sentence stems and rules which children learn throughout their lessons.

9. Impact

Formative assessment is ongoing and is used to evaluate the pupils' progress and to adapt teaching where necessary. Within each lesson, pupils` understanding is checked through observations, questioning and discussion as well as any written outcomes produced. Misconceptions are addressed and pupils are given the opportunity to reflect and respond to these. Teachers use formative assessment to inform assessment on educater. End of unit assessments from White Rose are optional and can be used to support teachers with making judgements.

Regular arithmetic tests are completed in class to track the progress of key fluency skills.

NFER tests are completed termly, assessing arithmetic and problem solving. These are also used to support teachers' judgements when levelling the children's achievements.