Our Curriculum Statement for the Teaching and Learning of Mathematics

Intent	***Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers.*** ***Shakuntala Devi, Indian writer and mental calculator*** At Hatchlands, our curriculum, in line with the 2014 National Curriculum, aims to develop the key skills of: ● **fluency** so that all children become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately ● **problem solving** so that all children can apply their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios ● **mathematical reasoning** so that they can follow a line of enquiry and develop and present a justification, argument or proof using mathematical language so that children can… ● move fluently between different representations of mathematical ideas ● make rich connections across mathematical ideas ● develop their fluency, mathematical reasoning and competence in solving increasingly sophistical problems ● apply their mathematical knowledge to science and other subjects ● have an appreciation of number and number operations ● be efficient, fluent and accurate with their mental calculations and written procedures At Hatchlands, we believe that mathematics is a form of communication: a language in its own right. We aim for children to have a firm grasp of that language, and be able to manipulate and grapple with it to understand, challenge, and create. Maths has the ability to challenge and change the world. We want all pupils at Hatchlands Primary School to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. At Hatchlands, we foster a growth mindset in Maths, and we promote the fact that Maths is for everyone, regardless of prior knowledge and experience. We believe all children can achieve in Mathematics, and teach for secure and deep understanding of mathematical concepts through manageable small steps.

Link to Drivers	Wellbeing	Environment	Challenge	Ambassadors	Relationships	Equity
	Our intent is for learners to: ● develop a real sense of achievement for everybody: no-one is left behind – mastery approach	**Our intent is for learners to:** ● understand how maths can be used in the wider world and be confident in using Maths in this context	**Our intent is for learners to:** ● make connections between the conceptual and real life experiences ● know that everything in Maths can be proved, reasoned through or challenged ● have the courage to accept when they have got it wrong and seek to find the mistake to support future learning	**Our intent is for learners to:** ● help others when they face a challenge with respect and compassion	**Our intent is for learners to:** ● help each other and work with each other to solve problems ● make relationships between different key mathematical concepts and representations	**Our intent is for learners to:** ● understand that we all achieve mathematical outcomes in different ways but all are valid ● prior knowledge is not an indicator of mathematical ability: everyone has a 'maths brain'

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<tr><td>Implementation in EYFS</td><td colspan="3">Mastering Number
This NCTEM programme is designed to ensure that all children develop a deep, secure, and adaptable understanding of number, known as "good number sense". Through short, daily, interactive sessions (approximately 10-15 minutes each), pupils learn to:
Subitise (instantly recognise small quantities without counting).
Understand number composition (see how numbers are made of smaller parts, e.g., that 4 is made of 3 and 1).
Develop mathematical language and oracy skills through explicit teaching of precise vocabulary and discussion with partners.
Build fluency and flexibility with number relationships, moving beyond simple counting procedures to use known number facts.</td></tr>
<tr><td rowspan="2">Implementation in KS1 and KS2</td><td>Mathematics Mastery
We use the Mathematics Mastery to support us in ensuring our coverage and representations are accurate and consistent. It also supports the planning of our six part lesson structure: Do Now, New Learning, Talk Task, Develop Learning, Independent Learning, Plenary.
https://www.arkcurriculumplus.org.uk/about-us/mymastery</td><td>Do Now
Retrieval practice of a key skill that will either help them later in the lesson or build fluency in a key skill. This is where everyone experiences success with no taught input.</td><td>New Learning
Children are introduced to the Star Words. The teacher and children use a range of concrete manipulatives with misconceptions being planned for, anticipated and addressed. The children are shown/modelled the Talk Task/Let’s Explore by the adult.</td></tr>
<tr><td>Talk Task/Let’s Explore
Children are speaking in full sentences, using their words and symbols accurately. Children have access to manipulatives where/when appropriate.</td><td>Develop Learning
References are made and built upon previously learnt models, representations, skills and/or concepts. Misconceptions are anticipated and incorporated with the learning task modelled to the children.</td><td>Independent Learning
Children have access to the appropriate concrete manipulatives and all are learning about the same mathematical concept or skill with the appropriate amount of scaffolding. There is an emphasis on understanding and developing fluency with extension tasks involving deeper understanding of the same mathematical concept or skill through solving less routine problems, demonstrating using concrete manipulatives / drawing diagrams, explaining in full sentences or asking their own questions.</td></tr>
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	Plenary Any final misconceptions are addressed and successes are also shared.	**Star Words** Children are introduced to key vocabulary that is required within the lesson and are expected to use these freely within the lesson to support their articulation and explanation of mathematical concepts.	**Continuing Professional Development** We have a strong commitment to improving Maths teaching and learning at Hatchlands. Staff use the professional development materials on the Mathematics Mastery website to support their own understanding of mathematical concepts.
	Online Maths Tools Children practise their mathematical fluency on programmes such as Purple Mash and Times Tables Rock Stars.		

Impact	**Pupil voice will show:** • children will learn, understand and can use the appropriate vocabulary which supports and extends their learning • children will be able to explain their understanding through reasoning and justifying the methods they have chosen and how they found the answer. • the impact of 'mastery' and the emphasis on accurate use of mathematical language will be evident during class/pupil discussions • children will have developed automaticity in the required skills and number facts they need by the end of each year. • children will be able to recall prior learning and apply it in a range of unknown contexts, for example, when problem solving or when finding more than one possible answer to a question • children have confidence to discuss their own work and identify their strengths and areas for development • children will have the flexibility and fluidity to move between different contexts and representations of mathematics. • children show confidence in Believing that they will achieve.	**Children's work in books, displays and assessment will show:** • that children will know more and remember more through evidence in their maths workbooks and progress tests. • that children will be able to apply their understanding across the curriculum and in a range of contexts. • careful and detailed termly tracking of children's progress and attainment will show good progress and secure understanding. • children are applying the number facts they have learnt e.g. number bonds, doubles, times tables etc. • children understand and use a range of methods to find all the possible answers to a question or problem. • children can explain their understanding through reasoning and justifying the methods they have chosen and how they found the answer.

	• children will be resilient, and they will have the skills to correct and learn from their mistakes.	

If you were to walk into a lesson at Hatchlands, you would see:

- lessons following a six part lesson structure
- star words being shared with all learners
- engaged children working with concrete resources
- discussion and collaboration as a whole class and with learning partners
- children making connections with prior knowledge
- all children using mathematical vocabulary to explain their learning
- children challenged through problem solving and reasoning activities
- teachers supporting and challenging learners
- resilient children

British Values and Spiritual, Moral, Social and Cultural Learning in Maths: British Values:

Within Maths, children are encouraged to take into account the views of others in collaborative activities and problem solving.

In Statistics, children are collecting data and aspects of democracy through voting. Children work within boundaries to make safe choices during practical activities and behave appropriately, allowing all children the opportunity to work effectively. In Maths, children are taught to take turns, share equipment and review each other's ideas respectfully. Maths involves working collaboratively to solve problems, offer solutions and help others.

Social: Within Maths, children are provided with opportunities for group work, paired talk and peer assessments. Each of these elements promotes children's social development.

Moral: Practical work in Maths requires children to cooperate with others and help others where necessary to achieve as a group or pair. These opportunities require children to be selfless and explain Mathematical concepts in detail to other children, putting their own determinations to one side.

Cultural: During Maths, children are able to share how they carry out calculations and listen to the opinions of others. Sharing, listening, understanding and taking peer advice, are examples of cultural skills developed within Maths.