**“Everything around you is numbers. Everything around you is mathematics”**

Intent

At Laceby Acres Primary Academy we recognise that Mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

We aim to provide a high quality mathematics education with a mastery approach so that all children:

* become fluent in the fundamentals of mathematics.
* reason mathematically.
* can solve problems by applying their mathematics. (National Curriculum 2014)
* We intend on delivering a curriculum which:
* Allows children to be a part of creative and engaging lessons that will give them a range of opportunities to explore mathematics following a mastery curriculum White Rose Hub approach.
* Gives each pupil a chance to believe in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges. This is closely linked with our Chris Quigley secrets to success.
* Recognises that mathematics underpins much of our daily lives and therefore is of paramount importance in order that children aspire and become successful in the next stages of their learning.
* Engages all children and entitles them to the same quality of teaching and learning opportunities, striving to achieve their potential.
* Makes rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
* Provides equal opportunities for children to apply their mathematical knowledge to other subjects (cross-curricular links).
* Enable children to develop a passion for mathematics and celebrate maths in all areas of life. From home life to outdoor learning involving mathematics and allow these opportunities to be discussed and celebrated within the curriculum.
* Provide opportunities for children to apply disciplinary literacy within the subject discipline of Maths. Pupils will be taught how to read, write and talk like a mathematician.
* We recognise that literacy skills are both generic and subject specific and value the contribution maths can make to these skills. Pupils will have opportunities to read widely to gain knowledge and by the end of their primary education, will leave with the skills to read fluently and with confidence in maths, supporting future success at the next stage of their education, and beyond.

Implementation

At Laceby Acres Primary Academy our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.

* We follow the national curriculum and use White Rose Schemes of Work as a guide to support teachers with their planning and assessment. We also further supplement this with the Gareth Metcalf ‘I see maths’ resources.
* We follow the same structure as a Singapore maths lesson. Each session begins with the use the counting stick to improve our fluency and recall of number facts. The lesson then has a three part structure, beginning with an anchor task which encourages the children to talk and reason following the elements of disciplinary literacy and how to talk as a mathematician. This is followed by an ‘investigation’ an element of the maths lesson in which the children work collaboratively and the teacher’ use this as an important AFL opportunity. The lesson then leads to independent questions. The lesson finishes with the writing of a mathematical golden sentence in which the children are taught elements of disciplinary literacy and how to write as a mathematician.
* Clearly defined end points showing clear structure and sequencing, each half term, provide an opportunity to evaluate children’s knowledge and understanding against the expectations. Teachers are clear with what children need to know, and do, to be able to reach them.
* The calculation policy is used within school to ensure a consistent approach to teaching the four operations over time.
* At the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the topic progresses. This is shared on our mathematics working wall.
* The learning environment encourages independence in mathematics through the use of open resources the children can access to support their learning as well as current working walls which reflect learning in the present.
* Children are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels. We also follow a CPA approach to our teaching in all year groups.
* Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a greater depth activity. This will ensure that children are using more than just one skill to be able to answer the mathematical problems.
* Reasoning and problem solving are integral to the activities that children are given to develop their mathematical thinking.
* Recall and retention strategies are used in different ways to ensure key knowledge is committed to the children’s long term memory. We use various methods such as Flashback 4’s, additional fluency sessions and the use of ‘golden sentences’.
* We have adapted our mathematics teaching in to minimise the impact of the pandemic by and close some of the gaps in mathematical learning that have developed as a result of the pandemic through additional fluency sessions and the introduction of quick maths.
* Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.
* Feedback is given on children’s learning in line with our feedback policy. Formative assessment within every lesson helps teachers to identify the children who need more support to achieve the intended outcome and who are ready for greater stretch and challenge through planned questioning or additional activities.
* In order to support teacher judgments, children may be assessed using the White Rose end of Unit tests. Gap analysis of these tests is undertaken and fed into future planning.
* The maths leader has a clear role and overall responsibility for the progress of all children in maths throughout school. Working with SLT, key data is analysed, and regular feedback is provided, to inform on progress and future actions. Termly moderation, work scrutiny, learning walks and pupil voice are also carried out by the maths lead.
* We have a team of Year 4 and 5 Maths Ambassadors who promote the importance of maths in school and work alongside the maths lead to ensure the teaching of mathematics is of the highest quality. They also accompany the maths lead on learning walks.
* During our weekly celebration assemblies we celebrate the winners of TT rockstars for that week and display this our TT rockstars headliners display. A TT rockstars trophy is given out weekly to the highest scoring member of the school.

Impact:

Books show:

* progress in skills development within each year group,
* progress in knowledge and understanding of the mathematics concepts,
* pride and mastering objectives showing greater depth knowledge.
* A consistent yet progressive approach to showcasing our mathematical understanding. This includes the lay out of sheets, the writing of learning into books, the use of threshold concepts and milestones, an investigation and independent part of our lessons and a chance to write a golden sentence.

Lessons show:

* Challenge, a range of suitable resources, clear objectives and a passion for learning. Concrete, pictorial and abstract resources aids teaching across all year groups.
* Mathematical concepts or skills being mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.
* Teachers intervene swiftly to help pupils showing misconceptions, while deepening the learning of others.
* Pupil voice highlight a positive attitude to learning in this subject area and KS2 maths ambassadors lead aspects of mathematical development across the whole school.
* Highly effective CPD for staff shows impact in delivering the maths curriculum effectively using a wide range of teaching resources.
* CPA approach
* Reasoning, fluency and the children and teaching staff talking, reading and writing as mathematicians.
* The children independently accessing the open maths resources in class.