FENISCOWLES PRIMARY SCHOOL

STRIVING FOR EXCELLENCE

MATHS @ FENISCOWLES

Maths @ Feniscowles

Striving for Excellence

Our Intent

Feniscowles Primary School has created a curriculum intent statement. This intent has been written to provide an overarching context for our school curriculum to allow 'A Feniscowles Child' to 'Live life in its fullest'. ***This document can be found on our website and should be read in conjunction with our subject specific intent statements.***

Our curriculum intent sets out our strong belief that 'A Feniscowles Child' will be highly literate, numerate and have the oracy skills to communicate with confidence. We recognise the important part that Mathematics has to play in ensuring that each child develops their fluency, reasoning and problem-solving skills; in order to embrace the opportunities that life brings, whilst navigating the uncertainties of an unknown future.

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Our Intent

The intent of our mathematics curriculum is to design a curriculum, which is accessible to all and will maximise the development of every child's ability and academic achievement. We deliver lessons that are creative and engaging. We want our children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. We intend for our pupils to be able to apply their mathematical knowledge to science and other subjects. We want children to realise that mathematics has been developed over centuries, providing the solution to some of history's most intriguing problems. We want them to know that it is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. As our pupils progress, we intend for our pupils to be able to understand the world, have the ability to reason mathematically, have an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

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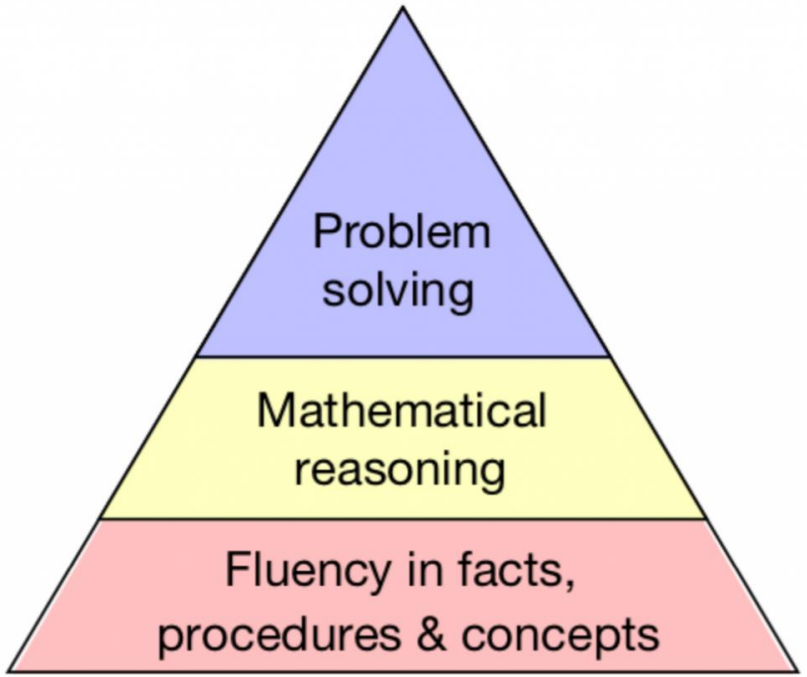
Mastery Approach

What is teaching for mastery?

Mastering maths means pupils of all ages acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that has been taught to enable pupils to move on to more advanced material.



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Mastery Approach

In September 2019, Feniscowles Primary School began transitioning towards a mastery approach to the teaching and learning of mathematics. We understood that this would be a gradual process and take several years to embed. The rationale behind changing our approach to teaching mathematics lay within the NCETM Maths Hub Programme as well as the 2014 National Curriculum, which states:

- The expectation is that most pupils will move through the programmes of study at broadly the same pace.
- Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.
- Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

FLUENCY – REASONING – PROBLEM SOLVING

These three key aims of the National Curriculum should be addressed in each sequence of learning.

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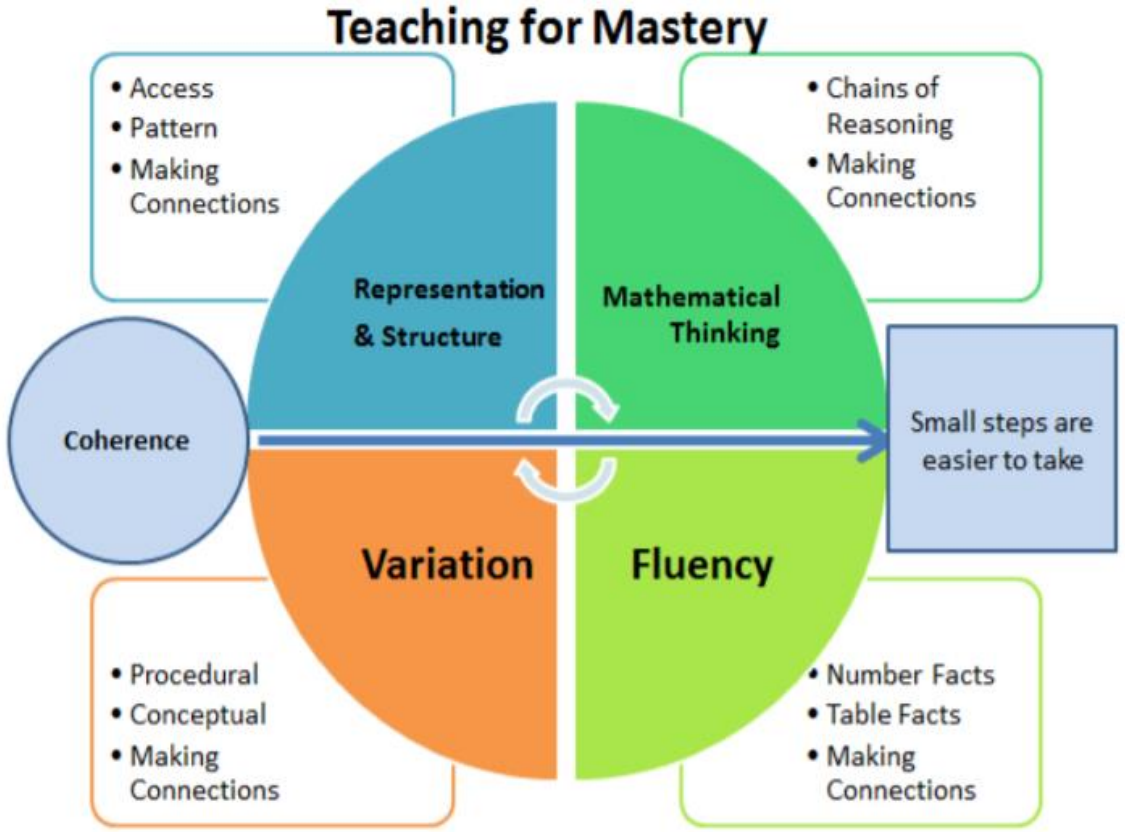
5 Big Ideas of Mastery

Our teaching for mastery is underpinned by the NCETM's 5 Big Ideas.

- Opportunities for Mathematical Thinking allow children to make chains of reasoning connected with the other areas of their mathematics.
- A focus on Representation and Structure ensures concepts are explored using concrete, pictorial and abstract representations, the children actively look for patterns and generalise whilst problem solving.
- Coherence is achieved through the planning of small, connected steps to link every question and lesson within a topic.
- Teachers use both procedural and conceptual Variation within their lessons and there remains an emphasis on Fluency with a relentless focus on number and times table facts.



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Lesson Structure

- Lessons are sharply focused; digression is generally avoided. There is a model of I do, we do, you do approach.
- Key new learning points are identified explicitly.
- There is regular interchange between concrete/contextual ideas, pictorial representations and their abstract/symbolic representation.
- Mathematical generalisations are emphasised as they emerge from underlying mathematics, which is thoroughly explored within contexts that make sense to pupils.
- Making comparisons is an important feature of developing deep knowledge. The questions “What’s the same, what’s different?” are often used to draw attention to essential features of concepts.

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Lesson Structure

- Repetition of key ideas (for example, in the form of whole class recitation, repeating to talk partners etc) is used frequently. This helps to verbalise and embed mathematical ideas and provides pupils with a shared language to think about and communicate mathematics.

- Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and completion of short activities.

- Formative assessment is carried out throughout the lesson; the teacher regularly checks pupils' knowledge and understanding and adjusts the lesson accordingly.

- Gaps in pupils' knowledge and understanding are identified early by in-class questioning. They are addressed rapidly through individual or small group intervention, either on the same day or the next day, which may be separate from the main mathematics lesson, to ensure all pupils are ready for the next lesson.

- Teachers discuss their mathematics teaching regularly with colleagues, sharing teaching ideas and classroom experiences in detail and working together to improve their practice.

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Our Wider Learning Experience

Links with Local High Schools

We have strong links with Darwen Vale who have taught lessons to our children in Year 5 and 6.

Also, they have delivered focused lessons to our more able learners.

St Bede's High School have held Maths competitions which groups of our children have attended and won!

Raising Aspirations

Children are made aware of how Mathematics is needed for a range of careers.

Maths Week / Days

Each year, we have a Maths Week or a Maths Day to further engage the children with their mathematical understanding and to develop a love for mathematics.

Maths Challenges

My Maths Homework challenge is set each week.

Reception use Power Jam as a tool to help promote Maths in EYFS.

Timestabel Rockstars challenges are set.

Termly Maths Challenges are available for each year group to complete.

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Partnership with Parents

Drop Ins

Every year, we invite parents and carers into school to see Maths in Action.

Workshops for Parents

Throughout the year, (pre-covid) we provide workshops for parents in EYFS, Key Stage 1 and 2 which are linked to the school's main priorities.

Assessment Meetings

Parents are informed of any mathematical national guidance at Key Stage 1 SATS Meeting, Key Stage 2 SATS Meeting and the Multiplication Tables Check Meeting.

Transition Meetings

Parents are informed about how they can support their child's learning at our transition meetings. Reception – Welcome to Feniscowles – Year 2 to Year 3 Transition Meeting – Meet the Teacher meetings.

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Connected Experts

Work Groups

At Feniscowles, we pride ourselves on 'Striving for Excellence' therefore we work closely with our Maths Hub to develop a model of professional and school development.

A Maths Hub Work Group is

- comprised of a group of schools who work on something together, normally over the large part of a school year, typically with one or two teachers from each school acting as lead participants
- led by a teacher or former teacher, expert both in the area of maths education in question and in leading teacher professional development
- normally part of a national collaborative project, which supports the Work Group Leads and seeks to ensure lessons are learned from around the country.

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ABACUS NW

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Schools in every Maths Hub

- work towards outcomes linked to teachers' professional learning, their practice development, the learning of the pupils they teach, and new approaches and policies in maths teaching across their school or department
- maintain a focus on the classroom, often planning, observing and refining lessons together
- evaluate the outcomes of the Work Group's activity, with collated findings being fed into the national picture and used to inform future work

Academic Year 2020 -2021

- Work Group – Specialist knowledge for teaching maths – Teaching Assistants
- Work Group EYFS – Building Firm Foundations
- Work Group EYFS - Specialist knowledge for teaching maths

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Academic Year 2021 – 2022

- Work Groups – Specialist knowledge for teaching maths
- Reception Jigsaw Trial – EEF (September 2021 notified we are a control school)
- Specialist Knowledge for Teaching Mathematics: Primary Teaching Assistants
- Work Group – Mastering Number Programme – Reception, Year 1 and Year 2.

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Connected Experts

Teacher Research Groups

Teacher Research Groups, (TRGs) meet regularly to plan, observe and discuss teaching for mastery. In between meetings, teachers explore mastery approaches in their own classrooms and across their school. TRG's run for a year initially, with many continuing beyond the first year as mastery is embedded in participants' schools.
Support is provided from a local classroom-based Mastery Specialist who leads the group. This model of professional development involves hands-on learning and peer-to-peer support. It is evidence-based and designed to support substantial long-term change.

At Feniscowles, we have been part of the 'Teaching for Mastery' Teacher Research Group, 'Embedding Mastery' TRG and are currently involved in the 'Sustaining Mastery' Teacher Research group.

The Maths Team attend these sessions and are supported by Vicky Carr, a Mastery Specialist.

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Planning

To ensure strong learning outcomes to meet the needs of all of our learners, our class teachers plan their Maths lessons using the National Curriculum. This is mainly delivered through the 'White Rose Maths' resources. However, by responding to formative and summative assessment, staff also use high-quality resources that maintain and further develop children's curiosity and a love for mathematical thinking and learning.

nrich
nrich.maths.org

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NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

White Rose

THIRD SPACE LEARNING

MyMaths

INSPIRE MATHS

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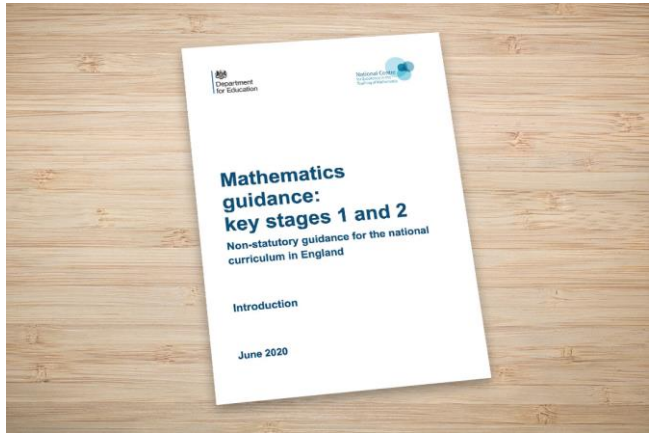
Progression

The Maths curriculum at Fensicowles is one that is progressive and builds on children's previous learning at every stage.
This has been adapted for the academic year 2020/2021 (using guidance from White Rose Maths) to address the gaps in children's learning caused by the Covid-19 partial school closures. This has been achieved by internal collaboration between teaching staff and the consultation of specialist bodies and advisors.

Ready to Progress Guidance



This publication aims to:
- bring greater coherence to the national curriculum by exposing core concepts in the national curriculum and demonstrating progression from year 1 to year 6
- summarise the most important knowledge and understanding within each year group and important connections between these mathematical topics

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CURRICULUM PRIORITISATION IN PRIMARY MATHS

Alongside the White Rose Maths sequence of learning, we are also using the Curriculum Prioritisation documents.

All the files have a common structure and include:

•comprehensive links to the relevant sections of the DfE guidance and the NCETM Primary Mastery Professional Development materials, so staff can see what's covered. The teaching guidance in both documents will help with teachers' understanding how to best use the slides to shape their lessons

•links to prior learning 'ready-to-progress' criteria – staff will check that pupils are secure with these before starting the unit. It is important to spend time addressing any gaps before moving on

•a full list of pupil outcomes

•relevant classroom slides for each pupil outcome, with links to teacher guidance.

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Early Maths

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

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Early Maths

At Feniscowles, we use Power Maths Reception. This has been developed in conjunction with White Rose Maths, Power Maths Reception is written by a team of Mastery Specialists and Early Years advisors.

- Combines short, ten-minute bursts of maths teaching each day with plenty of practice through both guided activities and independent play.

- Supports staff in delivering the teaching for mastery in Reception and covers the new Early Learning Goals and non-statutory Development Matters guidance.

- Helps ensure a smooth transition to KS1 and a consistent approach across your whole school from Reception to Year 6.

- An exciting growth mindset and problem-solving approach develops mathematical curiosity and resilience.

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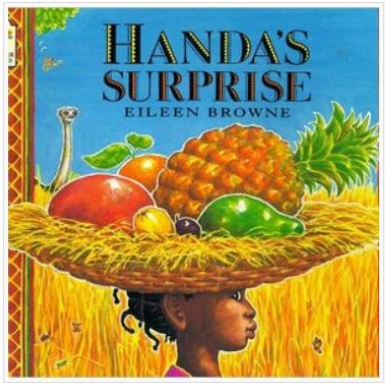
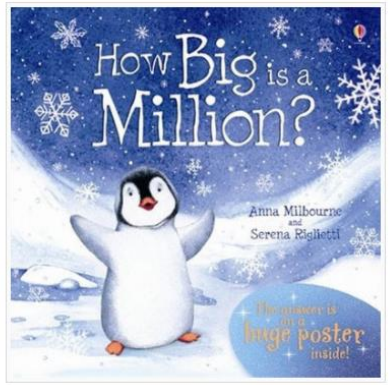
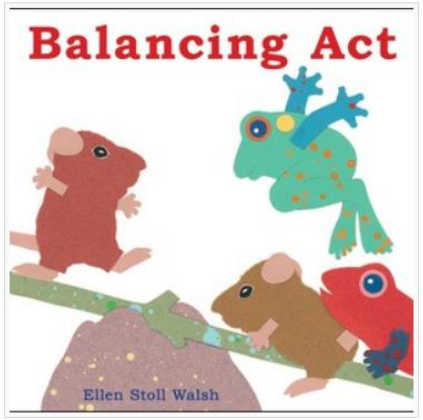
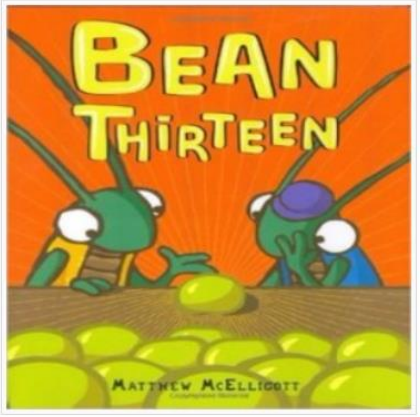
Connected Texts

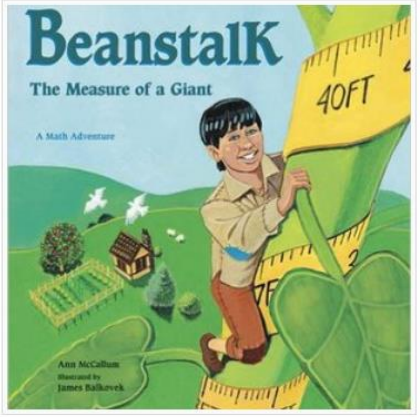
At Feniscowles we believe that storybooks can make mathematics more engaging. Quite often, there is some sort of a problem or crisis in the story and characters use their mathematical knowledge and skills to solve it. As children become involved in the narrative and characters, they emotionally invest in understanding the maths.
Stories also allow children to relate mathematics to their own lives through contextualisation.
Another powerful aspect is the visualisation of abstract mathematical ideas. Through illustrations, abstract concepts such as prime numbers or division of fractions are represented visually.











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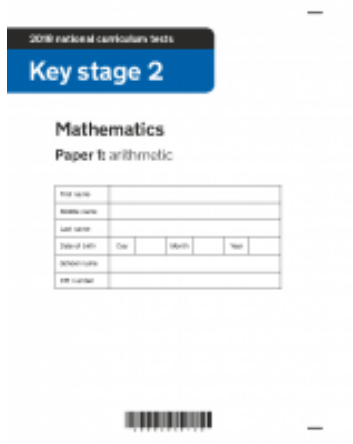
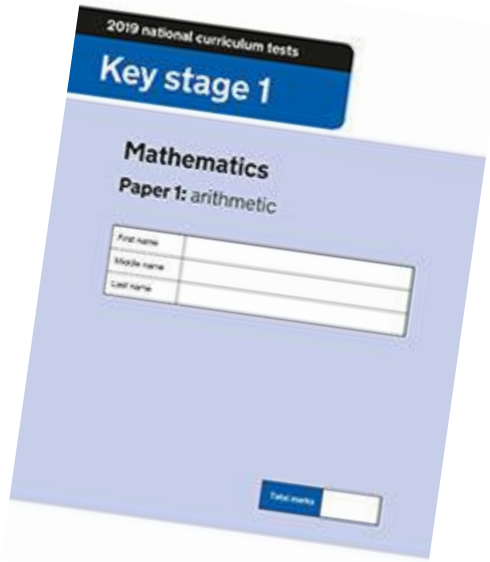
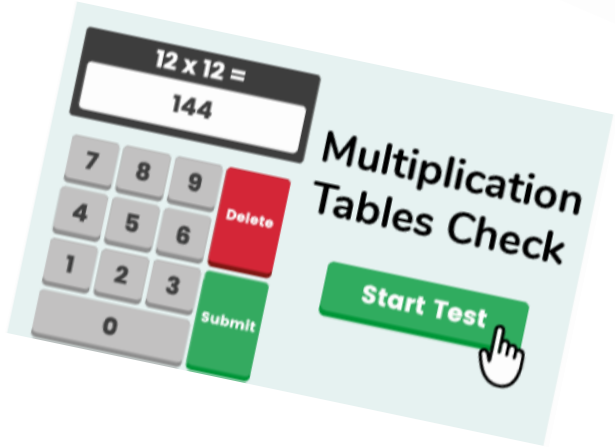
Assessment

Our curriculum design prepares children for the Summative testing completed nationally:

- Reception baseline check.
- Early Years Foundation Profile.
- Key Stage 1 SATs.
- Multiplication table check.
- Key Stage 2 SATs.







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Assessment

Ongoing formative assessment monitors both the knowledge and skills that children are developing in their Maths lessons. This daily assessment feeds into our 'Maths Meetings' 'Brain Gym Sessions' and 'Fix-It Time' allowing for immediate intervention to take place.

After each unit, teachers will make formative judgements on the achievement of their pupils.

Each Term, a summative judgement of children's achievement is made and tracked on Arbor.

Arbor

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National Data

Foundation Stage

	2019
% at a 'Good Level	77%

	2019
Personal, Social Emotional	92%
Physical Development	92%
Communication and Language	88%
Literacy	77%
Mathematics	83%
Understanding of the World	95%
Art and Design	100%

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National Data

Key Stage 1

Mathematics	School Results 2019	National Results 2019
Expected Standard	80%	76%
Greater Depth	14%	22%

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National Data

Key Stage 2

Mathematics	School Results 2019	National Results 2019
Expected Standard	86%	79%
Greater Depth	29%	27%

Mathematics	School Results 2019	National Results 2019
Average Scaled Score	105	105

Mathematics Progress Score -0.03 (-1.4 to 1.3)

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Special Education Needs

At Feniscowles we believe that all children, including those identified as having a special educational need or a disability (SEND) have a common entitlement to a broad and balanced academic and social curriculum, which is accessible to them, and to be fully included in all aspects of school life.

We ensure that our Maths curriculum is inclusive through:

- Effective differentiation in class teachers' planning through a mastery approach which does not place a ceiling on the learning expectations of children
- Practical resources and hands-on activities (Each classroom has Marvellous Maths Boxes which includes a range of manipulatives)
- Additional scaffolding to support children to access learning where necessary
- Effective deployment of additional adults when necessary
- Supportive Maths Working Walls in each classroom

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Monitoring and Evaluation

The Maths leads monitors teaching across school.

This takes the form of:

- Lesson observations
- Drop-ins/learning walks
- Work scrutinies
- Pupil and staff voice
- Monitoring visits from NCETM Mastery Specialist

Throughout the monitoring and evaluation process that Maths Team reflect on the quality of the teaching and learning of Mathematics and through an open dialogue with all staff discuss the strengths and areas for improvement.

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Governance

Our link governor for Mathematics is Mr Snelling

The Maths lead is in regular contact with the school governor to ensure that there is a strong partnership.

The monitoring and evaluation process informs the curriculum development plan which is written annually and is used to update the school's governors on the priorities for the advancement of maths for the next academic year.

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Continuous Professional Development

Staff receive regular training opportunities within the school year.

This may be school based CPD, provided by the Maths leads or external providers.

Through our work with Teacher Research Groups and Work Groups we enable all staff to encounter the current, up-to-date research and thinking in maths, ensuring our curriculum is constantly being enhanced.

Staff are encouraged to be research current updates from the NCETM website.

Think and Learn sessions have been implemented across school; staff are encouraged to observe lessons and are encouraged to create a positive professional dialogue discussing what went well and areas to be developed.

Academic Year 2020-2021

The Reception Jigsaw will be delivered as part of an EEF funded research trial into effective Early Years Mathematics CPD. The trial will run for one academic year. It will be independently evaluated by the National Foundation for Education Research (NFER) and the results used to inform future guidance for school leaders. All schools taking part in the trial will become certified EEF Project Partner Schools.

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Continuous Professional Development

Academic Year 2021 – 2022

Ongoing opportunities for internal and external CPD and to see mastery in action.

Maths Leads attended the Teacher Research Group (TRG) Sustaining Mastery

Work Groups – Specialist knowledge for teaching maths

Reception Jigsaw Trial – EEF (November 2021 notified we are a control school)

Specialist Knowledge for Teaching Mathematics: Primary Teaching Assistants

Work Group – Mastering Number Programme – Reception, Year 1 and Year 2.

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MASTERING NUMBER PROGRAMME
Supporting pupils in Reception, Year 1 and Year 2 to develop good number sense

This project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

More information can be found here - https://www.ncetm.org.uk/maths-hubs-projects/mastering-number/