



MATHEMATICS

Skills Progression Grids for Parkland Infant and Junior

INTENT

“The only way to learn maths is to do maths.” - Paul Halmos

At The Parkland Federation, we aspire for every child to become confident, passionate and able mathematicians. Our aims are to instill a love of learning maths and a thirst for mathematical discovery that stays with our pupils from Reception through to Year 6 and beyond. We believe that mathematical knowledge is at the heart of many subjects, including science and computing, and can equip pupils with vital skills essential for future life.

These aims form the basis of our daily mathematics lessons. We, at The Parkland Federation, provide all pupils with high-quality, engaging and absorbing lessons, that give children the opportunity to become fluent mathematicians and efficient problem-solvers who confidently reason about maths. By adopting the ‘Mastery Approach’, we believe that every child can achieve in maths.



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IMPLEMENTATION - What is Maths Mastery?

The Parkland Federation have adopted the 'Mastery Approach' to teaching mathematics. This mathematical approach has been inspired by practice from teachers in Shanghai and has been promoted and developed by the NCETM (National Centre for Excellence in the Teaching of Mathematics). Fundamental to this concept, is the belief that all children have the ability to achieve the same learning objective. Pupils are taught concepts through scaffolded, sequenced small steps designed to encourage breadth and depth of knowledge in a way previous approaches did not. They explore these concepts using concrete representations such as counters, and a variety of pictorial representations. Finally they move on to the more abstract symbols, such as the equals sign. Teachers are supported by Power Maths and White Rose Maths to aid planning and resourcing.



Every child matters

Differentiation in lessons is achieved through careful and deliberate scaffolding. This could take the form of using particular concrete or pictorial resources, additional adult guidance, the use of peer support or mentoring. In addition to this, through thoughtful, targeted questioning, teachers regularly assess the understanding of their children during lessons providing live feedback and encouraging children to develop their learning by asking them to explain, reason and justify their answers.

Through adopting the maths mastery approach, we believe that every child regardless of gender, ability or background has the opportunity to become a confident and able mathematician, who develops an enjoyment of maths



EYFS

The foundation of EYFS is play-based, child-led learning. Thus, Maths in Reception follows the same format. The children are taught a number a week and are given opportunities to explore that number through a variety of hands-on activities. In other maths lessons throughout the week, children learn about shape, space and measure. In EYFS, we aim to introduce children to the wonders of mathematics and aim to provide them with a solid foundation to help them on their maths education journey.



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Structure of a lesson

Key Stage 1 and 2

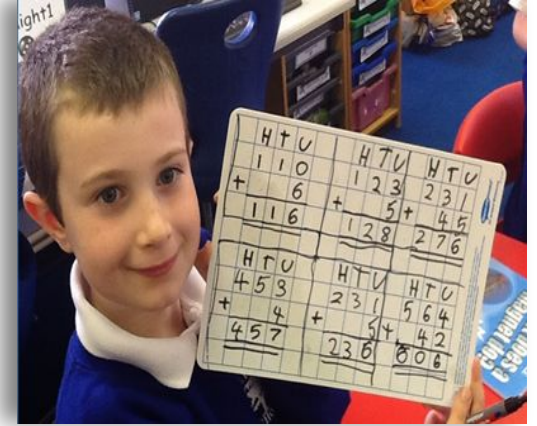
The Parkland Federation has adopted a consistent lesson structure, from Key Stage 1 (Years 1-2) to Key Stage 2 (Years 3-6). The structure of a typical mathematics lesson is detailed below.

- **Fluency Practice**

Each lesson starts with a five minute activity to develop the children's' mathematical fluency. The pupils work through four arithmetic-style questions on a quadrant and spend time discussing the efficient methods they used to answer them. In Year one, the start of the year mainly focuses on practical activities and builds upon the necessary key skills needed to be a successful mathematician

- **Discover**

The pupils are shown an 'anchor task' or image to introduce them to the lesson. The children are given a short time to discuss what they can see and what they feel they may be learning about.

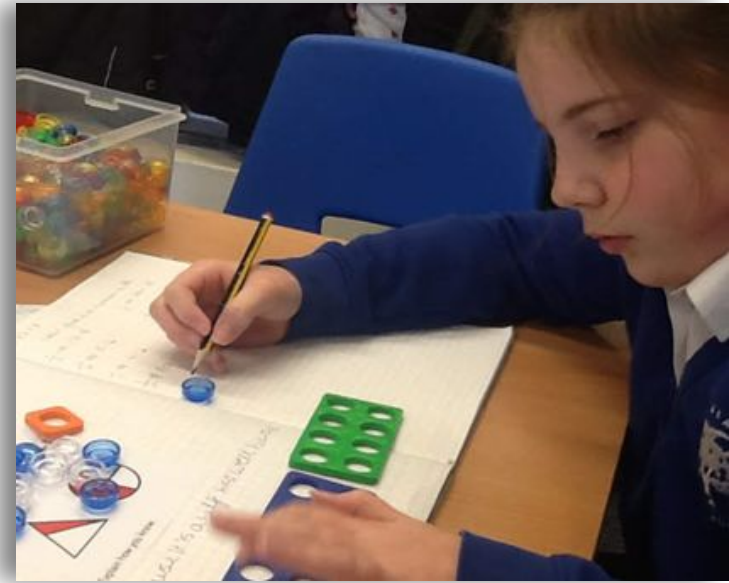


- **We are learning to (WALT)**

The WALT is shared with the class. This may be given by the teacher or could be offered by one of the children. At this point, the key vocabulary and the STEM sentence are also shared. A STEM sentence is a mathematically true, concise statement with gaps for the children to fill.

- **Active Learning - Year 1 only**

During this part of the lesson, the children explore the key concept through active learning. Every opportunity is taken to ensure learning is interactive and kinaesthetic, through the use of an effective concrete-pictorial-abstract approach. Evidence of learning is captured daily and is done so in a variety of different ways: *photos and comments; post-it notes reflecting student voice; appropriate worksheets from Power Maths or teacher-generated; written work from the children.*



- **Share**

This is the main teaching input. The teacher will model the learning. After, the children are given the opportunity to go back and answer the anchor task from the 'discover' part of the lesson.

- **Think together**

Pupils are given opportunities to actively practise what has been taught through a 'ping-pong' approach. The 'ping-pong' approach is based on repetition using the stem sentences and follows a *I do, we do, you do.* teaching strategy. Teachers address any misconceptions at this point and encourage the children to identify mathematical generalizations

- **Activity**

The pupils work through carefully planned activities, either, collaboratively with peers or independently.

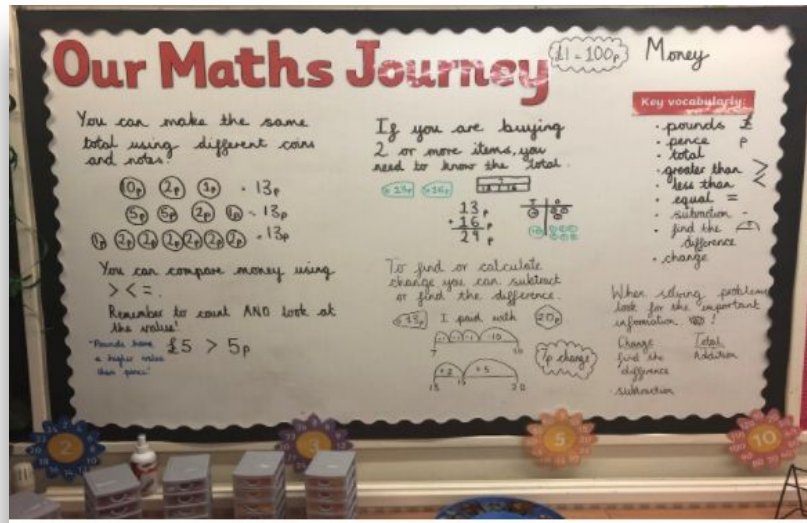
- **Stretch and Fix (Stretch Year 1)**

Feedback is given to the children immediately after the lesson and is acted upon during the 'Stretch and Fix' time. During this time the pupils are given the opportunity to consolidate their learning, deepen their understanding or clarify misunderstandings with the support of an adult lead group.



Working Walls

Across the school, Working Walls are used to support our children's understanding and consolidation of the concepts they are taught. A new 'Wall' is started for each unit of work and is added to as each new concept – or learning point - is covered. The concepts are numbered, so that the children can clearly see the 'small steps' they have taken in the journey of that particular unit. Relevant models and images are attached to the wall or drawn by teachers, so that the children have these resources to refer to during lessons. In addition to this, worked examples are a feature of most walls, along with a bank of key vocabulary, to support our children with their explanations and reasoning.



Assessment

Across the Early Years Foundation Stage, we use Otrack - our online assessment tracker - and Tapestry to record our observations of children's learning and to help us to assess their development over time. From September 2020, our EYFS children will be assessed using the new early learning goals under the *early adopter reforms*.

Assessment in Years 1-6

From September 2020, each unit will begin with the unit assessment from the previous year to identify gaps, inform planning and to accelerate learning. At the end of each unit, the pupils will take the current year end of unit assessment to help inform teacher judgements.

When a sequence of lessons has been completed formative judgements are then recorded on O-Track to track the progress of our children. From this information, summative judgements in Maths can be made every term.



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Mathematics outside the classroom

To develop mathematical skills outside of the classroom, Parkland pupils have access to MyMaths and Times table Rockstars. They are encouraged and supported to complete activities every week. We also have a ``Battle of the Bands` using the Times Table Rockstars programm

Extra curricular activities include fun mathematical events such as NSPCC's Numbers Day and the Summer Enterprise Challenge.



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Mathematics 2020-2021
Infant Subject Leader: Miss Alexandra Jewell
Junior Subject Leader: Mrs Alison Das
Subject Skills Reviewed: September 2020