

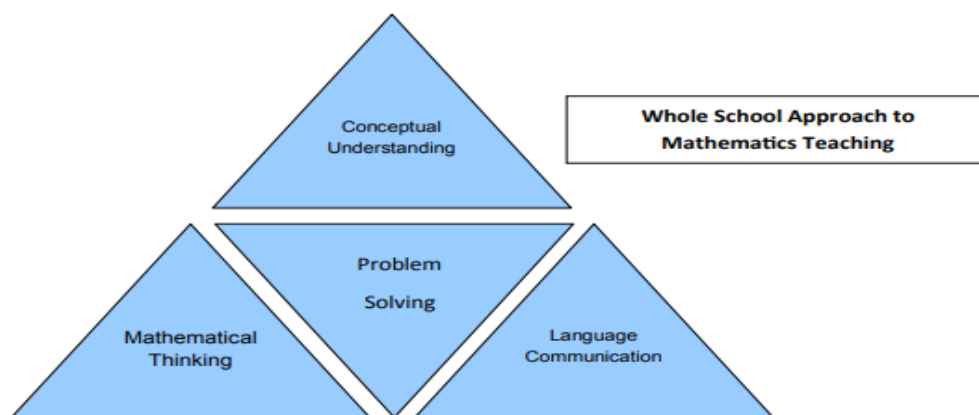
Peel Hall Progression in Mathematics

The study of mathematics is essential to everyday life, critical to science, technology and engineering and necessary for understanding everyday finances.

Intent:

At Peel Hall Primary School, the mathematics programme provides a consistent approach to the learning and teaching of mathematics across the whole school and ensures there is a balance of learning and teaching time in lessons for number, reasoning and problem solving in all year groups.

We want our pupils to make connections across mathematical ideas to develop fluency and reasoning and to be able to solve increasingly sophisticated problems, not only in maths lessons, but also in science and technology lessons and across the curriculum. We aim to embed a deep understanding of maths by employing a concrete, pictorial, abstract approach – using objects and pictures before numbers and symbols so that pupils understand what they are doing rather than just learning to repeat routines without grasping what is happening. We emphasise: **Language** – communicating ideas, proof, clarity and development of mathematical concepts; **Thinking** – questioning and task design to promote mathematical thinking; **Understanding** – using a concrete, pictorial and abstract approach to deepen conceptual understanding, and making connections to previous learning, to other subjects and to the ‘real world’ and **Problem Solving** – to be mathematical is to solve mathematical problems. Problem solving is both why and how we learn mathematics.



We expect:

- all pupils to become fluent in the fundamentals of mathematics developing a thorough knowledge and understanding of numbers and the number system;
- all pupils to reason mathematically using mathematical language;
- all pupils to solve problems by applying their mathematics to a variety of routine and non-routine problems;
- children to achieve and make good progress in mathematics.

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Implementation:

At Peel Hall, Children study mathematics daily covering a broad and balanced mathematical curriculum including elements of number, calculation, geometry, measures and statistics.

EYFS

In Early Years, Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure. We loosely use Focus Education – I can statements for maths in EYFN/R (non-negotiables with additional mastery planning for pupils who are secure and ready for new mathematical challenges).

Pupils are taught to:

Number

- count reliably with numbers from 1 to 20
- place them in order and say which number is one more or one less than a given number
- add and subtract two single-digit numbers and count on or back to find the answer using quantities and objects
- solve problems, including doubling, halving and sharing

Shape, space and measure

- use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems
- recognise, create and describe patterns
- explore characteristics of everyday objects and shapes
- use mathematical language to describe them.

Key Stage 1 & 2

Principally staff use the [White Rose Maths Hub Learning Overviews](#) (introduced 2017/18) for the planning of mathematics. However, a large proportion of time is spent reinforcing number to build fluency. **This is deliberate** because we believe children who have an excellent grasp of number make better mathematicians. Spending longer on mastering key topics we believe builds confidence and helps secure understanding. Staff are aware and address the need to help our children make important links within their mathematical learning/journey. This will mean that less time will need to be spent on other topics where knowledge of the four operations is applied e.g. perimeter, area, angles etc.

During weeks that cover 'Geometry: Properties of Shape' three days will focus on the shape objectives and two days will focus on 'number' objectives to ensure linkage and consolidation of new learning can be secured.

The maths programme at Peel Hall has been shaped to give sufficient time for teachers to explore concepts in depth, rather than covering it superficially and then coming back to it several times. **This does not mean that we do not revisit previous topics. All maths lessons contain a mental/oral starter that revisits and reinforces previous topics and/or provides new learning required for future lessons.**

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White Rose have broken down each block of learning into small manageable steps that help children understand the taught concepts better. They call these '**Small Steps**'. Each 'Small Step' is taught separately. Staff decide how long to spend on each step, dependent on their children. Importantly for us at Peel Hall the Maths Hub have provided more examples of what Fluency, Reasoning and Problem Solving looks like for each 'Small step' which we will use to ensure there is progress from year to year and across key stages.

Three key features of our maths teaching include:

- High expectations for every child
- More time on fewer topics taught each term
- Problem-solving at the heart of our maths programme.

Summary of the organisation of maths at Peel Hall:

- Maths is led and organised by the maths coordinator.
- Senior Leadership Team (SLT) will evaluate the teaching of the subject by the monitoring of teaching, books, data and pupil voice. Peer monitoring of books are undertaken to ensure school policies and practices are consistent across the whole school.
- Clear achievement targets will be set at the start of each academic year for all year groups' in maths and evaluating progress through the use of appropriate assessments (discussed in Pupil Progress Meetings – led by Phase Leaders) and regular yearly analysis of this data.
 - S.L.T. to identify areas of strength and areas for improvement.
 - Supporting, motivating and advising staff, and work alongside them in the development of their classroom practice, where appropriate.
 - Leading by example through good practice and, where relevant, model good lessons.
 - Disseminating information to the staff and providing INSET to promote staff development and improve learning and teaching.
 - Writing and contributing action planning in the subject for the school improvement plan when necessary.
 - Ensuring the teaching of maths is resourced effectively and resources are deployed appropriately.

From the 2019/20 academic year onwards, schools in England will be required to administer an online multiplication tables check (MTC) to year 4 pupils. The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided. To support the children with their multiplication practice we use 'Times Table Rockstars' (T.T.R.) as an online and fun learning platform which also offer resources to be used in the classroom.

Impact:

Throughout each lesson formative assessment takes place and feedback is given to the children through marking, fix its and next step tasks to ensure they are meeting the specific learning objective. Teacher's then use this assessment to influence their planning and ensure they are providing a mathematics curriculum that will allow each child to progress. The teaching of maths is also monitored on a termly basis through book scrutinies, learning walks /lesson observations. Each term children from Year 1 and above complete a summative assessment to demonstrate their understanding of the

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topics covered. Key Stage 1 use a combination of NTS Assessments and previous SATs papers (Year 2) whilst Key Stage 2 are using a combination of NTS Assessments, PiXL tests and previous SATs papers (Year 6.) The results from both the formative assessment and summative assessment is used to determine children's progress and attainment, which is recorded on the schools tracking system, and used in Pupil Progress discussions held termly.

We use '**Pre and Post Fluency learning Checks**' (evidenced in pupil books) across the maths curriculum with the **exception of statistics** to judge where there are gaps in pupils understanding are at the start and end of teaching a new maths concept. The expectation at Peel Hall is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will 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 additional practice, before moving on.

Our aim is to keep the class working together on the same topic, whilst at the same time addressing the need for all pupils to master the curriculum and for the more able children to gain greater depth of proficiency and understanding. Wherever possible children with special educational needs should work on the same curriculum content as their peers; however, we understand that a few children may need to work on earlier curriculum content than that designated for their age. The pre learning fluency check for this small group of children will reflect this. The principle, however, of developing deep and sustainable learning of the content they are working on will still be applied.