



Mathematics Policy

Aim:

At Landgate School we want Mathematics to be accessible, engaging and fun!

Mathematics is all around us, in everything we do. It is the building block for everything in our daily lives, including mobile devices, money, art, engineering, architecture and even sports. Mathematics is the science that deals with the logic of shape, quantity and arrangement.

We aim for our Learners to become maths-positive problem-solvers and to have ideas, to develop vocabulary and reasoning skills and so better understand mathematical concepts and participate within the world around them. We aim to ensure learners can confidently apply their mathematics skills when out in the community to provide them both with the love of mathematics and the independent skills to support them in adulthood.

Objectives:

Key-Stages 1, 2 and 3 follow the National Curriculum and cover the following areas of learning based on elements from White Rose Maths schemes of learning, Numicon strategies, Power Maths Calculation Strategies and Rising Stars Vocabulary lists:

- Number and Place Value
- Geometry
- Measure (length, mass, capacity)
- Statistics
- Position and Direction
- Finance
- Time

Throughout our curriculum we aim to ensure that our learners enjoy learning mathematics by providing opportunities to:

- Investigate Mathematical situations within school and the wider community.
- Have their curiosity stimulated by thinking of their own questions to explore
- Develop perseverance through trial and error.
- Develop deductive reasoning, which includes reasoning logically and systematically.
- Experience the sense of pride that comes from solving a problem or a mathematical puzzle.

Number is a key skill and currently around 80% of the content. Other number topics are brought in (such as measure) to help learners to apply functional concepts and develop Mathematical mindsets for life. Learners are encouraged to engage in practical activities to link ideas, increase the breadth and depth of their experience, develop knowledge and understanding of the more abstract as well as concrete, and be able explain outcomes.

Early Years Foundation Stage

We base our curriculum firmly on the 'Early Years: Development Matters' document. Within EYFS, Maths is a specific area of learning and is split into two aspects of 'Number' and 'Shape, Space and Measure'. Maths is taught in a purposeful, practical way and learners use play, continuous provision exploration and their own personal preferences to acquire and develop their own mathematical skills. In addition to child initiated activities, Maths is taught through a combination of group activities, Attention Autism sessions, daily Digit Dance sessions, adult led activities within the 'Maths Area' and wider classroom environment as well as via outdoor provision and visits into the local community.

Evidence of mathematical learning is collected from activities and observations of learners applying their own skills during activities and continuous provision, as well as ongoing assessments using the 'Development Matters' statements. Judgements are used to identify targets which are regularly evaluated and updated to ensure ongoing challenge and personalisation.

EYFS - Knowledge, Skills and Understanding

Opportunities to:

- show interest and experience fundamental mathematical concepts with everyday objects and shapes
- develop awareness of mathematical language
- improve their understanding and skills in counting
- begin to use and write numbers and recognise small quantities
- engage in simple calculation and problem-solving activities
- notice, explore and describe shapes, spaces, and measures.

Key-Stage 1

Strategies used within EYFS are continued at Key-Stage 1 where we focus on learning through a thematic approach, continuous provision and play in cohesion with more focussed teacher-led activities and discrete maths lessons. We place emphasis on practice, key vocabulary and developing confidence.

Learners are assessed using Landgate Learning Ladders taking into account The Engagement Model (for Learners working at Stages 1-5), The National Curriculum Pre Key Stage 1 Standards (upto Stage 9) and The National Curriculum Year expectations (Stages 10-15).

Key-Stage 1 - Knowledge, Skills and Understanding

Opportunities to:

- develop mental fluency and confidence with whole numbers, place value and counting reliably
- recognise, copy and extend sequences and patterns
- work with numerals and the four operations using practical materials to solve simple one-step problems
- use, read and spell key mathematical vocabulary to describe, draw, compare and sort a range of quantities, shapes and measures.

Key-Stage 2

All classes follow the National Curriculum and are assessed through Landgate Learning Ladders Stages 1-15 in conjunction with The Engagement Model (for Learners working at Stages 1-5) and The National Curriculum and Pre Key-Stage 2 Standards. Learners access three maths lessons per week with a focus on number and calculation, and one maths topic lesson on geometry and/or measures. Learning evidence is recorded on worksheets, workbooks and/or Earwig as appropriate. Delivery of maths lessons is tailored to suit individual needs including sensory focused, active approaches to mathematics using concrete and pictorial materials, role-play, outdoor maths, community visits, cross-curricular links and theme days to develop their independence and apply their skills by accessing maths in wider contexts. Learners have opportunity for self-assessment and discussion of their next steps and targets through the marking system.

Throughout Key-Stage 2, Learners develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. Learners build on vocabulary, prior skills, knowledge and understanding to make connections and develop resilience in using trial and error. Problem solving and reasoning is promoted to develop confidence, resilience, fluency and mastery.

Knowledge, Skills and Understanding

Opportunities to:

- extend prior learning, understanding and use of mathematical language to develop automaticity
- engage in practical activities involving increasingly large whole numbers
- develop skills and understanding of using number facts and place value concepts
- begin to learn and use multiplication tables
- begin to use rapid recall and mental strategies to solve one-step problems
- extend recording to more formal written methods and simple written calculations where appropriate.

Key-Stage 3

The Key-Stage 3 curriculum is designed in line with the National Curriculum expectations shown within assessment Flightpaths. Every learner has an identified pathway set from Year 6 assessment which outlines their expected progression over their education in Key-Stage 3. Lessons delivered are tailored to learner's individual needs including learning mathematics through a sensory focused, active approach and completing written work with scaffolded tasks to nurture learner confidence. Real-world problem solving and reasoning is promoted and learners take responsibility for their next steps through the marking system and use of peer assessment. Some learners apply their skills and develop independence by accessing ICT tools such as RM Easimaths, and more personalised interventions are provided to support learners where appropriate.

Knowledge, Skills and Understanding

Opportunities to:

- build on Key-Stage 2 learning to extend mathematical connections and develop fluency, reasoning and competence in solving more complex, multi-step problems
- consolidate mental and written calculation strategies, and practise use of mathematical language within real-life contexts
- develop mastery through variation and making decisions about calculation strategies.

Key-Stage 4 and Key-Stage 5

Within Key-Stage 4 and 5, learners follow AQA accredited routes and continue to develop functional maths. They are given a daily morning maths challenge related to aspects such as money, time or routines. Learners access the community, applying measuring and tessellation to woodwork, measure through cooking, create shopping lists, go shopping weekly and pay with cash. Students help to run the Staffroom tuckshop by stocking shelves, making price lists, taking orders, refilling, counting cash and working out profits.

Assessment

Information for assessment is gathered in various ways by each class staff team; by talking to the learners, observing learners at work, listening to learners describing what they have done, using IT and iPads and peer assessment so evidence and data can be collated. Learners are given ongoing feedback verbally and through the marking system. At the end of each unit of work teachers will assess the progress made in line with Learning Ladders and future targets set. We use RM Easimaths that can also be accessed at home and incorporates computing into the curriculum. Learners enjoy and excel in RM Easimaths which teachers are able to track and assess progress and target misconceptions. Learners are also given the opportunity to access White Rose end-of-block tests and SATS at the end of Key-Stage 1 and 2 where appropriate.

Parental Engagement

The mathematics department identifies that parents are our Learners' first educators and have developed a positive parent school relationship by communicating through Class Dojo, parent evenings, intervention reports, home school diaries, Parental Engagement Sessions and themed days when Parents are invited to attend. The Pastoral Team also work closely with the mathematics department to support parents in encouraging learners to use their mathematics skills at home and in the community.

Monitoring arrangement

The Head of School and Leadership Team will:

- Monitor the subject through the Landgate self-evaluation and monitoring schedule which are reviewed annually

Governors will:

- Monitor the work of each subject through the Landgate self-evaluation and monitoring schedule which includes a timetable of Subject meetings and a Subject Leader's report to governors, which are reviewed annually

Subject Leaders will:

- Complete departmental SES in line with each data input.
- Prepare, attend and participate in link meetings.
- Audit and support colleagues and parents in their CPD.
- Monitor/ moderate through work sampling, learning walks and lesson observations.
- Review/update assessment systems based on suitability of use.
- Review/ update Long Term Planning based on suitability of use.
- Create/ update and review a Subject Development Plan
- Monitor the impact of a subject budget.
- Purchase and organise resources.
- Monitor the impact of significant developments.

Additional Information

At Landgate School and College our teaching staff are supporting learners in their mathematical journey from concrete to pictorial to abstract concepts. Therefore, we understand the importance of quality manipulatives and audit/ update resources regularly.

In addition to this, we value our teaching assistants and their CPD is crucial in enabling misconceptions to be identified and learners extended in their mathematics. Therefore all staff are provided with vocabulary used in the National Curriculum and attend CPD regarding mastery in mathematics. This also ensures opportunities for cross-curricular mathematics skills to be applied are not missed. Teachers carry out visits into the community where learners can apply their mathematics skills and we support functional maths activities. The mathematics department is in discussion regarding community links and visitors to do talks regarding jobs that require mathematics.

Links to Policies

- Mathematics Calculation Policy (Power Maths – Draft tba 2021)
- Teaching and Learning
- Behaviour for Learning
- Assessment for learning
- Marking
- Homework
- Educational Visits

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