Lancasterian Primary School

Maths Policy

Version No.	Date	Approved by	Review Frequency	Review Date
3	1.12.20	Governors	+2 years	1.12.22

At Lancasterian we aim to create confident mathematicians who enjoy tackling challenging tasks. We do this through teaching the following themes taken from the National Curriculum:

- **Fluency** - This is enabling the children to become fluent in number in order to be able to use skills and knowledge efficiently and with a deep understanding of the fundamental concepts of mathematics
- **Reasoning** - This includes following a line of enquiry, conjecturing relationships and generalisations and developing a mathematical argument
- **Problem solving** - This includes giving the children opportunities to apply what they have learnt, where they need to break down problems into smaller steps and persevere in seeking solutions

The Mastery Curriculum

"Children's chances of success are maximised if they develop deep and lasting understanding of mathematical procedures and concepts." NCETM (The National Centre for Excellence in the Teaching of Mathematics)

We believe that our mastery curriculum is the most effective teaching style to ensure that all children progress together and acquire a solid enough understanding of the maths that's been taught to enable them to move on to more advanced material.

We follow the DfE recommended scheme, Power Maths, which is supported by both Power Maths and White Rose resources. The scheme enables children to fully master an area of mathematical learning within one extended unit, rather than revisiting several times throughout the year.

The key principles of our mastery curriculum are as follows:

- **Fluency**
  We believe that children must be fluent in their conceptual as well as procedural understanding of number. Our Fluency Passport provides the children with age appropriate fluency foci, which are taught termly. The fluency coverage map ensure that skills are built on appropriately throughout a child's time at Lancasterian. Furthermore, regular counting is an important teaching tool in order to provide the children with a secure understanding of place value and number.
- **Concrete → Pictorial → Abstract**
  This means that children are exposed to new ideas at a *concrete* level using a range of equipment such as Dienes' blocks, cubes, Numicon, place value counters etc. before moving on to *pictorial* representations. This may mean diagrams, sketches or the Singapore bar model. This allows the children to develop deep understanding before moving on to the *abstract* representation, which is the written calculation.
- **Context**
  As far as possible, we aim to give maths questions a context or put into 'real life' situations so children have lots of opportunities to apply their learning.

- **LATL**
  The Lancasterian Approach to Learning (LATL) has been influenced greatly by the 'teaching for mastery' approach. Within lessons, children progress through the LATL. This starts with Pre, which recaps on previous learning. If misconceptions arise, they can be dealt with here before starting the new learning. From Pre, the children will unpick Key Vocabulary and draw out one element of the new learning in the Uni phase of the lesson. Children are then taken up the incremental small steps of the Multi phase of the lesson. Within Multi, children are taught new concepts and procedures and given time to practice. Following Multi, the children will independently start the Relational challenge where they relate all learning from the Multi stage and solve a set of problems. For the higher attaining children, who are working at the Greater Depth level, the Extended Abstract challenge is offered. Throughout each stage of the LATL, we encourage our children to use the 5 Rs: Resilience, Resourcefulness, Responsibility, Reasoning, Reflectiveness.
- **Progress Conferencing (Daily teacher-led intervention)**
  After each lesson, teachers mark the children's Relational and Extended Abstract work and decide if they need a Progress Conference. Children can also request a progress conference when they have marked their work.

Planning

Teachers from Reception to Year 6 use both the Power Maths and White Rose Maths documents as a basis for their medium term and weekly planning, however, the needs of the children are first and foremost so flexibility is key. We also make regular use of the Pupil Assessment Grids (PAGs) to inform planning. Our daily lesson structure follows the LATL, as already explained. Within this, we will expect to see a variety of learning activities. Including:

- Daily counting
- Flashback Four (four questions linked to previous learning)
- Fluency teaching and practice
- A lesson hook (question, statement or context to 'hook' the children's interest)
- Opportunities for paired/group/class discussion
- Careful consideration of what models and images will be most suitable to encourage deep understanding
- Opportunities for regular verbal and written reasoning
- Investigative approaches to allow children to apply their skills and knowledge as much as possible.
- Explicit teaching of mental maths strategies
- Test base skills (e.g. Test Base online resource, Rising Stars Topic questions)
- Assessment for Learning opportunities
- Weekly opportunities to attempt the Times Table Challenge (KS2) and the Number Bond Challenge (KS1)

EYFS

Maths is an integral part of the provision in EYFS, with practitioners developing early maths skills through routines and organisation of the environment, as well as stories, rhymes and songs. Parents are regularly involved in their child's mathematical development, for instance during Stay and Play, and it is highlighted during parent workshops.

Support and Challenge

Meaningful scaffolding is vital in ensuring that each child can fully access the learning in every part of the lesson. A range of equipment is available for all children to use to scaffold their learning, if needed. However, scaffolding for lower attaining children, should not be limited to simply using

equipment. We want our children to feel confident enough to challenge themselves within the pictorial and abstract areas of their learning.

Challenge for higher attaining children is provided by Extended Abstract activities, which aim to provide children with the opportunity to deepen their understanding of concepts, rather than moving on to the next thing too quickly. Also, we encourage the children to follow their own lines of inquiry and 'delve deeper' into their learning.

At Lancasterian we teach using the Mastery Approach, where by all children are working towards the same learning challenge. Extension tasks As part of the PA Maths framework, a range of equipment is available for every child in every lesson but scaffolding for lower ability children should not be limited to simply using equipment.

Homework

In line with the school Homework Policy, children should get maths homework once a week related to their recent learning and/or their number fluency. Two effective online websites which are provided are Times Tables Rock Stars and Numbots. These are engaging game-style activities, which support the rapid recall of times table and number bonds.

Pupil recording

We create work to be proud of. Lessons should be recorded in books 4-5 times a week; however, this will not always be handwritten. As in all lessons, worksheets should be kept to a minimum.

- Age appropriate presentation, e.g. 1 number in 1 square; blank books
- Use of pencil only in Maths books, apart from green pen when self or peer assessing
- Short date and objective underlined for each piece of work
- Photos recording practical work
- Photocopies of work completed on whiteboards
- Evidence of different opportunities of different methods of recording
- Evidence of the Multi stage of the lesson
- Relational and Extended Abstract challenges
- High expectations of neatness

Assessment

We follow the school Assessment Policy, along with the following:

Formative assessment

- Verbal feedback and self and peer-assessment are the most valuable sources of formative assessment. (See Feedback and Marking Policy for more information).
- Teacher assessment is mainly informed by daily progress conferencing and Pupil Assessment Grids (PAGs); teachers update the PAGs as they teach each unit of maths, using them to identify gaps.

Summative assessment

- We also complete termly tests which are used to support teacher assessment and allow for staff to carry out gap analysis. White Rose tests assess the content that has been taught throughout the year so far.

Appendix

Calculation policy

Fluency Progression (to support the fluency passport) – *To follow in Spring 1*