Granby Junior School

Maths Policy

Review Date	Approved by	Governor Minute Reference

Contents:

1. Introduction

This policy outlines the teaching, organisation and management of the mathematics at Granby Junior School. The policy for mathematics is based on the National Curriculum. The implementation of this policy is the responsibility of all teaching staff.

2. Rationale

As a core subject, maths is a key life skill and essential to all children. As such, it should provide breadth and balance and be relevant and differentiated. It should be flexible, motivating all pupils, thus encouraging success at all levels.

3. Aims

Maths teaching at Granby will:

- Have high expectations of all pupils. Teachers are enthusiastic and encouraging of all pupils.
- Have a focus on assessment to ensure learning gaps and misconceptions are identified in the lesson and addressed. More formal weekly and termly summative assessment identifies learning gaps which influences future and long-term planning.
- Use high quality resources and programmes to allow all children to access learning in maths and bring maths to life. Concrete, pictorial and abstract representations underpin learning.
- Ensure that fluency in fundamental skills is secure before moving onto new learning. These skills underpin reasoning e.g. mastery of skills such as times tables and number bonds.
- Provide children with the skills to allow them to reason, discuss and explain their thinking and develop logic using precise mathematical vocabulary.
- Provide lessons which encourage pupils to challenge themselves and nurture curiosity.

4. Objectives:

- By the end of Key Stage 2 pupils should be taught to understand and master all the content required by the National Curriculum 2014. They should be taught using a mastery approach and be able to successfully attain the standard required by the end of Year 6.
- By the end of year 6, children should have a secure method to solve the

four operations (+ - x ÷) and are able to recall and apply knowledge rapidly and accurately.
- Reason mathematically and solve problems.
- A positive attitude towards mathematics, embracing challenge and using mathematical vocabulary with confidence to discuss, argue, justify and prove their ideas.

5. Planning

Long/medium-term plans

At Granby Junior School yearly overviews are created based upon the WhiteRose scheme of learning and NCETM prioritisation documents (as a result of Covid). These set out blocks of learning that allow longer units and smaller steps. The length of a unit plan may vary from a few days to multiple weeks.

Medium term plans are created half termly to identify smaller steps.

Short term plans

Teachers in their year group teams create their daily/weekly plans and resources based upon the medium-term planning and use a range of resources (WhiteRose, Big Maths, NCETM). Notebooks and PPTs are used to provide pictorial representations and model concepts. A learning objective, and subsequent plans and resources, may be taught and run over a few days rather than in one lesson. Planning should be flexible to meet the needs of the children.

Planning identifies differentiation and personalised curriculums where necessary.

6. Teaching

The start of the lesson

The start of a lesson will begin with feedback from learning the day before, praising children's achievements and addressing any misconceptions identified in the whole class feedback book.

Warmups/Starters:

Warms at the start are used to secure fluency in mental methods such as multiplication tables, number bonds and mental strategies. Warm-ups are used also for retrieval practise of key knowledge or to reinforce previous learning where gaps or misconceptions have been identified.

The main lesson:

Children are mostly taught the same objective following the mastery principles and promoting high expectation. Differentiation is by scaffolding or providing choice of where to start. At times, children are provided with a personalised curriculum to meet additional needs. Concrete and pictorial representations are used to reinforce new concepts or support individuals to allow them to access learning. Lessons, or sequences of lessons, move in small steps to allow for depth of understanding and to promote 'mastery'.

Challenges may vary day to day depending on where in the teaching sequence they are. Fluency questions may be used earlier in a teaching sequence to build confidence or as a starter. Opportunities to reason may come later in the teaching sequence once basics are secured. However, word problems may be used to present information when teaching at any point in the sequence to encourage problem solving skills and expose children to language and new contexts.

Problem solving

Questions in teaching and on challenge sheets are carefully generated for variation to encourage mathematical thinking e.g. what's the same/different? and to unpick children's understanding e.g. how did you know? Can you explain…?

Standard and non-standard examples are used during the main lesson and on challenge e.g. variation of the equals sign.

LSAs support learning in small groups or provide pre/post teaching where appropriate.

Discrete problem solving lessons are taught when necessary to teach a problem solving skill or later in the instructional sequence when fluency is embedded.

Plenaries

Plenaries are used at the discretion of the teacher depending on the pace/flow of the lessons. Plenaries may be used for: self/peer assessment, addressing a misconception, application of learning in a real-life word problem or for pre-teaching.

7. Additional resources to support teaching and learning.

Times Table Rockstars

Multiplication tables are taught discretely across the school to ensure fluency and rapid recall of facts. Times Table Rockstars is used to complement teaching, increase enjoyment in maths and to raise the profile of maths across

school. Children can access the programme in school to practise specific tables and at home as homework. Certificates are given in weekly celebration assemblies to reward fastest speeds and most accurate scores. Classes also have the opportunity to compete against each other in battles and to challenge each other.

Big Maths

Big Maths is also used throughout the school to complement and further enhance the children's learning of basic maths skills as well as their wider mathematical knowledge. It uses basic skills, which forms the foundations upon which all learning is built. This is also tested with weekly, low stakes challenges which allow teachers to identify whether their children have any gaps in their learning, in a fun and engaging way. These feed into afternoon interventions to ensure support is personalised and targeted.

8. The learning environment

Classrooms will have a maths working a wall which will display the following

- Reflection of daily/weekly learning. For calculations, a model from the calculation policy.
- A place value grid
- Key vocabulary (from the vocabulary progression document)
- Pictorial prompts where appropriate e.g. place value counters to show a calculation or a poster of the net of a 3d shape with labelled parts

9. Presentation

Children use one digit per square for the formation of numbers. Children are taught to form their numbers consistently and precisely e.g. four as two separate lines where the pencil is picked up; 6, 8 and 9 formed from the top right hand corner with the pen in contact with the paper for one movement.

10. Maths in the wider curriculum

Mathematics underpins learning in many areas of the curriculum. There are many areas of the curriculum which naturally link with maths e.g. in computing and science – creating graphs; PE – data collection; DT – measuring. Opportunities for children to develop and apply their learning across the curriculum are sought out. STEM ambassadors work with the science, mathematics and technology leads to promote maths across school.

11. Inclusion, equality and diversity

Maths teaching at Granby aims to be as inclusive as possible, offering challenge and high expectations of all pupils.

Inclusion.

Children of all abilities enjoy and benefit from the study of Mathematics at Granby Junior school and teachers are able to adapt teaching to respond to the strengths and needs of all pupils.

Teachers have a secure understanding of how a range of factors can inhibit pupils' ability to learn and know how best to overcome these through adaptive teaching. High-quality teaching approaches to engage and support the needs of all pupils are used within classrooms during maths lessons and assessment of pupils' progress is employed to identify barriers to learning and develop strategies to support all pupils through a graduated response – including but not limited to those with SEND, those of high ability, and those with English as an additional language.

Adaptive maths teaching focuses on the whole class while providing scaffolding such as differing levels of support, access to manipulatives, modelled first step examples or focused questioning to those who need additional initial support or challenge in order to access the same ambitious curriculum and meet our high expectations.

Equality

In lessons, children are offered equal opportunities to learn, and a ceiling is not placed on their learning. An adaptive teaching approach is employed to overcome barriers to learning and teaching staff approach lessons with the belief that all children, regardless of need, can achieve having high expectations of all.

Diversity

In maths lessons, learning is presented in a variety of contexts so that children are exposed to a variety of cultures, races, genders and disabilities and can see themselves represented in mathematical scenarios.
Maths is celebrated as multi-cultural field of study and throughout KS2, children will study the work of key figures and their achievements, such Katherine Johnson, Alan Turing and Al-Khwarizmi.

Safeguarding

At Granby, we promote a love of mathematics and aim to create a learning environment where children feel safe to make mistakes and take risks. Equally, low stakes activities are used initially to build confidence and enjoyment and remove anxiety or fear of failure, allowing children to feel successful.
In lessons, staff model making mistakes to make encourage mathematical talk but also to show that mistakes are a key part of learning and life. At Granby we 'embrace the mistake', aiming to create an environment where children feel safe to challenge themselves without fear of failure or anxiety to 'get it right'. After all, maths is not always about the 'right' answer!

12.Recording pupils' work

Although there are occasions when it is not necessary to record mathematics in a permanent form - during practical work and when using whiteboards for example - on the majority of occasions it is essential that the children do carry out written work using their maths books or on loose pieces of paper; the latter can facilitate possibilities for display so that the children can be proud of what they have achieved. When it isn't recorded in books, it can be photographed and put on SeeSaw or the website. Children are, therefore, taught a variety of methods for recording their work and are encouraged to use the most appropriate and convenient - this includes a consistent approach to the formal methods of calculation for the four basic number operations.

All children are encouraged to work tidily and neatly when recording their actual answers, although jottings are often essential and may take various forms - they are an important learning tool for the children and can also provide valuable evidence for the teacher.

13.Marking and feedback

It is recognised that it is not productive for an adult to always mark in isolation from the children, and nor should it be an onerous task. We value verbal feedback as highly as any written form. Where appropriate (in pure number work for example) the children will be encouraged to self-mark with support and guidance from the teacher and will self-assess all written work with their green pen. Corrections are made in green pen. Children do not copy the correct answer, but must try the calculation again or identify the error in the calculation with a green pen and correct that part.

After lessons, books are marked in line with school's marking and feedback

policy. Feedback books are used to identify misconceptions and basic skills errors to be shared at the start of the next day along with praise for achievements. Children are given time to respond to feedback at the start of the next lesson- this may be to make corrections or to complete a task set.
See Marking and Feedback Policy for further information.

14.Assessment

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term assessment will be an informal part of every lesson. The teacher will share the objectives for the lesson with the children and make sure they are clear what is expected of them to successfully achieve the objective(s). Short-term assessment will also involve the children, and teacher, checking the children's understanding both throughout and at the end of a lesson to inform self-assessments, future planning and lessons. Low-stakes quizzes (often through starters) are used as retrieval practice of objectives taught.

Medium-term assessment will involve teachers responding to AFL in the classroom. Big Maths quizzes (Clics, Safes and Learn-Its) are completed weekly to identify gaps in learning and as a retrieval exercise. Learning gaps are then identified on Big Maths and used to inform interventions and planning for the next lesson/week. Mini assessments are used at the start and end of a sequence of learning to inform planning before a unit and to identify gaps at the end of a unit.

Long-term assessment will take place in the autumn, spring and summer term - the statutory standardised assessments tests (SATs for Y6) and the Rising Stars PUMA assessments (for Y3, Y4 and Y5). Teachers will also draw upon their knowledge about their class to provide accurate information and data to senior management, the child's next teacher and parents.