



Roskear Primary and Nursery School

Mathematics Policy

Accepted by Governors	Spring 2017
Review Date	Spring 2020

General Aims

Mathematics is planned and delivered to all pupils across the EYFS, KS1 and KS2. It offers a broad foundation of mathematical experiences designed to provide our pupils with the understanding, skills and knowledge needed to deal with everyday situations and experiences.

We aim to ensure that all children at Roskear School have appropriate experience of a broad and balanced mathematics curriculum based on the National Curriculum 2014.

Thus, our children will become fluent in the fundamentals of mathematics, developing secure conceptual understanding and be able to apply their mathematical knowledge and skills to solve problems and develop mathematical reasoning.

We aim to encourage a positive attitude to Mathematics by:-

- *Fostering an early and continuing enthusiasm for Mathematics.*
- *Ensuring that learning is introduced in a way that creates interest and motivation, so that the children can gain pleasure and enjoyment.*
- *Helping children to see purpose and relevance in their learning.*
- *Encouraging the children to achieve a breadth of Mathematical knowledge, skills and understanding, which they are able to apply to real life situations.*
- *Helping the children at all levels of attainment to have confidence in their own abilities.*
- *Encouraging the children to be resilient and so enable a sense of personal pride in their achievements.*

We believe Mathematics is an important element of communication. It can be used to describe, illustrate, interpret, predict and explain. It provides a way of understanding much of what is in and happens within the world around us. It is interesting, challenging, creative and enjoyable.

Mathematical Language

Children are encouraged to "Talk for Maths" using speaking and listening skills and are taught and provided with opportunities to use the correct mathematical language and notation to discuss their mathematics and explain their thinking. Children must be assisted in making their thinking clear to themselves as well as others, and teachers will ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

There is a consistent use by staff of correct mathematical language, which progresses over each year group, to be found in the Roskear Calculations Policy document. Children have access to the vocabulary being taught each week via the 'learning walls' in each classroom. We also encourage the use of 'stem sentences' (for example, I know... because...) to help children justify their answers.

The Organisation of Mathematics

Maths is taught by the class teacher and other adults:

- To whole class introducing new concepts and reinforcing previous work
- In cross curricular work
- In Enhanced Learning
- To individual pupils, referring to IEPs when appropriate

From Year 1 onwards, all pupils will have a daily dedicated mathematics lesson. Within the lesson there will be a good balance between whole-class work, group teaching and individual practice.

Teachers will use their professional judgement to determine the activities, timing and organisation of each part of the lesson to suit its objectives. There will therefore be considerable variety and creativity on different days.

Structure and elements of lessons:

Children at Roskear have a maths lesson each day which have four elements: **In focus, Let's Learn, Guided Practice and Task.**

'**In Focus**' is a 'hook' which relates to prior learning and the main learning intention. It can be an image, a conjecture or question which pupils' discuss together before sharing with the class.

'**Let's Learn**' is where the teacher unpicks the pupils' thinking and teaches the main skills required for the lesson, (using CPA) the skills required for the lesson.

The '**Guided Practice**' is where the children attempt a series of questions which are differentiated to learn and consolidate the teaching part of the lesson.

After the children have attempted the Guided Practice, they attempt the '**Task.**' There are three levels of tasks (one star, two star, three star or terms that indicate three levels of challenge/progression/depth).

'**One star challenge**' - provides further consolidation of the 'Let's learn' example and initial 'Guided practice' questions with reasoning opportunities; '**two star challenge**' - provides consolidation of the final Guided practice questions and conceptual variation; '**three star challenge**' - provides pupils with conceptual variation and application of skills in different contexts.

Teaching Assistants work alongside the teacher to support individual children and small groups within the class. In upper KS2 there are booster groups to support those pupils with identified needs.

Number Fluency

In addition to the daily maths lesson, pupils receive 15 mins of 'essential skills' practice everyday. This aims to specifically develop number fluency by a variety of methods and fun activities. Number fluency is essential to problem solving and reasoning and in particular the need to be efficient, accurate and flexible with numbers and related number facts.

Enhanced Learning

Enhanced Learning sessions are available for both Key Stages every afternoon to address any misconceptions from the morning maths lessons. This shall not only be for children who may have struggled with a particular part of the learning, but also for those children who the teacher wishes to challenge even further.

EYFS

Mathematics teaching for the pre-school, nursery and reception children is taught through the 'Mathematical Development' (including number and shape, space and measures) area of learning, using Development Matters' curriculum guidance to ensure continuity of practice to KS1. There is a daily maths table with activities for the children to access (continuous provision). In YR, pupils will also participate in daily 'carpet maths' sessions, including a daily 'maths meeting' to provide additional support to the development of mathematical skills and knowledge. The aim is that by the end of the Reception all children are prepared to participate in the daily dedicated mathematics lesson, thus, appropriate readiness for the next stage of their education.

Planning, Assessment and Record Keeping

The National Curriculum 2014 provides the programmes of study to be covered with ideas on how to deliver them and what the children need to achieve. Teachers will initially use 'Maths No Problem' (a commercially produced scheme of work and lesson plans) and a variety of references and resources to support and produce their weekly plans. To ensure coverage over the whole year, long term plans are from the White Rose scheme, which correlates with the Maths No Problem scheme. Planning between parallel classes shows parity of learning intentions. Teachers use a range of activities and resources to deliver the objectives. Teaching and learning activities will include the use of ICT to support the teaching of the identified learning objectives. Our teachers will use their judgement about when ICT tools should be used to enhance teaching and learning.

Assessment

Marking pupils' work, against the learning intentions and success criteria is an integral part of every lesson and findings will be reflected in subsequent planning (see Marking Policy).

Feedback to pupils is timely, ensuring every opportunity is utilised to move learning forwards and ensure pupils make progress.

The use of 'key progress indicators' (KPIs) and the National Curriculum objectives form the basis of the teacher's assessment. These are regularly updated for each individual child on 'Target Tracker' and monitored half-termly for strengths, weaknesses and progress. At the end of each half term, children shall also take a 'Star Maths', which will be compared to their termly Target Tracker assessments.

End of key stage SATs are completed in years 2 and 6. These are analysed for strengths and areas of developments. These areas of development are in turn used to inform the Maths Evidence Form and Self Evaluation form (SEF)

Mathematical development in the Foundation Stage is currently assessed using the Phases of Development and the EYFS profile. Data is sent annually to the Core Stats team to support analysis and benchmarking; additional analysis is carried out by the EYFS team. We use Target Tracker to collate our data. Results are entered using this system on a termly basis, following on-entry data results in September. Data analysis provides the teacher with cohort next steps and areas for development to ensure the needs of all children are met.

Continuity and progression is ensured by:-

- transfer of baseline data
- input of KPI data
- transfer of any SATs data
- regular and programmed dialogue between successive teachers
- transfer of pupils exercise books in which work is dated and reference is made to the objectives being covered

Progression is informed by staff knowledge and understanding of the expectations contained in the programmes of study within the National Curriculum. 'Moderation' is an integral part of our assessment process and a programme for moderation is highlighted within the school's monitoring and evaluation programme.

This rigorous approach to assessment assists teachers in setting accurate and challenging individual targets. Our in house tracking system (see assessment policy) calculates and automatically sets targets based upon their current assessment 'grade'. In some cases, teachers can override these dependent upon a range of factors such as vulnerable groups, more able and disadvantaged; moving their targets forward or back should there be a need ensures challenges and standards are continually met.

[Approach to Calculation](#)

Mental mathematics

Mental methods will be emphasised from an early age. Children will be directly taught and provided with regular opportunities to develop the different skills involved. Children are encouraged to improve their performance and achievement is recognised through the '99 club'. Children are taught using modelling by the class teacher and practical and visual materials. These skills include:-

- ✓ remembering number facts
- ✓ using known facts to work out new facts
- ✓ developing a repertoire of mental strategies
- ✓ solving problems

The aim will be to develop an approach in which mental methods are always considered first.

Written Work

Written recordings will be used to:-

- ✓ informally support a mental calculation
- ✓ develop the skill of explaining the method used
- ✓ help someone else follow the method or assess the work
- ✓ practise writing and using the correct symbols and notation
- ✓ help remember or practise the recall of number facts
- ✓ carry out the working of a standard written method of calculation

The move from informal to standard written methods will occur in line with the expectations set within the National Curriculum.

Mathematics across the Curriculum

Opportunities will be used to draw mathematical experiences out of a range of activities in other subjects to provide opportunities to apply and use mathematics in real life contexts. Mathematics will also contribute to other subjects in practical ways.

This policy works in conjunction with our policy for Equal Opportunities and our policy for Special Education Needs.

Resources

Each class is separately resourced with basic materials and particular equipment for age specific year groups.

Teachers will use resources to:-

- ✓ Demonstrate or model an idea, an operation or method of calculation e.g. a number line, large arrow cards, counting stick.
- ✓ Enable children to use a calculation strategy or method that they couldn't do without help; e.g. individual number grids or lines, counters, fingers.
- ✓ Provide a context for the application and practise of mental calculation strategies and number skills e.g. dice, 0-10 number cards, number games, coins.

The level of resourcing is reviewed annually.

Transition from FS - KS1 - KS2

Children currently transfer from FS to KS1 with their end of FS profile. This is used to assess the children and ability group them for maths. Those children who are identified as needing more support with their maths learning and have not yet met the ELGs have the opportunity to participate in planned intervention programmes in order to enable pupils to meet the ELGs in maths.

KS1 curriculum is based on the FS 7 areas of learning, so children have continuity of learning styles and enjoy maths ILA activities every day. This develops, after the transition term, to include a range of maths activities which children are free to access in any order they wish during the planned maths lesson. These mathematical activities include 'I can' statements to support the self assessment process.

Children transfer from KS1 to KS2 with SATs data available and teacher assessments.

Transition to Key Stage Three

Continuity and progression in Mathematics is ensured by:-

- ✓ Transfer of SATs Data
- ✓ Personal visits by staff from local secondary schools to Year 6.
- ✓ Pupil work books are forwarded to new schools to allow continuation of learning.

Homework/Parental Involvement

Opportunities will be provided for children to practise and consolidate their skills and knowledge, and to develop and extend their techniques and strategies, and to prepare for their future learning through out-of-class activities or homework. Information is also available on our school website, including the school's homework policy.

99 club (whole school)

Children will take a weekly 99 club test. We aim for this to be completed, marked and handed back out on the same day (however please allow for possible delays). When these are handed back, if there are any corrections or incomplete questions, these should be completed as homework. If your child has passed the level, they should get the 'homework' version of the next level to practice for homework (as well as printed versions in school, these can be found on our website). These quizzes will be kept in their purple 99 club folders over the year.

Our '99 club' is an adaption of the commonly used '99 club' and has been designed to include not only the recall of known facts but the 'essential skills' they need to acquire at a level specific to their age.

Results are recorded weekly and progress in achievement is celebrated. Once a child has achieved 100% in the allotted time scale they receive a sticker to put on their 99 club badge. There are nine stickers to collect each year. Every year, every child will start again on the 11 club with the 'essential skills' specific to that year group.

Pupils have one opportunity per week to complete the next level:

Monday: Year 2
Tuesday: Year 3

Wednesday: Year 4
Thursday: Year 5

Friday: Year 6 (mark their own) &
Year 1 (when they start)

Prodigy Maths (KS2)

For Years 3, 4, 5 and 6, we are introducing 'Prodigy Maths' (new for 2019-20). Children will have received their log in details to Prodigy and take an initial assessment in class. These log-ins will have been stuck into their reading records (if you need another copy, please contact your class teacher). As always, we encourage children not to share their log-in information with other children.

As well as the 99 club homework, we ask that KS2 children complete a minimum of 30 minutes a week on Prodigy Maths at home. Class teachers will set specific areas of learning for the children to focus on, in line with what they will be/have learnt about in class.

Maths Shed

Although this is not a requirement, we also encourage all children to use Maths Shed, (which can be found by logging into your Spelling Shed account, then selecting Maths Shed in the drop down box on the left hand side. Alternatively, click this link: <https://play.edshed.com/loginmaths>. This will significantly boost your child's 'rapid recall' of mathematical facts, with specific areas for Number Bonds, Times Tables, Powers of 10, Adding & Subtracting, as well as a specific game aimed to replicate the Year 4 Multiplication Tables Check.

Management

The Headteacher, SLT, the Maths Subject Leader and school governors will observe, evaluate and keep records of Mathematics lessons to ensure consistency, progression and high standards.

The Governors responsible for overall standards are Mr Ham, Mr Tonkins (focus on Maths) and Mr Gray. The maths subject leader is Miss Morris-Marsham. The roles and responsibilities of the Maths Subject Leader are to:-

1. Keep the Headteacher, Maths governor and staff trained, informed and updated on current initiatives and provide INSET where appropriate.
2. Attend training provided by County and/or external agencies to keep abreast of current issues.

3. Monitor and support the teaching and learning of mathematics throughout the school which may include: lesson observations, work sampling, curricular target setting and liaising with the Assessment Co-ordinator and SLT to track pupil progress from year to year.
4. Carry out an audit of resources and purchase new stock where needed.
5. Work with the Headteacher and other members of staff to provide training and support for teaching assistants.
6. Monitor the impact of intervention programmes and discuss these with the SENCo to gain evaluations.

- ✓ To monitor the quality of teaching and learning of Mathematics across the school.
- ✓ To use the data analysis to determine the strengths and weaknesses within Mathematics across the school.
- ✓ To use data available to target areas of weakness through planning and appropriate intervention across the school.
- ✓ To inform SLT of the targets set and attainment within Mathematics.