Ladywood Primary School

Maths Policy

September 2020

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Mathematics Policy

Intent

It is our intention at Ladywood for every child to develop a good understanding of maths, equipping them with the skills of calculation, reasoning and problem solving that they need in life beyond school. We want all children to enjoy maths, experience success and develop a sense of curiosity about the subject with a clear understanding. We believe that all children can achieve in maths and teach for secure and deep understanding of mathematical concepts through manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems. Maths is a journey and a long-term goal, achieved through exploration, practise and application over time. At each stage of learning, children should be able to demonstrate a deep, conceptual understanding of the topic and be able to build on this.

General Principles

Mathematics will be taught to all pupils throughout the school in ways appropriate to their ability and learning style. The content of the maths curriculum at Ladywood is reflective of The New National Curriculum (2014) which was implemented across the school in 2014. The fundamental ethos of maths teaching and learning within the school centres around: challenge, fluency and reasoning. This will be underpinned by high quality questioning (directed at and from children) which will promote a deep and embedded confidence around the key mathematical concepts and principles. As leaders we have developed a personalised mathematics curriculum, based on White Rose. This allows us, as a school to ensure coverage across all key stages.

Aims

In our teaching of mathematics at Ladywood Primary School, we hope to:

- Encourage children to have fun and enjoy learning about maths.
- Enable pupils to have opportunities for mathematical thinking and discussion which will help deepen their understanding.
- Provide opportunities for pupils to demonstrate and apply mathematics in real life situations.
- Deepen understanding through the use of practical equipment and high quality questioning.
- Give the children confidence when working mathematically or discussing mathematical ideas or concepts.
- Provide an environment where it is acceptable to be wrong and ask questions.
- Encourage pupils to take responsibility for their own learning. Children should be given the opportunity in maths lessons to 'seek out' challenge and extend their learning.

Calculation Policy

The calculation policy is designed to support our children to develop a greater understanding of number through the use of concrete, pictorial and abstract representations. It is available to staff and parents to ensure a consistent approach throughout our school. The policy follows the concrete, pictorial and abstract ways of learning, mirroring the whole school implementation for

maths. This approach is an approach to be used with the whole class, with each principle being equally important.

Planning and Delivery

One session each day is spent on mathematical activities. These activities are concerned with fulfilling and extending the requirements of The National Curriculum (2014).They may be delivered to whole classes or in 'targeted' groups. Teaching staff will plan and deliver maths lessons to meet the needs of their classes. Teachers should use the mathematics implementation A and B to inform their planning. At times, it may be reasonable to spend longer on some areas of learning than others. This will be at the discretion of the class teacher but should be shared with the maths leaders and annotated on implementation A and B for that year group.

Planning will include:

- Objectives linked to the Programme of Study (statutory requirements).
- Wherever possible, children's learning will centre upon the N.C objectives from the year group to which the child belongs.
- Learning objective (child friendly language).
- Success criteria (child friendly language).
- Teaching activity.
- Differentiation (which may be via task, resources or adult/peer support).
- Differentiation will give all learners the opportunity to progress through activities dependent on success in that particular lesson.
- Use and direction of other adults.
- Plenary to include AFL and peer/self assessment.

All children will have the opportunities to:

- Succeed and feel positive about their learning in maths.
- Work independently and as part of a group.
- Take responsibility for their own learning, challenging themselves when appropriate.
- Use calculators and I.T. resources to support their learning.
- Participate in independent and collaborative calculating and problem solving.
- Use a wide range of mathematical tools/instruments.
- Rehearse mental strategies and skills.
- Participate in activities involving the development of knowledge, skills and understanding and the ability to tackle practical problems.
- Develop the use of mental calculation.

When communicating their mathematics, pupils need to:

- Talk about what they find difficult/ easy.
- Ask questions to both staff and peers.
- Debate ideas and solutions to problems with staff and peers.
- Present and explain results to others.
- Draw conclusions/ make generalisations.
- Discuss their learning through peer and self assessment.

- Draw upon previous knowledge to support new learning and make connections with previous learning.
- Make explicit links between their new learning and previous learning.

Mathematics is used in other curriculum areas wherever possible or appropriate. This helps to expand and consolidate mathematical concepts and using maths in a purposeful way in everyday context helps the children to realise that mathematics is important in the real world.

Expectations

We will endeavour to:

- Ensure the classroom environment is meaningful, relevant and supports the children in their learning.
- Allow every child the opportunity to succeed.
- Provide rapid and constantly evolving intervention to children who do not grasp key concepts. The emphasis will be in 'keeping up' not 'catching up'.
- Ensure every child has the opportunity to challenge themselves.
- Value the achievement of each child.
- Build upon the knowledge and skills which children already have.
- Give the children mathematical experiences which match their ability.
- Organise both collaborative and individual activities.
- Make clear to the children the purpose and relevance of any Mathematical activity.
- Encourage independent use of a variety of apparatus and equipment.
- Use Maths in cross- curricular topics wherever appropriate.
- Help children reflect on their learning.
- Give children the ability to calculate mentally.
- Ensure children meet the same mathematical ideas in a variety of contexts.
- Rehearse skills and strategies daily.

SEND Pupils

Teachers will plan for and accommodate the needs of SEND children. This may result in adapted resources and additional support for these children. The needs of the individual child may be met in a whole class, small group or on an individual basis. It will be the individual teacher's responsibility to ensure the needs of these children are met.

DFE ready to progress

Teaching and Learning

A typical 45 to 60 minute lesson will often follow the three-part structure of: mental starter, main focus and plenary. However, teaching staff are encouraged to be creative with how they deliver their maths lessons and on occasions this three-part lesson structure may not be appropriate. Maths learning is regularly monitored with children's progress being recorded half-termly on the school assessment tracker. (Flight path)

- Starter
    - From Year 1, this will be in the form of 5 key questions, this will be built upon as the children move on in their school career. The key questions will be timed (5 minutes) and the marked and worked through together as a whole class.

    - Where appropriate SEND children may work though bespoke questions relating to their individual needs.
    - In year 1 the children will be first exposed to this and therefore, will, throughout the Autumn term, build up to being able to complete this as a whole class by the Summer Term at the latest, in preparation for Year 2.
- The main teaching activity
    - This will include both teaching input and pupil activities. Some children will work independently, some collaboratively with peers or adults. Wherever possible children will be used to model/consolidate skills they have learnt in that lesson.
    - In Year 1, children will be taught through small group work as per the foundation stage, to enable a smooth transition. This will be built upon throughout the year as the children become more developmentally ready.
- Plenary
    - This will involve work with the whole class to review misconceptions, identify progress, to summarise key facts and ideas and what to remember, to make links to other work and to discuss next steps.
    - CTs should include a maths challenge as part of the plenary to allow children to apply their knowledge in a different context.

Out-of-class work and homework

The daily mathematics lessons will provide opportunities for children to practice and consolidate their skills and knowledge, to develop and extend their techniques and strategies, and to prepare for their future learning. These will be extended through out-of-class activities or homework. These activities will be short and focused and will be referred to and valued in future lessons.
Numbots will be used in school and at home to support our youngest children with rapid recall of number facts. This will, in turn, give them the skills to support their learning of times tables.
Times Tables Rockstars will be used in school and at home to support children from Y2- Y6 with their rapid recall of times tables.

Teaching Strategies

Mathematics teaching at all levels should include opportunities for:

- Sharing the teaching and learning objectives, drawing the attention to particular points.
- Giving information on how to do a particular process/activity.
- Modelling the skill(s) required.
- Explaining and illustrating; accurate, well-paced explanations referring to previous work or methods.
- Evaluating pupils' responses; identifying mistakes and using them as positive teaching points.
- Summarising – reviewing during the lesson what is being taught/learned.
- Discussion between teacher and pupils.
- Deepening of understanding via quality questioning.
- Children to reason and 'puzzle' things out.
- Children to work collaboratively with adults and peers.
- Challenge and extension.

Foundation Stages 1 and 2

The development of mathematical thought is an important area of experience for children in the Foundation Stages. Learning in mathematics should primarily be first hand, experiential and active, bearing in mind the requirements of the EYFS Framework. Play and talk are essential to the learning process.

Areas of Maths taught are categorised as Number,Shape, Space and Measures, which include:

- Appropriate mathematical language;
    - Making comparisons
    - Sorting
    - Understanding one to one correspondence
    - Conversation of numbers
    - Recognition of numbers
    - Writing numbers correctly
    - Basic ordinal language
    - Early use of estimation
    - Naming basic 2D and 3D shapes
    - Copying and recognising patterns
    - Early use of conventional time units
    - Early use of non-standard and standard measures
    - Early use of appropriate IT
- Addition and subtraction with two single-digit numbers
- Counting forwards or backwards from one and two-digit numbers
- Solving problems; including doubling, halving and sharing

All children in the Foundation Stage access Mathematical challenges through the continuous provision.

Years 1 – 6

Pupils will follow the requirements of the National Curriculum (2014). Class teachers will follow the implementation, as set out by the maths leaders.

Pupils' Records of Work

Mental work does not include a written record of methods or results. It should be noted that jottings and rough workings do not need to be set out with the same formality as the standard written methods presented in the Calculation Policy.

However, children should always be encouraged to form numerals correctly and legibly and reversal should always be pointed out and corrected by the child. As the children move through KS2, they will be taught to record their work in a variety of forms in line with the progression of written methods in the Calculation Policy.

The children use books, paper, worksheets and workbooks for mathematics. They will be encouraged to have good work habits, to set work out neatly and to show their method of working out so that the work can easily be talked through. When using squared paper, children in Key Stage 2 will be expected to write one digit per square and throughout Key Stage 1 this will be

practised as and when appropriate. The date will be written digitally (24/05/20) and the objective/ success criteria will be displayed at the top of the page.

Assessment and Recording

On entering Foundation Stage, the children complete a baseline assessment. Progress is then tracked regularly; short and long term observations are carried out and evidence kept in pupil's 'Learning Journeys.'

In Key Stage 1, White Rose Maths end of term assessments will be used to support and work alongside teacher assessment. The results will be inputted half termly on the school tracking system. (Flight path) End of year/Key Stage assessments are completed in Year 2.

In Key Stage 2, White Rose Maths end of term assessments will be used to support and work alongside teacher assessment. The results will be inputted half termly on the school tracking system. (Flight path) End of year/Key Stage assessments are completed in Year 6.

Evaluation and Review

This policy will be evaluated and reviewed in September 2022.

Written by K. Ledger and L. Jackson