



Policy Guidelines for Numeracy and Beyond Number

Rationale:

"Numeracy is a fundamental life skill. Being numerate involves developing confidence and competence in using number that allows individuals to solve problems, interpret and analyse information, make informed decisions, function responsibly in everyday life and contribute effectively to society. It gives increased opportunities within the world of work and sets down foundations which can be built upon through life-long learning.

Whilst numeracy is part of mathematics, it is also a core skill, which permeates all areas of learning, allowing pupils the opportunity to access the wider curriculum."

Building the Curriculum 4

Mathematics plays an important role in the wider world of work in areas such as science or technologies, and is vital to research and development in areas such as engineering, computing science, medicine and finance. Learning mathematics gives children and young people access to the wider curriculum and the opportunity to pursue further studies and interests.

"To face the challenges of the 21st century, each young person needs to have confidence in using mathematical skills, and Scotland needs both specialist mathematicians and a highly numerate population. "

Building the Curriculum 1

Aims of our Numeracy and Mathematics Curriculum:

- To meet the expectations of Curriculum for Excellence Numeracy and Mathematics Experiences and Outcomes
- Ensure progression of skill through the Significant Aspects of Learning
- To develop mathematical understanding through using innovative approaches including digital technologies, challenging practical tasks, enquiry and experimentation
- To create an awareness of the relevance of mathematics across the curriculum and in relation to the world of work
- To promote positive attitudes towards numeracy and mathematics and an enthusiasm for mathematics work in school
- To build confidence and competence in using number which will allow individuals to solve problems, analyse information and make informed decisions based on calculations
- To develop confidence and accuracy in mental maths using maths recovery strategies and interventions
- To use assessment for early identification and intervention of help to close the attainment gap by providing a differentiated numeracy and mathematics curriculum to meet the needs of all
- To develop numeracy skills to help pupils to manage themselves in everyday life and contribute effectively to society

Pedagogy and Climate:

At John Logie Baird Primary the teaching associated with Numeracy and Maths encompasses a wide range of learning and teaching approaches. The children's experiences are active and multi-sensory involving the application of skills learned in a challenging way.

Children are provided with a range of opportunities which support different styles of learning, the contexts of which are challenging and enjoyable including creative and investigative activities. Learners are encouraged to apply their learning via discussion groups, interaction, researching, practice, teaching each other and using digital technologies in order to demonstrate their learning.

Learners are asked open questions, given time to think and reflect and helped to realise their responses are valued. Teachers strive to encourage a creative and collaborative climate. An atmosphere of conjecture is encouraged to develop

expert learners where the depth of mathematical and numerical thinking and the concept of taking risks and exploring alternative solutions is valued.

Resources:

Teachers provide children with a range of resources to support their learning. Teachers make use of the full range of Heinemann Active Maths resources in an active and structured way. These include textbooks, reinforcement and extension materials, assessment materials and numeracy and maths games. Using the outdoors as a context for learning is encouraged through interdisciplinary learning and as a natural environment for learning.

Mental Maths is supported with the philosophy behind the Maths Recovery strategies and is taught for 10 minutes on a daily basis.

Teachers also make use of a range of digital technologies within Numeracy and Mathematics: Beebots, Spheros, Promethean Board activities, a range of websites and software packages including Heinemann Active Maths Real life Problem Solving and Talking and Listening CD's.

Planning:

Core activities detailed in forward plans at JLB are based on Curriculum for Excellence Experiences and Outcomes for Numeracy and Mathematics. This incorporates the Heinemann Active Maths planning tool. Teachers ensure that planning also encompasses the principles of curriculum design as detailed in Curriculum for Excellence: challenge and enjoyment, breadth, progression, depth, personalisation and choice, coherence and relevance and address the significant aspects of learning. Teachers ensure that the essential elements of Numeracy and Mathematics are taught. These are:

Numeracy:

- Estimation and rounding
- Number and number processes
- Multiples, factors and primes
- Powers and roots
- Percentages, decimals and fractions
- Patterns and relationships
- Expressions and equations
- Impact on the world present, past and future

Mathematics:

- Money
- Time
- Measurement
- Impact on the world present, past and future
- Patterns and relationships
- Properties of 2D and 3D shapes
- Angles, symmetry and transformations
- Data and analysis
- Ideas of chance and certainty

These elements are taught by reference to the experiences and outcomes of numeracy and mathematics at the relevant levels and, where possible, through interdisciplinary learning.

Forward Planning Documentation:

Teacher forward planning documentation for all levels and groups in Numeracy and Maths is through the use of the John Logie Baird Primary Progression Pathways. These documents are highlighted for each group at each planning session and evaluated at the end of the planning session. At the end of the academic session, these documents are used as transition documents and continued on from the following session to show progression.

Mental Maths linked to the Maths Recovery Strategies is integrated into these planners with links for further support and activities.

Supporting Learning:

A greater breadth and depth of experience in active learning and purposeful play is essential to learners at John Logie Baird Primary. Opportunities to observe, explore, investigate, experiment, play, discuss and reflect using contexts and experiences relevant to the children are used to assist the learner in need of learning support to develop numeracy and mathematical skills. Equally, the more able child is suitably challenged at the appropriate level.

Differentiated work programmes meet the needs of individual children in all aspects of numeracy and maths. Teachers meet with the DHT/HT twice a year to discuss individual children's attainment and issues arising. Where appropriate,

Maths Recovery assessments are carried out by the DHT to identify the areas to target in numeracy skills. This specific targeting is then carried out by Primary Pupil Support Assistants and class teachers on a regular basis. These activities support the daily active mental maths practice sessions all classes do.

Planning Assessment and Moderation

Teachers engage in planning, assessment and moderation professional dialogue at planning times to ensure depth and progression of knowledge and skills in Numeracy and Maths. At the end of the planning block, teachers moderate the assessment evidence available to make professional judgements about the achievements of targets.

Problem Solving:

At John Logie Baird Primary it is acknowledged that the knowledge and understanding of numeracy and maths skills is essential to develop the skills of problem solving. Problem solving is implemented through various resources and activities including the Heinemann Active Maths resource. Where possible, teachers link problem solving activities to real-life situations or through interdisciplinary learning. Time is given to children to reflect on their learning and making changes to their approach, based on Bloom's revised taxonomy in developing higher order thinking skills.

Mental Maths:

Mental Maths is taught in accordance with the Numeracy and Mathematics experiences and outcomes, significant aspects of learning and our Maths Recovery based progression pathway. Teachers employ a wide range of methodologies to incorporate both active and written techniques. Teachers link their mental maths activities to concepts currently or previously taught or for areas highlighted from assessments in order to consolidate the children's learning. Every day all classes have a 10 minute mental maths session built in to their Numeracy programme of work.

Learning Logs:

All children have a Numeracy and Maths Learning Log, the purpose of which is to record significant events in the child's learning journey and show progression and for children to celebrate achievements and reflect on learning.

Learning Logs contain:

- Learning intentions
- Success Criteria
- Annotated examples of children's work chosen by the children
- Children's reflections on their learning
- Teacher's comments on the learning journey
- Peer and self assessment evidence
- Next steps in learning evidence

These form part of the range of evidence used by teachers to make assessment judgements, particularly on achievement of a level in P1, P4 and P7.

Assessment:

The first priority of assessment at John Logie Baird Primary is to serve the purposes of supporting learning. It is designed to develop knowledge and understanding, skills, attributes and capabilities which contribute to the four capacities of curriculum for excellence. Assessment is both formative, incorporating all the essential elements of AiFL, and summative, currently represented by a signpost assessment. Some year groups complete standardised tests as part of the assessment process. An integral part of formative assessment, plenary sessions, take place at the end of each lesson.

All assessment at John Logie Baird Primary strives to provide opportunities to show that the learners have achieved a breadth of learning across the experiences and outcomes, can respond to the level of challenge and can apply their learning to new situations.

Holistic Assessment: (Implementation date August 2017)

As part of the planning and assessment cycle, teachers plan holistic assessments. Following a planned block of teaching, teachers bundle Numeracy and Maths outcomes together and design an assessment which will assess breadth, challenge and application of skills in a new context. At least 2 holistic assessments will form part of a body of evidence to assess achievement of targets/a level.

Homework:

As per the Homework policy of John Logie Baird Primary, children will be set a maths challenge or homework at the beginning of the week. Teachers have the opportunity to choose between one of the following 2 methods of distribution:

- 1) One reasonably long task distributed at the beginning of the week for submission later in the week.
- 2) Two small tasks throughout the week for submission at class teacher's discretion.

During Term 3, teachers may opt to incorporate numeracy and maths homework tasks into their Take Away Homework Menu. The children are then able to choose which tasks they would like to complete.

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