

Bun-sgoil Taobh na Pàirce

Poileasaidh Ionnsachaidh agus Teagaisg
Àireamhachd agus Matamataig

Learning and Teaching Policy: Numeracy and Mathematics



At Bun-sgoil Taobh na Pàirce, our aim is to help pupils expand their knowledge and understanding of Numeracy and Mathematics in everyday life; equipping learners with the skills they need to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions.

At our school Numeracy and Mathematics is delivered both as a discrete curricular area and through interdisciplinary contexts for learning. Our aim is that learners develop logical reasoning and creativity thus enabling them to think in abstract ways and make connections with between their learning and the world around them.

Bun-sgoil Taobh na Pàirce Numeracy and Mathematics curriculum matches Curriculum for Excellence, which provides a framework for learning for all of the primary school years.

Rationale

Mathematics is identified as a key area on the curriculum, and is a priority area for raising attainment in line with the National Improvement Framework (NIF). Numeracy and Mathematics plays an important role in people's lives and equips us with many of the skills required for learning, life and work. Understanding the part that mathematics plays in almost all aspects of life is crucial; it is used in everyday activities such as time keeping, playing games and budgeting. Mathematics has been one of the decisive factors in shaping the modern day world and continues to grow, including in areas such as:

- Science and Technologies and Engineering
- Research and Development [L]
[SEP]
- Computing Science, Medicine and Finance [L]
[SEP]

Aims

The aims of the Numeracy and Mathematics curriculum are described in the guidelines as helping pupils to:

- Be motivated, engaged and active in their learning and understand its purpose

- Make sense of the world around us and manage our lives
- Model real-life situations and make connections and informed predictions
- Access opportunities to pursue further studies and interests
- Have the skills to interpret and analyse information, simplify and solve problems, assess risk and make informed decisions
- Develop logical reasoning, analysis, problem-solving skills, creativity and the ability to think in abstract ways
- Use and apply the universal language of numbers and symbols in order to communicate ideas in a concise, unambiguous way.

The mathematics framework as a whole includes a strong emphasis on the important part mathematics has played, and will continue to play, in the advancement of society, and the relevance it has for daily life.

CfE, Numeracy and Mathematics Principles and Practice, 2009

Numeracy and Mathematics is rich and stimulating, it engages and fascinates learners of all ages, interests and abilities. Learning mathematics develops logical reasoning, analysis, problem-solving skills, creativity and the ability to think in abstract ways. It uses a universal language of numbers and symbols which allows us to communicate ideas in a concise, unambiguous and rigorous way.

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

Learning, Teaching and Assessment - Our Approach

A range of teaching strategies, which take account of pupils' interests, previous experiences and attainment, will enhance pupils' learning. Learning and teaching approaches will be flexible and responsive to the needs of children, taking account of different learning styles and contexts in accordance with Bun-sgoil Taobh na Pàirce's Learning and Teaching Policy.

From early stages onwards, children and young people should experience success in mathematics and develop the confidence to take risks, ask questions and explore alternative solutions without fear of being wrong. They will enjoy exploring and applying mathematical concepts to understand and solve problems, explaining their thinking and presenting their solutions to others in a variety of ways. At all stages, an emphasis on collaborative learning will encourage children to reason logically and creatively through discussion of mathematical ideas and concepts.

CfE, Mathematics Principles and Practice, 2009

Learning Progression from Early to Second Level

Young children learn best through play and communication with others. Our Sgoil-Àraich and C1 classes reflect this, providing stimulating and challenging play experiences linked to skills and learning in Numeracy and Mathematics. Sgoil Àraich children experience Numeracy and Mathematics through a range of child-led and play-based activities, with short periods of adult engagement. In C1 we build on these previous play-based learning experiences to further develop their knowledge and skills, complementing and extending this with short bursts of adult led input and group work, using S.E.A.L (Stages of Early Arithmetic Learning) progress to the end of P3.

As children progress through school we offer a variety of experiences to meet the needs of all of our learner through a balance of adult-led direct teaching with active learning in a wide range of real life contexts, whilst promoting Numeracy and Mathematics through play-based learning and exploration as appropriate to age and stage. Children have the opportunity to learn through individual and collaborative tasks. At Second Level children are expected to work more independently and take greater ownership of their own learning.

To challenge and stimulate children and promote their enjoyment of mathematics, a balance of approaches will be used by teachers that includes;

- Direct teaching
- Planned active learning
- Modeling and scaffolding - including sharing and analysing mistakes and learning from them, and learning from outstanding examples of pupils
- Collaborative and independent learning
- Discussion, communication and explanation of thinking
- Develop mental agility, including use of S.E.A.L (Stages of Early Arithmetic Learning) and focus on Àireamh an Latha (Number of the Day) (See Appendix 1)
- Use relevant and real-life contexts and experiences
- Differentiation of tasks; pupils selecting appropriate tasks with guidance from the teacher
- Making links across the curriculum to show how mathematical concepts can be applied in a wide range of contexts
- Using technology in appropriate and effective ways
- Building on principles of Assessment is for Learning (AifL) including clearly stating Learning as outlined in Learning, Teaching and Assessment Policy
- Develop problem solving and critical thinking skills including use of Bloom's Taxonomy and Higher Order Thinking Skills
- Using White Rose Maths Scheme of Learning

Mathematics is at its most powerful when the knowledge and understanding that have been developed are used to solve problems. It is essential that children have the opportunity to apply the skills they have learned in Numeracy and Mathematics in real life contexts and develop problem solving strategies.

Assessment, Recording and Reporting

Progress and attainment in learning will be monitored and tracked by assessment that is an integral part of learning and teaching. Assessment of learning is an ongoing process and informs children's next steps at every stage of their learning. The process of assessing pupil's progress will be set in a context of effective learning and teaching that takes account of the five key teacher responsibilities: planning, teaching, recording, reporting and evaluating using CfE Benchmarks and moderation process.

Formative assessment strategies include:

- Self Assessment
- Peer Assessment
- Teacher feedback - timely verbal and written feedback clearly linked to the planned learning and success criteria
- Class work will be regularly assessed by teachers and analysed to inform next steps in learning.
- Formative assessment strategies are used to:
 - Giving pupils clear and regular, high-quality feedback
 - Sharing learning intentions and success criteria
 - Assisting learners and teachers in identifying next steps in learning to ensure progression
 - Evaluating effective learning and teaching by teachers

Summative assessments include:

- Holistic Assessment - assessment which allows teachers to bundle aspects of learning together based on previous learning outcomes and skills development and their ability to apply this to new and unfamiliar contexts
- S.E.A.L Assessments
- Summative Assessments following a block of teaching, e.g TJ Assessments, S.E.A.L Assessments, Teacher created assessments
- Standardised Assessments at Clas 5 & 6
- Scottish National Standardised Assessments (MCNG) at Clas 1, Clas 4 and Clas 7


Summative assessments are used to:

- Assist learners and teachers in identifying next steps in learning to ensure progression
- Evaluate effective learning and teaching by teachers
- Consider alongside all evidence of learner progress to report to parents on progress

Children's Numeracy and Mathematical next steps are based on the analysis of assessment information, class work evidence and teacher observations. As with all curricular areas, where children have additional support needs which need to be addressed to allow them to progress in their learning Class Teachers will liaise with the school Support for Learning and Senior

Leadership Team to plan developmentally appropriate interventions which can be delivered through a blend of Class teacher, Support for Learning Teacher and PSA interventions and differentiation, normally taking place over a short, focused period of time.

Resources to support Numeracy and Mathematics

- City of Edinburgh Council S.E.A.L Maths
- Matamataig Heineamann Alba - Scottish Heineamann Maths
- TeeJay Textbooks & Assessment Resource 
- Heineamann Active Maths Resources
- Fuasgal agus Freagair - Leabhar Mòr Matamataigs
- Sgilean Beatha - bi faiceallach led airgead
- Sgilean Beatha - Uair & Airgead
- Leis an Airgead - On the Money
- A range of online line resources, including SumDog
- Outdoor Learning
- Class and Whole School Displays
- Teacher created resources
- White Rose Maths Scheme of Learning

In line with Bun-sgoil Taobh na Pàirce Learning, Teaching and Assessment policy, pupils' work will be displayed appropriately to promote learning and encourage positive attitudes to Numeracy and Mathematics and build self-esteem. Children will also select pieces of work showing their attainment and achievement of learning in their learning journals.

Appendix 1: Àireamh an Latha | Number of the Day

Àireamh an Latha, as a whole school approach, was shared with us from Tollcross Primary School, part of the James Gillespies High School Cluster, and is being piloted during Session 2019-20 at Taobh na Pàirce.

The expectation for its delivery across the school is as follows;

- 'Àireamh an Latha' in place across all classes from Early to Second Level as a daily activity to support the development of mental agility.

- Àireamh an Latha in place as a whole school approach to develop learners' mental agility and familiarity with a range of terms and strategies.
- Planning for progression across stages; 'Àireamh an Latha' to be noted on weekly plans and linked to 'Àireamh an Latha' progression planners. Consideration should be given to the learners' prior knowledge - could be used to revise a topic and consolidate learning or to introduce a new topic, if this was appropriate, and should link to the planned learning for the week.
- All Class Teachers to create an 'Àireamh an Latha' display in their classrooms; to support children's understanding of the whole school approach.
- Class Teachers to decide when it is appropriate to use the 'Àireamh an Latha' activity; such as during soft start, as a mental maths starter, as a station activity, whole class lesson, home learning (family learning mats, for example), outdoor learning opportunity, using ICT, as an assessment tool or to introduce a new topic, as a plenary.