 **EDUCATION & CHILDREN’S SERVICES**

**Mathematics and Numeracy Policy**

**Skene School**



**Working Together, Learning Together, To Be The Best We Can Be**

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# Introduction

**Mathematics** is the study of the properties, relationships and patterns in number and shape, and the application of this knowledge to analyse, interpret, simplify and solve problems.

**Numeracy** promotes the development of the number-based skills that are needed regularly by everyone in their lives and is a part of Mathematics.

**Mathematics**

Learning mathematics develops logical reasoning, analysis, problem-solving skills and the ability to think in abstract ways, as well as offering opportunities for creativity. It is a universal language of numbers and symbols which allows us to communicate ideas in a concise, unambiguous and rigorous way.

Mathematics is important in everyday life, allowing us to make sense of the world around us. It gives us confidence in dealing with number and in understanding shape, position and movement. It enables us to think abstractly, model real-life situations and make generalisations and equips us with the skills we need to interpret and analyse information, assess risk and make informed decisions.

 (ACFE- Maths Cover paper)

# **Numeracy**

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.

 (ACfE- Numeracy Outcomes paper)

# **Rationale**

At Skene School we acknowledge the importance of mathematics in everyday life. Mathematics is a core subject within The Curriculum for Excellence, as well as being integrated across all learning.

‘Mathematics equips us with many of the skills required for life, learning and work. Understanding the part that mathematics plays in almost all aspects of life is crucial. This reinforces the need for mathematics to play an integral part in lifelong learning and be appreciated for the richness it brings. ‘

Mathematics: Principles and Practice

‘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 populations.’

Building the Curriculum 1

**Aims**

At Skene Primary School we aim:

1. To develop a positive attitude to numeracy and maths as an interesting and exciting subject in which all children gain success and enjoyment
2. To develop mathematical understanding through systematic direct teaching of appropriate learning objectives
3. To encourage the effective use of numeracy and maths as a tool in a wide range of activities within and outwith school and, subsequently, adult life
4. To develop an ability in the children to express themselves fluently, to talk about the subject with confidence, using correct mathematical language and vocabulary
5. To develop an appreciation of relationships within maths and numeracy
6. To develop the ability to think clearly and logically with independence of thought and flexibility of mind
7. To develop mathematical skills and knowledge and quick recall of basic facts

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# Teaching and Learning

At Skene School, Numeracy and Maths are currently planned for using the CfE.

Active involvement in mathematical experiences, set in real and relevant contexts, is vital to the development of knowledge, understanding, skills and a positive attitude towards numeracy and mathematics.

Within a rich and supportive learning environment, best practice will draw upon a skilful mix of approaches, including:

* Planned active learning with opportunities to observe, explore, investigate, experiment and play
* Development of problem-solving capabilities
* Development of mathematical thinking skills
* Development of skills and accuracy in mental agility
* Use of relevant contexts, familiar to young people’s experiences
* Appropriate, effective use of technology
* Building on the principles of Assessment is for Learning
* Collaborative and independent learning
* Making links across the curriculum where appropriate
* Increased opportunities for discussion, communication and explanation of thinking

From early level onwards, we aim for all our pupils to experience success in mathematics and develop the confidence to take risks, ask questions and explore alternative solutions without fear of being wrong. They should, therefore, 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, the use of collaborative learning encourages children to reason logically and creatively through discussion of mathematical ideas and concepts. Misconceptions and wrong answers are to be used as opportunities to improve and deepen children’s understanding of mathematical concepts, through use of effective questioning and discussion. FAIL – First Attempts In Learning are encouraged.

Emphasis is still to be placed on establishing the foundations of numeracy, such as confidence in recall and use of number bonds and multiplication facts, understanding of place-value, and the application of mental strategies. These skills will be continually reinforced throughout the pupils’ education. Oral/Mental Maths activities are used on a daily basis.

Individual, group or class teaching, using direct or indirect methods, are used as appropriate to the circumstances of the class/stage. Practical experience and use of number and maths equipment is vital to facilitate learning and promote better understanding.

Wherever possible, ICT is used to enhance learning - eg: use of Smartboard, Education City and other interactive games.

**Planning, Assessment and Tracking Progress**

In Skene School, the Maths and Numeracy curriculum is delivered principally through the CfE experiences and outcomes. The main scheme used to support learning is:

* Heinemann Active Maths

The following schemes of work are also available to provide further support, breadth in resources/learning and to meet learners’ needs:

* Scottish Heinemann Maths
* TEEJAY

Work is supported in all classes by Education City, by Big Maths in some classes and Books for All for learners with literacy difficulties.

Assessment forms an integral and ongoing part of learning and teaching. It is the gathering of evidence of attainment and progression for the purpose of informing future planning, teaching and reporting.

In working with pupils, our teachers continuously evaluate and make use of this assessment in planning future activities. Assessment is for Learning (AifL) strategies are used on a daily basis. Formative and summative assessment will be used in the learning & teaching process:

* To share learning objectives and success criteria clearly
* To assess understanding through skilful questioning
* To give pupils clear and regular feedback
* To assist learners and teachers to identify the next steps in the learning process which will ensure progression
* To engage in the process of self and peer assessment

On-going classwork will be the main source of evidence, available through observation of:

1. Oral questioning and discussion

2. Practical tasks

3. Pupils’ written work

4. Pupil’s own assessments and comments

More formal evidence will be gathered at key development stages. This will include mental, written and task – based activities, linked to the experiences and outcomes of CfE. Incas assessments are completed at P3, P5 and P7.

# Heinemann Active Maths

Teachers identify the Curriculum for Excellence outcomes and subsequent Heinemann Active Maths outcomes which they will work on for a term. These will then be used to form weekly activities.

Each outcome within Heinemann Active Maths is assessed with either an observation, activity or written task (Question Bank). At Early and First Levels, these are recorded on the assessment sheets for each individual pupil, recoding the score where appropriate, and traffic lighting how well the pupil coped with the activity. At Second Level, scores are recorded on group record sheets and pupils self-assess against each I can as they progress through Second Level.

**Transition Periods**

In order to achieve a smooth transition between stages teachers complete a transition profile for the class indicating coverage of maths outcomes over the year. Individual assessment information is also passed on indicating where each child is at in their learning, as well as maths plans and trackers. Teachers also engage in transition meetings where an overview of progress in mathematics is shared.

Information regarding pupil attainment in mathematics at P7 will be passed on to Westhill Academy through existing and developing primary/secondary liaison arrangements.

# **Partnerships**

Partnership working will underpin the mathematics policy in practice:

1. Teaching and support staff collaboration to enhance learning experiences with practical activities
2. Partnership working between children will be encouraged when appropriate
3. Collaboration between ASN Teacher and Class Teacher to plan IEPs for children as needs arise
4. Teaching staff and support staff collaboration to ensure resources and displays are well organised and maintained
5. Partnership with parents will be encouraged through the appropriate use of Homework.

# **Role of Teachers**

In order to develop core maths and numeracy skills in our children, as well as enabling them to transfer these skills across learning, teachers will strive to:

* Plan coherent, progressive maths activities
* Engage pupils in their learning
* Use appropriate resources to support pupils in their learning
* Assess pupils to ensure understanding
* Engage in CPD to further develop skills
* Inform parents when there are concerns
* Ensure parents know what is being worked on through setting appropriate homework, or sharing learning logs/profiles regularly

# **Role of the Head Teacher**

The Head Teacher will:

* Monitor/evaluate teacher planning in Maths
* Engage in reflective discussions regarding maths at planning reviews
* Track pupil progress in Maths and provide feedback to staff
* Engage in informal/formal discussions with pupils
* Provide opportunities for professional development
* Ensure there are opportunities to embed/develop numeracy and maths skills across learning
* Analyse, reflect upon and share the standardised testing results
* Monitor, allocate, fund and identify resources
* Monitor classroom practice in maths and numeracy (in accordance with Quality Assurance Calendar)

**Role of Parents/Carers**

At Skene School we value the role of parents/carers in our pupils’ education. Parents/carers will be kept informed on the area of maths being worked on by homework tasks being sent home and pupil achievements being recorded in their profile. Teachers may set Education City homework and release additional topics if they feel further consolidation is required.

The yearly report card will indicate the level that each pupil is working at in term 4.

Parents/carers are encouraged to get in touch with their child’s teacher in the first instance if they have any concerns regarding their child’s progress in maths.

**References**

A Curriculum for Excellence - Building the Curriculum 1

A Curriculum for Excellence – Building the Curriculum 3

A Curriculum for Excellence -Cover paper for draft experiences and outcomes in Mathematics

A Curriculum for Excellence - Cover paper for draft experiences and outcomes in Numeracy