Play, Learn & Grow Together

**Llangyfelach Primary School**
**Pengors Road, Llangyfelach, Swansea SA5 7JE**

**Headteacher: Mr Lee Burnell**
**Deputy Headteacher: Mrs C J Bate**
☎: 01792 771497
📠: 01792 700907
e-✉ : Llangyfelach.primary@swansea-edunet.gov.uk
e-✉ : lee.burnell@swansea-edunet.gov.uk

# MATHEMATICS & NUMERACY POLICY

## Introduction

This policy is a statement of the aims, principles and strategies for the teaching and learning of Mathematics at Llangyfelach Primary School. It represents the views of all the staff on the teaching and learning of Mathematics. The implementation of this policy is the responsibility of all teaching staff.

## What is Mathematics?

Mathematics is a vital part of the curriculum as it is an essential set of skills required for everyday life. As a school we want to enable children to see that Mathematics provides a way of viewing and making sense of the world. It can be used to analyse and communicate ideas and information effectively and to tackle a range of practical tasks and real-life problems. Children should have a positive attitude to Mathematics as an interesting and attractive subject.

## Aims

Using the programmes of study from the National Curriculum it is our aim to develop:

- a positive attitude towards Mathematics by making teaching fun and interactive
- an ability to communicate Mathematics using correct mathematical language and vocabulary
- initiative and an ability to work both independently and in cooperation with others
- competence and confidence in mathematical knowledge, concepts and skills
- mathematical understanding through both systematic direct teaching of appropriate learning objectives using concrete and visual aids and through a process of enquiry and experiment
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- mental arithmetic skills through daily oral and mental calculation work with the whole class using a range of interactive resources including ICT
- an ability to use and apply number as a key skill across the curriculum and in real life

## Teaching and Learning

Lessons generally follow the National Numeracy Strategy format with a mental and oral starter, a main activity and a plenary session. The teaching of Mathematics provides opportunities for:

- group work
- paired work
- individual work
- whole class teaching

Pupils engage in:

- practical work
- investigational work
- problem-solving
- whole class, group and paired mathematical discussion
- mathematical games and puzzles
- consolidation of basic skills and routines
- the development of mental strategies
- the development of written methods

The school uses a variety of teaching styles to cater for the variety of learning styles of pupils in lessons. Our central aim is to develop children's knowledge, skills, understanding and reasoning in mathematics. We do this through daily lessons that have a high proportion of whole-class and group-directed teaching. During these lessons we encourage children to suggest strategies and explain their thinking as well as ask and answer mathematical questions using mathematical vocabulary accurately. The children have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning.

As a school we recognise the importance of developing pupils' investigative skills across the range. There is a strong emphasis on a cross-curricular application of numeracy skills when and where-ever possible. Opportunities are sought for pupils to apply their knowledge to a wide range of real life situations and to use number as a key skill across the curriculum. The LPS Numeracy Booklet does provide opportunities for pupils to develop investigative skills; however, we also supplement these activities with additional opportunities in the form of 'Mega-Maths'. These are Cornerstones based topic projects that allow pupils to apply a variety of their procedural skills in a meaningful context. These activities are dedicated to developing reasoning and problem-solving skills. Teachers also use this topic approach to provide the direct teaching of new skills through the topic activity.

It is essential that mathematics lesson support the development of pupil's problem solving, thinking and investigative skills. We believe that this approach will be successful in providing opportunities for pupils to choose appropriate equipment and methods for the task and to communicate and justify their findings in a manner appropriate to their age and ability. It also provides them with the opportunity to choose how to record their work in appropriate

ways for a variety of purposes. Most importantly, it gives pupils the opportunity to discuss their thinking and to explain, compare and evaluate their strategies.

## Organisation

Mathematics is primarily taught as a discrete subject in both Foundation Phase and Key Stage 2 but is also integrated into the other learning areas and Cornerstones topics. Wherever possible, opportunities for LNF coverage are included in the planning of all leaning and applied across the whole curriculum.

Llangyfelach Primary School recognises the need for the teaching of maths to be 'scheme assisted not scheme driven'. Consequently, we have developed our own Numeracy Booklet to facilitate the teaching of Mathematics. The booklet is considered as a teaching resource and not a Scheme of Work. The booklet supports teaching and planning of Mathematics and is designed as a progression model that allows for consolidation, challenge, extension and support outside of what is expected within the year group. Staff are encouraged to be flexible in their planning and teaching as this will help facilitate effective cross-curricular links to the class topic. This will allow them to provide meaningful contexts in which children can develop and apply their mathematical skills.

In Foundation Phase, in order to make children's mathematical development meaningful, organisation is flexible. Whilst teachers and teaching assistants work on specific objectives with a focus group, other groups are given opportunities to consolidate mathematical skills through challenges in the enhanced provision. These challenges may reflect the skills being taught that week or involve consolidation of skills taught previously, allowing the pupils to explore and engage in their environment.

It is our philosophy that the more active, 'hands-on' activities that children experience, in the Foundation Phase, the easier it is for them to understand mathematical concepts. Through participating in practical and experiential learning activities and experiences, children will:

- make use of their skills, knowledge and understanding of mathematics to solve problems
- communicate mathematical ideas to others orally, pictorially and in writing
- develop mathematical reasoning

## Target Setting

Wherever possible, children are encouraged to recognise their own improvement areas either independently, or in discussion with the teacher. In Key Stage 2, children are encouraged to read teacher feedback and respond appropriately in order to make improvements within their own work.

Within Year 2, the same system is used, with the exception that the teacher will coach pupils to identify improvements required. This system is introduced during Year 1, at the discretion of the teacher. Year 1 will initially use group and class targets.

Within Nursery and Reception, targets are communicated verbally to the children who are then reminded of the target before attempting related activities.

## Resources

There is a range of resources to support the teaching of Mathematics across the school. In the Foundation phase, resources are class based and classes are provided with a range of equipment. Some equipment is shared between classes and all is accessible to any member of staff. In KS2 resources for the delivery of the maths curriculum are stored both centrally and in classrooms. Everyday interactive materials are kept in classrooms. Additional equipment and topic-specific items are stored centrally. Resources are audited on a regular basis by the coordinator.

## ICT

All classrooms have an Interactive Touch Screen and teachers are trained in their use. The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good mathematics teaching
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons
- ICT should be used if the teacher and/or children can achieve something more effectively with it than without it
- ICT has the power to stimulate and motivate learners

The school makes use of a variety of commercial and teacher created PowerPoint resources to enhance teaching and learning. Each classroom has a large 'Touch-Screen' display that supports various Maths based software, e.g. Octopus. The school subscribes to 'MyMaths' and teachers make use of this in class teaching and to provide nearly all weekly homework. In addition to these resources, the school also uses a range of other software and on-line activities to motivate and support children's learning in Mathematics. Information technology is also used in mathematics for data handling (use of databases, spreadsheets and graph drawing packages) and modelling (use of Logo to develop pupils' understanding of angles and direction);

## Inclusion - Children with SEN and/or learning difficulties or disabilities

Where possible, we aim to fully include ALN pupils in the daily Mathematics lesson, so they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods. Through the use of appropriate support, resources and differentiation, these pupils will be working towards the same learning objectives as their peers. For learners working significantly below the expected level of their year group, the school uses the needs of the learner as a starting point to enable these children to work towards related objectives chosen from the relevant progression strand from a lower year group.

Teaching assistants are also used to teach small groups and help pupils achieve their targets. ALN pupils have access to a wide range of practical resources (concrete and visual) to help develop mathematical thinking and understanding. Where necessary teachers will in consultation with the ALNCO, draw up an Individual Education Plan for a child with specific targets for Mathematics. When opportunities are planned for pupils to use number as a key skill across the curriculum, it is important that teachers consider the stage of mathematical development that is appropriate for these pupils.

Teachers in Year 2 and Year 6 identify any children that require additional support (Basic Skills Groups) and they have focused support from teaching assistants.

## Inclusion - Children who are more able and talented

Children who are working well above the overall level of the class will be given a range of experiences designed to broaden or deepen their learning while working on the same learning objectives as their peers. This may be done by modification of language and instruction, by providing more demanding questions, tasks and problems, often with a more open-ended approach. From time to time they may also be accelerating the pace of their learning by working towards skills chosen from the corresponding strand of a higher year group. When Numeracy opportunities are planned for pupils across the curriculum, it is important, where appropriate, to increase the level of demand and challenge for these pupils.

## Equal Opportunities

All children have an equal opportunity regardless of gender, race or ability, to progress and succeed in their mathematical learning and understanding. We pay particular attention to ensuring there is no gender bias in materials or in access to resources, including ICT. Teachers should pay attention to the equal distribution of their questions across all groups. Any displays and references to mathematics in society should show positive role models of gender, race, ethnicity and disabilities.

## Assessment and Record Keeping

At Llangyfelach Primary School, assessment is an integral part of the teaching process. Assessment in Mathematics is ongoing and formative and summative with a variety of strategies used such as observation, discussion, marking and questioning to ensure that understanding is being developed and that progress is being made. Information from formative assessments is used to inform teachers' short-term planning, help teachers differentiate appropriately and identify misconceptions and ways forward for the pupils' learning. Feedback is given to the children as soon as possible and marking work will be guided by the school's Marking Policy. Teachers will make weekly assessments that are focused on the Learning Targets identified in their weekly planning (Incerts). These assessments are then entered into Incerts (weekly) and will inform the next round of planning.

Assessment for learning encourages children to be more involved in and take more responsibility for their learning in Mathematics. Children are involved in assessing their own work where possible. This might include: thumbs up/down; traffic Lights; generation of success criteria linked to the learning objective; self and peer assessment of work using the success criteria.

Formative assessment is complemented by summative assessments which help us to track the progress of children through the school. Where pupils appear to make less progress than expected, given past achievements, the school tries to intervene and support children to fulfil their potential.

Statutory National Testing for Numeracy is carried out in May from Year 2 to Year 6. At the end of each year, pupils' attainment is measured against school and national targets using the National Test Data. Pupils' progress in Mathematics in relation to the National Curriculum is recorded using Incerts which feeds directly into our annual report to parents.

## Reporting

Reporting to parents is carried out through the twice-yearly parent/teacher meetings and annually through the written report. They are provided with information on children's areas of strengths and/or weaknesses and on their progress in Mathematics. Parents are informed of any targets identified by the teacher during Parent Meetings and teachers may suggest strategies that parents can use at home to support their child achieve progress in relation to these targets.

## Homework

The aim of homework is either to consolidate or extend pupils' learning:

- Homework is provided once a week from Reception to Year 6
- Homework is directly linked to the week's learning objectives or the pupil's individual target
- Not all homework is written homework. In the foundation phase, we encourage teachers to set homework which makes use of the home context
- Parents can make use of the VLE on our School Website to access resources and activities to support their child's learning
- 'MyMaths' or J2Blast homework is set weekly by teachers.

## The Role of the Co-ordinator

- To offer support and guidance to all members of staff
- To audit and organise resources and encourage effective use
- To review the Mathematics policy in consultation with all staff and governors
- To keep abreast of latest developments sharing knowledge with colleagues
- To identify areas for development and write and monitor the school development plan for the subject

## Monitoring and Evaluation

The purpose of monitoring and evaluating activities is to raise the overall quality of teaching and levels of pupil attainment. The Mathematics co-ordinators and the Head teacher will monitor the quality of teaching and learning, and different areas are chosen to be monitored each year. The monitoring will include:

- Listening to Learners – pupil interviews and questionnaires
- Scrutiny of planning
- Half-termly workbook scrutiny
- Standardisation Meetings - Evaluation of pupils' work from different ability groups in each year group and in relation to National standards
- Quality of teaching and learning through lesson observations and feedback

During the last ADDs session of each half-term teachers provide examples of levelled work in Mathematics. All staff agree on the Level/Outcome before the work is added to standardisation folders.

In both Key Stage 2 and Foundation Phase, I-Pad recordings are used to keep a record of pupils' practical work in a number of subject areas. This is utilised in Foundation Phase where there is greater emphasis on practical work.

As part of our Transition Programme with our link Comprehensive School, Pontarddulais, the co-ordinators take part in moderation meetings with other primary schools in our cluster. At these meetings assessments of standards and levels achieved across all strands of Mathematics are discussed and agreed. This process is outlined fully in our Assessment Policy.

***This policy was created December 2013 and will be reviewed annually.***

***Next Review Date:***
***July 2019***