



Mathematics Policy Document

The Beacon MATHEMATICS POLICY

Rationale

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

The intention is to provide mathematical experiences which equip the pupil/ students with the necessary knowledge and skills to lead as full and independent a life as possible within the community. The main aims and objectives for the Mathematics Curriculum are therefore related to the overall vision of the school by ensuring that the mathematics the children encounter is both practical and positive, related to their own experience and develops their ability to generalise concepts in achieving independence and social competence.

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- ☐ become fluent in the fundamentals of mathematics,
- ☐ reason mathematically
- ☐ can solve problems by applying their mathematics to a variety of routine and non-routine problems.

(National Curriculum 2014)

- to develop a sound understanding of basic mathematical concepts through practical and investigational work
- to acquire appropriate and necessary mathematical skills and to apply them confidently
- to enjoy mathematics, be successful and have a positive attitude to the subject
- to be able to demonstrate their skills and knowledge and convey an understanding of what they have done
- to develop thinking skills and logically apply their mathematical knowledge to solve problems
- to use mathematics meaningfully as part of their everyday life in school, the community and at home in terms of developing vital life skills, thus empowering our pupils towards independent living and preparing them for adulthood.

There are a variety of individual needs across The Beacon. All pupils at the school have a Statement of Special Educational Needs. There are a large percentage of ASD pupils. Some pupils have gaps in their understanding. Some pupils have difficulty with personal organisation. Some need help managing their behaviour to prevent them disrupting the education of others in the group. Some pupils have horizons reduced by failure within the context of the school, or family. Within the context of mathematics we recognise that not all pupils will achieve at the same rate or attain the same level, but our aim is always to enable our pupils to become numerate and able to use maths functionally in real life situations.

Purpose of study

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Objectives

- to ensure that all pupils follow a broad and balanced mathematics programme based on the requirements of the National Curriculum 2014
- to ensure that all pupils are provided with interesting and challenging tasks that enable them to achieve standards commensurate with their abilities and potential
- to ensure that pupils can work individually, collaboratively in groups and within the whole class
- to allow pupils to develop as independent learners, able to make decisions about their own work
- to ensure that pupils encounter and engage in practical and positive activities that are relevant to their personal development
- to enhance pupils' levels of independence and abilities to generalize learnt concepts

Curriculum outline

Numeracy has a spiraling curriculum with increasing levels of difficulty as pupils progress through the yearly schemes of work. Our pupils require additional time and input to acquire the relevant knowledge, skills and understanding in this subject.

- P1/ Yr 1 (Reception/Year 1) - follow EYFS.
- P2/ Yr2 - Year 1 Teaching Programme/p levels

- P3 / Yr 3 - Year 1 Teaching Programme
- P4/ Yr 4 - Year 2 Teaching Programme/ Year 1
- P5 / Yr 5 - Year 2 Teaching Programme/ Year 1
- P6/ Yr 6 - Year 3 Teaching Programme/ Year 1
- Y7 - Year 3 Teaching Programme/ Year 2
- Y8 - Year 4 Teaching Programme/ Year 2
- Y9 - Year 4 Teaching Programme/ Year 2
- Y10 - Welsh Board Entry level Certificate/ Year 2
- Y11 - Welsh Board Certificate Entry level/ certificate/ Year 3
- Y12/Y13/Y14 - Welsh board Functional Skills and OCR life and living

Within this structure there is flexibility so that teachers use their professional judgements if they feel that a particular teaching issue is either too difficult or too easy, they can look back or forward within the structure.

Differentiation

Schemes of Work provide teachers with a suitably structured differentiated NC programme. Pupils in the Foundation Class follow the EYFS guidelines. Students in KS4 and 5 engage in specific OCR units which lead to accreditation in Life and Living at 'award' and 'certificate' levels.

Work for pupils will be pitched at appropriate and differing levels by means of various strategies, and in accordance with their developmental needs, including:

- use of sensory activities
- open-ended questions
- appropriate resources
- teacher/TA support
- a range of class/individual management techniques
- clear objectives and interesting schemes of work
- ICT access via switches, iPads, touch screens, flip top cameras etc. and ICT mathematics programs including Dynamo Maths.

Assessment

Pupils are assessed continually throughout the year, using b squared as an assessment tool. Progress is analysed three times a year and pupils identified who need to be targeted with extra input or support.

The school holds parent/teacher meetings to discuss children's progress three times a year. Before the annual review a more detailed report is sent home to parents and parents can again meet with teaching staff to discuss their child's progress.

There is a whole school Marking and assessment policy. Work should be marked regularly and based on the learning objective. TA's may mark work for the group they are working with.

Teaching Styles

Lessons will have clear learning objectives or intentions for pupils.

Teaching styles include:

- wide variety of interesting resources – to interact with
- demonstration – showing how
- explanation – giving examples
- questioning – challenging understanding
- discussion and evaluation – talking about it
- directing – encouraging independent work or copying adult model
- practicing – basic skills learnt

Each pupil will be encouraged to use ICT as part of their mathematical studies.

What should lessons be like?

Lessons should:

- Be highly motivating and relevant to pupils' abilities and actively demonstrate their relevance to real life as experienced by pupils.
- Be practical and experimental, where appropriate.
- Be student paced offering plenty of opportunity for consolidation and practice, extension and differentiation.
- Foster autonomy rather than dependence.
- Recognise and value the importance of social interaction.
- Acknowledge cross-curricular links.
- Use accessible materials.

- Move generally from the concrete to the abstract only if and when appropriate
- Foster the development of multiple strategies.
- Where possible work from examples to investigate rules.

Spoken language

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Cross-curricular skills and links

Elements of numeracy are incorporated into all other areas of the curriculum wherever possible and often occur naturally as part of the subject focus. Pupils are encouraged to view numeracy as an integral part of their daily lives both in school and in all other settings. Teachers show planning for numeracy in all subjects. In this way Numeracy can become an effective subject across the whole curriculum.

SMSC

- the pleasures and rhythms of counting – “Music is the pleasure the human soul experiences from counting without being aware it is counting.”
- transformations through multicultural themes – buildings, carpet design...
- stories.
- encouragement of the wonder and awe of the beauty of mathematics, the simplicity of mathematics, the complexities of mathematics, the particular qualities of mathematics...
- activities emphasising other cultures eg Bengali numbers, Rangoli patterns...
- making sense of the world around us...
- the dangers of money, the Lottery, the ethics behind advertising eg collecting the 6 'free' gifts...

Homework

Homework is sent home according to the homework policy. Every other term teachers meet with parents to discuss pupils' progress and how they can further be supported both at home and at school.

Equal opportunities

All children are entitled to an education that is not limited by considerations of ability, gender, race, creed or class. We aim to provide a healthy learning and social environment which:

- Overcomes bias and conditioning in the question of gender, race, class and creed.
- Openly involves children in discussing issues of equal opportunities in order to raise their awareness.
- Avoids stereotyped roles when grouping children together.
- Encourages children to experience non-traditional areas of work.
- Eliminates bias in learning materials.

The school's Equal Opportunities Policy is available on request.

Inclusion

The needs of pupils are constantly changing and all pupils at the school are involved in the "process" of inclusion. For all pupils this means having access to the National Curriculum and the full range of opportunities and activities available to children in mainstream schools. It also means having the opportunity to work alongside adults other than teachers, to visit the local community and to share activities with other children from other schools.

For some children we try to plan opportunities to take part in group activities and specific curriculum-based activities in mainstream schools or to be re-integrated part-time into a mainstream school or college to follow particular courses

In addition to this some of the more able children attend mainstream schools to provide them with attaining a higher level of achievement.

The school's Inclusion Policy is available on request.

Health and Safety

(See Federation Health and Safety Policy Document).

Management and Administration

The Mathematics curriculum faculty team monitors and leads new developments. Maths is taught according to the NC for Key Stages 1, 2, 3 and 4. Children in the Early Years Department follow the Early Years Foundation Stage guidelines and students KS4&5 engage in functional maths skills across the curriculum.

Role of faculty team

Subject curriculum faculty teams ensure curriculum continuity and best practice for pupils in all key stages (EYFS to Sixth Form).

The teams are responsible for ensuring practice matches policy and they have opportunities during the academic year to monitor and support learning and teaching in their subjects.

Resourcing

Responsibility for this is undertaken by the Mathematics curriculum faculty team in line with annual budget allocation and forms a part of the Performance Management Procedure with SMT each year. There is regular ongoing discussion/evaluation of resource needs between staff.

Evaluation and review

- At the beginning of each year subject action plans are reviewed and new targets are set. Usually mid - year they are reviewed again to ensure the targets are being met.
- Mathematics policy is reviewed every three years.

Appendices – Calculation Policy

UPDATE SCHEDULE

Version	Date	Reason for Update	Review due
1	Sept 2016	Transfer to single school	Sept 2018