



Western
Learning
Federation



Tŷ Gwyn School


MATHS AND NUMERACY POLICY




RATIFIED BY GOVERNORS	18th September 2024
DATE REVIEWED	18th September 2024
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Monitoring the policy

This policy will be reviewed bi-annually unless change of circumstances or legislation requires it to be amended earlier.

SIGNED  **DATE** 4/10/24
Chair of Governors

SIGNED W A H  **DATE** 6/10/24
Executive Headteacher

SIGNED  **DATE** 02/10/24
Deputy Executive Headteacher

SIGNED  **DATE** 02-10-24
Head of School

The values and principles

The federation is underpinned by a set of values that define the culture of the three federated schools.

Our Principles

Honesty

Responsibility

Positivity

Trust

Empathy

Patience

Respect

Kindness

Our Values

- We celebrate our differences.
- We have a shared sense of belonging.
- We play, laugh, smile and celebrate success.
- We have a positive attitude.
- We learn from experiences to develop life and independent skills.
- We follow our dreams and aspirations.
- We care for our own and wider environment.
- We improve quality of life.

Definition

Values One's judgement of what is important in school life.

Principles Morally correct behaviour and attitudes.

Rights Respecting Schools

Every child has rights "without discrimination of any kind, irrespective of the child's or his or her parent's or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status"

Western Learning Federation
Executive Headteacher - Mr Wayne Murphy
Deputy Executive Headteacher - Mrs Rachel Faulkner - Morris
Tel: 029 2083 8560
E-mail: westernlearningfederation@cardiff.gov.uk

Riverbank School
Head of School - Mrs Amie Lucas
Tel: 0292 0563 860
E-mail address: riverbanksp@Cardiff.gov.uk

Tŷ Gwyn School
Head of School - Mr Jamie Brotherton
Tel: 0292 0838 560
E-mail address: tygwynsp@cardiff.gov.uk

Woodlands School
Head of School - Mrs Siân Thomas
Tel: 0292 0838 560
E-mail address: woodlandshighschool@cardiff.gov.uk



Vincent Road, Cardiff, CF5 5AQ

Western Learning Federation
Together we learn, grow and achieve

@CardiffWestern @RiverbankSch @GwynSchool @WoodlandsHS

www.westernlearningfederation.co.uk

Ty Gwyn's Vision Statement

"Learning to Achieve"

Rationale

The Curriculum for Wales

The new Curriculum for Wales (2021) makes it explicit that the new curriculum and assessment arrangements in Wales are to be fully inclusive and easily understood by all, encompassing an entitlement to high-quality education for every child and young person and taking account of their views in the context of the United Nations Convention on the Rights of the Child (UNCRC), and those of parents, carers and wider society.

We are fully committed to developing and implementing the four purposes of the curriculum, as they apply within a special school context across each of the 6 AoLE's.

We want all of the pupils at Ty Gwyn School to be;

- **Ambitious**, capable learners;
- **Enterprising**, creative contributors;
- **Ethical**, informed citizens;
- **Healthy**, confident individuals.

As a Rights Respecting School we are committed to embedding the principles and values of the United Nation Conventions for the Rights of the Child (UNCRC). This policy enables our pupils to access and enjoy the following articles of the convention that have most impact on their education:

- Article 12 – Every child has the right to express their views, feelings and wishes in all matters affecting them, and to have their views considered and taken seriously.
- Article 13 – Every child must be free to express their thoughts and opinions and to access all kinds of information, as long as it is within the law.
- Article 23 – A child with a disability has the right to live a full and decent life with dignity and, as far as possible, independence and to play an active part in the community.
- Article 28 – Every child has the right to an education.
- Article 29 – Education must develop every child's personality, talents and abilities to the full.

For further information please see our Teaching and Learning Policy (2021)

Links with other policies:

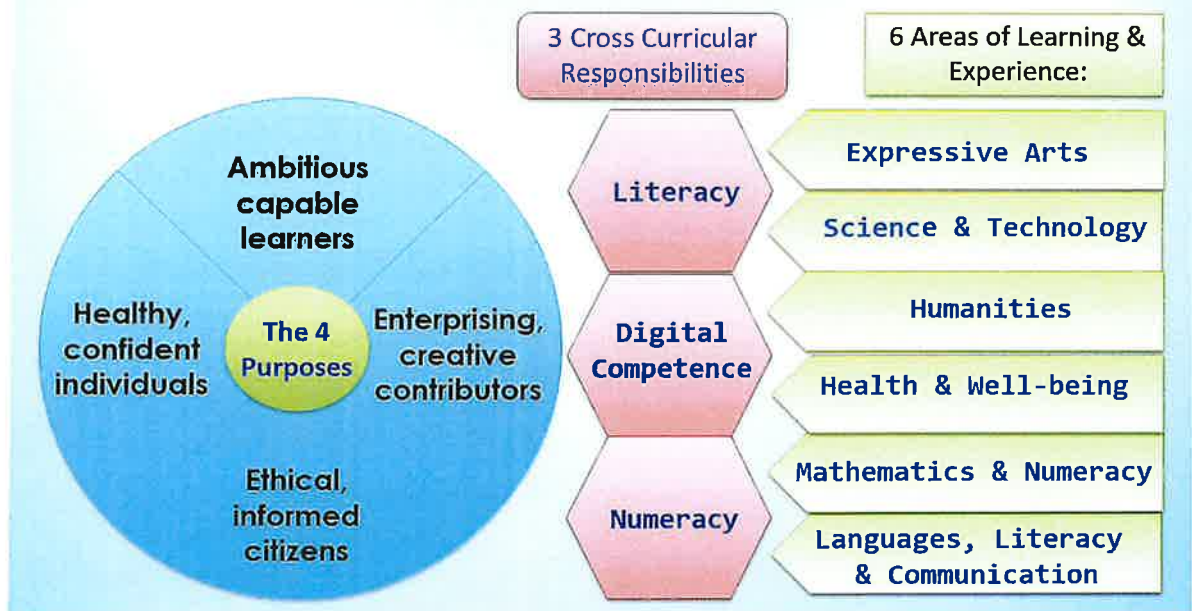
This policy should be read in conjunction with the following school policies:

- Teaching, Learning and Curriculum Policy
- Assessment Policy

- Food and Fitness Policy
- Substance Use and Misuse Policy
- Sun Protection Policy
- RSE Policy
- PE Policy
- Eco Schools Policy
- ESDGC Policy
- Pupil Participation Policy
- E- Safety Policy
- Confidentiality
- Safeguarding/Child Protection
- Anti-bullying Policy
- Equal Opportunities Policy

A Curriculum for Wales – a Curriculum for Life

'Successful Futures' led to an exciting new approach to the Curriculum for Wales



Introduction:

Mathematics and Numeracy

Within the new Curriculum for Wales, Mathematics & Numeracy is one of six Areas of Learning and Experience (AOLE) alongside Expressive Arts, Health and Wellbeing, Humanities, Science & Technology and Literacy, Language & Communication.

What matters in Mathematics and Numeracy?

Through understanding 'what matters' about Mathematics and Numeracy, learners will be able to realise the Four Purposes of the Curriculum for Wales.

The number system provides learners with a basis for algebraic, statistical, probabilistic and geometrical reasoning, as well as for financial calculation and decision-making. This will develop **Ethical, informed citizens** of Wales and the world, who will be able to make informed decisions about future actions and choices.

Mathematics help to develop **Healthy confident individuals**, who are ready to lead fulfilling lives as valued members of society. They able to reason, make balanced choices and solve problems in mathematics and in a wide range of real-world contexts. Understanding the concepts of measurements, percentages and ratios can help to create a balance in all areas of lifestyle and the world around us.

Ambitious capable learners ready to learn throughout their lives should engage with Mathematics. Managing data and representing information effectively provide learners with the means to test hypotheses, draw conclusions and make predictions. The process of reasoning with statistics and probability, and evaluating their reliability, develops critical thinking and analytical skills that can be used across all learning.

Mathematics can help to develop **Enterprising, creative contributors**, ready to play a full part in life and work by understanding the World around them. Reasoning about the sizes and properties of shapes and their surrounding spaces helps learners to make sense of the physical world and the world of mathematical shapes.

The following "**Statements of What Matters**" make up the focus of the Mathematics and Numeracy AoLE from age 3 to 16;

- **The number system is used to represent and compare relationships between numbers and quantities.**
- **Algebra uses symbol systems to express the structure of mathematical relationships**

- **Geometry focuses on relationships involving shape, space and position, and measurement focuses on quantifying phenomena in the physical world.**
- **Statistics represent data, probability models chance, and both support informed inferences and decisions.**

Each of these statements form the basis of teaching within the Mathematics and Numeracy AoLE, which is adapted to be appropriate for our learners at Ty Gwyn.

Principles of Progression

- **Increasing breadth and depth of knowledge** – Pupils are encouraged to explore their own world initially and then develop the confidence to begin to explore more abstract concepts in the wider world. Pupils are supported to build knowledge, and with the skill of teachers, link this knowledge to new ideas and concepts at a level that is appropriate to them by revisiting concepts and embedding their knowledge whilst encouraging more learning. Differentiation within Mathematics and Numeracy is key, with each pupil working to achieve their own specific targets which comprise of small, achievable steps to ensure success.
- **Deepening understanding of the ideas and disciplines within areas of learning and experience**– Skills such as problem solving can be developed across each of the what matters statements within Mathematics and Numeracy. Pupils are encouraged to explore concepts such as number and shape in the immediate world around them, with more specific specialised subject areas being addressed at as they move up the progression steps. All staff have a vital role in helping all pupils to be able to participate fully in the teaching experience, fully understanding the recommendations from other professionals involved with each individuals development.
- **Refinement and growing sophistication in the use and application of skills** – The main skills encouraged within Mathematics and Numeracy include exploration, analysis, problem solving and critical thinking. For our pupils, the early development of these skills is taught via sensory experiences and 'hands on' learning. These early skills are then built on and expanded into more abstract concepts, allowing their skill base to become more sophisticated and refined. Mathematics and Numeracy is an area of learning that can be practical in nature, allowing pupils to explore the environment around them as well as experience the wider world, applying the skills that they have developed in every day life.
- **Making connections and transferring learning into new contexts** – Pupils are encouraged to apply their learning from within Mathematics and Numeracy

to inform their thinking beyond personal experience and the classroom, and into the wider world. Teachers support pupils to be able to link current knowledge and experiences to the wider community and the world around us. This supports pupils to transition into different contexts, develop wider life skills and a prepare them for life after school.

- **Increasing effectiveness as a learner** – Throughout their time in school, learners are supported and encouraged to become more confident as learners as well as becoming more independent in their learning. Skills are developed over time, being revisited frequently and in different contexts, encouraging out learners to use their skills with breadth and depth. Learning opportunities are designed to provide learners the opportunity to effectively use their skills and knowledge across the areas of learning, increasing their ability to become life long learners.

Descriptions of Learning – content and delivery

Progression steps 1 and 2 provide the foundation for learning across the statements of what matters within Mathematics and Numeracy, and focus on early mathematical concepts such as number, shape and measure. Most of our pupils are working within Routes to Literacy, Numeracy and Digital Competence, and up to Progression Steps 1 / 2. Mathematics and Numeracy is currently being planned for and assessed via the Literacy and Numeracy Framework and Mathematics P Levels.

Mathematics and Numeracy is taught and developed through a wide range of experiences and also through a multi-sensory approach that suits the needs of all pupils across the school. Class teachers and support staff utilise a variety of teaching styles and create learning opportunities that suit each learners needs and maximise their potential to learn.

Mathematics and Numeracy is planned in conjunction with the half-termly Context for Learning,

each lesson allowing for a wide range of learning opportunities. This is delivered as part of a cycle within each area of the school. Individual targets are set on a termly basis for learners via their Individual Education Plans, which allow a focus on mathematical skills and knowledge.

Within Mathematics and Numeracy, there is a focus on four main areas, namely, number skills, data skills, measuring skills and developing numerical reasoning. Pupils are encouraged to develop across all four areas within the framework and learning opportunities are provided across all four areas.

Planning across the school ensures that Mathematics and Numeracy is taught throughout a pupils learning career. The 14-19 department has a focus on ASDAN accredited courses, allowing for pupils learning to be recognised and celebrated as they reach the end of their school careers. Pupils aged 14-16 focus on Transition Challenge, aiming to achieve a Gold award. Pupils aged 16-19 undertake the Personal Progress Qualification, aiming to achieve a diploma that can help them in their future lives after school.

The aims of teaching Mathematics and Numeracy:

- To develop conceptual understanding, allowing pupils to develop an understanding of connections and to explore ideas.
- To develop an understanding of communication using symbols, understanding the relationship between the written numeral and the amount.
- To be able to use logical reasoning and problem solving skills to overcome any obstacles.
- To use strategic competence to communicate their ideas effectively with others and work as part of team or group.
- To develop fluency in remembering facts and mathematical knowledge so that they can be applied across situations and contexts.

Cross-curricular Skills

All staff are responsible for developing pupils' skills in literacy, numeracy and digital competence; these are cross-curricular and will take account of the following key guidance:

- Literacy and numeracy framework (LNF)
- Routes to literacy
- Routes to numeracy
- Digital competence framework (DCF)
- Routes to digital competence

More information regarding the three cross-curricular skills can be found within the Teaching and Learning Policy (2021)



Within Mathematics learners are given regular opportunities to describe, explain and justify their understanding of various mathematical concepts, using appropriate mathematical vocabulary. For our pupils this might be the use of simple words and phrases, the use of symbols and schedules, the use of pictures and objects to aid understanding as well as Makaton sign. Literacy skills can also be developed in order to describe mathematical processes, such as reasoning, understanding a range of calculation strategies, describing shapes, studying and interpreting data as well as comparing alternative methods before arriving at a solution to a mathematical problem. These literacy skills can be used as they encounter practical, real-life problems.



The five mathematical proficiencies – Conceptual understanding, Communication using symbols, Fluency, Logical reasoning and Strategic competence – can be applied

and connected by using a range of real-life contexts to introduce and explore mathematical concepts, as well as to build their skills and knowledge. Pupils are encouraged to develop their numeracy skills through a range of fun, practical tasks, which are repeated and reinforced in a variety of contexts to increase and ensure understanding.



Digital approaches enhance learners' mathematical and numeracy skills across a range of situations that will naturally occur within the area of learning and experience. Computer programs that enhance problem solving skills and logical reasoning as well as numerical knowledge can be used within the area of learning. As learners develop and progress, they will increasingly use more complex digital skills, processes, techniques and systems to create solutions to address specific problems, opportunities or needs.

Skill acquisition

The Integral Skills of the new Curriculum for Wales include;

- Creativity and Innovation
Mathematical working requires and develops creativity and curiosity which also transfer to other aspects of life. Frequently in mathematical problem-solving the learner does not immediately know how to approach the problem; it takes creativity and courage to explore different approaches before deciding how to proceed. Planning and modelling tasks within mathematics develops learners' ability to turn ideas into action.
- Critical thinking and problem solving
The development of logical and critical thinking underpins learning in mathematics. Mathematics teaches us problem-solving skills which transfer to all areas of the curriculum, to life in general and to the world of work.
- Personal effectiveness
Studying mathematics develops personal effectiveness. When studying mathematics everyone encounters challenges at some point, and overcoming these challenges requires and develops resourcefulness and resilience. Communicating about mathematical thinking and solving problems is a core aspect of mathematics. Mathematical communication is precise and logical and will be useful in life generally.
- Planning and Organising
Mathematical thinking requires learners to be organised and, as they progress through school, their organisational skills will develop. In their mathematical problem-solving, learners should be encouraged to predict and estimate solutions and then to check their answers, reflect on their results and evaluate their approaches. Increasing confidence in decision-making for mathematical problem-solving supports learners to be more

aspirational in setting goals and challenges for themselves including planning how to achieve these.

Pupils learn through rich, experimental, investigative and directed play activities. Our staff are highly skilled in the way in which they achieve the appropriate balance between self-exploration and more adult led activities in order to challenge pupils to reach their full potential and allow them to access opportunities for independent learning, wherever possible. Our pupil centred ethos and approaches allow all pupils to develop their independence and make progress commensurate with their abilities and needs.

Provision for our pupils is holistic with the child at the heart of the curriculum. Our provision offers all pupils well-planned learning experiences, allowing them to be creatively involved in their own learning. Our active learning enhances and extends pupils' holistic development by building upon their abilities and interests and acknowledging prior learning and achievements. Pupils are offered choices and challenges with care and sensitivity. Our staff motivate pupils and scaffold their learning at the appropriate level to move their learning forward. Key skills are embedded into each area of learning.

The Mathematics and Numeracy area of learning is deeply embedded in our curriculum and learning opportunities, and is developed across all aspects of our work incorporated into the six AoLEs.

With the implementation of the ALN Bill our thematic plans and individual planning (IEPs/IDPs) will be fully reviewed and amended in light of significant developments.

Key links with other areas of learning and experience

Expressive Arts

- Use of counting, sequencing and time in music, dance and art
- Exploration of space, patterns, symmetry, shape and position can be used across the arts.
- Ratios, scale, proportions and fractions can also be explored in music.
- Use of songs and rhymes can assist with the embedding of numeracy during the early progression steps.

Humanities

- collecting of primary data in geography and history
- representation and analysis of data and statistics in geography and history enquiries
- Being able to identify patterns, trends and anomalies in data
- Experiencing entrepreneurship and exploring money, finances and budgeting in the 14-19 department
- ordering and sequencing timelines and events in the past
- Exploring ratio when using maps

Languages, Literacy and Communication

- Songs and rhymes can be used to teach early numeracy in all languages.
- Finding and applying patterns for problem solving

- Acquisition of gross motor skills as a precursor of fine motor skills such as handwriting.
- The role of language, both written and spoken in communicating and recording results of investigations.
- The potential of language to develop critical thinking skills.

Health and Wellbeing

- Learning to be financially literate and be able to use money in everyday situations
- Knowledge and understanding of the process of decision-making, especially financial decisions
- Opportunity to explore the role of numeracy in purchasing food and items that are wanted and needed
- Preparing food to support daily nutrition, using measuring skills to ensure recipes are followed
- Being able to access appointments and activities by being able to use time effectively

Science and Technology

- Using and understanding data and statistics
- Using problem solving skills in inquiry and investigation activities
- Using geometry and measurement in design and technology
- data handling in computer science
- knowledge of numbers and symbols in computer sciences

Cross-cutting themes

Local, national and international contexts in Mathematics and Numeracy

Mathematics is a universal language. To make sense of this language and to understand mathematical concepts, learners need examples rooted in everyday life. Learning within local, national and international contexts will enable learners to understand the connection between mathematics and numeracy and authentic real-life contexts that span both Wales and the world.

Using international examples from a range of cultures enables learners to understand the history of mathematics and its development into an international and universally applicable language. This also promotes and supports cross-curricular learning.

Careers and work-related experiences in this Area

An engaging and exciting Mathematics and Numeracy curriculum inspires learners and equips them with the foundations to become life-long learners, embarking upon rich and varied opportunities in life.

Studying mathematics and numeracy helps develop skills in logical thinking, problem-solving and decision-making, which are important skills in both life and in the workplace.

Through authentic contexts, learners should be given opportunities to experience mathematics within the world of work. Schools should give purpose to mathematical learning through the creation of school and locally based enterprise projects which develop, foster and evaluate entrepreneurial skills.

Schools value and character

We aim to develop a culture of inclusion and diversity in which all those connected to the school feel proud of their identity and are able to participate fully in school life.

We are committed to ensuring that all members of the Ty Gwyn community are treated equally with equal opportunity to access education and services irrespective of disability, race, gender, age, sexual orientation, religion or belief, gender reassignment, pregnancy & maternity, marriage and civil partnership.

In regular school council meetings pupils express their thoughts and opinions on whole school matters and act as representatives for their classmates, ensuring all pupils' voices are heard and their ideas valued.

We tackle discrimination by the positive promotion of equality, challenging bullying and stereotypes and creating an environment which champions respect for all.

Diversity is a strength which should be respected and celebrated by all those who learn, teach and visit Ty Gwyn.

Policy review

In light of the ongoing and rapid curriculum and assessment developments as part of the new Curriculum for Wales this policy will be reviewed on an annual basis to ensure that it reflects the progress towards the full implementation of the 2021 curriculum.