Skills and learning

Mathematics
in the national curriculum for Wales

This document highlights those statements or sections in the programmes of study for mathematics that provide explicit opportunities for

- developing thinking
- developing communication
- developing ICT
- developing number

and promoting

- Curriculum Cymreig and Wales Europe and the world
- personal and social education
- careers and the world of work.

The number and context of such opportunities are for schools to determine within their curriculum overview/curriculum planning.

Developing thinking

Schools should provide opportunities, where appropriate, for learners to develop and apply their thinking across the curriculum through the processes of planning, developing and reflecting.

In mathematics, learners ask questions, explore alternative ideas and make links with previous learning in order to develop strategies to solve problems. They gather, select, organise and use information, and identify patterns and relationships. They predict outcomes, make and test hypotheses, reason mathematically when investigating, and analyse and interpret mathematical information. They describe what they have learned, reflect on their work by evaluating their results in line with the original problem, and justify their conclusions and generalisations.

In mathematics, opportunities to develop thinking apply throughout the Skills and Range sections of the programmes of study for Key Stages 2, 3 and 4.

Developing communication

Schools should provide opportunities, where appropriate, for learners to develop and apply their communication skills across the curriculum through the skills of oracy, reading, writing and wider communication.

In mathematics, learners listen and respond to others. They discuss their work with others using appropriate mathematical language. They read and extract information from mathematical texts. When solving problems, they present their findings and reasoning orally and in writing, using symbols, diagrams, tables and graphs as appropriate.

In mathematics, opportunities to develop communication apply throughout the Skills and Range sections of the programmes of study for Key Stages 2, 3 and 4.

Developing ICT

Schools should provide opportunities, where appropriate, for learners to develop and apply their ICT skills across the curriculum by finding, developing, creating and presenting information and ideas and by using a wide range of equipment and software.

In mathematics, learners use a variety of ICT resources to find, select, organise and interpret information, including real-life data, to explore relationships and patterns in mathematics, to make and test hypotheses and predictions, to create and transform shapes, and to present their findings using text, tables and graphs.

In mathematics, opportunities to develop ICT apply throughout the Skills and Range sections of the programmes of study for Key Stages 2, 3 and 4.

Developing number

Schools should provide opportunities, where appropriate, for learners to develop and apply their number skills across the curriculum by using mathematical information, calculating, and interpreting and presenting findings.

In mathematics, learners use their number skills throughout the programme of study when solving problems in a variety of practical and relevant contexts and when investigating within mathematics itself.

In mathematics, opportunities to develop number apply throughout the Skills and Range sections of the programmes of study for Key Stages 2, 3 and 4.

Curriculum Cymreig (7–14) and Wales, Europe and the World (14–19)

Schools should provide opportunities, where appropriate, for learners aged 7–14 to develop and apply knowledge and understanding of the cultural, economic, environmental, historical and linguistic characteristics of Wales. Learners aged 14–19 should have opportunities for active engagement in understanding the political, social, economic and cultural aspects of Wales as part of the world as a whole.

Mathematics contributes to the Curriculum Cymreig by offering learners the opportunity to learn and apply mathematics in the context of data from their own local community, from the local and national environment, and from current issues related to Wales. The traditional Welsh vocabulary for some numbers as well as Welsh quilt and Celtic patterns provide investigative opportunities to contribute to learners' development of a sense of Welsh identity.

In mathematics, there are no explicit references to the Curriculum Cymreig.

Personal and social education

Schools should provide opportunities, where appropriate, for learners to promote their health and emotional well-being and moral and spiritual development; to become active citizens and promote sustainable development and global citizenship; and to prepare for lifelong learning.

Mathematics contributes to learners' personal and social education by providing opportunities to apply mathematics to real-life problems. It helps them to analyse and interpret information presented to them on environmental and other twenty-first century issues, and to develop an informed and challenging attitude to real-life information, questioning its validity and recognising its implications for their world.

In mathematics, there are no explicit references to personal and social education.

Careers and the world of work

Schools should provide opportunities, where appropriate, for learners aged 11–19 to develop their awareness of careers and the world of work and how their studies contribute to their readiness for a working life.

Mathematics contributes to learners' awareness of careers and the world of work by providing opportunities to apply mathematics in the context of financial awareness of employment, budgeting, saving and spending.

Key Stage 3

Range

Measures and money

Pupils should be given opportunities to:
2. Understand and use money
   - calculate with money and solve problems related to budgeting, saving and spending, and currency exchange rates.

Key Stage 4

Range

Measures and money

Pupils should be given opportunities to:
2. Understand and use money
   - calculate with money and solve problems related to budgeting, saving and spending, including currency exchange rates, profit and loss, discount, hire purchase, best buys, household bills and compound interest.