# Vision for Mathematics and Numeracy

## What do we want our learners to become?

- ambitious, capable learners, ready to learn throughout their lives.
- enterprising, creative contributors, ready to play a full part in life and work.
- ethical, informed citizens of Wales and the world.
- healthy, confident individuals, ready to lead fulfilling lives as valued members of society.

## What should we teach in Mathematics and Numeracy and why?

Throughout the year, each year group will ensure that all 5 areas of Mathematics and Numeracy are taught in sufficient detail:

- Conceptual understanding
- Communication using symbols
- Fluency
- Logical reasoning
- Strategic competence

Within this, educators will help our learners to learn not to be afraid of unfamiliar or complex problems by teaching high quality sessions in and providing opportunities for:

- comprehension of, and proficiency with, the symbols and symbol systems used in mathematics
- problem solving in real-world contexts
- rigorous logical reasoning

## How should we teach Mathematics and Numeracy?

Mathematics and Numeracy experiences must:

- be as engaging, exciting and accessible as possible for learners as possible
- develop mathematical resilience
- encourage deep thinking, allowing learners to understand and make reasoned decisions.
- (in tackling mathematical problems) encourage learners to be creative by:

    - asking them to play and experiment with the maths
    - take risks
    - be flexible
- provide all learners with tools to analyse data critically, enabling them to develop informed views on everyday circumstances (social, political, economic and environmental issues).

NB: In the early years, play forms an important part in the development of mathematics and numeracy, enabling learners to solve problems, explore ideas, establish connections and collaborate with others. In later years, learners need to have opportunities to work both independently and collaboratively to build on the foundations established in the early years.

**In our school …**

**Each learning episode in mathematics and numeracy will be characterised by …**

- a clear learning journey throughout the lesson that links to previous learning and clearly leads into future learning
- high expectations for all learners
- clear and competent teaching by all staff
- accurate use of concrete objects and/or visual models to enhance the learning experience
- high quality, engaging tasks and challenges for all learners with opportunities for reasoning and problem solving in nearly every lesson
- quality opportunities for the children to reflect on their learning

**The children in our school learn best when …**

- the learning is accurately pitched at their level
- the feel safe and able to achieve even when challenge is high
- concrete objects and visual models are used accurately and effectively
- the learning is linked to real life
- feedback is immediate
- gaps are addressed and support given
- regular and meaningful opportunities are provided for children to reflect on their own learning journey

**and so we will …**

- carefully plan each learning session to ensure it is pitched at the correct level

- enable every learner to achieve and progress
- ensure learners feel safe to take on high challenge activities
- use concrete objects and visual models accurately and effectively to enhance the learnings of all students
- link learning to real-life contexts and use real-life examples as much as possible
- provide learners with their feedback as quickly as possible (verbally, written or both)
- identify any gaps in learning and ensure they are taught
- regularly provide meaningful opportunities across the curriculum for children to reflect on their own learning journey

**Our learners will show us that they are numerate when…**

- they have a good basic knowledge of arithmetic and are able to understand and work with numbers.

| Year group | Pupils must be/know… | | |
|---|---|---|---|
| Nursery | Fully confident with numbers to 5 (counting, addition and subtraction and reasoning and problem solving) | | |
| Reception | Fully confident with numbers to 10 (counting, addition and subtraction and reasoning and problem solving) | Able to form all numbers 0-9 correctly | |
| Year 1 | Fully confident with numbers to 20 (counting, addition and subtraction and reasoning and problem solving) | Know all addition facts within 10 | |
| Year 2 | Fully confident with numbers to 100 (counting, addition and subtraction and reasoning and problem solving) | Know all addition facts within 20<br><br>Know the x2 x5 and x10 times tables | + - x ÷ (numbers up to 20) |
| Year 3 | Fully confident with numbers to 1,000 (counting, addition and subtraction and | Know all addition facts within 20 | + - x ÷ (numbers up to 100) |

| | | | |
|---|---|---|---|
| | reasoning and problem solving) | Know the x2 x5 and x10 x3 and x4 times tables and related division facts | |
| Year 4 | Fully confident with numbers to 10,000 (counting, addition and subtraction and reasoning and problem solving) | Know all their times tables up to 10 x 10 and related division facts | + - x ÷ (numbers up to 1,000) |
| Year 5 | Fully confident with numbers to 100,000 (counting, addition and subtraction and reasoning and problem solving) | Know all their times tables up to 12 x 12 and related division facts | + - x ÷ (numbers up to 10,000) |
| Year 6 | Fully confident with numbers to 1,000,000 (counting, addition and subtraction and reasoning and problem solving) | Know all their times tables up to 12 x 12 and related division facts | + - x ÷ (numbers up to 100,000) |

NB: Any learners who have not achieved these aims by the end of each stage will be provided with support and/or intervention to 'close the gap' as quickly as possible.