

Curriculum Statement: Mathematics

Being a mathematician at Thingwall Primary means;

1. **Being confident and fluent in the fundamentals of maths;**

Children need to be confident with number. To do this they need to be using number regularly to count, calculate and spot patterns (make connections within and between different concepts of number). Children need to be able to recall number facts from a young age. This starts with number sequences and bonds to 20; progressing through to use of multiplication facts in decimals and larger numbers. Progress is made smoother by children being explicitly taught the connections between the different operations and place value. Our aim is that children will become, over time, fluent in number facts with a deep understanding of place value and the connections between operations.

1. **Being efficient at calculation;**

Children will learn a variety of methods of calculation for the four different operations of number (addition, subtraction, division and multiplication). These methods will progress to formal written methods. Children will be taught to understand their methods and the relationship between them. The children will be increasingly challenged to extend and develop their methods to become more efficient. Our aim is that children will be able to work efficiently and accurately with larger numbers (including decimals) by the time they leave school.

1. **Reason Mathematically:**

**Our children will be able to recognise patterns, communicate their ideas and think logically about problems: To do this we will:**

* Develop an appropriate use of mathematical vocabulary
* Provide opportunities for children to identify patterns and talk about their maths
* Encourage children to communicate their reasoning in both written and number form
* Provide increasingly complex problems, requiring higher levels of reasoning/logical thinking
1. **Solving Problems;**

Effective mathematicians are able to use and apply their skills and understanding to efficiently solve problems. Our aim is to provide children, in every year, with a healthy diet of problem solving activities. Our mathematics curriculum will ensure that children are challenged to use their skills in effective ways and will increasingly ask children to tackle more complex problems. Children will be taught a range of strategies for dealing with problems and encouraged to be resilient when faced with problems of greater sophistication. Our aim is that children will develop a ‘tool box’ of efficient strategies that can be utilised when solving a range of different types of problem.

1. **We learn mathematics because it is essential for everyday life. We help children to make this connection by asking questions, such as:**
* Who might use this information about angles?
* In what just might profit and loss be helpful?
* Could be use number bonds to help us with anything at home?
* When would you use capacity at home?
* Who might be interested in drawing a line graph? How might data be used by a restaurant, shop, business?
* Why do we need to know the names of 2D and 3D shapes?

**Curriculum Statement for Mathematics**

**Addition and Subtraction**

Children are to use number bonds, solve problems, count forwards and backwards, find the difference, derive facts, mentally calculate answers, use formal written methods and work with increasingly large numbers.

**Multiplication and Division**

Children will learn to group, double, find simple fractions, use arrays, use number patterns, be fluent in multiplication (including ties tables), solve problems, find factors, multiples, cubed, prime, square, fractions, equivalence and use formal written methods with increasingly large numbers.

**Fractions**

Children will learn to find, name and make fractions of shapes, objects and quantities. They will also understand equivalence between fractions and decimals and percentages, adding, subtracting, multiplying and dividing, measurement, proper and improper fractions, mixed fractions and rounding.

**Measurement**

Children will learn the associated vocabulary, comparing measures, telling the time, using measuring equipment, using money, equivalence, perimeter and area, problem solving, temperature and speed.

**Geometry**

Children will learn to name and discuss properties of; draw and make: 2D and 3D shapes, use angles, co-ordinates, tessellation, translation, symmetry and measurement.

**Statistics**

Pictograms, bar charts, line graphs, Venn diagrams, Carroll diagrams, pie charts, simple scales, interpreting data, co-ordinates, angles, fractions and percentages.

**Cross-Curricular Links**

**Science**

Children will use data interpretation and data handling skills in the context of investigations. They will interpret their results closely and provide explanations for them. They will also provide written conclusions that will further develop their ability to reason and justify their conclusions.

**ICT and Computing**

**There are many opportunities for children to use mathematics through ICT**:

* Children can use a variety of software to present data and represent their finding to others. They can also interpret data found online and come to conclusions based upon their findings.
* Children have to opportunity to use and apply logic and algebraic thinking in the development of computer algorithms.
* Children use their problem solving skills in order to write programs for computers when given a specific purpose.
* Use logical reasoning to work out and debug computer programs.
* Use a range of internet sites and online support to develop an understanding of mathematics.

**Art and Design**

Art and design offers excellent opportunities for investigating; Geometry, shape, fractions, number patterns, and measures.

**Geography**

Geographical skills and fieldwork-the skills of map reading, compass reading, directional language, measurement and the use of co-ordinates.

**History**

Statistical information can be used and interpreted to gain an understanding of a given time period. The use of timelines can support an understanding of both number and the concept of time.