

St Margaret's Vision For Mathematics

Our Intent

At St Margaret's CE VA Primary School we recognise that the personal development of pupils, spiritually, morally, socially and culturally, plays a significant part in their ability to learn and achieve. We therefore aim, through our core values, to provide an education that provides pupils with opportunities to explore and develop their own values and beliefs, spiritual awareness, high standards of personal behaviour, a positive, caring attitude towards other people, an understanding of their social and cultural traditions and an appreciation of the diversity and richness of the cultures.

Mathematics 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, and a sense of enjoyment and curiosity about the subject.

The aims of the Maths curriculum at St Margaret's

To develop competent mathematicians who can apply their knowledge and skills to a variety of contexts.

To develop pupils who are fluent in the fundamentals of mathematics so that they have a conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.

To develop pupils who can reason mathematically by following a line of enquiry by conjecturing relationships & generalisations and developing an argument or proof using mathematical language.

Pupil can solve problems by applying their mathematics to as variety of problems and are able to persevere in seeking solutions.

Can develop a good financial understanding with regards to money and its importance in everyday life. These include knowledge of: -budgeting, financial awareness, including financial institutions, and making good financial decisions.

How we implement Mathematics

Principle of the teaching and learning of Maths

St Margaret's Primary School follows the New Maths Curriculum Programmes of Study:

Number
Measurement
Geometry

Statistics

Problem Solving is interwoven into every strand of the new curriculum (Number, Measurement, Geometry and Statistics).

Children will encounter the language of mathematics in their daily lives everywhere in the form of: objects, pictures, words, numbers and symbols. The mastery approach incorporates all of these to help children explore and demonstrate mathematical ideas; enrich their learning experience and deepen understanding. Together, these elements help embed knowledge so pupils truly understand what they have learnt.

All children, when introduced to a new concept, will have the opportunity to build competency in the topic by taking this approach. Children are exposed and encouraged to physically represent mathematical concepts, through objects and pictures, in order to support their mathematical learning, helping them to visualise abstract ideas, alongside numbers and symbols.

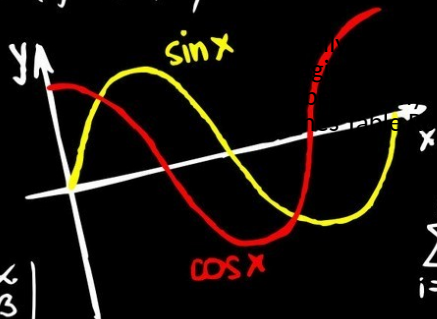
Concrete - children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

Pictorial - children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.

Abstract - With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence.

The skills developed in the teaching of Maths are applicable across all areas of the curriculum, and frequently links are made with other subjects.

$$x^3 + x^2 + y^3 + z^3 + xyz - 6 = 0$$



$$\text{grad} f = \left(\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y} \right)$$

$$Y_{i+1} = Y_i + b \cdot K_2$$

$$B = \begin{pmatrix} 2 & 1 & -1 \\ 3 & 0 & 1 \end{pmatrix}$$

$$\sum_{i=0}^n (P_2(x_i) - y_i)^2$$

$$\tanh 2x = \frac{2 \tanh x}{1 - \tanh^2 x}$$

$$\tanh x = \frac{\sin x}{\cos x}$$

$$\iiint_M z \, dx \, dy \, dz = \int_0^{2\pi} \left(\int_0^2 \left(\int_{\frac{1}{2}}^1 r \, r \, dr \right) d\theta \right) d\varphi$$

$$\lim_{n \rightarrow \infty} \frac{\sqrt[n]{n^3 + 1} + n}{\sqrt[n]{3n^2 + 2n - 1}}$$

$$x_2 = \begin{pmatrix} -2 \\ 3 \\ -8 \\ -5 \end{pmatrix}$$

$$2 \arctan x - x = 0, I = (1, 10)$$



$$\frac{a}{\sin d} = \frac{b}{\sin s}$$

Impact

Quick recall of facts and procedures

The flexibility and fluidity to move between different contexts and representations of mathematics.

The ability to recognise relationships and make connections in mathematics

A mathematical concept or skill has been *mastered* when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

Regular monitoring is undertaken in various ways: regular lesson observations usually with a focus; scrutiny of pupils' work; learning walks; moderation of pupil outcomes and pupil discussions

Children's learning is assessed in lessons and formally on a termly basis. The outcomes of these are then used to inform teacher's planning and further improve pupil's progress and attainment.

Parents are given the opportunity to discuss Maths with their child's teacher through termly parents evenings and termly written reports.

Events and Learning Opportunities

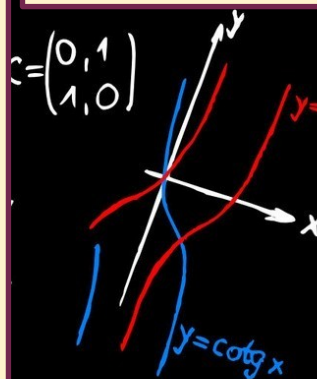
Home Learning

Home Learning is used to support mathematics through tasks such as: the playing of number games/puzzles (Reception and Year 1); learning of tables (expected of all pupils from Year 1 onwards); specific tasks set by teachers.

Celebrating Maths

Excellence in Maths is celebrated in the following ways: displays of children's work in class and on the school maths display board; praise and stickers awarded in Congratulations Assembly for class/ homework and pupil initiated achievements.

There are also opportunities to support and reinforce areas of the maths curriculum, through lunchtime Times Table Rock Stars Club; Mathletics club and Magical Maths Club.



$$\sin^2 x + \cos^2 x = 1$$

$$\lambda_2 = i\sqrt{14}$$

$$\int P(x, \sqrt{\frac{ax+b}{cx+d}}) dx$$

$$\frac{\sin x}{x} \leq \frac{x}{x} = 1$$

$$\frac{2x}{x^2 + 2y^2} = 2 \quad z = \frac{1}{x} \arcsin \frac{\sqrt{2}}{2}$$

$$\eta_1 = \lambda_1^2 - 3\lambda_1 + 1 \neq 0$$

$$\sin(x+y) = \sin x \cos y + \cos x \sin y$$

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