Emmaus Primary School

Church of England and Catholic Primary School

Travelling together with Jesus

Maths across the Curriculum Policy

Intent

Intention, Implementation and Impact

When pupils have opportunities to apply and develop mathematical skills across the curriculum, the impact is to consolidate and enhance those skills. This policy should be read in conjunction with the Maths Policy, where the intent, implementation and impact are dealt with more fully, and is intended as additional guidance.

In producing this policy, the intention is to:

- celebrate the breadth of maths used across the curriculum
- demonstrate how maths intertwines with and underpins some activities in other curriculum areas
- identify key activities that each year group undertakes in the course of teaching other subjects, that rely upon maths appropriate to that year group

Aims:

These aims are taken directly from the maths policy, and are no less relevant when maths skills are implemented in other curriculum areas. It is intended that children will:

· enjoy maths through practical activity, exploration and discussion
· understand the importance of mathematics in everyday life
· become confident and competent with numbers and the number system
· become fluent in the fundamentals of mathematics
· develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
· reason mathematically by following a line of enquiry,
· spot relationships across domains, make generalisations and express an opinion using mathematical language,
· solve problems by applying their mathematics to a variety of routine and non-routine problems, including breaking down problems into a series of simpler steps
· keep persevering in seeking solutions collectively and individually
· be aware that there are often many or even no solution
· develop an appreciation of the creative aspects of maths; be aware of its aesthetic appeal
· see the historic context and present day relevance of mathematics

Mathematics cross-curriculum planning

There should be elements of maths being applied across the curriculum in every term, and when this occurs, it should be planned for and clearly noted on the science or topic planning forms, as appropriate.

Teaching and learning

Maths may be evident in other subjects:

- at a level below age equivalent

- at a level that is age equivalent
- at a level above age equivalent

If it is below age equivalent, then the maths should be applied appropriately and be seen as a chance to revise and apply previous learning. Examples of this could be noting dates in history, recording experimental data in science, or looking at statistical information in geography.

Maths that is above age equivalent may be mentioned and appropriate language used, as an opportunity to introduce terminology without any expectation that the children will fully understand or remember. Some children may well recall the information when the topic is introduced later that year, or in following years. Examples may be the use of parallel lines in some forms of art or discussion of scale in art or geography.

The purpose of this policy is to focus more on age equivalent maths.

Age Equivalent Maths

Maths is taught in maths lessons. In other lessons - be that science, geography or PE - the maths element may be seen as being applied not necessarily taught. However, some level of revision may be required and teachers may even choose to organise the maths curriculum in such a way that the maths is taught in the maths lesson, specifically to aid the work in another subject. This maths should be in line with the expectations of the year group, or of the previous year if the lesson is taught early on in the year. (Specific details are in appendix 1)

Assessment and recording

Teachers can use evidence of maths being applied in another subject, to support their view as to whether a maths target has been achieved.

Marking

Marking should focus upon the learning objective of that lesson, not the maths. A comment about the maths used is not anticipated, but can be made if a teacher judges that it is helpful in supporting, or commending, a child's understanding or application.

Display

Where a display includes some element of maths, this should be highlighted: eg if children have applied *measuring* skills when completing a DT project.

Nursery/Reception

The approach advocated within this policy is already being taken within nursery and reception classes, where maths is taught and used constantly through topics with a maths element - such as in growing - and in play activities and areas of the classroom such as the construction area, a doctor's surgery or a café. The use of mathematical vocabulary relating to number, pattern and measures is encouraged.

The linking of mathematics within other curriculum areas

Overleaf, in appendix 1, is a year by year analysis of when maths has been used and applied by children at an age appropriate level, across the curriculum.

In appendix 2 is a more general review showing examples of when maths is evident in subjects, though not necessarily applied at an age appropriate level.

It is not intended to be a complete review, or a minimum requirement, but guidance. The curriculum constantly changes as new advice, new resources and new technologies become available. Teachers should use their professional judgement to ensure that when they plan they seek out mathematical opportunities whenever possible, and whenever relevant, to support both the learning objective of the lesson and the teaching of maths.

Date: September 2025

Appendix 1 – Specific studies

Year Group	Main area of focus	Objective	Age Related Maths
Year 1			
Aut	French	Numbers 1-50	To work with the numbers to 50 and beyond
Aut	History	Understanding time	Sequencing events in chronological order/old and new
Aut	Science/Geog	Reporting the weather	Days of the week, creating a chart, terms like temperature
Aut	PE	Dance and Gym	Use bodies to make 2D shapes, and understand the language of time
Spr	History	Transport	Changes over time – sequencing events
Spr	Science	Growing a bean plant	Measuring lengths
Spr	Computing	Coding	Describe position, movement and direction
Spr	Art	Repeated pattern	Shape and pattern
Sum	Computing	Spreadsheets	Simple inputs and calculations
Sum	DT	Create a fruit kebab	Use language of more than / less than / most / least
Sum	PE	Athletics	Running faster, jumping further, throwing further
Sum	Science	Weather	Seasons, measuring rainfall, and noting the direction of the sun
Year 2			
Aut	Science	Food groups / diet	Sorting, recording data, results: pictograms, Venn diagram, bar charts
Aut	Science	Pulse rates	Use of time and recording rates per minute
Aut	Science	Animal classification	Grouping and classifying facts and data
Aut	Science	Life cycles	Sequencing and ordering
Spr	French	Numbers	Counting
Spr	Geography	Mapwork – where is Liverpool?	Compass points, position and directional language
Spr	History	Timelines (GFOL)	Sequencing, ordering numbers, intervals of time
Sum	History	Timelines (John Lennon)	Recording and counting back in 10s and 100s
Sum	History	Comparison	Venn diagram comparing 60s to now
Sum	Art	Sculpture	Shape, space, measurement, 3d language
Sum	Computing	Programming	Position and directional vocabulary, spreadsheet

Year Group	Main area of focus	Objective	Age Related Maths
Year 3			

Aut	Science	Rocks	Present data using charts, pictograms or tables
Aut	History	Cradles of civilisation timeline	Compare durations of events
Aut	Music	Counting beats	Estimation, pattern, sequence
Spr	DT	Design a soup for the homeless	Measurement, including combining masses
Spr	Science	Animals including humans	Comparing measurements of carbs
Spr	Science	Animals including humans	Comparing distances (cm) – bar chart recording distances
Sum	Geography	Lines of latitude and longitude	Comparing lengths and understand their purpose
Sum	History	Roman numerals	Understanding Roman numerals
Year 4			
Aut	Science	States of matter	Measurements in experiments
Aut	History	Romans	Timeline – chronology, duration
Aut	Art	Doodles	Geometry, 2d shapes
Aut	Computing	Coding	Coordinates, sequencing, debugging
Spr	Science	Sound	Line graph
Spr	Geography	Tourism	Changes in tourism bar chart
Spr	Science	Living things and their habitats	Venn diagram
Sum	Geography	Earthquakes	Richter scale – line graph
Sum	Geography	Deserts	Temperature scales – Gobi desert

Year Group	Main area of focus	Topics	Maths Opportunities
Year 5			
Aut	Geography	World Food - Maritime trade	Work out air miles and distances from suppliers to the UK
Aut	Geography	Chocolate is made from cocoa	Percentages/Comparing weights and measures
Aut	History	Bagdad	Comparison of dates
Aut	Art	Adinkra pattern	2D shape, pattern, symmetry, etc and the language of shape
Aut	DT	Cultural food	Weights and measures/reading scales
Spr	Geography	Population / Migration	Line and bar charts
Spr	Science	Forces	Data collection, measuring, reading scales
Spr	French	Time	Reading clocks
Sum	Geography	Local area sketch map	Grid references, OS symbols, scale
Sum	PE	Athletics – long and high jump	Measurement in m and cm, using decimals and converting
Sum	PE	OAA	Angles, measurement, distance
Year 6			
Aut	Geography	Energy and climate change	Interpreting pie charts
Aut	History	World War II	Timelines, length of events, dates and sequencing
Aut	DT	Make do and mend	Measuring and organising a bag
Aut	Art	Sue Averill – Cityscapes	3d Design
Aut	Science	Heart	Line graph of heart rate Pie chart of blood components
Aut	Science	Light	Averages
Spr	DT	Mexican meal	Weighing ingredients
Sum	DT	Frame	Cutting wood to sizes; angles of 45°
Sum	Science	Light	Use of angle; explanation of line graphs
Sum	Geography	Mapwork	Grid referencing

Appendix 2 – General opportunities

Main area of focus	Topics	Maths Opportunities
Literacy	Instructions/recounts Information texts Issues and dilemmas	Numerical language, sequencing events, vocabulary of measure Reading information shown in tables, graphs and charts Reading graphs eg related to global warming, falling numbers of endangered animals
Science	Experimental work Reading off scales	Reading and recording results in charts and graphs Using large numbers and decimal numbers; negative numbers Classifying data
Geography	Climates Local area Places Physical features Mapwork	Temperature/Scales Planning routes and using directional language Using compasses; distances between countries Lengths, heights, using and comparing large numbers, Scale and co-ordinates
History	Events/objects from the past Timelines BC /AD Civilisations	Ages and dates Dates, sequencing, scale, pattern Across zero Number systems
Art / DT		Measuring sizes Measures and scales 2D and 3D language
Music		Pattern, sequences
PE		Using directional language Recording times/measuring performance
Computing		Sequencing , directional language , Recording data, debugging,