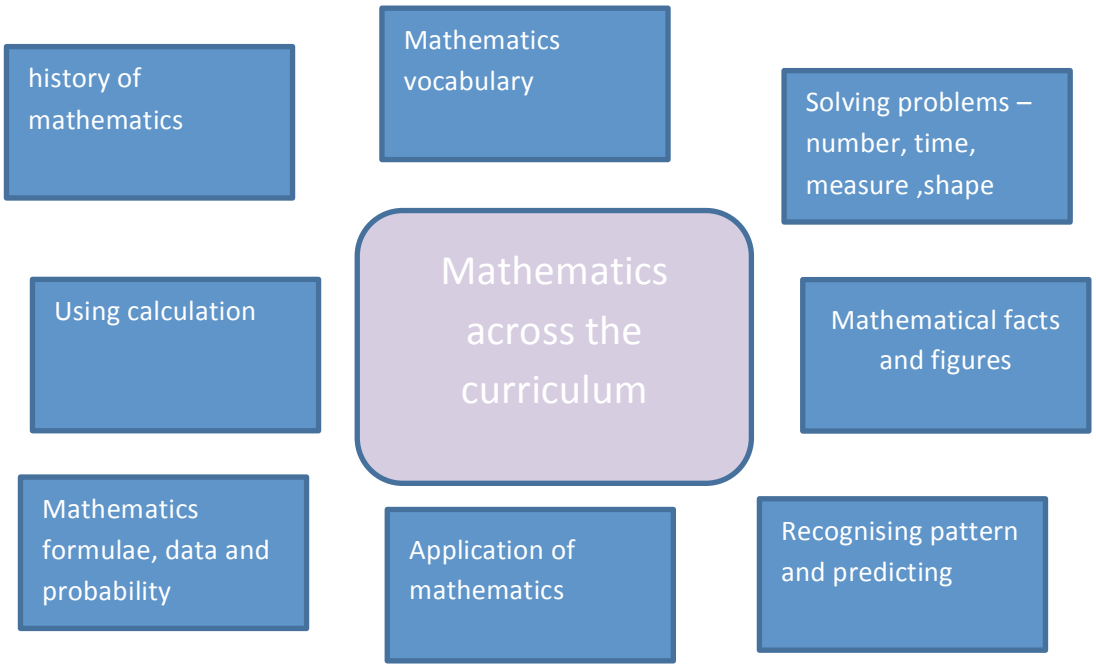
Reedswood E-ACT Primary Academy

Mathematics Across the Curriculum

The key principle is for us to make natural connections across the wider curriculum.



These areas link to our content strands.

Mathematics Content Strands

Number sense, properties, and operations	*Number Facts*	*Algebra and functions*	*Measurement*	*Data analysis, statistics, and probability.*	*Geometry & spacial awareness*

Art, Design and mathematics

Exploring mathematical ideas of pattern, shape and its transformation taught in art and design

Using the mathematical ideas of ratio and proportion, including similarity and scale

The work on perspective links to the development of enlargement and scale factor in mathematics

Art and design supports the knowledge taught on shape, space and measures

Art and design contributes to the development of pupils' problem solving, communication and reasoning.

Making, generating ideas and evaluating materials and textures provides opportunity to explore mathematical vocabulary.

Design, Technology and mathematics

Design and Technology reinforces pupils' knowledge, understanding and skills in all aspects of measurement, including estimation of measures (link to cookery and nutrition)

Use of ratio, proportion and percentages compatible with work in mathematics

Using calculation methods and formula (structures)

Construction and transformations strands of shape, space and measures when pupils are developing, planning and communicating their ideas

Scales and scale factors used in the different strands of technology when pupils are developing, planning and communicating ideas

Handling data applicable to technology teaching, in particular when pupils are evaluating processes and products? Also, use of ICT for recording results

Using a common vocabulary when teaching

Using and applying mathematics and the problem solving

Accuracy of measurements, use of decimal places and significant figures, and use of units and their abbreviations

Geography and mathematics

Number and calculation strands of mathematics feature in teaching geography – world and local geography

Teaching within geography position, direction, compass points, coordinates, grid references and measures

Handling data cycle – identify and collect data, analyse and represent data, interpret results – relate directly to work in geography

Drawing, interpreting graphs and charts

Labelling conventions for graphs match those of the mathematics

Using and applying mathematics within geography field work – local study

History and mathematics

Number and calculation strands of mathematics feature in teaching history – historical facts, figures and timelines

Handling data cycle – state problem, identify and collect data, analyse and represent data, interpret results – relate directly to work in history

Drawing and interpreting graphs and charts in history

Labelling conventions for graphs match those of the mathematics

Thinking skills in history contribute to the development of using and applying mathematics

ICT and mathematics

Mathematics application using ICT in supporting pupils' learning

ICT packages are in use to support pupils' mathematical development : use of excel, graphing, data packages

Feedback systems for voting/whole class collection of data

Use of robots, lego control technology, programming B Bots and graph plotting and geometry software

Music and mathematics

Music makes significant use of symbolic representation, as does mathematics.

How can work on equivalent fractions enhance pupils' understanding of the relative values of notes

Making links are there between mathematical sequences and those found in music, such as rhythm patterns

Counting to a regular rhythm often forms part of a pupil's earlier mathematical education; we can use this to enhance pupils' understanding of rhythm

Rhythm patterns, represented either symbolically or numerically, be seen to have parallels in mathematical sequences

Knowledge of time and speed enhance their understanding of musical time, when considering technical issues such as beats per second and the differences between certain types of music, for example music from around the world, pop, techno, and so on

The study of pattern in musical forms such as ABA, AABA, ABAB (leading to fugue, sonata and symphonic form) enhanced by pupils' understanding of repeating patterns in mathematics

Explore shapes in written music (such as high/low, rising/falling, ascending/descending), can comparisons be made with pupils' work on graphs

Music contributes to the development of pupils' skills in organisation, logical thought, problem solving, collaborative working, listening to and sharing opinions.

Science and mathematics

Handling data and use of ICT devices used in this work (for example, sensors, spreadsheets, computer graph packages, calculators

Introduction of continuous data, as distinct from discrete data

Numbers in context, particularly large numbers, fractions and decimals, indices, ratios and proportions, and the relationships between different metric units

Use of calculation mehtods that are developed through the mathematics yearly teaching programmes

Teaching and interpretation of formulae and graphs support the expectations in mathematics

Use of a range of different forms of graphs/charts/keys/flow diagrams

Agreed with mathematics how graphs should be labelled and presented

Using and applying mathematics in all science lessons – through experiments, collection of information, analysis of results, working scientifically

Physical education and mathematics

Making links (for example, in gymnastics or dance) building upon ideas of pattern, movement and symmetry developed in mathematics

Physical activities develop pupils' awareness of time, distance and speed

Discuss rates such as km per hour.

Using map references, compass bearings and estimates of distances travelled developed in planning and carrying out outdoor activities

Gathering and use performance data: – in general fitness work – in specialised work such as athletic activities

Handling data collected from activity and using to support pupils' interpretations of performance data

Recording - differences in readings from manual and electronic data-logging equipment

Statistical terms such as the mean, mode and median that might be appropriate for measuring performance in a range of physical activities

Pupils use problem solving, communication and reasoning in physical activities.

PSHE, religious education, community and mathematics

Discussing numbers (for example, in populations), time differences, fractions, percentages and proportions

handling and interpreting data as a means of enabling pupils to become better informed citizens

handling data cycle – state problem, identify and collect data, analyse and represent data, interpret results – are used most

Using a range of graphs and charts in line with expectations in the mathematics

Make links with mathematical work on maps, scales and distances

Are pupils introduced to mathematics from other cultures?

Do we use pupils' mathematical knowledge and skills when we explore the ideas of probability, risk and chance?

Is correct mathematical vocabulary used where appropriate?

When exploring evidence, are pupils given opportunities to develop their competence in problem solving, communicating and reasoning?