Mathematics Across the Curriculum

Intent

Opportunities to apply mathematical knowledge, fluency and reasoning are woven throughout the wider curriculum. This supports pupils in making connections across areas of learning and understanding how mathematics is used to interpret and solve real-world problems.

Implementation

Subject	Mathematical Application
English	Sequencing, timelines and interpreting information from surveys and data.
Science	Measuring, recording results, graphing, identifying patterns and interpreting data.
Geography	Map scale, coordinates, distance, population data and climate statistics.
History	Timelines, chronology, duration and comparison of historical periods.
Computing	Data handling, logical reasoning and pattern recognition.
DT	Measuring, calculating dimensions, scale drawings and evaluating outcomes.
Art	Shape, symmetry, pattern, proportion and spatial awareness.
RE	Timelines, surveys, data interpretation and comparison of beliefs and traditions.
Music	Counting, rhythm, beat, fractions and repeating patterns.
PE	Timing, scoring, measuring distance and analysing performance data.
PSHE	Budgeting, financial literacy and interpreting charts and graphs.
French	Numbers, dates,

Progression

EYFS: Counting, sorting, comparing and pattern spotting through practical exploration.
KS1: Application of number, measurement and simple data handling in meaningful contexts.
Lower KS2: Measuring accurately, collecting and interpreting data, identifying relationships.
Upper KS2: Analysing data, using scale and ratio, reasoning mathematically and solving complex problems independently.

Impact

- Apply mathematics confidently across subjects.
- Use mathematical vocabulary accurately.
- Strengthen fluency through purposeful application.
- Reason, justify and solve problems effectively.
- Recognise mathematics as a valuable tool for understanding the world

Year	English	Science	History & Geography	RE	DT & Art	Computing	Music	PE	French / PSHE
Reception	**Handa's Surprise, The Gingerbread Man, Mr Wolf's Pancakes, The Hungry Caterpillar, Martha Maps It Out, Commotion in the Ocean, The Christmas Pine** and **Jack and the Beanstalk,** Counting, sorting, classifying, comparing, measuring, sequencing events, using positional and directional language, and solving simple problems. Opportunities strengthen reasoning, mathematical vocabulary and logical thinking	Count, sort and compare natural objects; identify patterns; measure growth; classify living things.	Create a timeline of personal events; compare photographs of people past and present; sequence festivals and celebrations. Compare local environments; identify routes and locations; sort and classify features within communities and ecosystems.	**Creation:** count and sort features of nature. **Harvest:** compare quantities and pictograms. **What Makes Us Special?:** measure height, compare ages, tally eye colours.	**Eat Fruits & Vegetables:** pictograms, data collection and comparison of class preferences. **Moving Minibeast:** position, movement, sliders, levers and wheels. **Stable Structures:** shape, structure, stability and spatial reasoning.	Bee Bots: position, direction, sequencing and routes.	Count beats; repeat patterns and pulse.	Counting in dance; keeping score in games; positional language; comparing distance and movement pathways; shape and space in gymnastics.	— **PSHE:** Self-awareness, relationships, belonging and routines - Counting, sorting, comparing, tallying and sequencing daily events

Year 1	***Old Bear* (Finding Narrative), *Diary Entry*, *Messages*, *Recipes*** Sequencing events in order, using time language, counting and measuring ingredients when writing recipes	**Seasons:** record weather and identify patterns. **Materials:** sort and classify objects. **Animals:** create pictograms and group animals. **Plants:** measure and compare plant growth.	**Childhood Then and Now:** compare toys, homes, schools and clothing across time. **Kings and Queens:** family trees, chronology and succession. **Homes of the Past:** compare Victorian and modern homes. **Where Do I Live?** maps, countries and capitals. **Weather Patterns** weather recording and comparison. **Who Lives Here?** comparing homes and lifestyles around the world	**Judaism:** sequence festivals. **Islam:** count Five Pillars. **Marriage & Baptism:** timelines and age comparisons.	**Puppets:** measuring fabric and accurate cutting. **Vehicles:** wheels, axles, position and movement. **Perfect Pizzas:** class surveys, classification and comparing favourite choices. **Colour Creations:** sorting and classifying colours; pattern recognition. **Paper Art:** shape, symmetry and measurement. **Andy Goldsworthy:** counting objects and creating repeated patterns	**Treasure Hunters:** positional language and direction. **Rhythmic:** sound patterns and sequencing. **Detectives:** using data to solve clues and problems	**School:** telling the time and using timetables. **The Weekend:** sequencing events chronologically. **World War II/Habitats/Planets:** classification and comparison. **Me in the World:** comparing countries and global information.	**Gymnastics:** shape, levels and direction. **Invasion Games:** scoring and tactics. **Athletics:** measuring performance, distance and improvement. Team Building: problem solving and comparison.	— **PSHE** Mental & Physical Health, Relationships, Living in the Wider World - Tally charts, comparisons, growth timelines and simple surveys

Year 2	***How to Build a Habitat*, *Diary*, *Jungle Animals Information Report*, *How a Machine Works*** Sequencing instructions and processes, ordering events chronologically, sorting and classifying information.	**Materials:** comparative testing and recording results. **Animals:** sequence life cycles. **Habitats:** classification and sorting. **Plants:** observe, measure and compare growth conditions.	**Great Fire of London:** sequence events and construct timelines. **Florence Nightingale:** order and summarise events in her life. **Seaside of the Past:** order holidays chronologically and compare past and present. **My World and Me** comparing locations and weather. **Seas and Coasts** identifying oceans and continents. **Map Makers** compass directions, symbols, keys and route mapping.	**Taking Care of God's World:** ecycling bar charts. **Purim:** measuring ingredients for Hamantaschen	**Storybooks:** levers, linkages and mechanical movement. **British Inventors:** classification, comparison and evaluation. **Light-Up Signs:** technical drawing, planning layouts and measurement. **Self Portrait:** proportion and position of facial features. **Giuseppe Arcimboldo:** classification and shape recognition. **Super Sculptures:** measurement and 3D shape.	**Astronauts:** programming sequences. **Games Testers:** recognising rules, patterns and logic. **Zoologists:** collecting and presenting data about bugs.	Copying rhythms; comparing tempo and dynamics; high, medium and low pitch; verse, chorus and instrumental sections; musical notation.	**Sending & Receiving:** accuracy and comparison. **Striking & Fielding:** scoring and decision making. **Team Building:** map creation and problem solving. **Athletics:** measuring distance, height and accuracy. Dance: counts of 8 and timing.	— **PSHE** Mental & Physical Health, Relationships, Living in the Wider World - Data collection, bar charts, comparison of choices and environmental surveys

Year 3	***River Information Leaflet* (*Rhythm of the Rain*), *Egyptology*, *Newspaper Report* (*Into the Forest*)** Using chronology in recounts, organising information, interpreting and communicating factual information.	**Forces & Magnets:** measure and compare forces. **Animals:** classify and compare skeletons. **Rocks:** compare and classify materials. **Plants:** record life-cycle changes. **Light:** investigate shadows, transparency and patterns.	**Prehistoric Britain:** sequence Stone, Bronze and Iron Ages. **Shang Dynasty:** chronology and historical comparison. **Ancient Greece:** compare developments, beliefs and significant events. **Villages, Towns and Cities** settlement comparisons and population distribution. **Mountains, Volcanoes and Earthquakes** global location and physical processes. **Water, Weather and Climate** weather data, seasons and climate comparison.	**Bible's Big Story:** scaled timelines from Creation to Jesus. **Judaism:** compare significance and frequency of festivals.	Accurate measurement, perimeter, tessellation and Islamic geometric patterns. **journeys:** mapping, direction, scale and distance. **Famous Buildings:** geometry, symmetry, scale and proportion. **Seurat and Pointillism:** pattern, counting and spacing	**Programmers:** algorithms and sequencing. **Opinion Pollsters:** collecting, analysing and presenting data. **Bug Fixers:** logical reasoning and debugging.	Beat versus rhythm; crotchets and quavers; BPM (beats per minute); glockenspiel notation; pitch on a stave; silence and structure; layers of sound (texture).	**Basketball and Netball**: scoring systems and game statistics. **Rounders**: runs and points. **Athletics:** measuring distance, time and recording scores. **Gymnastics**: shape, balance and sequencing.	**FRENCH: J'apprends le français:** count 1-10; locate France and key cities on a map. **Les Saisons:** sequencing seasons and festivals. **Musical Instruments:** rhythm and pattern. **Fruits:** sorting and classifying. **Ice Creams:** counting quantities and money **PSHE:** Mental & Physical Health, Relationships, Living in the Wider World - Survey data, comparison, interpretation of responses and community data

Year 4	***Escape from Pompeii*, *Jacques Cousteau Biography* (*Manfish*), *Information Reports*, *School Prospectus*** Constructing and understanding timelines, organising information logically, presenting factual information clearly.	**Habitats:** classification keys and food chains. **Animals:** interpret food webs. **Sound:** compare results and collect data. **States of Matter:** measure temperature and record changes. **Electricity:** compare results and identify patterns.	Census interpretation; Roman chronology. Population graphs and fieldwork data. **Rivers** observing and comparing river features. **Migration** mapping movement and population change. **Natural Resources** comparing resources between countries and interpreting patterns.	**Hinduism:** symmetry in mandala patterns. **Sikhism:** timelines of Sikh Gurus and chronology.	**Seasonal Stocking:** measuring fabric and pattern pieces. **Viking Longboats:** shape, scale, strength and stability. **Seasonal Food:** quantities, ingredients and food measurements. **At the Pantomime:** position and spatial awareness. **Can We Change Places?:** scale, perspective and proportion. **Warhol and the Pop Art Movement:** grids, repetition, symmetry and transformations.	**Software Developers:** times-table quizzes and classification games. **Artists:** tessellations, geometry and transformations. **Meteorologists:** weather measurement and data presentation.	Rhythms using minims and rests; tempo and emotional effect; pitch notation (C-D-E-F-G); song structures; tessellations and pattern through performance art links.	**Tennis**: point scoring and continuous rallies. **Cricket:** runs, scores and comparison. **Athletics**: pace, speed, distance and accuracy. **Dance**: timing, spacing and sequencing. Swimming: measuring distance.	**French:** **Introducing Yourself:** count to 20; age and personal information. **La Famille:** comparing family members. **Fashion:** colours, sizes and descriptions. **Classroom:** counting classroom objects. **My Home:** positional language and location. **PSHE:** Mental & Physical Health, Relationships, Digital Citizenship - Graphing survey results, trend spotting, comparison and data interpretation

Year 5	***Formal Report* (*The Hound of the Baskervilles*), *Survival Guide* (*The Lost Book of Adventure*), *Balanced Argument* (*King Kong*)** Organising and evaluating evidence, interpreting factual information and justifying viewpoints using evidence.	**Earth & Space:** identify cycles and patterns. **Materials:** fair testing and evidence analysis. **Habitats:** compare life cycles. **Forces:** measure gravity, friction and resistance. **Animals:** analyse growth and development over time.	**Benin:** compare societies and trade. **Medieval Monarchs:** compare reigns and chronology. **Industrial Revolution:** analyse change over time and historical developments. **South America and Slums** climate and population comparisons. **Biomes** comparing ecosystems and climate zones. **Energy and Sustainability** collecting, interpreting and presenting data.	**Hinduism:** geometric patterns and symmetry.	**Building Bridges:** measurement, scale, span, structural design and prototype testing. **Chinese Inventions:** testing and evaluating prototypes. **Fashion & Textiles:** measurement, pattern pieces and accurate cutting. **Cityscapes:** geometry, scale, measurement and perspective. **People in Action:** body proportion and movement. **Leonardo da Vinci:** symmetry, proportion and mathematical relationships.	**Game Developers:** mathematical games, coordinates, scoring and variables. **Architects:** scale, measurement and spatial reasoning. **Cryptographers:** patterns, codes and logical thinking	Semibreves, minims, crotchets and quavers; tempo comparison; notation using C-D-E-F-G-A-B; alternative song structures; rhythm combinations and rests.	**Handball, Hockey, Netball and Rounders:** scoring, tactics and statistics. **Athletics:** distance, time, speed and personal bests. **Dodgeball:** probability, scoring and officiating.	**French:** **Quelle est la date?** calendars, dates and sequencing time. **The Weather:** comparing weather patterns. **Olympics:** timings, scores and performance comparison. **Clothes:** quantities, classification and comparison. **PSHE:** Economic Wellbeing, Relationships, Living in the Wider World - Budgeting, percentages, financial decisions, surveys and comparison of opinions

Year 6	***Shackleton's Journey*, *The Origin of the Species*, *The Ways of the Wolf*, *Newspaper Report*, *Biography*, *Balanced Argument*** Working with chronology, analysing evidence, interpreting factual information and drawing reasoned conclusions.	**Habitats:** classification systems. **Animals:** heart-rate investigations, data analysis and graphing. **Light:** compare observations and patterns. **Electricity:** compare brightness and voltage. **Evolution:** interpret evidence, variation and change over time.	**Twentieth Century Conflict:** timelines across decades. **Civil Rights:** sequence social change. **Middle East:** compare historical developments and causes over time. **Local Fieldwork** collecting, presenting and analysing geographical data. **Population** population pyramids and demographic trends. **Globalisation** trade patterns, comparisons and global data interpretation.	**Pilgrimage:** compare journey distances and routes. **Christian Message (2000 years):** multi-millennia timelines. **Islam:** demographic data about world religions. **Buddhism:** percentages and global comparisons. **Christmas Advertising:** survey analysis and percentages.	**Structures:** comparing dimensions, scale and stability. **Sushi Rolls:** proportions, quantities and measurement. **Sculptures (Bird Houses):** technical drawing, measurement, plans and precision construction. **Art Illusions:** geometry, angles, tessellation and transformations. **Famous Fashions:** scaling, measurement and pattern construction. **Monet and the Impressionists :** perspective, proportion and spatial relationships.	**Toy Makers:** order of operations and programming logic. **Computational Thinkers:** algorithms and logical reasoning. **AI Developers:** classification, pattern recognition and data analysis.	Syncopation and off-beat rhythms; semiquavers; tempo terms and BPM; sharps and flats; composition using varied pitch; analysing musical structure and texture	**Athletics:** measuring, timing and recording. **Cricket, Dodgeball, Netball and Tag Rugby:** scoring, statistics, tactics and performance analysis.	**French:** **School:** telling the time and using timetables. **The Weekend:** sequencing events chronologically. **World War II/Habitats/Planets:** classification and comparison. **Me in the World:** comparing countries and global information. **PSHE:** Economic Wellbeing, Citizenship, Mental & Physical Health - Statistics, trends, financial planning, demographic data and interpretation of survey findings