Numeracy across the curriculum handbook

Non Sibi Sed Aliis

Your word is a lamp to my feet and a light to my path.
Psalm 119, vs 105

Mathematics may not teach us to add love or subtract hate, but it gives us hope that every problem has a solution.

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What is numeracy?

Numeracy is the ability to reason and to apply simple numerical concepts. Basic numeracy skills consist of:

- The ability to carry out basic calculations efficiently and accurately, either mentally or with pencil and paper as appropriate.
- The ability to apply knowledge of number to both familiar and new circumstances and to use it in the solution of problems, including those involving percentages, ratio and proportion.
- The ability to understand and use units of measurement of length, mass, capacity and time.
- The ability to understand and use information presented in graphs, tables and charts.

Everything covered in Mathematics is underpinned by numeracy skills.

The importance of Numeracy across the curriculum

Numeracy is a key skill that is important for the employment opportunities of pupils at all levels of attainment. Evidence has shown that poor numeracy skills are a greater impediment to life chances than poor literacy skills. If all members of staff support the drive to raise standards of numeracy the career prospects of pupils will be improved.

Many pupils do not see the links between Mathematics and other subjects unless they are pointed out and therefore, the aim of this is to improve the consistency in practice of promoting Numeracy across the school. As effective work in Mathematical thinking across the curriculum is dependent upon establishing and maintaining a positive culture towards Mathematics, it is imperative that all staff have a collective and coherent approach to adhere to.

How do we change the attitudes towards Mathematics?

Observation and environment – Identify any negative comments that may be made about numeracy and spend time thinking about positive comments which could replace them. Be enthusiastic when talking about numeracy or Mathematical thinking. Create a culture in your classroom where normal behaviour is to challenge negative comments about Mathematics and replace them with positive comments. Remove negative statements such as, 'I can't do Maths', from the classroom environment.

Displaying positive behaviours – Identify the behaviours that you want the pupils to display towards Mathematics and exhibit those behaviours yourself, regularly and often. Make use of the numeracy leaders to promote a positive attitude towards Mathematics.

Consistency – Ensure that you are following the consistent approach used across the school and use the same language as the Maths department to avoid confusion. All staff should be referring to the Numeracy skills support booklet when planning the use of numeracy in their lessons. There is also an extensive list of vocabulary to be reinforced across the school.

Numeracy Strategy

Numeracy strategy – Cross- curricular priorities

- Maintain high standards of numeracy across the school by ensuring consistency.
- To ensure staff are confident in their numeracy skills, and to make use of opportunities to include numeracy in the teaching of all subjects.
- Help students to retain and transfer knowledge between subjects.
- To improve students' reasoning and problem-solving skills.
- To change attitudes of pupils and staff by promoting a positive view of Mathematical thinking across the school.
- To improve accuracy, particularly in calculation, measurement and graphing.

Management of The Numeracy Strategy

The Role of The Numeracy Co-ordinator is to:

- Work with SLT to determine a numeracy strategy for dealing with cross-curricular links and to ensure the effective development and implementation of numeracy across the curriculum.
- Establish and maintain a line of communication with all departments to ensure there is regular opportunities for guidance and feedback.
- Monitor and evaluate the implementation of the numeracy across the curriculum strategy and facilitate amendments in the light of evaluation and curriculum changes.
- Establish lines of communication to ensure there is liaison between Mathematics teachers and feeder primary schools.

The role of the Senior Leadership Team (SLT) is to:

- Participate and support the Numeracy co-ordinator in the planning, implementation and evaluation of numeracy across the curriculum.
- Specify the expectation to be made of all teachers and provide support and encouragement to all staff in promoting numeracy across the school.
- Provide CPD for all staff as appropriate.
- Provide opportunities for effective communication between the SLT, the Numeracy Co-ordinator, the Mathematics Department and other departments.
- Provide finance for material resources where needed.

The Role of The Mathematics Department is to:

- Be aware of the Mathematical techniques used across the school and provide advice to other departments, so a correct and consistent approach is always used.
- Provide opportunities for different stimuli to be used in lessons to generate ways of seeking solutions to problems.

- Liaise with other teachers to ensure pupils have appropriate numeracy skills by the time they are needed for the work in other subject areas.
- Seek opportunities to use topics from other subjects in Mathematic lessons.

The Role of All Teachers is to:

- Have a full appreciation of what numeracy is.
- To promote a positive attitude to numeracy and Mathematical thinking in their subject areas.
- Ensure they are familiar with correct Mathematical language, notation, convention and methods provided in the Numeracy skills support booklet, and encourage students to use these correctly in their subject.
- Provide information for Mathematics teachers on the stage at which specific numeracy skills will be required.
- Use the numeracy handbook and skills support booklet to ensure consistent approaches in all appropriate lessons.

Numeracy SAVE – a tool to be used across the school for staff to ensure consistency when planning and preparing for numeracy in lessons. All teachers to display in their own classroom to promote a consistent approach.

Scientific calculator

First and foremost, we always try and use our mental and written method when attempting a calculation. If a calculator is need then this needs to be a scientific calculator.

This is a requirement and pupils are expected to have their own calculator in school. Pupils need to know how to use a scientific calculator correctly and they are taught this in their Maths lessons.

Approach

Pupils must be encouraged to **always show their working out**, regardless of whether they are using a calculator or not.

Vocabulary

Mathematical vocabulary is precise and rigorously defined. It should be used carefully to avoid misinterpretation and confusion with the same similar words used elsewhere.

Estimation

Errors are commonly made when students fail to check the reasonableness of their answer in the context of the question. Recognising that estimation is not just a guess, but rounding need to be used.

Mathematical language

A lot of language used in Mathematics can often cause misinterpretation. Below is a list of examples, this is not exhaustive. There is also a list on the following page of examples of how language is used differently in Mathematics teaching.

1. Look at these two sentences. How can they cause confusion for pupils?
   - 13 **take away** 6
   - 13 **was taken away from** 6

   13 − 6 = 7 6 − 13 = −7

2. When reading numbers aloud the format that is used to ensure clarity is:

In maths we use:	One thousand, two hundred **and** twenty three	for	1223
For dates we often say:	Twenty twelve	for	2012
In maths for decimals:	One point six four	for	1.64

   Any other ways of phrasing these causes pupils problems with interpretation and is incorrect – for instance saying one point sixty four for 1.64 gives too large a significance to the value after the decimal point and creates problems with imagining sizes.

3. Sometimes **simplifying the language** of mathematics can cause misunderstandings. Take for example the use of the terms 'acute' and 'obtuse' angles. If they are referred to by names such as 'sharp' or 'wide' this leads pupils to think about the shape of the point rather than on the amount of turning that happens. This then makes comparisons between different angles harder. Also pupils often think that diagram A is more acute than diagram B

Diagram A

Diagram B

4. As in English, the terms 'fewer' and 'less' and their derivatives can cause problems.
   'Fewer' always relates to a number i.e. something that can be counted.
   'Less' always refers to a quantity e.g. less milk in a cup

5. The word **'power'** has a specific meaning in mathematics: it tells the reader how many times a number is multiplied by itself.

   4^2 is 4 to the power 2

6. Like many words in mathematics the word '**scale'** is difficult as there are so many meanings in English and mathematics itself has two specific meanings
   a. **Scale** meaning how much to enlarge or reduce the size of an object
   b. The **'scale'** as used on measuring devices or graphs or plans

7. Some of the difficulties are caused by pupils not having text to support them in decoding their reading. Shops and adverts are classic examples where this happens. Information is briefly written to be eye-catching rather than to aid interpretation.

   Look at: '25% **of** £5.00' compared to '25% **off** £5.00'.

   25% of £5.00 25% off £5.00

   Lack of precision in reading can cause very real differences in interpretation.

Term used	What is meant
Calculate	A numerical answer is expected which requires the use of a calculator or formal calculation methods.
Deduce	Use logic – one step follows on from another and reasoning is given.
Describe fully	Use mathematical vocabulary in the description. Ensure that the answer is unambiguous.
Do an accurate drawing	Use compasses to draw lengths (rather than just a ruler), protractors for measuring angles and a sharp pencil – avoid parallax errors.
Estimate	An estimate is not a guess. Use rounded numbers to work out an approximate number.
Expand	Multiply to convert the brackets into individual algebraic or numerical terms.
Expand and simplify	Multiply to convert the brackets and then collect terms together to form the simplest version possible.
Explain your answer. Show your working	Show the steps taken to reach an answer and justify the reasoning for each step.
Explain/Comment/Give a reason for your answer	Use words and/or mathematical symbols to justify an answer or describe the limits of the process you have used to reach your answer.
Express, in terms of	Use the given information to write an expression which only uses the letter(s) given.
Factors	Factors are numbers which can be multiplied together to get another number.
Give the answer to a sensible degree of accuracy	For scientists: Answers should be no more accurate than the values given in the question. If the question quotes values to 2 sf. then give an answer to either 2 sf. or 1 sf.
Hence	Use the previous answer to work out the next part.
Make (x) the subject	Rearrange a formula so that it is written x = ...
Measure	Use a ruler or a protractor to measure a length or an angle.
Product	The answer when two or more numbers are multiplied together.
Prove	An algebraic or geometric proof is required where each step is justified.
Show that	Use reasoning which utilises words, numbers or algebra to find an answer.
Simplify	Collect algebraic terms together or cancel down a fraction to find the simplest version of an answer.
Solve	Find the value(s) of (x) that makes the equation true.
Use the graph	Do not calculate the answer, read the answer from the graph. Draw marker lines on the graph to show how the answer has been found.
Work out	A calculation is involved in finding the answer.

A more extensive list of Mathematics vocabulary and Maths command words is provided in the Numeracy skills support booklet to refer to.

Mathematical thinking and procedures

Exploring, questioning, working systematically, visualising, conjecturing, explaining, generalising, justifying, proving... are all at the heart of Mathematical thinking. Mathematical thinking involves, looking for patterns in order to discern structure, and looking for relationships and connecting ideas.
Many pupils are unaware that the skills they use across the school are Mathematical ways of thinking. Part of our promotion of numeracy across the curriculum is to ensure pupils are made aware of when they are using these skills.
These ways of thinking can be employed to tackle both Mathematical and non-mathematical problems. Helping pupils understand that they often use this type of thinking in many situations is an important part of valuing Mathematics.

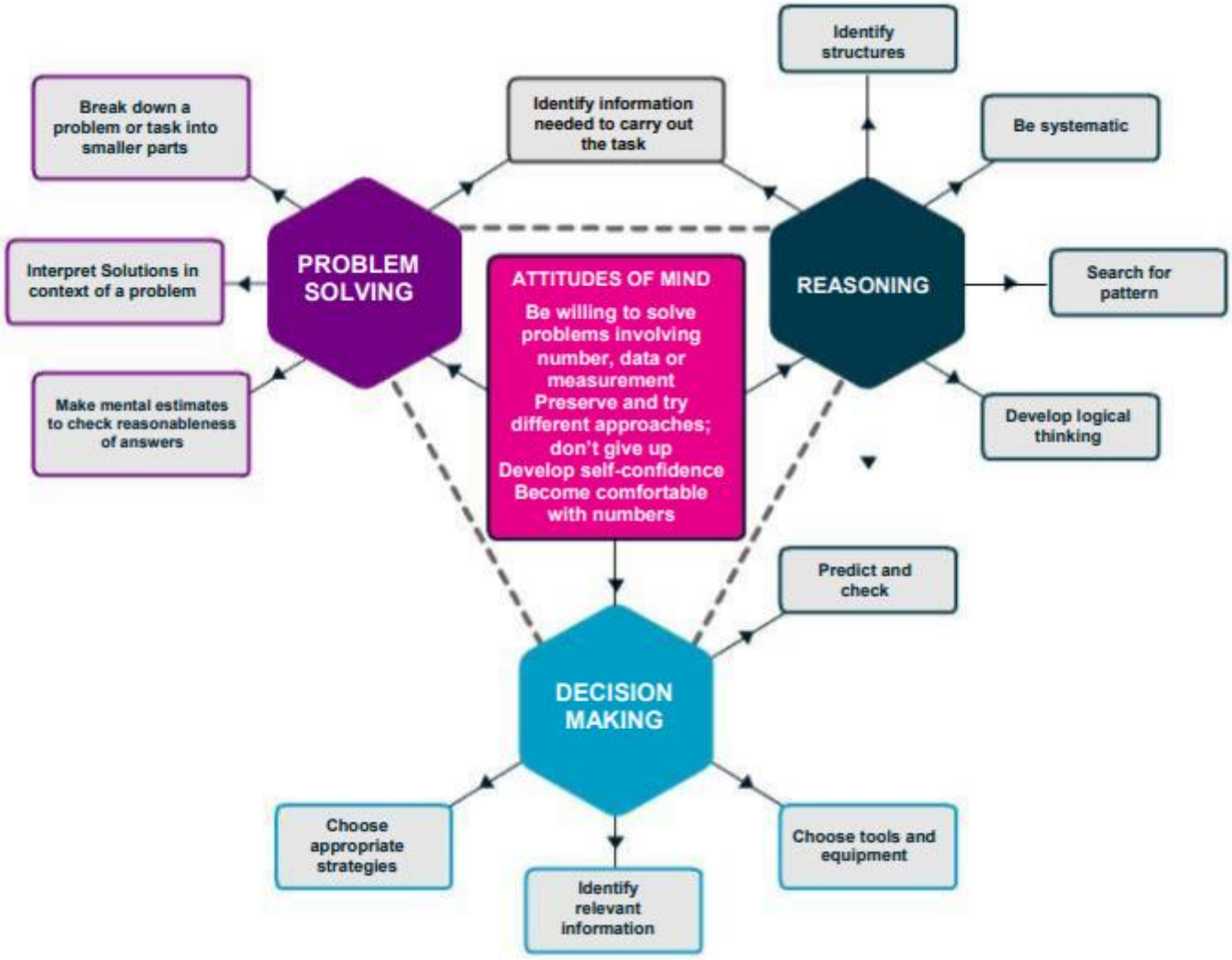

Diagram provided by The National Numeracy Strategy.

Promoting Mathematical thinking

Staff will be provided with this guide to questioning and must have this displayed in their classroom to encourage Mathematical thinking across the school.

LEVEL OF THINKING	GUIDE QUESTIONS
Memory: recalls or memorises information	What have we been working on that might help with this problem?
Translation: changes information into another form	How could you write/draw what you are doing? Is there a way to record what you've found that might help us see more patterns?
Interpretation: discovers relationships	What's the same? What's different? Can you group these in some way? Can you see a pattern?
Application: solves a problem - use of appropriate generalisations and skills	How can this pattern help you find an answer? What do think comes next? Why?
Analysis: solves a problem - conscious knowledge of the thinking	What have you discovered? How did you find that out? Why do you think that? What made you decide to do it that way?
Synthesis: solves a problem that requires original, creative thinking	Who has a different solution? Are everybody's results the same? Why/why not? What would happen if....?
Evaluation: makes a value judgement	Have we found all the possibilities? How do we know? Have you thought of another way this could be done? Do you think we have found the best solution?

Staff will also be provided with a reusable poster to be displayed in their rooms to encourage pupils to see the links between the skills used in their Maths classrooms and elsewhere in school. Staff will need to update this regularly for pupils to see where Maths is used in everyday life and also, where it is being used in that particular classroom.

Numeracy across the curriculum

Listed below are each of the subjects at Balshaw's and where numeracy links in to each curriculum. There are also examples of potential uses in lessons and links to some resources. This list is not exhaustive; if any department would like anything added to the list please see APH.

Subject	Numeracy skills	Potential uses in lessons (not exhaustive)	Links
Art	Overview: Apply number skills such as measurement, estimates, scale, proportion, pattern and shapes to develop, inform and resource their creative activities. More detail: • Use standard measures to find length • Form repeating patterns (tessellations), making use of reflection, rotation and translation. • Use of paint mixing as a ratio context. • • Many patterns and constructions in our own and other cultures are based on spatial ideas and properties of shapes, including symmetry. • Calculating the golden ratio in pictures/drawings (Mona Lisa) • • Perspective and scale • Drawing in 3 dimensions	• Designing and making 3D letter structures (accuracy in measuring using a ruler and joining edges of a 3D letter together using the correct angles) • Looking at artists who use shape and from as the main focal point of their work. Pupils to identify and draw a variety of shapes from the artist's work. • Using a grid framework to create block lettering, accuracy in using squared paper and a ruler. • Using a view finder to crop and zoom in on an area of work. Then using a grid to plot and measure to assist in zooming in and enlarging an image when drawing. • Looking at artists Ruth Piper and her use of shape. Using a compass accurately to draw circular patterns and shapes inspired by the artist. • Isometric drawings, using grid paper to draw 3D shapes accurately. • Textile activities where students have to work with a design template/pattern to draw around and accurately cut out the design onto fabric before stitching together (cross curricular with Tech)	Numeracy in Art Numeracy in Art 2 Numeracy in Art 3 Mathematical Art lessons

Business Studies /Computing /ICT	Overview: Use mathematical information and data presented numerically and graphically in data-handling software. They use number to collect and enter data for interpretation in spreadsheets and simulations and present their findings as graphs and charts, checking accuracy before processing. More detail: • Use Mathematical symbols and notation (sigma for sum), construct and interpret graphs. • Using estimation to be aware of sensibleness of answers. • Use formulae to interpret data in spreadsheets. • Spreadsheet skills, used in modelling and simulations, rely on the numeric, algebraic and graphical skills involved in constructing formulae and generating sequences, functions and graphs. • Use of percentages and ratio in calculating costings etc. Deductive reasoning when justifying answers. • Use of sampling when conducting research and constructing tables to draw conclusions from. • Use of mathematical vocabulary e.g. sum, profit	• Pupils will collect and classify data, enter them into data-handling software, produce graphs and tables, and interpret and explain their results. • When using a spreadsheet as a model consider the mathematical conventions on comparing between fractions and decimals. • Constructing graphs – Including axes, titles, and/or key. Understanding the terms discrete, continuous and grouped data and be familiar with the appropriate measures of speed. • Programming – Using formulas and substitution into these formulas to calculate the value of a variable. Links between inputs and outputs in the context of simple function machines. • Binary code – Pupils consider how computers uses switches to control the output of programs. Comparison of binary numbers with decimal numbers and order numbers in binary code. • Producing profit and loss accounts using formulae. (EG Net profit = gross profit – expenditure) • Plotting graphs using break even points. Using the graphs to predict patterns. • Producing budgets and calculating variances between budgets and actual spending/revenue. • Producing cash flow forecasts – using formulas on spreadsheets.	Numeracy in ICT Numeracy in ICT 2

Design & Technology	Overview: Use mathematical information and data, presented numerically and graphically, to research and develop their ideas. They use number to measure and calculate sizes, fits and materials. More detail: • Use standard measures to find length, mass, time, force, temperature, area or capacity. Use of estimation when calculating mentally. • Use mathematical symbols and notation, construct and interpret graphs and charts. • Use scale and ratio to produce drawings using ruler, compass and protractor correctly. • Use of sampling in research then taking, reading, and recording results. • Design of products using 2D and 3D shapes, construction of polygons and 3D drawing to create models.	• Food tech – Recipes as a ratio context, reading scales, pricing ingredients. • Textiles - Textile activities where students have to work with a design template/pattern to draw around and accurately cut out the design onto fabric before stitching together (cross curricular with Art)	Numeracy in DT Numeracy in DT 2 Numeracy in DT 3
Drama	• Reading and writing numbers, identifying sequences and patterns. • Budgeting – forecasting costs etc	• Creating time lines showing the sequence of actions introduced in a plot. Recognise the difference between a time line where time is evenly spaced out on the horizontal axis as in mathematics and when the axis is labelled with scenes from a play or chapters. Help pupils understand the numbering system used for acts and	Numeracy in Drama Numeracy in Drama 2 Numeracy in Drama 3

		scenes in plays (cross-curricular with English)	
English/Media Studies	Overview: Develop skills in the application of number through activities which include number rhymes, ordering events in time, gathering information in a variety of ways, including questionnaires; accessing, selecting, recording and presenting data in a variety of formats More detail: • Comparison of data sets. • Reading and writing numbers, identifying centuries. • Coding – secret codes. • Grouping/categorising ideas or words. • Sequencing.	• Use of Venn diagrams- which adjectives describe each one and which describe both? e.g. Of Mice and Men Crook  Curley's wife • Creation and analysis of poetry e.g. Lambic pentameter; rhythm and pattern in the number of syllables in words in poetry. • When creating non-fiction articles, the evidence can be chosen from graphs, charts, tables and mathematical vocabulary which have to be interpreted. • Creating time lines showing the sequence of actions introduced in a plot. Recognise the difference between a time line where time is evenly spaced out on the horizontal axis as in mathematics and when the axis is labelled with scenes from a play or chapters. Help pupils understand the numbering system used for acts and scenes in plays (cross- curricular with Drama) • In creative story writing, recognising the use of Mathematical types of thinking when placing restrictions on the way writing is formed or a character can behave during different events. • Create a 2D diagram or 3D model of the location of a story – annotate the diagram/model using quotes from the text as	Numeracy in Media Numeracy in English Numeracy in English 2

		evidence for your choices.	
Geography	Overview: Apply number skills in the classroom and in fieldwork to measure, gather and analyse data. They use mathematical information to understand direction, distances and scale and to determine locations when using plans, maps and globes. More detail: • Use Mathematical symbols and notation, construct and interpret graphs and charts. • Use grids to identify position • Use negative numbers to interpret below sea level. • Use standard measures to find length, mass, time, force, temperature, area or capacity.	• Statistical enquiries – Analysing population data to explore and compare lifestyles. Use of percentage change to compare population sizes • Using data collection to construct graphs and charts – Pie chart, bar chart etc. • Map study – Use of coordinates and ideas of angle, direction, position, scales and ratio. • Discussing evidence- involve measurement, estimation and approximation skills, and making inferences.	Numeracy in Geography Numeracy in Geography 2 Numeracy in Geography 3
History	Overview: Develop their number skills through developing chronological awareness, using conventions relating to time, and making use of data, *e.g. census returns and statistics*. More detail: • Use timelines and interpret negative numbers • Use scale to interpret maps and diagrams • Use mathematical symbols and notation, construct and interpret graphs and charts.	• Magnitude of numbers of people who died in a conflict – knowing how many days are in a month, year etc and being able to calculate with figures. • Interpretation of maps and graphs – countries involved in war, area and numbers of people etc. • Coding of countries as the start of algebra	Numeracy in History Numeracy in History 2 Numeracy in History 3
MFL	Overview: Develop number skills through a range of activities in the	• Number recognition and number sequencing – counting forwards and	Numeracy in MFL

	target language. These can include number rhymes; ordering numbers; ordering events in time; using number in relevant contexts such as currency exchange; gathering information in a variety of ways, including questionnaires and recording and presenting results in a variety of formats. More detail: • Use dates, sequences and counting in other languages • Use basic graphs and surveys to practise foreign language vocabulary and reinforce interpretation of data.	backwards in sequences using different languages. Calculating sums in other languages. EG. Quatre + deux =? • Practise times table facts in different languages – repetition. • Fractions – Matching card activity – calculez le quart de quarante • Shape and space – Naming 2D and 3D shapes, describing size, colour and properties in different languages. • Grouping words – masculine, feminine, singular, plural. Use a table of results. • Reading from tables – practising large numbers. • Comparison and conversions between currencies. • Time – Telling the time, calculating time differences, reading timetables.	Numeracy in MFL 2 Numeracy in MFL 3 Numeracy in MFL 4
Music	• Use addition of fractions in bar music • Use counting for beats • Use sound waves, frequency and oscillations • Use graph sketching to demonstrate change over time e.g. in dynamics over a piece • Reading and writing numbers, identifying sequences and patterns. • Measurement and geometry – length of strings, surface area. • Comparison of units – ratio, rates and proportions.	• Bar Music – addition of fractions • Counting for beats • Sound waves, frequency and oscillations (Cross curricular with Science)	Numeracy in Music Numeracy in Music 2 Numeracy in Music 3
PE	Overview: Develop their number skills by using mathematical	• Measuring accurately – During throwing events pupils choose the correct	Numeracy in PE

	information and data. They use the language of position (including co-ordinates and compass points) and movement, as well as data handling and measures in athletic and adventurous activities. They use scale in plans and maps. They measure and record performances, *e.g. time, distance and height*, and use the data to set targets and improve their performance. More detail: • Use of speed, distance, time in measurements. • Use fractions to identify time – timekeeping. • Collect and record real data, finding averages, compare and draw conclusions – identifying sequences or patterns. • Construct graphs/charts and interpret the data from real results. • Movement, position and direction used across many sports. • Use of estimation to make predictions of results.	measuring device and are able to measure accurately and convert between units. • Basketball 2-point system – Understanding different scoring systems in sports. • Athletics – Use of division in team events like relay races to decide pace. Comparing speeds run by individuals and team events. Understand number in split second timing. • Estimating – Estimating throws before accurate measuring. Use of interpolation. Use of rounding when estimating distances or time. • Tally charts – Keeping score in games.	Numeracy in PE 2 Numeracy in PE 3
PSHE	Overview: Select data from given information presented in a range of numerical and graphical ways. Gather information in a variety of ways, including simple questionnaires or databases to support understanding of PSE-related issues [and in KS3 access and select data from relevant information presented in a variety of ways and from different sources],	• Discussion of moral and social issues – use of primary or secondary data, interpretation of graphs and charts. • Use of data to make more reasoned and informed decisions and to recognise biased data and misleading representations. • Financial – Budgeting, money management, earning. Discussion of	Numeracy in PSHE

	[and in KS4 select from and interpret a variety of methods of presenting data, including pie charts, scatter graphs and line graphs] to support understanding of PSE-related issues. More detail: • Use mathematical symbols and notation, construct and interpret graphs and charts. • Use standard measures (metric and imperial) to find length, mass, time, force, temperature area or capacity. • Use timelines and interpret negative numbers. • Consider infinity and the meaning of this conceptually • Reflect on logic and the process of constructing a sound argument Belief and likelihood in risk assessment in PSHE, relate well to work in mathematics. The discussion of moral and social issues is likely to lead to the use of primary and secondary data and the interpretation of graphs, charts and tables, helping pupils to make reasoned and informed decisions and to recognise biased data and misleading representations. By applying mathematics to problems set in financial and other real-life contexts, pupils will develop their financial capability and awareness of the applications of mathematics in the workplace.	financial capability and awareness of Mathematics in the workplace. • Bank accounts – interest rates, tax, NI, pay.	

RE	Overview: Develop skills in the application of number by using information such as ordering events in time, by measuring time through the calendars of various religions, by calculating percentages of tithing, and by considering the significance of number within religions. They interpret results/data and present findings from questionnaires, graphs and other forms of data in order to draw conclusions and ask further questions about issues relating to religion and the world. More detail: • Use Mathematical symbols and notation. Construct and interpret graphs, charts and timelines. • Reflect on logic and the process of constructing a sound argument • Belief and likelihood in religious education, relate well to work in mathematics. The discussion of moral and social issues is likely to lead to the use of primary and secondary data and the interpretation of graphs, charts and tables, helping pupils to make reasoned and informed decisions and to recognise biased data and misleading representations. By applying mathematics to problems set in financial and other real-life contexts, pupils will develop their	• Religious icons – Recognising patterns and symmetry. • Data gathering and representation of people's views – RE based issues. • Understanding the numbering systems in religious texts and the reasons for them – importance of number in different belief systems. • Different number systems – Pattern for days of the week, calendar and recurring festivals have mathematical processes that underpin them. • Maps – Study of maps to track journeys, land use and/or possession involves coordinates, and ideas of direction and scale. • Comparing annotated time lines involving development of different religions. • Use of data to make more reasoned and informed decisions and to recognise biased data and misleading representations. • Discussion of moral and social issues – use of primary or secondary data, interpretation of graphs and charts.	Numeracy in RE Numeracy in RE 2 Numeracy in RE 3

	financial capability and awareness of the applications of mathematics in the workplace.		
Science	Overview: Work quantitatively to estimate and measure using non-standard and then standard measures, recording the latter with appropriate S.I. units. They use tables, charts and graphs to record and present information. With increasing maturity, they draw lines of best fit on graphs, use some quantitative definitions and perform scientific calculations More detail: • Use formulae to calculate work, power, mass, density. • Rearrange and substitute into formulae • Construct and use graphs to represent data - interpretation of graphs. • Use standard measures to find length, mass, time, force, temperature, area or capacity. • Manipulate numerical data from their experiments and do calculations – use data to recognise patterns and draw conclusions. • Use Mathematical symbols and notation – use of scientific calculators. • Take readings from scales – including negatives. • Use of rounding in estimation – accuracy and error.	• Almost every scientific investigation or experiment is likely to require one or more of the mathematics skills of classifying, counting measuring, calculating, estimating and recording in tables and graphs.	Numeracy in Science Numeracy in Science 2 Numeracy in Science 3 Numeracy in Science 4