Numeracy Policy

Believe, Succeed, Together

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1.0 Introduction

At Eastwood we believe that numeracy skills are absolutely fundamental for each of our pupils to be successful in their lives. Numeracy provides an ability to cope confidently with the mathematical demands of adult life, further education and employment. The development of numeracy skills is a basic entitlement for all pupils. All pupils should experience a rich numeracy learning environment, regardless of perceived 'ability'.

Numeracy involves the application of knowledge, skills and understanding essential for personal and social development, in this way the school supports the life-long learning of its pupils.

Competent numeracy promotes self-confidence and therefore staff will endeavour to deliver their lessons in a manner that builds pupil belief both in them and to improve the application of numerical skills by all pupils across the whole range of appropriate subjects.

The point of numeracy is to make sure that all pupils have the skills to confidently cope with the mathematical needs within the school curriculum and also in their future adult lives. The policy is here to reinforce each pupil's understanding of mathematical methods, vocabulary and notation when they meet mathematics in other subjects. If there is not consistency between subjects then pupils can get easily confused due to conflicting methods. This can only have a negative effect on pupil performance across subjects.

2.0 Definition

Numeracy, in very simple terms, is 'the ability to understand and work with numbers'.

To this end, pupils should:

- Be able to select the appropriate method for solving problems.
- Be able to recall number facts.
- Use methods they have been taught in Mathematics lessons.
- Use calculators efficiently and recognise when these are inappropriate tools.
- Be able to communicate effectively their chosen method and approach.
- Be able to estimate and judge the reasonableness of their solutions.
- Be able to present ideas and data in the form of charts, graphs and tables.
- Be able to interpret, describe and discuss their work and use this to support their conclusions and make appropriate predictions.
- Be able to use mathematical vocabulary correctly in both oral and written work to explain their strategies and methods.
- Adopt a systematic approach to problem solving.

3.0 Policy Aims

- Adopt a whole-school approach to numeracy across the curriculum.
- Ensure that a consistent approach to numeracy is adopted by all staff to keep pupil confusion to a minimum and avoid re-learning or un-learning numeracy methods.
- Enable all pupils to attain at least minimum expected standards by age 16 in the key numeracy skills.

- Support the development of numeracy skills throughout the curriculum
- Raise staff awareness of key numeracy strategies through INSET, meetings, weekly literacy tips and the dissemination of good classroom practice.
- Encourage staff to take responsibility for the development of numeracy in their subject areas through the inclusion of appropriate schemes of work and lesson planning.
- Support the development of numeracy through the deployment of a range of resources in the school e.g. Library, ICT suites etc.
- Identify specific roles and responsibilities within the Academy with regard to the development of numeracy work.
- Establish procedures for monitoring numeracy across the curriculum.

4.0 Curriculum Mapping of Numeracy

The following codes are used in schemes of work to map numeracy-based skills.

Code	
	Number and Algebra
N1	Understand place value and order numbers up to 100
N2	Know when to add or subtract when solving problems
N3	Recognise odd and even number
N4	Read and write numbers in figures and words, up to a million
N5	Round numbers to the nearest 10, 100 or 1000
N6	Use <, >, <, > and = symbols
N7	Mental addition and subtraction of 2 digit numbers
N8	Written addition and subtraction of three digit numbers
N9	Multiplication tables – 2, 3, 4, 5 and 10 and associated division facts
N10	Use simple fractions and recognise when two simple fractions are equivalent
N11	Use decimal notation – money
N12	Recognise and use negative numbers in context
N13	Multiplication tables up to 10 X 10 and associated division facts
N14	Multiply and divide whole numbers by 10 and 100
N15	Written addition and subtraction of whole numbers
N16	Short multiplication and division of whole numbers
N17	Add and subtract decimals to two decimal places
N18	Order decimals to three decimal places
N19	Recognise and use simple percentages
N20	Use simple formulae expressed in words
N21	Use co-ordinates in the first quadrant
N22	Multi[ply and divide decimals by 10, 100, 1000
M23	Order, add and subtract negative numbers in context
N24	.+, -, X, ÷ with up to 2 decimal places
N25	Calculate fractions of quantities
N26	Use simple ratio and proportion
N27	Long multiplication
N28	Long division
N29	Check answers using inverse operations
N30	Estimate and check answers using approximations
N31	Construct simple formulae
N32	Use co-ordinates in four quadrants

N33	Calculate a number as a fraction of another
N34	Calculate a number as a percentage of another
N35	Understand and use fraction, decimal and percentage equivalence
N36	Add and subtract fractions
N37	Calculate using ratios
N38	Solve linear equations
N39	Use co-ordinates for geographical representation
N40	Calculate percentages of quantities
N41	Use simple formulae
N42	Use significant figures
N43	Multiply and divide fractions and decimals
N44	Use a calculator efficiently and appropriately
N45	Use proportional change
N46	Solve simultaneous linear equations graphically
N47	Solve simultaneous linear equations algebraically
N48	Solve simple inequalities
N49	Calculate power and roots
N50	Use standard form
N51	Use formulae involving fractions, decimals or negative numbers
N52	Calculate the original quantity given the result of proportional change
N53	Solve problems involving repeated proportional change
N54	Interpret graphs modelling real life situations
N55	Draw graphs modelling real life situations
N56	Transform formulae
N57	Solve inequalities in two variables
N58	Determine the bounds of intervals
N59	Find formulae that approximately connect data and express general laws in symbolic form
N60	Use direct proportion
N61	Use indirect proportion
N62	Use the rules of indices
N63	Solve problems using intersections or gradients of graphs
	Shape, Space and Measure
S1	Mathematical names for 2-D and 3-D shapes
S2	Understand angle as a measure of turn
S3	Recognise right angles
S4	Understand reflective symmetry
S5	Use metric units of length, capacity, mass and time
S6	Solve problems involving time or timetables
S7	Make simple 3-D models from nets
S8	Draw 2-D shapes in different orientations
S9	Understand rotational symmetry
S10	Reflect simple shapes in a mirror line
S11	Measure and read scales using appropriate units and accuracy
S12	Find perimeters of simple shapes
S13	Find areas by counting squares
S14	Measure and draw angles
S15	Know the angle sum of a triangle
S16	Know the sum of angles at a point
S17	Identify all the symmetries of 2-D shapes
S18	Convert one metric unit to another

S19	Know rough metric/imperial equivalence of common units
S20	Estimate measures
S21	Know and use the formula for the area of a rectangle
S22	Draw and interpret simple scale drawings
S23	Recognise 2-D representations of 3-D shapes
S24	Know and use properties of quadrilaterals
S25	Use angle and symmetry properties of polygons
S26	Use angle properties of intersecting and parallel lines
S27	Devise instructions for a computer to generate and transform shapes
S28	Use the formula for the circumference of a circle
S29	Use the formula for the area of a circle
S30	Find the areas of plane rectilinear figures
S31	Use the formulae for the volume of a cuboid
S32	Enlarge shapes by a positive whole number scale factor
S33	Use Pythagoras' Theorem in 2-D
S34	Calculate lengths and areas in plane shapes
S35	Calculate volumes of prisms
S36	Enlarge shapes by a fractional scale factor
S37	Determine the locus of a moving object
S38	Understand the limitations of accuracy of measurements
S39	Understand and use compound measures
S40	Understand and use similarity and congruence
S41	Use trigonometry in 2-D
S42	Distinguish between formulae for perimeter, area and volume by considering dimensions
S43	Use Pythagoras' Theorem in 3-D
S44	Use trigonometry in 3-D
S45	Calculate lengths of circular arcs
S46	Calculate areas of sectors
S47	Calculate surface area of cylinders
S48	Calculate volume of cones and spheres
	Handling Data
H1	Sort and classify objects by more than one criterion
H2	Record results in simple lists, tables and block graphs
H3	Interpret simple tables and lists
H4	Interpret pictograms
H5	Draw pictograms
H6	Interpret bar graphs
H7	Draw bar graphs
H8	Collect data and record them using frequency tables
H9	Understand and use the mode, the median and the range of a set of data
H10	Group collected data into equal class intervals
H11	Draw frequency diagrams using grouped data
H12	Interpret line graphs
H13	Select and use appropriate scales for axes
H14	Draw line graphs
H15	Understand and use the mean of a set of data
H16	Use averages and ranges to compare two sets of data
H17	Interpret pie charts
H18	Understand and use the probability scale from 0 to 1
H19	Find probabilities using equally likely outcomes or experiment

H20	Create frequency tables with equal class intervals to record continuous data
H21	Draw frequency diagrams
H22	Draw pie charts
H23	Draw scatter diagrams
H24	Understand simple correlation
H25	Use two-way tables to record all the possible outcomes of two events
H26	Use the fact that the total probability of all mutually exclusive outcomes of an experiment is 1
H27	Specify and test hypotheses using appropriate methods and taking account of variability and bias
H28	Find modal class of grouped data
H29	Estimate the mean, median and range of grouped data
H30	Use averages and ranges and frequency polygons to compare two sets of data
H31	Draw a line of best fit on a scatter diagram
H32	Use relative frequency to estimate probability
H33	Interpret cumulative frequency tables and diagrams
H34	Construct cumulative frequency tables and diagrams
H35	Estimate the median, quartiles and inter-quartile range from a cumulative frequency diagram
H36	Interpret histograms with unequal class intervals
H37	Understand and use sampling
H38	Draw histograms with unequal class intervals
H39	Use Spearman's coefficient of correlation