



Cross-Curricular Numeracy Policy

Rationale

Using Mathematics

Using Mathematics is the skill of applying mathematical concepts, processes and understanding appropriately in a variety of contexts. Ideally these should be in relevant real life situations or work in a cross curricular subject that requires some mathematical knowledge or skill.

Across the curriculum, at a level appropriate to their ability, pupils should be encouraged to:

- choose the appropriate materials, equipment and mathematics to use in a particular situation.
- use mathematical knowledge and concepts accurately.
- work systematically and check their work.
- use mathematics to solve problems and make decisions.
- develop methods and strategies, including mental mathematics.
- explore ideas, make and test predictions and think creatively.
- identify and collect information.
- read, interpret, organise and present information in mathematical formats.
- use mathematical understanding and language to ask and answer questions, talk about and discuss ideas.
- explain ways of working.
- develop financial capability.
- use ICT to solve problems and/or present their work.

If a chance to use mathematical skills and knowledge arises in cross curricular work, then hopefully this should reinforce work done in maths lessons. However, there may be a time when e.g. a history graph could be used in a maths lesson to help develop pupils' basic data handling skills. I see no reason why data from a cross curricular subject could not be used to show how graphs work etc. Many teachers feel that they need to practise the skill first in maths and then

apply it in cross curricular work. In my opinion, if a cross curricular opportunity to develop a maths idea occurs - then use it (in the numeracy lesson), as the pupils' motivational levels/interest in the cross curricular subject may be the 'incentive ' they need to become fully involved in the lesson and its learning intention. Learning may actually be better in this instance rather than in a dry, out of context example.

Opportunities for developing numeracy in the various cross curricular subjects have been included in an appendix to this document.

MAndrew (Numeracy Coordinator) January 2017 Update

Cross-curricular Numeracy (Update Jan 2017)

Every effort should be made to link numeracy with other areas of the curriculum. I'd like to draw your attention to possible links. The table below lists some examples. When deciding which numeracy skills will be used in a cross-curricular subject, it is vital that these are chosen carefully and are at the appropriate level for your pupils. Remember, a cross-curricular theme may be used in a numeracy lesson to teach a mathematical concept or skill, particularly if it is likely to lead to better lesson engagement and consequently pupil learning.

English

Frequency of words (e.g. Shakespeare vs Bacon).
Bar charts, pie charts
Surveys.
Line graphs -charting emotional response.
Beats & syllables in poetry.

Science

Solving a variety of problems involving decimals, fractions, percentages & ratio.
Use of formulae.
Graphs and charts of all kinds.
Length, area, volume.
speed, temperature etc.
Using statistics - mean, median, mode, range etc.

Art

Islamic Art. Shape in 2-D and 3-D.
Symmetry-reflective/rotational
Simple ratios.
Perspectives and Golden ratios.

Escher - tessellations.
The art of Wassily Kandinsky, Piet Mondrian, Theo Doesburg and others use geometrical shapes. Cubism.

Paint mixing - ratios

Statistical analysis of e.g. the number of colours used in a painting/the position of the key elements etc.

Analysis of the position and angles between the key subjects in paintings.

Design and Technology

Solving a variety of problems involving decimals, fractions, percentages & ratio, nutritional values for food, energy calculations
Use of formulae.
Graphs & charts of all kinds.
Construction and measure of 2-D and 3-D shapes. Nets.
Scale drawings and plans
Coordinates
Angles
Symmetry
Sequencing - thought processes.
If I do this, then ...

Geography

Solving a variety of problems involving decimals, fractions, percentages & ratio,

Analyse 3D shapes using 2D projections
Using coordinates, maps & scales (ratio)

Graphs and charts of all kinds. Population growth. 4/6 figure grid references.
Using statistics
Timetable analysis.

Distances /
Conversions
Heights/depth comparison (Place value)

Angles - eg Road design (corners)

Symmetry - major road intersections

Place value

Music

Fractions - note values/beats in a bar etc.

Popularity of music - statistics

Sequences - recurring phrases.

History

Using the number line effectively. Ideas of large numbers, wealth, decimals, fractions, percentages & ratios.

Measures of weight, length, time.

Interrogating databases.
Coordinates, line graphs, bar charts, pie charts etc all types

Population change, deaths, births, no of years people lived, nos. in armies etc.

Using statistics - mean, mode, median and range.

PE

Speed/distance/time, units, mass
Gathering /analyzing performance data
Using statistics, graphs and charts,
Percentages success of pupils at a task.
Conversion to a fraction etc and vice versa.
Angles - equipment set up / in pass and move games
Shapes - teamwork - moving as a unit eg triangles -best shapes?

ICT

Using spreadsheets, interrogating databases,

Using computer formulae, expressions sequences, creating flowcharts.

Using a computers shape reflecting and rotational functions to investigate symmetry.

Drawing bar charts, line graphs and pie charts.

Modeling

Using the formulae in eg word to support data analysis in other subjects.

RE

Shape - e.g. Pentagon - 5 pillars of Islam.

Octagon - eightfold path (Buddhism)

Circles and associated vocabulary

Dates AD and BC
Calendar years /
Dates of origin of other faiths.

Modern foreign languages

Measures of length/distance, time and weight, counting, tables, exchange rates, money/costs, speeds, distance, Population statistics,

Drama

Length, area, using scale drawings, plans & elevations - stage sets.

Time-lines for cues, prompts, lighting, music etc

Seating arrangements for audience - number of seats etc

PSHEC/Financial Awareness

Budgeting
School Council
Finance decisions

Health topics

Using statistics, graphs and charts, Percentages, weight/height/rations.
Conversions eg Stones/pounds to Kg/g

