



NUMERACY ACROSS THE CURRICULUM POLICY

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Definition of Numeracy

Numeracy is a proficiency which involves confidence and competence with numbers and measures. It is more than an ability to do basic arithmetic and requires an understanding of the number system, repertoire of mathematical techniques and an inclination and ability to solve quantitative or spatial problems in a range of contexts. Numeracy also demands understanding of the ways data is gathered and presented.

Aims Of The Policy

Wellfield School is committed to raising standards of numeracy of all its students, so they develop the ability to use numeracy skills effectively in all areas of the curriculum and the skills necessary to cope confidently with the demands of further education, employment and adult life.

The School Will:

- Promote numeracy throughout the curriculum in a consistent and efficient manner;
- Raise standards of numeracy by enhancing the quality of learning and teaching;
- Implement appropriate procedures for the monitoring and evaluation of the delivery of numeracy throughout the school;
- Provide staff training where necessary and raise the profile of numeracy within the school.

Characteristics Of A Numerate Student:

- Confident and competent at performing calculations involving number;
- Can use a range of techniques to carry out computations mentally and on paper;
- Knows and understands the properties of number;
- Can explain methods and justify reasoning & conclusions, using correct mathematical terms;
- Can use calculators and other ICT resources appropriately and effectively to solve mathematical problems, and select from the display the number of figures appropriate to the context of the calculation;

- Can recognise and use mathematical skills and techniques in a variety of contexts.

Management of The Numeracy Strategy

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

- Participate in the planning, implementation and evaluation of the whole school numeracy policy;
- Determine the role of the Numeracy Co-ordinator;
- Specify the expectation to be made of all teachers;
- Support the development and implementation of a whole school numeracy policy;
- 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;
- Support and encourage all staff in promoting numeracy across the school.

The Role of The Numeracy Co-ordinator is to:

- Work with SLT to determine a strategy for dealing with numeracy across the curriculum and to ensure the effective development and implementation of the numeracy policy;
- Establish and maintain line of communication to ensure there is constructive liaison between mathematic teachers and teachers of other subjects;
- Establish lines of communication and sure there is constructive liaison between mathematics teachers and feeder primary schools;
- Monitor and evaluate the implementation of the Numeracy Policy;
- Facilitate amendments to the numeracy strategy in the light of evaluation and curriculum changes.

The Role Of The Mathematics Department is to:

- Be aware of the mathematical techniques used in other subjects and provide assistance and advice to other departments, so a correct and consistent approach is used in all subjects;
- 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;
- Ensure they are familiar with correct mathematical language, notation, convention and techniques 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;
- Provide resources for mathematical teachers to enable them to use examples of applications of numeracy relating to other subject areas.

Teaching and Learning

To develop numerate students teachers need to:

- Have challenging and progressive objectives;
- Be direct and explicit;
- Provide lessons which are highly interactive, inspiring, motivating and which are varied in style to meet all pupils needs;
- Provide opportunities for pupils to reflect on their learning and become increasingly independent.

Planning And Assessment

Planning should:

- Ensure coverage, progression across the key stages and improve teaching and learning;
- Provide opportunities for functional and investigative tasks;
- Ensure differentiation;
- Ensure the transference of numeracy skills across the curriculum.

Assessment should:

- Inform planning and have an impact on teaching and learning;
- Provide data for the use of intervention groups;
- Inform target setting.

Numeracy Intervention

Targeted intervention will be given across both key stages. Intervention in Y7, 8 and 9 will be used after gap analysis to support pupils to catch up with their peers as quickly and effectively as possible in order to maximise access to the secondary curriculum.

Teachers across the curriculum will be kept informed about which pupils are participating in Numeracy intervention.

Teachers will be familiar with the content Numeracy intervention to ensure they can provide links into their subject area and give pupils opportunities to practice their skills. Intervention in year 10 and 11 will be focused on revision techniques within a numeracy context.

Role and Use Of Calculators

Whole School Policy On The Use of Calculators

In deciding when pupils use a calculator in lessons we should ensure that:

- pupils' first resort should be mental methods;
- pupils have sufficient understanding of the calculation to decide the most appropriate method: mental, pencil and paper or calculator;
- pupils have the technical skills required to use the basic facilities of a calculator constructively and efficiently, the order in which to use keys, how to enter numbers as money, measures, fractions etc.;
- pupils understand the four arithmetical operations and recognise which to use to solve a particular problem;
- when using a calculator, pupils are aware of the processes required and are able to say whether their answer is reasonable;
- pupils can interpret the calculator display in context (e.g. 5.3 is £5.30 in money calculations);
- we help pupils, where necessary, to use the correct order of operations – especially in multi-step calculations, such as $(3.2 - 1.65) \times (15.6 - 5.77)$.

Department Policies On The Use of Calculators

ALL departments are expected to have a policy and consistent practice on the use of calculators. Consideration of these questions and the whole school policy will help them with this.

- Where in your subject do you expect pupils to be able to use a calculator?
- Are there, and should there be, situations in your subject when you would not wish pupils to use calculators?
- Are the calculator skills required of pupils in line with expectations in the mathematics curriculum?

In simple terms, each department needs to decide and then plan into each module of work whether calculators are banned, ignored, allowed, encouraged or compulsory!

Evaluation Of The Numeracy Policy

The Numeracy Policy will be monitored and reviewed through:

- The Whole School and Departmental Development Plans;
- Lesson observations;
- Sampling of pupils' work;
- Encouraging departments to share good practice by exemplifying pupils' work;

- Scrutiny of departments schemes of learning
- Discussion with students, staff, parents and governors;
- Reviewing planning;
- Analysing assessment data;

Examples Of Numeracy Across The Curriculum

Science

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.

Art and Design

Measurements are often needed in art and design. Many patterns and 3D objects in our own and other cultures are based on spatial ideas and properties of shape, including symmetry. Design may need enlarging or reducing, introducing ideas of multiplication, scale and ratio.

Technology and Construction

Measurements are often needed in technology and construction. Many patterns and constructions are based on spatial ideas and properties of shape, including symmetry. Design may need enlarging or reducing, introducing ideas of multiplication, scale and ratio. The preparation of food involves measurement, timing and calculating cost which uses ratio and proportion.

ICT and Business

In ICT lessons, pupils will collect and classify data, enter values into data handling software, produce graphs and tables, and interpret and explain their results. Spreadsheets require algebraic and graphical skills involving constructing formulae and generating sequences, functions and graphs. Pupils will apply mathematical skills to financial problems

Humanities

Pupils will make statistical enquiries involving primary and secondary data and the interpretation of graphs, charts and tables. Pupils will apply mathematical skills to real-life contexts such as the study of maps involving co-ordinates, angle, direction, position, scale and ratio.

P.E

Athletic activities use measurement of height, distance, time, data logging devices to quantify, explore, and improve performance. Ideas of counting, time, symmetry, movement, position, direction are used in gymnastics, athletic and competitive games.

Music

Ideas of counting and timing are used in music and drama.