YSGOL RHIWABON

NUMERACY POLICY

This policy was adopted/updated by the Governing Body on:

Signed: _____ Chair of Governors

Date: _____

In September 2013 the Literacy and Numeracy Framework became statutory. The National Support Programme Partner was not appointed until shortly before the October half term of 2013.The school's established Numeracy Policy is broadly in line with the requirements of the Framework but may be reviewed when the full implications of the Framework become clear.

The policy will be reviewed: Autumn Term 2016

Our Mission Statement:

Ysgol Rhiwabon is committed to raising the standards of numeracy of all of its students, so that 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.

Introduction

The purposes of our whole-school numeracy policy:

I. to develop, maintain and improve standards in numeracy across the school;
II. to ensure consistency of practice including methods, vocabulary, notation, etc.;
III. to indicate areas for collaboration between subjects;
IV. to assist the transfer of pupils' knowledge, skills and understanding between subjects.

A current definition of numeracy

The ability to use mathematics at a level necessary to function at work and in society in general.

(Basic Skills Cymru)

Numeracy is not the same as mathematics. Numeracy is a proficiency with number that is acquired through being taught mathematics well. Although pupils usually learn their numeracy skills during mathematics lessons, to be fully numerate they must be able to apply these skills in other subject areas and real-life contexts.
(Improving numeracy in KS2 & KS3 – Estyn)

Practice at Ysgol Rhiwabon

I Raising Standards

Raising Standards in Numeracy across our school cannot be solely judged on performance in mathematics. There is a need to evaluate the pupils' ability to transfer mathematical skills into other subject areas, applying techniques to problem solving. Their confidence in attempting this is initially as important as achieving the correct solution. The main processes for evaluating the success of our practice will be through individual departmental and SLT monitoring of the development of pupils' numeracy skills. This will take place via on-going classroom assessment and book scrutinies.

The Numeracy Co-ordinator maintains an overview of development across the school and has produced a whole school Numeracy action plan.

II Consistency of Practice

The mathematics department should:

1. be aware of the mathematical techniques used in other subjects and provide assistance and advice to other departments, so that a correct and consistent approach is used in all subjects.

2. provide information to other subject teachers on appropriate expectations of students and difficulties likely to be experienced in various age and ability groups.

3. through liaison with other teachers and departments revise the mathematics scheme of work in an attempt to ensure that students have appropriate numeracy skills by the time they are needed for work in other subject areas.

4. seek opportunities to use topics and examination questions from other subjects in mathematics lessons.

Departments other than mathematics should:

1. ensure that they are familiar with correct mathematical language, notation, conventions and techniques, relating to their own subject, and encourage students to use these correctly.

2. be aware of appropriate expectations of students and difficulties that might be experienced with numeracy skills.

3. provide information for mathematics teachers on the stage at which specific numeracy skills will be required for particular groups.

4. provide resources for mathematics teachers to enable them to use examples of applications of numeracy relating to other subjects in mathematics lessons.

III Our Areas of Collaboration

Mental Arithmetic Techniques

Initial staff training has taken place on the variety of approaches to calculations used by pupils in Key Stages 2 and 3. There is an acceptance that pupils are able to tackle the same questions with a variety of methods. These approaches rely on mixing skills, ideas and facts; this is done by pupils drawing on their personal preferences and the particular question. All departments should give every encouragement to pupils using mental techniques but must also ensure that they are guided towards efficient methods and do not attempt convoluted mental techniques when a written or calculator method is required.

Written Calculations

Staff have received training on "non-standard" methods, particularly for grid multiplication and division by chunking. Pupils should be encouraged to apply mental or written methods, when appropriate, in all subjects. However, we recognise that there will be times when the subject requirements will need to take precedence and therefore the use of a calculator will be required.

Role & Use of Calculators

Each department will decide and then plan into each programme of work when calculators will be allowed, encouraged or compulsory, whilst continuing to bear in mind their role as outlined in section II.

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) x (15.6 - 5.77).

Vocabulary

Pupils should become confident that they know what a word means so that they can follow the instructions in a given question or interpret a mathematical problem in a variety of contexts including real life and in other subjects. The school's "Cross Curricular booklet provides guidance on terminology and methodology.

IV Transfer of Skills

"It is vital that as the skills are taught, the applications are mentioned and as the applications are taught the skills are revisited."

The Mathematics team will deliver the National Curriculum knowledge, skills and understanding using direct interactive teaching. They will make references to the applications of Mathematics in other subject areas and give contexts to many topics. Other curriculum teams will build on this knowledge and help pupils to apply them in a variety of situations. Liaison between curriculum areas is vital to pupils being confident with this transfer of skills and the Maths team willingly offers support to achieve this.

The transfer of skills is something that many pupils find difficult. It is essential to start from the basis that pupils realise it is the same skill that is being used; sometimes approaches in subjects differ so much that those basic connections are not made.

The Estyn Supplementary Guidance on Skills indicates the ways in which numeracy can be developed in a range of subjects.

ART

- scale and proportion.
- use mathematical knowledge and understanding in areas of measurement and shape and space.

DESIGN & TECHNOLOGY

- scale and proportion.
- use mathematical knowledge and understanding in areas of measurement and shape and space.
- gather information in a variety of ways, including questionnaires and databases.
- choose appropriate data from given information.
- record, interpret and present data in charts, diagrams, tables and graphs choosing appropriate styles of representation to present information.

ENGLISH

- gather information in a variety of ways, including questionnaires.
- record, interpret and present data in charts, diagrams, tables and graphs.

GEOGRAPHY

- scale.
- gather information in a variety of ways, including questionnaires and databases.
- choose appropriate data from given information.
- record, interpret and present data in charts, diagrams, tables and graphs choosing appropriate styles of representation to present information.

HISTORY

- ordering events in time.
- gather information in a variety of ways, including questionnaires.
- record, interpret and present data in charts, diagrams, tables and graphs.

ICT

- collecting data for interpretation in spreadsheets and simulations.

- gather information in a variety of ways, including questionnaires and databases.
- choose appropriate data from given information.
- record, interpret and present data in charts, diagrams, tables and graphs choosing appropriate styles of representation to present information.

MODERN FOREIGN LANGUAGES

- number rhymes, ordering numbers, ordering events in time and using number in relevant contexts.
- gather information in a variety of ways, including questionnaires.
- record, interpret and present data in charts, diagrams, tables and graphs.

MUSIC

- develop number skills in relevant musical contexts.

PHYSICAL EDUCATION

- scale and time.
- use mathematical knowledge and understanding in areas of measurement and shape and space.
- gather information in a variety of ways, including questionnaires and databases.
- choose appropriate data from given information.
- record, interpret and present data in charts, diagrams, tables and graphs choosing appropriate styles of representation to present information.

RELIGIOUS EDUCATION

- ordering events in time.
- gather information in a variety of ways, including questionnaires.
- record, interpret and present data in charts, diagrams, tables and graphs.

SCIENCE

- select and use appropriate mathematics to solve problems and check results.
- develop number skills and use a range of appropriate mental, written and calculator computational strategies.
- use mathematical knowledge and understanding in areas of measurement and shape and space.
- gather information in a variety of ways, including questionnaires and databases.
- choose appropriate data from given information.
- record, interpret and present data in charts, diagrams, tables and graphs choosing appropriate styles of representation to present information.

WELSH

- number rhymes, ordering numbers, ordering events in time and using number in relevant contexts.
- gather information in a variety of ways, including questionnaires.
- record, interpret and present data in charts, diagrams, tables and graphs.