

**BALLYMENA ACADEMY**

**NUMERACY POLICY**

**May 2021.**

**[Approved at October 2021**

**B of G meeting]**

Ref. Numeracy Policy (8) – Reviewed MAY 2021

**Introduction**

* Numeracy is a key life skill and, as such, must be a core feature of the whole school curriculum.
* Numeracy/Mathematics provides a means of communication which is powerful, concise and unambiguous.
* Competence in Numeracy is essential within the school curriculum and in the wider world of work and leisure.
* The development of Numeracy is an entitlement for all pupils regardless of perceived ability.

In Ballymena Academy Numeracy is a whole school priority, as outlined in the School Development Plan. Numeracy content is taught in Mathematics lessons. Expectations are high, outcomes are closely monitored and remedial action is taken quickly.

**Definition**

Numeracy is the ability to apply appropriate mathematical skills and knowledge in familiar and unfamiliar contexts and in a range of settings throughout life, including the workplace. It involves the development of:-

* an understanding of key mathematical concepts and their interconnectedness;
* appropriate reasoning and problem-solving skills;
* the proficient and appropriate use of methods and procedures (formal and informal, mental and written); and
* active participation in the exploration of mathematical ideas and models.

(Count, Read, Succeed – 2011. A Strategy to Improve Outcomes

in Literacy and Numeracy: Department of Education)

**Key documents**:-

* Every School a Good School – A Policy for School Improvement
* Count, Read, Succeed
* Together Towards Improvement
* Better Mathematics
* Delivering Social Change: Literacy and Numeracy (DOE)
* Department of Education CPD Literacy and Numeracy documentation and resources
* A Joint Report by ETI and DE & Skills Inspectorate on Promoting and Improving Literacy in Post-Primary Schools

**Aims**

To raise Numeracy standards by:-

* developing approaches and activities which provide both a challenge and a sense of achievement for all pupils;
* presenting Numeracy as an experience from which pupils derive pleasure and enjoyment, and so promote a positive attitude to mathematical learning;
* promoting Numeracy development throughout all areas of the curriculum;
* offering positive direction for all staff on matters related to Numeracy and ensuring a shared understanding of, and consistent approach to, Numeracy across the school;
* drawing up and maintaining appropriate procedures for the monitoring and evaluation of the Numeracy provision for all pupils;
* ensuring that all staff have a keen awareness of the mathematical and Numeracy demands of their subject area and the desired range of mathematical skills pupils bring to their lessons.

**Objectives**

In the promotion of Numeracy the school seeks to:-

* raise the awareness of all staff about their responsibilities for the development of Numeracy in their subjects;
* develop a co-ordinated approach across the curriculum through a two-way flow of communication between the Mathematics Department and all other contributory subjects to ensure, where possible, agreement on common approaches, notation and language;
* ensure that the Mathematics Department acts as a service subject in the development of Numeracy for other contributory subjects through the timing of its delivery of particular aspects of Numeracy;
* ensure that a range of teaching approaches and learning strategies is employed to suit pupils of all abilities;
* set targets for improving the performance of pupils with respect to Numeracy using data from Key Stage assessment;
* identify those pupils underachieving in Numeracy at Key Stage 3 and provide help through the provision of a Numeracy Support Programme at Key Stage 4 in order to raise their attainment;
* encourage the use of ICT to facilitate learning in Numeracy in all its application areas;
* implement procedures for the monitoring and evaluation of the Numeracy provision for all pupils;
* encourage parental involvement in the development of their child’s Numeracy skills;
* ensure that homeworks involving Numeracy are relevant to classwork, consolidate Numeracy skills, are accessible to all pupils and, where appropriate, open-ended in structure to challenge more able pupils;
* encourage a positive attitude to Numeracy through out-of-class activities and competitions aimed at raising pupils’ enjoyment of and participation in Mathematics.

**The Numerate Student**

Numeracy is a proficiency which is developed mainly in mathematics lessons but also through other subjects. Poor Numeracy skills inhibit students’ progress and can lower their self-esteem. It is the aim of Ballymena Academy that all pupils should be able 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 mathematical processes 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;
* interpret, explain and make predictions from information given in graphs, charts and tables.
* use mathematical understanding and language to ask and answer questions, talk about and discuss ideas and explain ways of working;
* develop financial capability;
* use ICT to solve problems and/or present their work;
* make sense of number problems and identify and use the required operations to solve them;
* restrict their reliance on the calculator and use it only when it is appropriate to do so;
* develop their skills of estimation and approximation and have strategies for checking the reasonableness of their answers.

**Responsibilities in Numeracy Co-ordination include:-**

* raising awareness of Numeracy issues in subjects and courses;
* monitoring and evaluating whole-school Numeracy standards;
* leading/co-ordinating working groups such as the Numeracy Working Group;
* provide and/or coordinate additional Numeracy assistance and support;
* assisting with Numeracy-related Staff Development;
* encouraging parents to take a proactive role in promoting a positive attitude to Numeracy.

**The Curriculum: Raising Standards in Numeracy**

Whilst the Mathematics department is the major contributor towards competence in Numeracy, Numeracy is at the very heart of the revised curriculum. Each teacher is responsible for delivering Numeracy skills in their own area of learning. Pupils should be encouraged to realise that mathematical concepts are related to many subjects, are interconnected and relevant to everyday life.

At KS4 all pupils take a GCSE qualification in Mathematics and are offered access to modules suited to their needs and ability.

The following examination courses are offered:-

* CCEA GCSE Mathematics
* CCEA GCSE Further Mathematics
* CCEA AS and A Level Mathematics
* CCEA AS and A level Further Mathematics

**The Mathematics Department**

The Mathematics department prepares pupils for the outside world so that they can use Mathematics confidently in real situations and increase Numeracy awareness so that students may use Mathematics in other disciplines.

**Continuity and Progression**

To enable continuity and progression, the Mathematics department will:

* strive to take account of work previously carried out in the primary schools. The Year 8 programme is, therefore, a mixture of revision of topics covered in primary school plus a further development of this work to extend their mathematical knowledge and skills. Information from CATs and MidYis scores can also be used to highlight those who struggle with mathematics or those who are Gifted and Talented in the subject;
* build upon previous knowledge and recognise different approaches;
* ensure there is a planned approach to the mathematics curriculum across the year groups and that the sequence in which topics are taught is appropriate;
* provide continuity and progression between classes, by each member of the department following the same scheme of work and pupils (in Years 8 to 10) taking common internal examinations and tests. These schemes of work and assessment material are written, agreed and discussed when necessary by the members of the department.

**Calculator Use**

* Develop pupils’ ability to use calculators effectively and efficiently;
* In all calculator work, the Estimate - Calculate - Check cycle is emphasised, to encourage pupils to mentally estimate answers, and to check the appropriateness of the results of calculations. Indeed, with the increased use of calculators, estimation and mental arithmetic strategies become even more important.
* It is important that this approach is practised in relevant subject areas.

**Learning Support within the Mathematics Department**

The Mathematics Learning Support programme is designed to be:

* highly personalised to meet the individual needs of those pupils experiencing significant difficulties in Numeracy;
* specifically targeted on those pupils who are identified as requiring support for additional educational needs;
* time-bound, monitored and evaluated.

A summary of the many ways in which such support is provided is given below:

**General**

* Remediation is directed by the class teacher – each member of the department tracks their own pupils, offering additional help when appropriate.
* Pupils who are giving a cause for concern are flagged to the HOD.
* Tracking data is used with common assessments across all year groups to highlight pupils who are encountering difficulties.
* VLE/ Google Classroom Resources are available to supplement teaching and assessment resources and promote independent learning.
* Parents are informed of any issues and given advice on how to support the learning of their children through phone calls and consultation events.

**KS3**

* Trained Year 14 Numeracy Mentors are available each week to help pupils who are struggling with any mathematical issues.
* A timetabled Learning Support Programme, which includes a Numeracy element, is provided for selected pupils in Years 9 and 10.
* Problem topics are identified, additional revision classes are held and specific pupils are encouraged to attend these classes.
* Pupils complete self-evaluation booklets throughout their KS3 Maths, highlighting areas for improvement and identifying work which has been done to address these.

**GCSE**

* Trained Year 14 Numeracy Mentors are available for 1-1 help should it be requested.
* Pupils complete self-evaluation sheets throughout the GCSE studies, highlighting areas for improvement and identifying work which has been done to address these
* Class revision sessions are held when deemed necessary.
* Pupils have the opportunity to enter a lower/higher module depending on effort and achievement as their GCSE studies progress.

**A-LEVEL**

* 1-1 help is offered to pupils studying AS Maths, should it be requested.
* Pupils complete self-evaluation sheets throughout their A-level studies, highlighting areas for improvement and identifying work which has been done to address these.
* Support programmes are put in place for pupils who are underachieving or who want help in structuring revision when repeating modules.
* Revision Tutorials are held in the run up to exams.

**Other Subject Departments**

Following an audit of Numeracy across departments, departments have identified when specific Numeracy content is covered within their subject. This aided the Mathematics Department in the timing of the delivery of KS3 topics.

It is expected that other subject departments will:

* be aware of the range of mathematical attainment that pupils bring to lessons and highlight this to students where appropriate. They will build pupils confidence when they are struggling with a calculation;
* encourage pupils to understand the method they are using;
* use mathematical knowledge accurately and consistently with departments and across the school;
* value pupils’ different methods for calculation and regularly ask “How do you do that?” and “did anyone do it a different way?”;
* collaborate to ensure that pupils can apply their mathematical skills in a variety of relevant and appropriate contexts;
* assist the Numeracy coordinator in updating the Numeracy Policy and associated handbook in line with changes in their subject’s curriculum~~;~~
* use guidance materials provided to help maintain consistent approaches across the curriculum;
* highlight Numeracy within their schemes of work, wherever relevant.

Pupils will be encouraged to:

* see mental calculation as the first resort when faced with any calculation;
* use ‘ Estimate, Calculate, Check’ model :-

- explain any calculation they have done by showing all of their working out;

- estimate an answer before a calculation is done whenever possible;

- consider the reasonableness of their answers after a calculation has been done;

* know how to use all of the relevant buttons on their calculator efficiently and effectively when its use is appropriate and be able to interpret the display sensibly;
* use appropriate mathematical language confidently.

**Learning Support Co-ordination**

* Mathematics teachers are familiar with the Indicators for Dyscalculia and the associated support strategies (Outlined in the Ballymena Academy Learning Support Handbook).

The Learning Support Co-ordinator will ensure:

* an early identification and assessment of pupils’ difficulties;
* liaison with the heads of department and subject coordinators prior to the formulation of a pupils’ Individual Education Plan to ensure appropriate provision for his/her special educational needs in mathematics/Numeracy;
* Mathematics/ Numeracy targets in the IEP are challenging but realistic.

**Raising the profile of Mathematics and Numeracy**

One of our aims is that pupils should enjoy mathematics. The wide range of teaching strategies and activities written into our schemes of work is one way of doing this. A selection of Numeracy-based tasks is shown below – these are activities which focus on Numeracy skills, and problem solving.

* Team Challenges/Team Races
* Maths Trails
* Numeracy Ninjas
* 5-a-day tasks
* KS3/GCSE Puzzles made available at the front of the room
* Takeaway Homeworks
* Investigations
* Family Finance Project

In addition to developing Numeracy knowledge and skills within the classroom, we aim to raise the profile outside the classroom in the following ways:

* Numeracy Noticeboard
* Cross-curricular Numeracy posters in various departments
* Entering pupils for the Junior, Intermediate & Senior Maths Challenges (UKMT)
* Entering teams for the Junior, Intermediate & Senior Team Maths Challenges (UKMT)
* Junior Maths Club meeting each half term
* Noticeboard Maths Puzzle

**Methods of Communication**

* Monthly Head of Department meetings
* Monthly Departmental Meetings – minutes shared with members of Department and Vice-Principal (Curriculum)
* Termly meetings between Numeracy Co-ordinator and member of SLT/Vice-Principal (Curriculum)
* End of year Review meeting with Vice-Principal (Curriculum)
* Meetings of the Curriculum Care Support Group
* Annual meeting with Principal

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| * Information a support materials are available on the school VLE / Google Classroom * The Head of Department is available to speak to parents throughout the year * Information regarding Numeracy Support is forwarded to parents of pupils in Key Stage 3 | | | | | | | |
|  | Yr 8 | Yr 9 | Yr 10 | Yr 11 | Yr 12 | Yr 13 | Yr 14 |
| Overview of Learning Document | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Parents’ Guide | ✓ | ✓ | ✓ |  |  |  |  |
| Revision Checklists | ✓ | ✓ | ✓ |  |  |  |  |
| Parents’ Information Meeting | ✓ |  | ✓ | ✓ |  | ✓ |  |
| Parents’ Consultation Evening | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Progress update | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Annual Report | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

**Communication with Parents/Guardians**

**Primary School Links**

‘*Those responsible for an individual’s education need to build more effectively on the skills, knowledge and attributes which the learner has developed in the preceding phase.’*

Transition in Mathematics: Primary to Post Primary, March 2010

* Links have been established with feeder primary schools to ensure smooth transition from KS2 to KS3
* Requests are made to the Primary schools for performance data at KS2
* Transfer scores are available
* Involvement of Numeracy Co-ordinator in CPD Literacy and Numeracy Transition Project which has involved collaboration with Ballymena and Groggan Primary Schools.

**Other Links**

* BLT Numeracy Co-ordinators’ Meetings

**The Role of Assessment in Raising Standards in Numeracy**

Pupils are assessed at the end of each topic, using a standardised test. Internal exams are also scheduled. Results are recorded by the Mathematics class teachers on SIMS which facilitates tracking, target setting, review and intervention. Summative assessment keeps parents and pupils informed about progress. Pupils are also assessed through effective teacher questioning, classwork and homework. Class teachers will take remedial action by offering support in / outside class time or by making a referral to the Numeracy Co-ordinator for additional Numeracy support.

Targets are established by Maths class teachers in September using the appropriate methods , transfer scores, Alis and/or previous exam results.

A range of assessment for learning strategies is used: sharing success criteria, use of exemplar materials, self and peer evaluation, questioning.

**Monitoring, Evaluation and Review**

* Monthly departmental meetings
* Audit of key departments as a base-lining mechanism
* Lesson observations
* Sampling pupils’ work
* Pupil feedback on learning experiences
* KS4 external examination results.
* AS and A level results
* Data analysis – NI Grammar School Averages, ALIS , MIDYS
* Kirkland Rowell Attitudinal Surveys
* Tracking groups and individuals through the use of CATS
* Monitoring end of Key stage outcomes and setting appropriate targets.
* Formal school assessment (January and May).
* IEP reviews of progress by the SENCO.
* Ongoing assessment of classwork and homework.
* Staff evaluation of Schemes of Work
* Meetings with Vice-Principal (Curriculum)
* Centralised and shared departmental documentation
* Audit has been completed, strengths and areas for development identified and action plan produced.

**This policy will be kept under review.**