

Curragh Post Primary School – Numeracy Policy

Introduction and Scope of this Policy:

This document sets out the policy of Curragh Post Primary School in respect of the advice, supports and tuition of numeracy as part of the integrated education of students.

Relationship to school's Mission / Vision / Aims:

Curragh Post Primary School's Mission Statement is as follows:

Our School values the gifts and talents of students and staff in their development in an atmosphere of equity, caring and mutual respect. Can we achieve this? Yes, we can. Is Feidir Linn.

This Numeracy Policy is another important framework within which “the development of whole people, empowered to lead effective lives in the wider society” is enhanced in our school. The dignity of each student, staff member and parent / guardian is honoured and reflected in school policies and structures, including this policy.

This policy is informed by the school's Mission Statement which commits us to preparing all students for the challenges of adolescent and adult life and to respecting the dignity, worth and individuality of every member of the school community. The school's role in the development of young people supports and is enriched by the active participation of teachers and parents / guardians in many aspects of students' lives.

Rationale:

In Curragh Post Primary School, Whole-School Numeracy is seen as an essential part of the teaching and learning process. We recognise the importance of numeracy in the school environment, to life within wider society and to the personal growth of individuals. We are committed to the development of a whole-school approach to numeracy and recognise the need for a multi-stranded approach. We are committed to using a whole-school approach to numeracy to improve learning and raise standards.

This Numeracy Policy aims to ensure that appropriate opportunities and procedures are in place to enable the school

- to offer a quality and holistic education to our students;
- to ensure that the education programme is supported by the development of numeracy skills in our students;
- to ensure that all students are supported in improving their numeracy skills;
- to target interventions and support students with poor numeracy skills;
- to promote consistency of practice in methodology, vocabulary, use of resources, etc.
- to ensure subject specific numeracy is taught in all subject areas, including subject specific vocabulary and to recognise the numeracy demands of specific subjects;
- to promote whole-school numeracy by maintaining a positive ethos and creating a high public profile e.g. creating a print rich environment using displays, numeracy award schemes and paired reading;
- to develop cross curricular links with numeracy which can be supported by all subject teachers. These will include whole-school marking approaches, whole-school use of homework policy, widening the range of texts available and numeracy specific targets;
- to develop the specific teaching of numeracy within Mathematics, Science, Woodwork, Construction Studies, Technical Graphics, Design and Communications Graphics, Home Economics, Business, Accounting, English and related departments (e.g. Learning Support and Resource);
- to link numeracy to the transition programme from primary to secondary school;

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- to devote time to staff inservice training in the area of numeracy;
- to promote continued parental involvement and support of their child's numeracy development and
- to ensure that parents / guardians are as fully informed as possible about numeracy issues.

The school's Numeracy Policy is important for the following reasons:

- Numeracy skills enable pupils to understand and interpret numerical and graphical information. This facilitates improvement in pupils' abilities to make their own judgements and to draw sensible conclusions from information.
- Almost all subjects depend on pupils having competence in basic numeracy skills.
- If pupils numeracy skills are not developed and used they may well be denied the opportunity to develop the level of understanding of some topics or subjects at the level expected for their age.
- Without basic numeracy skills, pupils can lack both personal and social adequacy which is a recipe for failure and low esteem.
- Industry and commerce continually bemoan the lack of numeracy skills of school leavers and graduates alike.

Goals:

The school shall have in place appropriate means and processes

- to assess students' numeracy skills;
- to inform students about the best way to improve their numeracy skills;
- to improve numeracy skills by, among other things, promoting teaching that is direct and explicit; interactive; motivating; varied in style; well pitched to students' needs and that is inclusive. This will help provide learning (for students) that is active; creative; reflective; independent and linked to personal / group targets.;
- to inform parents / guardians about numeracy skills of their children in the school;
- to involve parents / guardians in the numeracy development of our students and, ultimately,
- to support the role of parents / guardians as the primary educators.

What is Numeracy?

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

Students with well developed numeracy skills will:

- Have a sense of the size of number.
- Know by heart basic number facts such as number bonds, times-tables, doubles and halves, and recall them rapidly.
- Use what they know by heart to figure out an answer mentally.
- Calculate accurately, both mentally and with pencil and paper, and be able to draw on a range of strategies.
- Use a calculator judiciously.
- Make sense of number problems and recognise the operations needed to solve them.
- Know for themselves that their answers are reasonable and have strategies for checking.
- Explain their methods and reasoning, using correct terminology.
- Suggest suitable units for measurement and make sensible estimates of measurements.
- Explain and make sensible predictions from numerical data in a graph, chart or table.

The Numeracy Working Group

Numeracy is everyone's responsibility

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A Numeracy Working Group will be appointed to implement and drive the plan and to liaise with the subject departments & teachers, learning support teachers, management, and the feeder primary schools. The Numeracy Working Group will be responsible for:

- Developing and implementing a Numeracy Plan for the whole school
- Establishing a schedule / calendar for numeracy development
- Putting in place structures to monitor, evaluate and review the numeracy development plan in action
- Driving and activating the school numeracy development plan, focusing particularly on first year students and on developing a whole school aspect.

The Numeracy Working Group is comprised of the following:

- Numeracy co-ordinator
- A teacher of Maths
- A teacher of a subject other than Maths
- Learning support / Resource teachers
- Principal and Deputy Principal

The group liaises with some of the following: Home School Community Liaison Officer, Class teachers and Parents / Guardians.

Numeracy Across the Curriculum

Numeracy is not the sole responsibility of the mathematics department. Most other subjects can, in fact contribute to the development and enhancement of students numeracy skills, including their ability to describe and explain their strategies and reasoning.

Numeracy – Possible Things to do as a School Community:

- Target 1st Year Students and 5th Year Students especially;
- Focus on students with a Numeracy Achievement Age below their Chronological Age;
- Mentoring;
- Appropriate Professional development for teachers;
- Provide specific individualised instruction;
- Follow up in SUBJECT classrooms;
- Regular use of assessment and assessment feedback;
- Provide frequent opportunities to practice in the skills of numeracy and
- Regular use of I.T. for individualised programme(s).

At a classroom level, better numeracy standards are associated with:

- Well-structured lessons and good use of time, so that pace is maintained and the minimum of time is spent on class administration or control.
- Sessions of direct teaching, with teachers involved proactively, not just when pupils are stuck.
- Regular interaction with pupils, with the teacher using perceptive questioning, giving careful attention to misconceptions and providing constructive help.
- Rehearsal of existing knowledge and skills, including emphasis on instant recall of as many number facts as possible.
- Recognition that *knowing by heart* and *figuring out* support each other in developing numeracy.
- Careful attention to the development of mathematical vocabulary and the use of correct terminology and notation.
- Teaching a range of computation methods and ways of recording them – including mental, written and calculator methods, asking pupils to explain their methods and discussing with them which methods are best suited for particular purposes.
- Planning a variety of activities on a topic, both to consolidate and extend mathematical

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skills.

- Identifying opportunities in other subjects to reinforce and extend mathematical skills.
- Systematic assessment of the progress of a class to monitor pupils' strengths and weaknesses and to plan the next stage of work.
- Clear procedures for the early identification of pupils with difficulties, combined with targeted and positive support to help them to keep up with their peers.

At whole school level better numeracy standards are associated with:

- Well informed subject teachers who set high expectations.
- Clear targets for raising standards and a realistic plan for achieving them with regular evaluation of the school's progress towards the targets.
- Systematic monitoring of teachers' planning, teaching and assessment of numeracy.
- Provision of a thoroughly planned teaching programme with clear learning objectives.
- Effective arrangements, which take account of national standards, for assessing the standards reached and progress of individuals and whole year groups.
- Professional development of teachers involved in the teaching of numeracy.
- Effective deployment of classroom assistants to support class teachers.
- The involvement and support of both parents / guardians and the Board of Management.

Pupils in all lessons should:

- make correct use of mathematical vocabulary when providing oral and written answers or asking questions.
- present ideas and information they have collected in the form of displays of charts and tables.
- interpret, describe and explain their work and not simply reproduce graphs, tables and charts or statements concerning percentages and other numerical data.
- set their work out systematically and with care. Where there are calculations these should always be set out so the method used is clear. Where there are graphs these should always show a suitable scale, be correctly labeled and have a title.

Teachers of all subjects should:

- have regard for the whole school numeracy policy in their planning of lessons.
- use and explain mathematical vocabulary whenever it will enhance pupils' knowledge, skills and understanding of the topic. The use of such vocabulary by pupils should be strongly encouraged.
- give emphasis to mental calculation when it is sensible to do so.
- encourage pupils to estimate when appropriate.
- use and explain appropriate calculations and data whenever it will enhance pupils' knowledge and understanding of the topic. The explanation should be in line with whole school policy.
- liaise with the Mathematics department when using mathematical skills earlier than met in the mathematics scheme of work.
- demonstrate how to measure to the required degree of accuracy.
- choose and use appropriate units of measure correctly.
- demonstrate how to use the four rules of number with and without a calculator.
- demonstrate how to select a type of graph appropriate to the data provided.
- correctly label a graph or chart.
- correctly interpret a graph or chart and make appropriate comparisons where more than one graph illustrates the data.
- explain the steps in the solution to a problem.
- discuss and clarify why a particular method of calculation works.

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- use and explain the meaning of appropriate mathematical terms.

Subject Department Folders / Handbooks and Schemes of Work

- Should contain a copy of the whole school numeracy policy.
- Should identify topics / areas requiring numeracy skills.
- Should provide guidance to staff concerning approaches to the use of numeracy skills in their subject.
- Should ensure that units of measure are written according to the correct convention.

Numeracy – Agreed Initiatives for Implementation as Whole School Activities:

Keywords of the Week Initiative

Each teacher should write on the whiteboard / on a poster two keywords / calculations / formulae each week. These keywords / calculations / formulae are key words / terms that students are expected to learn, understand and to be able to use in the right context. These two keywords / calculations / formulae will be changed each week, so that students' vocabulary and ability to communicate numerically in their subjects will be developed and expanded.

Numeracy Challenge - Monthly Maths Tests

The initiative is aimed at subject teachers interested in improving the application of key keywords / calculations / formulae and offering the students a challenge in order to motivate the learning process. A member of the school's Numeracy Working Group will coordinate the creation of the *Weekly Numeracy Initiative* and the monthly *Maths Tests* that will take place on agreed dates each month.

Numeracy – Other Possible Initiatives:

Activities: First year focus for students who are seriously underachieving in numeracy

Some ideas for first year numeracy development:

- 1 class per day devoted to numeracy development;
- Small teaching team;
- Formative profiling;
- Paired Reading;
- Critical numeracy skills training module;
- Calculations worksheets;
- Marking policy;
- Numeracy day / week;
- Individualised numeracy programmes where appropriate (particularly mathematical skills deficiency);
- Use of appropriate I.T. software;
- Team teaching;
- Access to maths books readily and freely.

Numeracy - Things for the School to do:

Pre-Enrolment Data Gathering and Sharing by school management:

Gather and collate the *student passport* provided by the transferring national school. Review the current use of tests to ensure that they provide meaningful data for 1st Year teachers.

Other provisions to be made by school management:

Re-assess students' numeracy competencies as follows: 1st Years in the last term and 5th Years in September.

Administer the agreed tests in the first week of October and, again, in the first week of May of 1st Year to establish baseline data re: students competence and achievement in Maths.

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Add the data provided to the *national school student passport* and prepare copies for parents / guardians and teachers before the beginning of each school year.

Compare and review the results / scores with previous data and respond appropriately.

Provide calculators and log tables to each 1st and 5th Year student (until all students own a personal calendar and set of log tables) for use in school and at home.

Develop *Subject Rooms* rather than teacher rooms.

Create a *Resource Room* and furnish and design it for multiple numeracy related uses.

Numeracy - Things to do as Teachers in Subject Departments (as appropriate):

Create a visual, print rich, interactive learning environment – display educational posters and display students' work.

Include the promotion and development of numeracy in subject plans – yearly plans, term plans and daily lesson planning.

Participate fully and enthusiastically in the agreed whole school numeracy initiatives.

Numeracy - Things to do as a Teacher (as appropriate):

Give homework in every class and indicate to students the average amount of time this work should take.

Monitor diaries / journals and the use of dictionaries in every class.

Use frequently the classroom calculators provided by the school.

Write homework on the board for students to note it.

Give the last two minutes of class to ensure homework is recorded.

Check homework every day – ensure date, page and title is on every entry.

Correct homework regularly and date the corrections.

When correcting classwork and homework, provide positive feedback and treat numeracy issues as important.

When marking exams / assessments, give positive, instructive and developmental feedback.

(Appendix 1 - Subject Department Numeracy Checklist - of this document should be used by teachers and subject departments to enhance the promotion of numeracy in the school).

Numeracy - Things for Students to do:

Students should remember that all subjects require full attention to numeracy.

In School

Students must bring the official school diary / homework journal, personal dictionary calculator and log tables, which they will be given in September, to every class. They should be placed, open, in the top right hand corner of the desk. Paying full attention in class is a minimum requirement and makes classwork and homework easier to complete. Students must record all their homework, both oral and written. All homework must be presented to the teacher as required on the specified date.

School Wide Strategies For Teachers

Keywords / Calculations / Formulae

- Check texts and identify essential Keywords / Calculations / Formulae
- Make a list, keeping it as short as possible.
- Pre-teach Keywords / Calculations / Formulae
- Revise Keywords / Calculations / Formulae.

Key concepts

- Identify key concepts
- List key concepts
- Discuss and explain each one.

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Key spellings and numbers

- Carefully choose a small number of Keywords / Calculations / Formulae you want all students to know.
- Select a small number of keywords per topic / unit / chapter.
- Pre teach these words – meanings, context and usage.
- Have students write a Keywords / Calculations / Formulae list in the back of copies or give them a typed list.
- Display Keywords / Calculations / Formulae lists on walls
- Use them regularly and read them frequently.
- Give students the opportunity to discuss, use and revise them.
- Check comprehension and application of Keywords / Calculations / Formulae regularly.
- Revise often.

Teachers' Corrections of Students' Work

- The **correction** of a students work should be **clear** and **focused** on how the student can make improvements.
- Corrections are **opportunities for feedback**. They should be **constructive** and **informative**.
- Make positive and constructive comments.

Presentation of Work by Students

- Page should be ruled with red pen along the top line of the page.
- Date must be written at the top right hand side of every exercise.
- The title of the work must be written at the top of the page at the beginning of each exercise.
- Students should be encouraged to keep their copies neat and tidy and the condition their copies should be regularly checked.

Work

Work should be **differentiated** according to student's level of ability.

Homework

Students should be given homework in accordance with the homework policy. When instructing students about homework teachers should:

- Write homework on the board at the beginning of class.
- Reinforce verbally.
- Consider those students with special education needs by ensuring they understand the homework which is to be completed and differentiate tasks according to students' ability.
- Ensure all students have homework written correctly into their homework Journals.

Correcting Classwork and Homework

Ask students to **Check**

- The correct version against your own.
- Identify areas where mistakes occurred.
- Repeat the process if necessary.

Recommendations

- Repetition and reinforcement of keywords / formulae / calculations.
- Marking of pupils work and correction of formulae / calculations.
- Display keywords / formulae / calculations and students work in the classroom.
- Set memorisation of formulae and calculations homework tasks.
- Students should be encouraged to correct their own maths / numeracy keyword list.

At Home

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Students should try to do their homework:

- At a definite, fixed time each day.
- As soon as is realistically possible after arriving home.
- In a warm, well lit, quiet room, with no distractions from television, stereo or other people.
- On the night it is given. This is particularly important where a period of days elapse between the assignment being given and presentation dates, e.g. work given on Monday to be handed up on Thursday. Students should be encouraged to do such work as early as possible.
- With both their homework journal and their personal dictionary and calculator on the desk in front of them.

What can Parents / Guardians do?

The school is a supportive organisation in respect of the primary educators – parents / guardians. Our efforts to provide holistic education, in its various forms, are most meaningful and effective when parents / guardians both understand and support our aims and activities. Parents / guardians should work with the school to emphasise the importance of schoolwork, homework, study and reading. They should check the student's diary / journal to ensure that homework is recorded and, then, should look at the student's copies to ensure it is completed. Reading in quiet spaces should be encouraged at home. Parents / guardians can create the climate at home, quiet room, no distractions, fixed time each day, etc. to ensure homework can be fully done, as required by the school.

Review Procedures:

The Numeracy Policy will be reviewed regularly by teachers and by the Board of Management every four years. Any staff member who is unhappy with the content or the implementation of any school policy may request a review at any time and such a request will be dealt with as quickly as possible. The Parents' Council may request a formal review at any time and such a request will be dealt with as quickly as possible by the Board of Management. This policy was adopted by the Board of Management on _____ [date]

Signed: _____
Chairperson of Board of Management

Signed: _____
Principal

Date: _____ Date: _____

Review Date: March 2018

Numeracy Checklist

	Yes	No
Are all teachers in the subject department aware of students with learning difficulties or Special Educational Needs?		
Are learning objectives outlined in Schemes of Work and		

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Lesson Plans? <i>Knowledge, Understanding, Skills and Attitudes (KUSA)</i>		
Are methodologies varied to suit different types of learners?		
Is differentiated homework given for 1st Years?		
Is differentiated homework given for 2nd Years?		
Is differentiated homework given for 3rd Years?		
Is differentiated homework given for 5th Years?		
Is differentiated homework given for 6th Years?		
Has the subject department / teacher outlined targets and plans for SEN students?		
Has the subject department / teacher outlined targets and plans for EAL students?		
Has the subject department / teacher outlined targets and plans for exceptional students?		
Is student work displayed in the classroom?		
Is student work displayed outside the classroom?		
Has the subject department developed and displayed a set of Key Words / Formulae for each year group?		
Is spelling, grammar and punctuation corrected?		
Is ICT used to support numeracy development?		
Are students given independent keywords / numeracy / calculations tasks?		
Are there rewards and incentives for improvements or achievements in numeracy?		