

School Policy on Mathematics

Introduction:

Mathematics may be seen as a science and also as a language based on symbols and diagrams. It involves the handling of information, making predications and the solving of problems, through the use of a language that is both concise and accurate.

Mathematics education provides the child with a wide range of knowledge skills and related activities that help him/her to develop an understanding of the physical world and social interactions and gives the child a language and a system through which he/she may analyse, describe and explain a wide range of experiences, make predications, and solve problems. Mathematics education fosters creative and aesthetic development, and enhances the growth of reasoning, through the use of investigative techniques in a mathematical context. It encourages the child to be confident and to communicate effectively through the medium of mathematics.

Mathematics education should seek to enable the child to think and communicate quantitatively and spatially, solve problems, recognize situations where mathematics can be applied, and use appropriate technology to support such applications.

Our aim will be at all times to adhere to the principles of the revised curriculum. Through its approaches we hope to maintain the high standards in mathematics that have always existed in the school and to improve in them being mindful of the individual needs of our pupils.

By whom was the Policy formulated:

The policy was formulated by Mrs. Paula Keane (post holder, policy development) and the principal in consultation with the staff and reviewed by the whole staff in May 2012.

- (a) using the expertise of the staff
- (b) the needs of the pupils
- (c) the curriculum guidelines
- (d) curriculum inservice
- (e) the experience gained by members of staff over many years teaching this subject

Date of policy: The policy was revised during the school year 2011-2012 by all the staff led by the I.S.M.T. The Principal, the Deputy Principal and Mrs. Paula Keane Post Holder Policy Development.

The structure of the curriculum:

The curriculum comprises of five strands:

- Number
- Algebra
- Shape and space
- Measures
- Data

cf. appendix Overview of skills development

These strands although presented in separate sections, are not isolated areas. They should be seen and will be taught as interrelated units.

Aims:

To develop all aspects of Mathematics in the school across the age range of children from Junior Infants to Sixth in accordance with the New Guidelines in Mathematics (D.E.S.) and to begin to implement Circular for Maths 0056/2011 re: Numeracy and allocate extra time in Keeping with revised guidelines.

Our observations would be that the children have a very positive attitude towards the subject, that they enjoy the mental and practical work involved.

- To achieve the highest possible standard of Mathematics
- that each child would achieve to his/her maximum potential in the subject
- to enable the children to acquire proficiency in fundamental mathematical skills
- knowledge of number facts are an integral part of our school life

Resources:

A central storage area for Maths equipment has been created in the school where the schools supplies of equipment are stored and are easily accessible to individual teachers and classes. We have recently done an audit of our Maths Equipment and have ordered new stock to meet teachers requirements, which will be stored in individual classrooms.

Textbooks:

Use of Textbooks

We still think that a class Maths book is essential but we will be using it in a different way - as a resource only. Mathemagic is in use in classes from 2nd-6th. Planet Maths is being introduced in September 2012 for Junior Infants, Senior Infants and Rang 1. Teachers will draw from a variety of Maths books and will use in conjunction with Mathemagic graded worksheets to extend the children's experience.

Mathematical Language

& Methodologies: (a) There is a change of emphasis in language. We will be following the Guidelines in the Revised Curriculum, Primary School Mathematics Teacher Guidelines p. 30. cf appendix Symbols Numerals Fractions and Terminology.

Language in Junior Infants

Sort Same as, Big, bigger etc. tall, heavier etc. Long, Short - light, lightest Curved, round, inside, above too many, enough How many more? First, second, third, etc. Shape	Object Match/mark, join Full, empty. 'holds' All terms re: time, moving etc. Early, late More, less, few/fewer, others, circle, rectangle, square, triangle Who? How? Why? Zero Numerals one, two etc.,	Colour Same length, weight, height Small To, from, before, after Set Straight, corner, outside, below Roll, stacked Pattern Coins How much
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Language in Senior Infants as Junior Infants (plus the Following)

Compare Add Greater than/less than High, low Today, yesterday, tomorrow Days of the week etc., Holds most/least/the same Joined, between, next to straight Out, front, back, high low around Number strip	Least Same as Money Count on/back Thick/thin Holds more than/less than Over, under, on, in, open Closed Charts Subtract/take away, go back 3D shapes, names Cube/cuboid Cone etc.	Most, heaviest, etc., How far/how far more? Break up groups Wide narrow Months, seasons O'clock Amount How long, short, heavy Measure Copy Words for numerals
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Language in First Class as in Infants (plus the following)

Less, more	Addition	Missing numeral
Number	Subtraction	Make the same as
Smaller, greater	Rest of them	Single digit
Take away	Measure	Centimetre
How many more	Change	Group, order
Days of the week	Tens/ones/unit	Calendar
Between	Months	Subtract, steps
Clock	Make tens	Half past
Problem	Dienes blocks	Abacus
Circle, square, rectangle	Graph	Bar chart
Triangle, side, corner	Cube/cuboid/pyramid	Pictogram
Faces, edges	Sphere, cylinder, cone	Counting in 2's etc.
Left over	Magic square	Symmetry
Number line	100 square	capacity
fraction	Odd, even	

Language in Second Class as in 1st class (plus the following)

Missing numbers	Half quarters	Forward, backwards
Shaded set	Rename	Place value
In order	Grid	Add, group
Metre, centimeter	Sign	Difference between
Hundred	Decimeter	Counting
Shaped	Base 10's etc	Distance
Number sentence	Minutes/hours, quarter	Different
Digital	past/to	Midnight
Subtract	Code	Magic square
Timetable	Midday	2D, 3D hexagon
Tessellate	Seasons	pictogram
Prism, cuboid, cylinder	a.m. p.m.	
	block graph	

Language in Third Class as in 2nd class (plus the following)

<p>Symmetry</p> <p>Language of division and multiplication</p> <p>Divide/divided by/division etc.</p> <p>Product</p> <p>Factors</p> <p>Set</p> <p>Angle, right angle, horizontal, vertical, diagonals, rectangle, cuboid, triangle, perimeter</p>	<p>Covering area</p> <p>Mathematic sentence versus written $2 \times 3 = 6$</p> <p>Capacity / liquid/litres, kl</p> <p>Weight - grammes/ kg</p> <p>Length - metres, cms, mms</p> <p>Pictogramme</p> <p>Decimal</p> <p>Fractions - halves, quarters</p>	
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Language in 4th Class as in 3rd (plus the following)

<p>Symmetry</p> <p>Division and multiplication - estimate, remainder</p> <p>Quantity</p> <p>Weight</p> <p>G, Kg, light, lighter etc. Heavy objects</p> <p>Pointed, straight, square, solid, angle, acute, obtuse, etc.,</p>	<p>Capacity</p> <p>More/ less, litre. Millilitres</p> <p>Into, by, from, under, value, more, less, shapes</p> <p>Horizontal, vertical, sloping, parallel, congruent, half, quarter, eighth etc/ divide, shade, frame, figure</p>
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Language in 5th & 6th Class as in 4th (plus the following)

<p>Fractions</p> <p>Percentage</p> <p>Area</p> <p>Perimeter, length, width, surface, diameter, circumference, radius,</p>	<p>Shapes</p> <p>Heptagon, octagon, nonagon</p> <p>Decagon, rhombus, quadrilateral, ellipse, oval, polygon</p> <p>3D - cylinder- sphere, cone, cube,</p>
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base, perpendicular height Symmetry Axis, reflection, image, parallel protractor	cuboid, pyramid, triangular prism, tetrahedron Rotation, symmetrical
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The borrow/payback system of subtraction has been discontinued in our school and we have replaced it over the past four years by the Decomposition Method in all classes.

Estimation will form an important part in the teaching/learning process

It is school policy that the learning of tables and mental maths will receive the importance they have always received in the school.

Calculators will be introduced into fourth class and will be used in the Senior Classes Mathematics Primary School Curriculum p.7. An adequate supply of calculators will be available to each class grouping and when not in use will be stored in each classroom.

Individual Teacher's planning

The whole school plan and the curriculum documents will inform and guide individual teacher's planning long and short term methodologies and approaches.

Assessment:

- (a) Teacher observation
- (b) Weekly, end of term, end of year tests
- (c) Children to be introduced to self - assessment and self- correction in the senior classes

Standard Tests: **Sigma-t** to be administered to classes
First - Sixth every year with results communicated to
parents in S.S. form and will be analysed by I.S.M.T.

Children who attain a percentile less than 10 on the Sigma-t will attend the learning support teacher for Mathematics.

Criteria based Mathematics tests to be administered to children who are experiencing difficulty with the class Mathematics programme.

Maths Milestones for each Class
Staff Development

Staff Development

- Teachers are encouraged to attend courses and engage actively in in-service, as inservice courses on Literacy & Numeracy are compulsory every 5 years for membership of Teaching Council
- Teachers co-operate with research undertaken by the D.E.S. universities, colleges of education etc., when this arises.
- Elements of mathematics, along with other subject areas features on the agenda of staff meetings
- Teachers have access to reference books, resource materials and websites and the sourcing of / obtaining materials is promoted by the learning support teacher whose post of responsibility is curriculum development
- Teachers use I.T. and a wide range of concrete materials to enhance their lessons in Mathematics
- There is a generous sharing of ideas, resources and materials

Communication with Parents

Home School Links

Homework:

- We see homework as an opportunity to reinforce and widen experiences begun in the classroom

- We see it as an opportunity for the child to develop time management skills and the ability to work independently
- We see homework as one of the links between home and school
- Parents are aided in this work through the Advice Booklet on language and methodology
- Children attending learning support/resource will receive only one set of Mathematics homework.
- Communication starts before the children are enrolled in the school. Meetings for parents of junior infant classes are arranged in June each year.
- Parent teacher meetings at the end of October every year.
- The report card is approved by N.C.C.A.
- Informal meetings with parents as the need arise.
- Parents are given the opportunity to discuss their child's Sigma T results at a 2nd Staff Meeting held in June.
- Transfer of information from class teacher to class teacher first Friday in September.

Advice Booklet

This booklet was compiled in October '06.

A Parent's Guide & some simple maths. It was compiled by Sr. Helen O'Connor in consultation with the staff and in line with this plan based on a similar booklet proffered by H.S.C.L. co-ordinator (when we had this service)

Review Date: September 2015

Signed: _____ Fr. Joe Kennedy Chairperson B.O.M.

Date: _____.

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