

## **Scoil Náisiúnta Gleann A'Chaisil**

Glencastle NS

Whole School PPlan for Mathematics

September 2019

### **Introductory Statement and Rationale**

#### **A. Introductory Statement**

This plan was developed following a process of consultation and collaboration with all the teaching staff and the principal of Glencastle National School. Teachers worked in Croke Park hours to review the original policy and to make amendments where necessary. These amendments were then discussed and agreed at whole school level. This policy was framed on the revised Curriculum in Mathematics.

#### **B. Rationale**

This policy describes our agreed approach to the teaching of Mathematics in this school. It was formulated for the following purposes:

- To ensure conformity with the Primary School Curriculum.
- To ensure the consistency and continuity in our approach to teaching and planning.
- To help improve the children's learning of Maths.
- To serve as part of an induction to the school for new teachers.
- To review existing practice.

### **Vision and Aims**

#### **A. Vision**

Glencastle National School endeavours to help each child reach their full potential. In conjunction with our schools vision statement, and school aims, we present our pupils with a carefully planned and co-ordinated curriculum that ensures sufficient opportunity for each student to acquire essential knowledge and skills to meet the requirements of the Primary Curriculum. We aim to provide an excellent educational service, one that is planned and developed to the highest professional standards so that each pupil may benefit to the full from their experience in our school.

## B. Aims

Our primary aims in the teaching of Mathematics are:

- To develop a positive attitude towards mathematics and an appreciation of both its practical and aesthetic aspects.
- To develop problem- solving abilities and a facility for the application of mathematics to everyday life.
- To enable children to use mathematical language effectively and accurately.
- To enable children to acquire an understanding of mathematical concepts and processes to his/ her appropriate level of development and ability.
- To enable the child to acquire proficiency in fundamental mathematical skills and in recalling basic number facts.

## Content of the Policy

### 1. Content

The strands and strand units of the Primary School Maths Curriculum have been divided into terms to make planning more consistent across all class levels. The following pages outline the strands and strand units to be covered in each term for each class.

**Please note that there may be slight differences in terms 2 and 3 due to when Easter falls each year.**

## Numeracy Milestones

### Junior Infants

#### **Early Mathematical Activity**

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Classifying objects on the basis of one attribute such as colour, shape, texture or size.</li><li>• Classify sets according to size, colour and quantity.</li><li>• Match equivalent/ non-equivalent sets.</li><li>• Identify the components of a set.</li></ul>	<ul style="list-style-type: none"><li>• Compare objects/sets according to length, weight, capacity and quantity. – without counting.</li><li>• Order objects according to length or height.</li><li>• Order sets without counting.</li></ul>	

#### **Number**

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Pupils can identify, read and write numerals 1 and 2.</li><li>• Pupils can add numbers 1 and 2 together.</li><li>• Pupils can count from 1 – 10.</li><li>• Compare equivalent and non-equivalent sets 1-5 by matching without using symbols.</li></ul>	<ul style="list-style-type: none"><li>• Pupils can identify, read and write numerals 1,2,3,4.</li><li>• Develop an understanding of the conservation of number 1- 5.</li><li>• Pupils can order sets of objects by number 1-5.</li><li>• Explore the components of number, 1-5.</li><li>• Pupils can combine sets totalling to 5.</li><li>• Partition sets of objects 1- 5.</li></ul>	<ul style="list-style-type: none"><li>• Pupils can identify, read and write numerals 1,2,3, 4, 5 including Zero.</li><li>• Use ordinal numbers first, second, last.</li><li>• Identify the empty set and the numeral zero.</li><li>• Subitise the number of objects in a set. 1-5.</li><li>• Solve oral problems up to 5</li></ul>

### Algebra

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Pupils can identify patterns, sorting them according to shape, colour and size.</li> <li>• Identify and continue a given pattern.</li> </ul>		

### Shape and Space

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Identify whether shapes can roll/ not roll</li> </ul>	<ul style="list-style-type: none"> <li>• Spatial language introduced.</li> <li>• Correctly use spatial language – over, under, beside, between.</li> <li>• Children can recognise shapes such as squares, circles, triangles, rectangles, i.e. characteristics of such shapes.</li> <li>• Sort and name 2D shapes</li> </ul>	<ul style="list-style-type: none"> <li>• Children can identify and sort 3D shapes – sphere, cube and pyramid.</li> <li>• Children can construct 2D shapes.</li> <li>• Children are familiar with 2D, 3D shapes.</li> <li>• Children can sort regular and irregular 3D shapes.</li> <li>• Children can solve tasks involving problems relating to shape.</li> </ul>

### Measures – Length

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Develop an understanding of the concept of length through exploration, discussion, and use of appropriate vocabulary, long, short, wide, narrow, longer, shorter, tall etc.</li> <li>• Compare and order objects according to length or height.</li> </ul>		

### Measures – Weight

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• Children develop an understanding of the concept of weight through exploration, handling of objects, and use of appropriate vocabulary- heavy/light, heavier/lighter, balance and weight.</li> <li>• Compare objects according to weight.</li> </ul>	

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>• Children develop an understanding of the concept of capacity through exploration and the use of appropriate vocabulary – empty, full, holds more, holds less, holds as much as, nearly full etc.</li> <li>• Compare and order containers according to capacity.</li> </ul>

### Measures – Time

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• Develop an understanding of the concept of time through the use of appropriate vocabulary – morning, evening, night, day, lunchtime, bedtime, early, late, days of the week, school days, and weekends.</li> <li>• Can sequence daily events or stages in a story.</li> <li>• Sequence items according to time using correct vocabulary first, then, after, before.</li> </ul>	

### Measures – Money

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• Naming the coins 1c, 2c, 5c.</li><li>• Be familiar with vocabulary – coin, cost, shop, change, how much, more, less, enough, same.</li><li>• Be able to add 1c to 1c.</li><li>• Adding money up to 5c</li><li>• Solve practical tasks and problems using money.</li><li>• Be able to recognise Euro as European currency.</li></ul>

### Data

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• Children can sort and classify sets of objects by one criterion.</li><li>• Match sets, equal and unequal.</li><li>• Represent and interpret a set of mathematical data using real objects, models and pictures.</li></ul>	

## Numeracy Milestones – Senior Infants

### Number

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Estimate the number of objects in a set (2 – 9), check by counting.</li> <li>• Pupils can use concrete materials to make and order sets of objects and to understand the conservation of number, 0 – 10.</li> <li>• Pupils can identify the empty set and the numeral zero.</li> <li>• The pupil understands the meaning of the + and the word “add”.</li> <li>• The pupil is familiar with the “names” for numbers and can read the words one, two, ten.</li> <li>• The pupil can position sets of objects 6-9 and can use the symbols + and = to construct simple word sentences involving addition.</li> <li>• The pupil can arrange sets of objects/counters into different patterns to match a given number and can match a numeral to the correct set.</li> <li>• The pupil understands the components of number 6-9 and is familiar with the “story of” numbers up to 9.</li> <li>• The pupil is familiar with the notion of difference and can compare equivalent and non-equivalent sets 0-5.</li> </ul>	<ul style="list-style-type: none"> <li>• Estimate the number of objects in a set (2 –10), check by counting.</li> <li>• The pupil understands the concept of “the same as” and can recognise and write the symbol =.</li> <li>• The pupil can combine sets of objects to make totals of up to ten.</li> <li>• The pupil can read, write and order the numerals 0 – 10.</li> <li>• The pupil can sequence numbers from 1 – 10. The pupil is familiar with the position of numbers on the number line and the terminology – before, middle and after.</li> <li>• The pupil can count forwards using the number line.</li> <li>• The pupil understands addition up to ten, using the number line.</li> <li>• The pupils can combine sets of objects to total 10.</li> <li>• The pupil understands the components of number 1-10 and is familiar with the “story of” numbers up to 10.</li> </ul>	<ul style="list-style-type: none"> <li>• The pupil can solve simple oral and pictorial problems 0 – 10.</li> <li>• The pupil can count backwards using the number line.</li> <li>• The pupil can solve simple oral and pictorial problems 0 – 10.</li> <li>• The pupil can position sets of objects 6-9 and can use the symbols + and = to construct simple word sentences involving addition.</li> <li>• The pupil can add three numbers to a total of ten.</li> <li>• The pupil can add two numbers vertically and match the total to the correct picture.</li> <li>• The pupil can count the number of objects in a set from 0-20 and can match the correct number of objects to the numeral.</li> <li>• The pupil can use the language of the ordinal number to describe position in a line- first, second, third, last etc.</li> <li>• The pupil is familiar with the notion of difference and can compare equivalent and non-equivalent sets 6-10 (introducing the concept of subtraction informally)</li> </ul>

### Algebra

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>The pupil can identify copy and extend patterns (using three to four elements) in colour, shape, size and number.</li> </ul>	<ul style="list-style-type: none"> <li>The pupil can use counters to make different patterns for numbers.</li> </ul>	<ul style="list-style-type: none"> <li>The pupil can recognise patterns and predict subsequent numbers e.g. 2,3,4.... And 5,_,7,_,9 etc.</li> </ul>

### Shape and Space

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>The pupil has explored, discussed and developed the notion of spatial relations and can use the appropriate vocabulary- above/below, near/far, right/left, over/under and give simple directions.</li> <li>The pupil can sort, describe and name 2D shapes- square, rectangle, triangle, circle and can discuss using the correct vocabulary- flat, straight, side, curved and corner.</li> <li>The pupil can solve simple problems using shape and space.</li> <li>Combine and divide 2D shapes to make larger or smaller shapes.</li> </ul>	<ul style="list-style-type: none"> <li>The pupil can sort, describe and name 3D shapes- cube, cuboid, pyramid, and sphere and can discuss using the correct vocabulary- flat, straight, side, curved and corner.</li> <li>Combine 3D shapes to make other shapes</li> </ul>

### Measures – Length

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>The pupil has explored and developed an understanding of the concepts of length.</li> <li>The pupil has compared and ordered objects according to length.</li> <li>The pupil can estimate and measure using appropriate non-standard units.</li> </ul>		



### Measures – Weight

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• The pupil has explored and developed an understanding of the concepts of weight.</li><li>• The pupil has compared and ordered objects according to weight.</li><li>• The pupil can estimate and measure using appropriate non-standard units.</li></ul>	

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• The pupil has explored and developed an understanding of the concepts of capacity.</li><li>• The pupil has compared and ordered objects according to capacity.</li><li>• The pupil can estimate and measure using appropriate non-standard units</li></ul>

### Measures – Time

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• The pupil has developed an understanding of the concept of time and can discuss using appropriate vocabulary-yesterday, today, tomorrow, seasons and name the days of the week.</li><li>• The pupil can sequence daily events and can record them pictorially.</li></ul>	<ul style="list-style-type: none"><li>• The pupil can read the time in one hour intervals.</li></ul>

### Measures – Money

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>The pupil can recognise coins up to 20c and use coins up to 10c, engaging in shopping activities using the appropriate vocabulary- cost, price, cheap, expensive, too little, too much, change.</li></ul>

### Data

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>The pupil can sort and classify sets of objects by one and two criteria.</li></ul>		<ul style="list-style-type: none"><li>The pupil can represent and interpret data in two rows or columns using real objects, models and pictures.</li></ul>

## Numeracy Milestones – 1st Class

### Number

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Read, write and order numerals 0-50.</li> <li>• Use the ordinal number 1st to 10th.</li> <li>• Group and count in tens and units using lollipop sticks, abacus, and notation board 0-50.</li> <li>• Develop two and three addends to 20.</li> <li>• Add numbers without/with renaming 0-50.</li> <li>• The pupil is familiar with the notion of difference and can compare equivalent and non-equivalent sets 0-20.</li> <li>• The pupil can explore and discuss repeated addition in 2s.</li> <li>• Construct number sentences and number stories.</li> <li>• Identify half of sets to 20.</li> <li>• Develop addition tables.</li> </ul>	<ul style="list-style-type: none"> <li>• Read, write and order numerals 0-99.</li> <li>• Revise two and three addends to 20.</li> <li>• Add numbers without/with renaming 0-99.</li> <li>• Subtract numbers without renaming 0-99.</li> <li>• Construct number sentences and number stories.</li> <li>• Revise half of sets to 20.</li> <li>• Develop subtraction strategies between 0-50.</li> <li>• Develop addition tables.</li> <li>• Subtract numbers without renaming 0-50</li> <li>• The pupil can explore and discuss repeated addition in 10s.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop subtraction strategies between 0-99.</li> <li>• Develop subtraction facts within 20.</li> <li>• The pupil can explore and discuss repeated addition in 5s.</li> </ul>

### Algebra

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Explore the use of patterns in addition facts</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise pattern, including odd and even numbers.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the use of a frame to show the presence of an unknown number.</li> </ul>

### Shape and Space

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• Sort, describe, compare and name 2D shapes.</li> <li>• Combine and partition 2D shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Sort, describe, compare and name 3D shapes.</li> <li>• Explore the relationship between 2D and 3D shapes.</li> </ul>

### Measures – Length

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Estimate, compare, measure and record using non-standard units.</li><li>• Estimate, measure and record length using standard units (the metre)</li></ul>		<ul style="list-style-type: none"><li>• Solve and complete practical tasks and problems involving length.</li></ul>

### Measures – Weight

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Estimate, compare, measure and record using non-standard units.</li><li>• Estimate, measure and record length using standard units (the kilogram)</li></ul>		

### Measures – Capacity

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Estimate, compare, measure and record using non-standard units.</li><li>• Estimate, measure and record length using standard units (the litre)</li></ul>		<ul style="list-style-type: none"><li>• Estimate, compare, measure and record using non-standard units.</li><li>• Estimate, measure and record length using standard units (the litre)</li></ul>

### Measures – Time

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• Read day, date and month using the calendar.</li><li>• Read time in hours and half hours on the 12 hour analogue clock.</li></ul>	

### Measures – Money

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• Recognise, exchange and use coins up to the value of 50c.</li><li>• Calculate how many items can be bought with a given sum.</li></ul>

### Data

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• Sort and classify objects by two and three criteria.</li><li>• Interpret data in rows or columns using pictures.</li></ul>

## Numeracy Milestones – 2nd Class

### Number

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Combine and partition sets to 20.</li> <li>• Have two and three addends to 20.</li> <li>• Explore, develop and apply commutative and associative properties of addition.</li> <li>• Develop recall strategies for addition facts to 20.</li> <li>• Add numbers with and without renaming within 99.</li> <li>• Use symbols +, -, =, &lt;, and &gt;.</li> <li>• Subtracting as deducting, difference and complementing 0-20.</li> <li>• Subtracting without renaming within 99.</li> <li>• Solve one step problems involving subtraction.</li> <li>• Estimate the number of objects in a set.</li> <li>• Discuss the relationship between <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math>.</li> <li>• Count the number of objects in a set, estimate first and recheck by counting.</li> <li>• Read, write and order numerals 0-199.</li> <li>• Compare equivalent and non-equivalent sets.</li> <li>• Use symbols &lt;, &gt; and =.</li> <li>• Use the language of the ordinal number.</li> <li>• Explore, identify and record place value to 199.</li> </ul>	<ul style="list-style-type: none"> <li>• Solve two step problems involving addition.</li> <li>• Estimate differences within 99 using rounding strategies.</li> <li>• Solve two steps problems involving subtraction.</li> <li>• Repeat and explore pattern in 2s, 3s, 4s, 6s and 10s.</li> <li>• Solve problems involving addition (number stories)</li> <li>• Identify <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math> of sets to 20 (early in term 2).</li> <li>• Discuss the relationship between <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math>.</li> <li>• Subtraction with renaming within 99.</li> </ul>	<ul style="list-style-type: none"> <li>• Solve two step problems involving addition and subtraction.</li> <li>• Subtraction with renaming within 99.</li> </ul>

### Algebra

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Recognise patterns and predict subsequent numbers.</li> <li>• Recognise and explore patterns in addition facts.</li> <li>• Recognise and explore pattern using the hundred square.</li> <li>• Understand the use of a frame to show the presence of an unknown number.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise and explore pattern in 2s, 3s, 4s, 6s, and 10s.</li> <li>• Recognise and explore patterns using the 100 square.</li> </ul>	

### Shape and Space

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Sort, describe, compare and name 2D shapes.</li> <li>• Combine and partition 2D shapes.</li> <li>• Construct and draw 2D shapes.</li> <li>• Identify and discuss the use of 2D shapes in the environment.</li> <li>• Explore and recognise angles in the environment.</li> <li>• Identify <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math> of 2D shapes.</li> <li>• Explore, discuss, develop and use the vocab of spatial awareness.</li> <li>• Describe, compare and name shapes ( cube, cuboid, cylinder, sphere and cone</li> <li>• Explore the relationships with 2D shapes.</li> <li>• Discuss the use of 3D shapes in the environment.</li> <li>• Solve and complete practical tasks and problems involving 2D and 3D shapes.</li> <li>• Use and look for a pattern.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify line symmetry in shapes and in the environment.</li> </ul>	

<ul style="list-style-type: none"> <li>Give and follow simple directions within the classroom and school settings including turning directions (including <math>\frac{1}{2}</math> and <math>\frac{1}{4}</math> turns).</li> </ul>		
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### Measures – Length

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>Estimate, compare, measure using nonstandard units.</li> <li>Estimate, compare, measure and record length using the metre.</li> <li>Estimate, compare, measure and record length using <math>\frac{1}{2}</math> m and <math>\frac{1}{4}</math> m.</li> <li>Estimate, compare, measure and record using centimetre.</li> <li>Solve and complete practical tasks and problems.</li> </ul>	

### Measures – Area

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>Compare and measure surface area.</li> <li>Estimate and measure surfaces using nonstandard units.</li> </ul>	



### Measures – Weight

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• Estimate, compare, measure and record weight using non-standard units of measure.</li> <li>• Select and use appropriate non-standard measuring units and instruments.</li> <li>• Estimate, measure and record weight using 1kg, <math>\frac{1}{2}</math> kg and <math>\frac{1}{4}</math> kg.</li> <li>• Explore and discuss instances where objects or substances that weigh 1kg vary greatly in size.</li> <li>• Solve simple problems involving weight.</li> </ul>	

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>• Estimate, compare, measure and record capacity using nonstandard units.</li> <li>• Estimate compare, measure and record capacity using the litre.</li> <li>• Estimate, compare, measure and record capacity using the <math>\frac{1}{2}</math> litre and <math>\frac{1}{4}</math> litre.</li> </ul>

### Measures – Time

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• Read day, date and the month using calendars.</li> <li>• Use vocabulary to sequence events.</li> <li>• Record time using simple devices.</li> <li>• Read the time in hours and half-hours on the 12hour analogue and digital clock.</li> <li>• Read the time in quarter hours.</li> </ul>		

### Measures – Money

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• Recognise, exchange and use coins to value of €2.</li><li>• Record money amounts as cents and later as euros.</li><li>• Calculate change up to €1.</li><li>• Write the value of a group of coins.</li></ul>	

### Data Term

Term 1	Term 2	Term 3
<ul style="list-style-type: none"><li>• Sort and classify objects by 2 or 3 criteria.</li><li>• • Read and interpret pictograms.</li><li>• Represent, read and interpret block graphs.</li><li>• Represent, read and interpret simple tables and charts.</li><li>• Use or make a table.</li><li>• Use logical reasoning.</li></ul>		

## Numeracy Milestones – 3rd Class

### Number

Term 1	Term 2	Term 3
<p><b><u>Place Value</u></b></p> <ul style="list-style-type: none"> <li>• explore and identify place value in whole numbers, 0-999</li> <li>• read, write and order three-digit numbers</li> <li>• round whole numbers to the nearest ten</li> <li>• explore and identify place value in decimal numbers to one place of decimals</li> <li>• round whole numbers to the nearest hundred</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• add and subtract, without and with renaming, within 999</li> <li>• know and recall addition and subtraction facts</li> <li>• solve word problems involving addition and subtraction</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Multiplication</b></p> <ul style="list-style-type: none"> <li>• develop an understanding of multiplication as repeated addition and vice versa</li> <li>• explore, understand and apply the zero, commutative and distributive properties of multiplication</li> <li>• develop and/or recall multiplication facts within 100</li> <li>• multiply a one-digit number by 0-10</li> </ul>	<p><b><u>Operations</u></b></p> <p><b>Multiplication</b></p> <ul style="list-style-type: none"> <li>• multiply a two-digit number by 0-10</li> <li>• solve and complete practical tasks and problems involving multiplication of whole numbers</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Division</b></p> <ul style="list-style-type: none"> <li>• develop an understanding of division as sharing and as repeated subtraction, without and with remainders</li> <li>• develop and/or recall division facts within 100</li> <li>• divide a one-digit or two digit number by a one digit number without and with remainders</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Decimals</b></p> <ul style="list-style-type: none"> <li>• identify tenths and express in decimal form express one tenth as 0.1</li> <li>• order decimals on the number line</li> <li>• solve problems involving decimals.</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• identify fractions and equivalent forms of fractions with denominators 2, 4, 8 and 10</li> <li>• compare and order fractions with appropriate denominators and position on the number line</li> <li>• calculate a fraction of a set using concrete materials</li> </ul>	<p><b><u>Operations</u></b></p> <p><b>Division</b></p> <ul style="list-style-type: none"> <li>• solve and complete practical tasks and problems involving division of whole numbers</li> </ul>

	<ul style="list-style-type: none"> <li>• develop an understanding of the relationship between fractions and division</li> <li>• calculate a unit fraction of a number and calculate a number, given a unit fraction of the number</li> <li>• solve and complete practical tasks and problems involving fractions what fraction of a chart is coloured yellow/is not green?</li> </ul>	
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### Algebra

Term 1	Term 2	Term 3
<p><b>Number sentences</b></p> <ul style="list-style-type: none"> <li>• translate an addition or subtraction number sentence with a frame into a word problem (frame not in initial position)</li> <li>• solve one-step number sentences</li> </ul> <p><b>Number patterns and sequences</b></p> <ul style="list-style-type: none"> <li>• explore, recognise and record patterns in number, 0-999</li> <li>• explore, extend and describe (explain rule for) sequences</li> <li>• use patterns as an aid in the memorisation of number facts</li> </ul>		

## Shape and Space

Term 1	Term 2	Term 3
<p><b>Lines and angles</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify vertical, horizontal and parallel lines</li> <li>• recognise an angle in terms of a rotation classify angles as greater than, less than or equal to a right angle</li> <li>• solve problems involving lines and angles.</li> </ul> <p><b>2-D shapes</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify 2-D shapes: square, rectangle, triangle, hexagon, circle, semicircle, oval and irregular shapes</li> <li>• explore, describe and compare the properties (sides, angles, parallel and non-parallel lines) of 2-D shapes</li> <li>• construct and draw 2-D shapes</li> <li>• combine, tessellate and make patterns with 2-D shapes</li> <li>• identify the use of 2-D shapes in the environment</li> <li>• solve and complete practical tasks and problems involving 2-D shapes</li> </ul> <p><b>3-D shapes</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify 3-D shapes, including, cube, cuboid, cylinder, cone, sphere, triangular prism, pyramid</li> <li>• explore, describe and compare the properties of 3-D shapes</li> <li>• explore and describe the relationship of 3-D shapes with constituent 2D shapes</li> <li>• construct 3-D shapes</li> <li>• solve and complete</li> </ul>	<p><b>Symmetry</b></p> <ul style="list-style-type: none"> <li>• identify line symmetry in the environment</li> <li>• identify and draw lines of symmetry in two dimensional shapes</li> </ul>	

practical tasks and problems involving 2-D and 3-D shapes.		
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### Measures – Length

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>estimate, compare, measure and record lengths of a wide variety of objects using appropriate metric units (m, cm)</li> <li>rename units of length in m and cm - <math>125\text{ cm} = 1\text{ m } 25\text{ cm}</math></li> <li>solve and complete practical tasks and problems involving the addition and subtraction of units of length (m, cm)</li> </ul>	

### Measures – Area

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>estimate, compare and measure the area of regular and irregular shapes</li> </ul>	

### Measures – Weight

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>estimate, compare, measure and record the weight of a wide variety of objects using appropriate metric units (kg, g)</li> <li>solve and complete practical tasks and problems involving the addition and subtraction of units of weight (kg and g)</li> </ul>

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>estimate, compare, measure and record the capacity of a wide variety of objects using appropriate metric units (l, ml)</li> <li>solve and complete practical tasks and problems involving the addition and subtraction of units of capacity (l, ml)</li> </ul>

### Measures – Time

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>consolidate and develop further a sense of time passing</li> <li>read time in five-minute intervals on analogue and digital clock (12-hour) record time in analogue and digital forms</li> <li>read and interpret simple timetables</li> <li>rename minutes as hours and hours as minutes</li> <li>read dates from calendars and express weeks as days and vice versa</li> <li>solve and complete practical tasks and problems involving times and dates</li> </ul>		

### Measures – Money

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>rename amounts of euro or cents and record using symbols and decimal point</li> <li>solve and complete one step problems and tasks involving the addition and subtraction of money.</li> </ul>	

## Data

Term 1	Term 2	Term 3
<p><b>Representing and interpreting data</b></p> <ul style="list-style-type: none"><li>• collect, organise and represent data using pictograms, block graphs and bar charts</li><li>• read and interpret tables, pictograms, block graphs and bar charts</li><li>• use data sets to solve and complete practical tasks and problems</li></ul>		<p><b>Chance</b></p> <ul style="list-style-type: none"><li>• use vocabulary of uncertainty and chance: possible, impossible, might, certain, not sure</li><li>• order events in terms of likelihood of occurrence</li><li>• identify and record outcomes of simple random processes</li></ul>



## Numeracy Milestones – 4th Class

### Number

Term 1	Term 2	Term 3
<p><b><u>Place Value</u></b></p> <ul style="list-style-type: none"> <li>• explore and identify place value in whole numbers, 0-9999</li> <li>• read, write and order four-digit numbers and solve simple problems</li> <li>• round whole numbers to the nearest thousand</li> <li>• explore and identify place value in decimal numbers to two places of decimals.</li> </ul> <p><b><u>Operations</u></b></p> <p><b>Addition and Subtraction</b></p> <ul style="list-style-type: none"> <li>• add and subtract, without and with renaming, within 9999</li> <li>• know and recall addition and subtraction facts</li> <li>• solve word problems involving addition and subtraction</li> </ul> <ul style="list-style-type: none"> <li>• <b>Multiplication</b></li> <li>• develop an understanding of multiplication as repeated addition and vice versa.</li> <li>• explore, understand and apply the zero, commutative, distributive and associative properties of multiplication</li> <li>• develop and recall multiplication facts within 100</li> <li>• multiply a two-digit or three-digit number by a one or two-digit number estimate products</li> <li>• use a calculator to check estimates</li> <li>• solve and complete practical tasks and problems involving multiplication of whole</li> </ul>	<p><b><u>Operations</u></b></p> <p><b>Multiplication</b></p> <ul style="list-style-type: none"> <li>• multiply a two-digit or three-digit number by a two-digit number estimate products</li> <li>• use a calculator to check estimates</li> <li>• solve and complete practical tasks and problems involving multiplication of whole numbers</li> </ul> <p><b>Division</b></p> <ul style="list-style-type: none"> <li>• solve and complete practical tasks and problems involving division of whole numbers</li> </ul> <p><b>Decimals</b></p> <ul style="list-style-type: none"> <li>• express tenths and hundredths as fractions and decimals</li> <li>• identify place value of whole numbers and decimals to two places and write in expanded form</li> <li>• order decimals on the number line add and subtract whole numbers and decimals up to two places</li> <li>• multiply and divide a decimal number up to two places by a single digit whole number</li> <li>• solve problems involving decimals.</li> </ul>	

<p>numbers</p> <p><b>Division</b></p> <ul style="list-style-type: none"> <li>• develop an understanding of division as sharing and as repeated subtraction, without and with remainders</li> <li>• develop and/or recall division facts within 100</li> <li>• divide a three-digit number by a one-digit number without and with remainders use calculator to check estimates</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• identify fractions and equivalent forms of fractions with denominators 2, 3, 4, 5, 6, 8, 9, 10 and 12 compare and order fractions with appropriate denominators and position on the number line</li> <li>• calculate a fraction of a set using concrete materials</li> <li>• calculate a number, given a multiple fraction of the number</li> <li>• express one number as a fraction of another number</li> <li>• solve and complete practical tasks and problems involving fractions</li> </ul>		
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## Algebra

Term 1	Term 2	Term 3
	<p><b>Number patterns and sequences</b></p> <ul style="list-style-type: none"> <li>• explore, recognise and record patterns in number, 0-9999</li> <li>• explore, extend and describe sequences</li> <li>• use patterns as an aid in the memorisation of number facts</li> </ul>	<p><b>Number sentences</b></p> <ul style="list-style-type: none"> <li>• translate an addition, subtraction, multiplication or division number sentence with a frame into a word problem (frame not in initial position)</li> <li>• translate a one-step word problem into a number sentence</li> <li>• ☑ solve one-step number sentences</li> </ul>

## Shape and Space

Term 1	Term 2	Term 3
<p><b>2-D shapes</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify 2-D shapes: equilateral, isosceles and scalene triangle, parallelogram, rhombus, pentagon, octagon</li> <li>• explore, describe and compare the properties (sides, angles, parallel and non-parallel lines) of 2-D shapes</li> <li>• construct and draw 2-D shapes</li> <li>• combine, tessellate and make patterns with 2-D shapes</li> <li>• identify the use of 2-D shapes in the environment</li> <li>• solve and complete practical tasks and problems involving 2-D shapes.</li> </ul> <p><b>Symmetry</b></p> <ul style="list-style-type: none"> <li>• identify line symmetry in the environment</li> </ul>	<p><b>3-D shapes</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify 3-D shapes, including cube, cuboid, cylinder, cone, sphere, triangular prism, pyramid</li> <li>• establish and appreciate that when prisms are sliced through (in the same direction) each face is equal in shape and size</li> <li>• explore and describe the relationship of 3-D shapes with constituent 2D shapes</li> <li>• construct 3-D shapes</li> <li>• ☑ solve and complete practical tasks and problems involving 2-D and 3-D shapes</li> </ul>	

<ul style="list-style-type: none"> <li>• identify lines of symmetry as horizontal, vertical or diagonal</li> <li>• use understanding of line symmetry to complete missing half of a shape, picture or pattern</li> </ul> <p><b>Lines and angles</b></p> <ul style="list-style-type: none"> <li>• identify, describe and classify oblique and perpendicular lines</li> <li>• draw, discuss and describe intersecting lines and their angles</li> <li>• classify angles as greater than, less than or equal to a right angle</li> <li>• solve problems involving lines and angles.</li> </ul>		
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### Measures – Length

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• estimate, compare, measure and record lengths of a wide variety of objects, using appropriate metric units, and selecting suitable instruments of measurement</li> <li>• rename units of length using decimal or fraction form</li> <li>• understand, estimate and measure the perimeter of regular 2-D shapes</li> <li>• ☑ solve and complete practical tasks and problems involving the addition, subtraction, multiplication and simple division of units of length (m, cm, km).</li> </ul>	

### Measures – Area

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>estimate, compare and measure the area of regular and irregular shapes</li></ul>

### Measures – Weight

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>estimate, compare, measure and record the weight of a wide variety of objects using appropriate metric units (kg, g) and selecting suitable instruments of measurement</li><li>rename units of weight in kg and g</li><li>rename units of weight using decimal or fraction form</li><li>solve and complete practical tasks and problems involving the addition, subtraction, multiplication and simple division of units of weight (kg and g).</li></ul>

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>estimate, compare, measure and record capacity using appropriate metric units (l, ml) and selecting suitable instruments of measurement</li><li>rename units of capacity in l and ml <math>1500 \text{ ml} = 1 \text{ l } 500 \text{ ml}</math></li><li>rename units of capacity</li></ul>

		using decimal and fraction form <ul style="list-style-type: none"> <li>• solve and complete practical tasks and problems involving the addition, subtraction, multiplication and simple division of units of capacity (l, ml).</li> </ul>
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### Measures – Time

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>• consolidate and develop further a sense of time passing</li> <li>• read time in one-minute intervals on analogue and digital clock (12-hour)</li> <li>• express digital time as analogue time and vice versa</li> <li>• read and interpret simple timetables.</li> <li>• rename minutes as hours and hours as minutes</li> <li>• read dates from calendars and express weeks as days and vice versa</li> <li>• solve and complete practical tasks and problems involving times and dates and the addition and subtraction of hours and minutes</li> </ul>		

### Measures – Money

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• rename amounts of money as euro or cents and record using € symbol and decimal point</li> <li>• solve and complete practical one-step and two-step problems and tasks involving the</li> </ul>	

	addition, subtraction, multiplication and simple division of money.	
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**Data**

Term 1	Term 2	Term 3
<p><b>Representing and interpreting data</b></p> <ul style="list-style-type: none"> <li>• collect, organise and represent data using pictograms, block graphs, bar charts and bar-line graphs incorporating the scales 1:2, 1:5, 1:10, and 1:100</li> <li>• read and interpret bar-line graphs and simple pie charts</li> <li>• use data sets to solve and complete practical tasks and problems.</li> </ul>		<p><b>Chance</b></p> <ul style="list-style-type: none"> <li>• use vocabulary of uncertainty and chance: chance, likely, unlikely, never, definitely</li> <li>• order events in terms of likelihood of occurrence</li> <li>• identify and record outcomes of simple random processes</li> </ul>

## Numeracy Milestones – 5th Class

### Number

Term 1	Term 2	Term 3
<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• read, write and order whole numbers and decimals</li> <li>• identify place value in whole numbers and decimals</li> <li>• round whole numbers and round decimals</li> </ul> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• estimate sums, differences, products and quotients of whole numbers</li> <li>• add and subtract whole numbers and decimals (to three decimal places) without and with a calculator</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• compare and order fractions and identify equivalent forms of fractions with denominators 2 – 12</li> <li>• express improper fractions as mixed numbers and vice versa and position them on the number line</li> <li>• add and subtract simple fractions and simple mixed numbers</li> <li>• multiply a fraction by a whole number</li> <li>• express tenths, hundredths and thousandths in both fractional and decimal form</li> </ul>	<p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• divide a three-digit number by a two-digit number, without and with a calculator</li> <li>• multiply a decimal (up to three places) by a whole number, without and with a calculator</li> <li>• divide a decimal number by a whole number, without and with a calculator</li> </ul> <p><b>Decimals &amp; Percentages</b></p> <ul style="list-style-type: none"> <li>• develop an understanding of simple percentages and relate them to fractions and decimals</li> <li>• compare and order fractions and decimals</li> <li>• solve problems involving operations with whole numbers, fractions, decimals and simple percentages use diagrams; estimate and compute answers with a calculator, include simple discount and increase examples 10% off all jeans, 20% extra free.</li> </ul> <p><b>Number Theory</b></p> <ul style="list-style-type: none"> <li>• identify simple prime and composite numbers</li> <li>• identify square and rectangular numbers</li> <li>• identify factors and multiples</li> </ul>	



## Algebra

Term 1	Term 2	Term 3
	<p><b>Directed Numbers</b></p> <ul style="list-style-type: none"> <li>Identify positive and negative numbers in context</li> </ul> <p><b>Rules &amp; Properties</b></p> <ul style="list-style-type: none"> <li>explore and discuss simple properties and rules about brackets and priority of operations</li> <li>identify relationships and record verbal and simple symbolic rules for number patterns</li> </ul>	<p><b>Equations</b></p> <ul style="list-style-type: none"> <li>Translate number sentences with a frame into a word problem and vice versa</li> <li>Solve one step number sentences and equations</li> </ul>

## Shape and Space

Term 1	Term 2	Term 3
<p><b>2-D Shapes</b></p> <ul style="list-style-type: none"> <li>make informal deductions about 2-D shapes and their properties</li> <li>use angle and line properties to classify and describe triangles and quadrilaterals</li> <li>identify the properties of the circle</li> <li>construct a circle of given radius or diameter</li> <li>tessellate combinations of 2-D shapes</li> <li>classify 2-D shapes according to their lines of symmetry</li> <li>use 2-D shapes and properties to solve problems</li> <li></li> </ul>	<p><b>3-D Shapes</b></p> <ul style="list-style-type: none"> <li>identify and examine 3-D shapes and explore relationships, including tetrahedron (faces, edges and vertices)</li> <li>draw the nets of simple 3-D shapes and construct the shapes</li> </ul> <p><b>Lines &amp; Angles</b></p> <ul style="list-style-type: none"> <li>recognise, classify and describe angles and relate angles to shape and the environment</li> <li>recognise angles in terms of a rotation</li> <li>estimate, measure and construct angles in degrees</li> <li>explore the sum of the angles in a triangle</li> </ul>	

### Measures – Length

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• select and use appropriate instruments of measurement</li><li>• estimate and measure length using appropriate metric units</li><li>• estimate and measure the perimeter of regular and irregular shapes.</li></ul>

### Measures – Area

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"><li>• discover that the area of a rectangle is length by breadth</li><li>• estimate and measure the area of regular and irregular 2-D shapes ☐ calculate area using square centimetres and square metres</li><li>• compare visually square metres and square centimetres.</li></ul>	

### Measures – Weight

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"><li>• select and use appropriate instruments of measurement choose measurement</li><li>• estimate and measure weight using appropriate metric units</li></ul>

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>select and use appropriate instruments of measurement</li> <li>estimate and measure capacity using appropriate metric units</li> </ul>

### Measures – Time

Term 1	Term 2	Term 3
<ul style="list-style-type: none"> <li>read and interpret timetables and the 24hour clock (digital and analogue)</li> <li>interpret and convert between times in 12hour and 24-hour format</li> </ul>		

### Measures – Money

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>compare 'value for money' using unitary method</li> </ul>	

### Data Term

Term 1	Term 2	Term 3
<p><b>Representing &amp; Interpreting Data</b></p> <ul style="list-style-type: none"> <li>collect, organise and represent data using pictograms, single and multiple bar charts and simple pie charts</li> <li>read and interpret pictograms, single and multiple bar charts, and pie charts</li> </ul>		<p><b>Chance</b></p> <ul style="list-style-type: none"> <li>identify and list all possible outcomes of simple random processes</li> <li>estimate the likelihood of occurrence of events</li> <li>construct and use frequency charts and tables</li> </ul>

## Numeracy Milestones – 6th Class

### Number

Term 1	Term 2	Term 3
<p><b>Place Value</b></p> <ul style="list-style-type: none"> <li>• read, write and order whole numbers and decimals</li> <li>• identify place value in whole numbers and decimals</li> <li>• round decimals</li> </ul> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• estimate sums, differences, products and quotients of decimals</li> <li>• add and subtract whole numbers and decimals (to three decimal places) without and with a calculator</li> <li>• multiply a decimal by a decimal, without and with a calculator</li> <li>• Divide a decimal number by a decimal, without and with a calculator</li> </ul> <p><b>Fractions</b></p> <ul style="list-style-type: none"> <li>• compare and order fractions and identify equivalent forms of fractions with denominators 2 – 12</li> <li>• express improper fractions as mixed numbers and vice versa and position them on the number line</li> <li>• add and subtract simple fractions and simple mixed numbers</li> <li>• multiply a fraction by a whole number</li> <li>• express tenths, hundredths and thousandths in both fractional and decimal form</li> </ul>	<p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• divide a four-digit number by a two-digit number, without and with a calculator</li> </ul> <p><b>Decimals &amp; Percentages</b></p> <ul style="list-style-type: none"> <li>• use percentages and relate them to fractions and decimals</li> <li>• compare and order percentages of numbers</li> <li>• solve problems relating to profit and loss, discount, VAT, interest, increases, decreases.</li> </ul>	<p><b>Number Theory</b></p> <ul style="list-style-type: none"> <li>• identify simple prime and composite numbers</li> <li>• identify and explore square numbers</li> <li>• explore and identify simple square roots</li> <li>• identify common factors and multiples in exponential form</li> </ul>

## Algebra

Term 1	Term 2	Term 3
	<p><b>Rules &amp; Properties</b></p> <ul style="list-style-type: none"> <li>• know simple properties and rules about brackets and priority of operation</li> <li>• identify relationships and record symbolic rules for number patterns</li> </ul>	<p><b>Directed Numbers</b></p> <ul style="list-style-type: none"> <li>• identify positive and negative numbers on the number line</li> <li>• add simple positive and negative numbers on the number line</li> </ul> <p><b>Variables</b></p> <ul style="list-style-type: none"> <li>• explore the concept of a variable in the context of simple patterns, tables and simple formulae and substitute values for variables</li> </ul> <p><b>Equations</b></p> <ul style="list-style-type: none"> <li>• translate word problems with a variable into number sentences</li> <li>• solve one-step number sentences and equations</li> </ul>

## Shape and Space

Term 1	Term 2	Term 3
<p><b>2-D Shapes</b></p> <ul style="list-style-type: none"> <li>• make informal deductions about 2-D shapes and their properties</li> <li>• use angle and line properties to classify and describe triangles and quadrilaterals</li> <li>• construct triangles from given sides or angles</li> <li>• identify the properties of the circle</li> <li>• construct a circle of given radius or diameter</li> <li>• tessellate combinations of 2-D shapes</li> <li>• construct a circle of given radius or diameter</li> <li>• classify 2-D shapes according to their lines of</li> </ul>	<p><b>3-D Shapes</b></p> <ul style="list-style-type: none"> <li>• identify and examine 3-D shapes and explore relationships, including octahedron (faces, edges and vertices)</li> <li>• draw the nets of simple 3-D shapes and construct the shapes</li> </ul>	

<p>symmetry</p> <ul style="list-style-type: none"> <li>• plot simple coordinates and apply where appropriate</li> <li>• use 2-D shapes and properties to solve problems.</li> </ul> <p><b>Lines &amp; Angles</b></p> <ul style="list-style-type: none"> <li>• recognise, classify and describe angles and relate angles to shape</li> <li>• recognise angles in terms of a rotation</li> <li>• estimate, measure and construct angles in degrees</li> <li>• explore the sum of the angles in a quadrilateral</li> </ul>		
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**Measures – Length**

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• select and use appropriate instruments of measurement</li> <li>• rename measures of length</li> <li>• estimate and measure the perimeter of regular and irregular shapes</li> <li>• use and interpret scales on maps and plans</li> </ul>	

### Measures – Area

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>recognise that the length of the perimeter of a rectangular shape does not determine the area of the shape</li> <li>calculate the area of regular and irregular 2-D shapes</li> <li>measure the surface area of specified 3-D shapes</li> <li>calculate area using Ares and hectares</li> <li>relationship between square metres and square centimetres.</li> <li>find the area of a room from a scale plan</li> </ul>	

### Measures – Weight

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>select and use appropriate instruments of measurement</li> <li>rename measures of weight</li> </ul>	

### Measures – Capacity

Term 1	Term 2	Term 3
		<ul style="list-style-type: none"> <li>select and use appropriate instruments of measurement</li> <li>rename measures of capacity</li> <li>find the volume of a cuboid experimentally</li> </ul>

### Measures – Time

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>explore international time zones</li> <li>explore the relationship between time, distance and average speed</li> </ul>	

### Measures – Money

Term 1	Term 2	Term 3
	<ul style="list-style-type: none"> <li>• explore value for money</li> <li>• convert other currencies to euro and vice versa</li> </ul>	

### Data

Term 1	Term 2	Term 3
<b>Representation &amp; Interpreting Data</b> <ul style="list-style-type: none"> <li>• collect, organise and represent data using pie charts and trend graphs</li> <li>• read and interpret trend graphs and pie charts</li> </ul>		<b>Chance</b> <ul style="list-style-type: none"> <li>• identify and list all possible outcomes of simple random processes discuss and list all possible outcomes of: rolling two dice and calculating the total (2, 3, 4 ... 12) selecting two numbers at random from the numbers 1, 2, 3, 4, 5 (ten possibilities)</li> <li>• estimate the likelihood of occurrence of events; order on a scale from 0 to 100%, 0 to 1</li> <li>• construct and use frequency charts and tables</li> </ul>



**Special Class – Multi Disability Class**  
**(Moderate General Learning Outcomes)**

Term 1	Term 2	Term 3
<p><b>Early mathematical Activities</b></p> <ul style="list-style-type: none"> <li>•Classifying</li> <li>•Comparing</li> <li>•Matching</li> <li>•Ordering</li> </ul> <p><b>Number</b></p> <ul style="list-style-type: none"> <li>•Counting</li> <li>•Addition</li> <li>•Comparing &amp; ordering</li> <li>•Counting</li> </ul> <p><b>Measure</b></p> <ul style="list-style-type: none"> <li>•Length</li> <li>•Weight</li> </ul> <p><b>Pattern&amp; Sequence</b></p> <ul style="list-style-type: none"> <li>•Observe &amp; use pattern &amp; sequence</li> </ul> <p><b>Shape &amp; Space</b></p> <ul style="list-style-type: none"> <li>•Spatial awareness</li> </ul>	<p><b>Early mathematical Activities</b></p> <ul style="list-style-type: none"> <li>•Classifying</li> <li>•Matching</li> <li>•Comparing</li> </ul> <p><b>Number</b></p> <ul style="list-style-type: none"> <li>•Addition</li> <li>•Subtraction</li> <li>•Order numerals</li> </ul> <p><b>Measure</b></p> <ul style="list-style-type: none"> <li>•Time</li> <li>•Money</li> </ul> <p><b>Shape &amp; Space</b></p> <ul style="list-style-type: none"> <li>•2 D &amp; 3D shape</li> </ul>	<p><b>Early mathematical Activities</b></p> <ul style="list-style-type: none"> <li>•Ordering</li> <li>•Classifying</li> <li>•Matching</li> </ul> <p><b>Number</b></p> <ul style="list-style-type: none"> <li>•Counting</li> <li>•Comparing</li> <li>•Addition</li> </ul> <p><b>Data</b></p> <ul style="list-style-type: none"> <li>•Collecting &amp; processing data</li> <li>•Recognising data</li> </ul> <p><b>Measure</b></p> <ul style="list-style-type: none"> <li>•Capacity</li> </ul>

The ASD unit follows the plan used for 1<sup>st</sup> Class as a guide of which topics are taught each term.

The outcomes are differentiated in line with individual abilities.

Students are also integrated into the mainstream classes so the ASD teacher also tries, where possible, to follow the topic areas being taught in individual classrooms with individual students.

## Approaches and Methodologies

The following approaches and methodologies will be used throughout the year.

- **The use of manipulatives:** Children will have access to and use of a broad range of mathematical equipment during lessons. Resources are stored in the maths shelves in the principal's office and infant classroom.
- **Talk and Discussion:** Talk and discussion is seen as an integral part of the learning process. Opportunities should be provided during the maths class for pupils to discuss problems and given a chance to explore and discuss alternative ways of approaching a problem with the teacher, other individual pupils and in groups.
- **Active Learning/ Guided Discovery:** As part of the maths programme for each class, children are provided with structured opportunities to engage in exploratory activities. Under the teacher's guidance they are encouraged to construct meaning, to develop mathematical strategies for problem solving and to develop self-motivation.
- **Language:** There is a strong link between language and concept acquisition. We feel it is important to have a common approach to the terms used and the correct use of symbol name. A list of language that the pupils are expected to be introduced to at each class level can be found at appendix 1.
- **Tables:** Number facts up to twelve will be memorised by the end of 2nd class. Addition facts will be memorised in First Class. Subtraction facts will be memorised in Second Class. Multiplication and division facts will be memorised throughout Third and Fourth class. All tables will be revised in Fifth and Sixth Class. In keeping with the Literacy and Numeracy Strategy classes from 1st to 6th class will practice tables each day using their Number Facts book.
- **Skills:** The following skills will be acquired by the pupils through the study of the various strands in the Curriculum:
  - Applying and Problem Solving
  - Communicating and Expressing
  - Integrating and Connecting
  - Reasoning
  - Implementing
  - Understanding and Recalling
  - Estimation

Every strand provides opportunities for acquiring these skills. Opportunities should also be provided to develop these skills in other curricular areas such as Science and Geography.

- **Problem Solving:** Pupils are encouraged to apply the following strategies when problem solving:
  - RUDE
  - RUCSAC
  - CUBES

- **Maths Display:** Mathematical language and strategies are displayed clearly in each classroom on a Math display board.
- **Estimation:** Estimation is a part of every maths lesson. Pupils are encouraged to use the following strategies to develop their estimation skills
  - Front End
  - Clustering
  - Rounding
  - Special Numbers

These strategies are explained on pages 32-34 of the Teacher Guidelines for Mathematics.

- **Station Teaching :** Station teaching takes place, where possible, for a six week period in the second term.
- **Calculations Strategy** A calculations strategy (BOMDAS) is in use in the school to ensure that operations are taught in a systematic manner throughout the school at all class levels.

### 3. Assessment and Record Keeping

Assessment is used by teachers to inform their planning, selection and management of learning activities so that they can make the best possible provision for meeting the varied mathematical needs of the children in our school. Teachers use a number of tools for assessing pupils' work including

- self-assessment
- conferencing
- portfolios
- concept-mapping
- questioning
- teacher observation
- teacher designed tasks and tests
- pupil profile
- standardised testing.

The following are other assessment tools used by teachers:

- Teacher observation
- Worksheets and work in copies
- Assessment games
- Extension and enrichment activities based on the strand unit being taught.
- On going teacher-designed tests. Test results are kept by the class teacher.
- Oral tests (tables, continuation of number patterns, ...)
- Problem solving exercises that use a variety of mathematical skills
- Standardised Assessment

Pupils from First Class to Sixth Class complete Dromcondra Maths tests each May/June. Where areas of need have been identified students may be offered extra support - this may take the form of being withdrawn from class or given in-class support.

#### 4. Children with different needs

In our school we are dedicated to helping each child to achieve his/her individual potential. It is the policy of our school that all children will participate in Mathematics in each classroom. Children with particular special needs will receive extra support from the support teacher to enable them achieve a level of competency in line with their ability before leaving primary school. This may be in-class or withdrawn support. Extension material will be available in each classroom for gifted children who finish work early or need additional challenges. Work at a simpler level will also be available for those who need it. The responsibility for providing this work will be discussed and agreed at the daily/weekly planning meeting. Normal practice involves each teacher preparing work to meet the needs of all pupils in their group.

#### 5. Equality of Participation and Access

All children are provided with equal access to all aspects of the Maths curriculum. Boys and girls are given equal opportunities to engage in mathematical activities. A thematic approach is taken in the Special Class rather than discrete lessons with mathematics integrated into class activities.

#### 6. Timetable

- As a minimum, Infant Classes will receive 2 hours and 15 minutes formal instruction per week and from 1st to 6th class pupils will receive a minimum of 3 hours as outlined in the 1999 Revised Primary Curriculum.
- In accordance with the new Literacy and Numeracy Strategy an additional 70 minutes will be allocated to the teaching of mathematics each week. Junior and Senior Infant classes integrate math into other subjects including Aistear where applicable. Second to Sixth Class use this extra time to practice tables and complete their Number Facts book.

The following strategies are being used by teachers to support this initiative:

- Skip counting
- Reciting tables (2<sup>nd</sup>-6<sup>th</sup>)
- Use of the inversion method
- Table patterns
- Games
  
- Withdrawal of pupils for supplementary teaching.  
It is important that there is collaboration between class teacher and support teacher so as to ensure continuity of topics covered. There are daily/weekly planning meetings where the plans for the coming week are outlined and the previous week is evaluated. This allows both the mainstream and the support teacher to plan for the same topics and discuss the progress of the pupils. Pupils who are withdrawn for maths should also be present for the mainstream maths lesson.

## 7. Homework

Homework will be given in accordance with school policy. In summary it will

- Reinforce work done in the classroom during the school day
- Be achievable and therefore differentiate according to children's needs as appropriate
- Foster independent work skills
- Link what is happening in the classroom and the home
- Increase in quantity in accordance with class grouping
- Ask children on occasions to record and engage in active learning depending on the Strand being taught

In addition 2<sup>nd</sup> to 6<sup>th</sup> classes will be given tables to learn as part of their Maths homework (Monday - Thursday).

## 8. Resources and ICT

### Manipulatives

We acknowledge the importance of concrete materials in the development of mathematical concepts for children in all classes. Teachers are encouraged to introduce all topics using physical resources, before moving to pictorial and finally the use of the abstract. We have well sourced maths resources for each strand of the maths curriculum. Teachers are accountable for resources borrowed and return them to the office after use. The Principal is responsible for the storage and maintenance of the maths equipment. Please see appendix 2 for a full list of maths resources.

### Textbooks

Chosen textbooks must reflect the objectives of the Primary School Curriculum in Mathematics. The scheme in use for the school is Operation Maths, published by EdCo. Teachers are encouraged to use ancillary materials to support the textbook. In addition, the Ready Set Maths programme is available for use by teachers in the junior end of the school.

### Calculators

From Fourth Class upwards pupils are permitted to use calculators alongside traditional paper and pencil methods. Calculators are useful for handling large numbers, to check answers, to explore the number system and to remove computational barriers for low attaining pupils.

### ICT in the classroom

Interactive whiteboards and accompanying software are available for use within all classrooms. Teachers are encouraged to utilise these resource. We have a number of laptops in the school and we are currently exploring options to purchase some iPads. We intend to make greater use of these as outlined in our digital learning strategy. There is an internet connection in each classroom. The internet can be used to enhance learning in mathematics through games and activities. All internet use must be in line with the current Internet Acceptable Use policy.

## 9. Individual Teacher's Planning and Reporting

Teacher's yearly and fortnightly plans should be based on the content set out in this policy. Approaches and methodologies are provided in this policy for teacher's use and should be followed accordingly. Each day/week there is a planning meeting with each class teacher and the support teacher. The strands and strand units for the week are outlined at this meeting along with the duties of each teacher. The planning meetings also provide a forum to review the previous week's work. Teachers are encouraged to evaluate the teaching and learning by discussing what worked well, what did not work well and what could be changed for future teaching methods. Work covered by mainstream and support teacher will be outlined in Cúntas Miosúil which will be submitted to the principal at the end of each month.

## 10. Staff Development

Teachers are made aware of any opportunities for continuous professional development and are encouraged to up skill themselves through participation in these courses. Skills and expertise within the school are shared and developed through input at staff meetings. In addition, teachers are also invited to participate in the Continual Professional Development programme in the school as well as in informal observations which take place regularly each year.

## 11. Parental Involvement

Parents are encouraged to support the school's plan for Maths. Parent / teacher meetings are held annually. Teachers and parents are afforded the opportunity to discuss each individual child's progress in Maths and ways of supporting the child at home. Parents and teachers are welcome to make individual arrangements to discuss matters of relevance at other times throughout the school year.

## 12. Community Links

On occasion, members of the local community may be invited into the school to contribute to the teaching and learning of maths if appropriate. Permission for this will be sought from the school's management in advance.

The local environment may be used, with permission from the principal, to carry out elements of the maths curriculum, for example, maths trails. Two members of staff must accompany each class if they are leaving the school grounds.

## **Success Criteria**

The principal and teaching staff are confident that this policy will make a difference to the teaching and learning of maths in the Glencastle NS. It will be evident that the plan has been implemented when:

- Teacher's long and short term planning is based on this school plan. Both continuity of content and methodologies should be evident in teacher's planning and preparation.
- Procedures and activities outlined in this plan are followed.

- Progression is evident from year to year.

The indicators that the plan has achieved its aims will be based on:

- The results of annual standardised tests.
- The results of on-going assessments both formal and informal which should indicate whether pupils are acquiring an understanding of mathematical concepts and a proficiency in maths skills appropriate to their age and ability.
- Inspector's reports.
- Feedback from teachers implementing the plan.
- Feedback from parents.
- The pupils have a positive attitude towards maths and an appreciation of its importance in their daily lives.

## **Implementation**

### **A. Roles and Responsibilities**

This plan will be supported, implemented and reviewed by the BOM, the principal and the teaching staff of Glencastle NS. Class teachers and support teacher should show evidence of using this plan in their short and long term planning. The principal will inspect planning to ensure the plan is being followed in each class.

### **B. Timeframe**

This plan will be implemented in October 2019 and reviewed in 2021 or as necessary.

### **Ratification and Communication**

This Maths plan was ratified by the BOM in October 2019. A copy of the ratified plan was distributed to all teaching staff in the school. This plan is available in the office for inspection on appointment.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix 1. Language

*(The Special Class and ASD Unit use the following language bank to choose appropriate language to match the ability level of their students)*

### Junior Infants:

Sort	object	colour
same as,	match/mark, join	same length, weight, height
big, bigger etc, tall heavier etc	full, empty, 'holds'	small long,
all terms re. Time, moving etc.	to, from, before, after	short - lighter, lightest
early, late	set	curved, round, inside, above
more, less few/fewer, others	straight, corner, outside, below	too many, enough
circle, rectangle, square	roll, stacked	triangle
how many more?	Who? How? Why?	Pattern
first, second, third etc.	zero	coins,
shape	numerals one, two etc.	how much

### Senior Infants as Junior Infants: plus the following:

compare	least	most, heaviest, etc
add	same as	how far/how far more?
greater than/less than	money	break up groups
high, low	count on / back	wide narrow
today, yesterday, tomorrow	thick/thin	months, seasons
days of week etc.	holds more than/less than	o'clock
holds most/least/the same	over, under, on, in, open,	amount
joined, between, next to	closed	how long, short, heavy
straight	charts,	measure
out, front, back, high low	subtract/take away, go back	copy
around,	3D shapes, names,	words for numerals
cube,/cuboid	number strip	

### 1st Class: as 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
tens/ones/unit	calendar	between
subtract, steps	clock,	make tens
half past	problem	dienes blocks
abacus	graph	bar chart,
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.	



**2nd Class: as 1st plus the following:**

missing numbers	half quarters	forward, backwards
shaded set	rename	place value
in order	grid	add, group
metre, centimetre	sign	difference between
hundred	counting	shaped
base 10's etc.	distance	number sentence
minutes/hours, quarter past/to	different	digital
code	midnight	subtract
midday	magic square	timetable
hexagon	tessellate	a.m. p.m.
pictogram	prism, cuboid, cylinder	graph.

**3rd Class: as 2nd plus the following**

covering area	Language of division and multiplication
mathematic sentence versus written $2 \times 3 = 6$	Divide,/divided by/division etc.
capacity/liquid/litres, kls	Product
weight - grams / kgs	Factors
length - metres, cms, mms.	Set
pictogram	Angle, right angle, horizontal, vertical, diagonals
decimal	Rectangle, cuboid, triangle, perimeter
fractions - halves, quarters	

**4th Class: as 3rd plus the following:**

capacity	division and multiplication - estimate, remainder
more/less.	litre, millilitres - l, ml
quantity	into, by, from, under, value, more, less
weight	shapes
g. kg.	light, lighter, etc. heavy objects.
horizontal, vertical, sloping, parallel, congruent,	
pointed, straight, square, solid, angle, acute,	half, quarter, eighth etc/divide, shade, frame,
Obtuse etc.	figure.

**5th & 6th Class: as 4th plus the following:**

fractions	shapes,
percentage	octagon,
area	rhombus, quadrilateral,
length, width, surface, diameter	oval, polygon
circumference, radius, base, perpendicular height,	3D - cylinder - sphere, cone, cube, cuboid,
pyramid	axis, reflection, image, parallel,
triangular prism, tetrahedron	protractor
rotation, symmetrical	

## **Appendix 1 Continued**

### **Addition**

More than

Total

And

Sum of

Plus

Add

Increase

### **Subtraction**

Less than

Minus

Decrease

Subtract

Difference

Take away

### **Multiplication**

Multiply

Square

Power of

Times

Product of

### **Division**

Divide

Give

Share

Split

Group

Give

How many

**Equals**

Means

Will be

Represents

Is

Answer is

Same as

## Appendix 2

### Number

Laminated T/U notation boards 5

Laminated T/U boards 7

Blue Number Fans 9

Large Number Fans 2

Small Number Fans 37

Abacus 2

Problem solving cards 1 box

Base Ten Sets 2

Multiplication Domino Set 1

Calculators 20

10's and 100's cubes 1 basket

Wooden Dice 12

Coloured spools Box

Bears 2 Jars

Coloured Counters 2 boxes

Cubes Box

Peg Boards 17

Small Plastic Lacing hands 1 jar

Large Dice 3

Small Links

Large Links

Wooden Shapes 2 Jars

Numicon Set

Mixed Flash cards X8

Sorting Trays

Number Sets

Number Lines

Beads and Pattern Sets

100 squares

Unifix Blocks

Number Blocks (Blue Box)

Nexus foam number boards

Dino Math Tracks

Cuisenaire Rods Set

### **Capacity**

1L containers 4

Funnels 5

White volume containers 4

Set of graduated beakers 3

1L measuring jug 1

$\frac{1}{2}$  L measuring jug 1

White bucket 1

Measurement Set – Litre

### **Length**

Trundle wheels 2

Large protractor 2

Large Set Square 2

Plastic compass 1

Rulers – metre and 30cms

## **Shape and space**

Geo Shape Set 1

Jar of 2D shapes 1

Plastic tangrams sets X18

Tangram Activity cards

Assorted 3D shapes (plastic) 24

Assorted small 3D shapes 4 coloured sets

Geo Solids – 2D & 3D

Pentominoes Box

## **Time**

Large Clock 1

Large Cardboard Clock 1

Wall Clock 1

White plastic clocks 16

Cardboard clocks 57

Time Stamps 3

Ink Pad 1

Time Bingo

Time Lotto

## **Money**

Bag of plastic coins 1

Bag of 1c cent coins 1

73

Bag of 2c cent coins 1

Bag of 5c cent coins 1

Coin stamps 8

Ink pad 1

Wallet of notes 1

Price tags 1 set

Plastic coins and notes 1 set

### **Weight**

Small Balance Scales 5

Large Balance 1

Weighing scales 3

Digital Weighing Scales

Small weighing scales 4

Bucket of weights 1

Food Can weights

### **Fraction/Decimals/Percentages**

Fraction Squares

Fraction Dice 5

Card Fraction Walls

Plastic Fraction Wall 1

Fraction Pizza set 1