



Pelletstown Educate Together National School

**Junior Infants - Sixth Class
Whole School Plan**

Maths

Table of Contents	page number
1. Introduction	3
1.1 Rationale	3
1.2 Vision	3
1.3 Aims	3
2. Content	4
2.1 Maths Curriculum	4
2.2 Approaches and Methodologies	4
2.3 Maths Rich Environment	5
3. Assessment and Record Keeping	5
3.1 Self Assessment	5
3.2 Teacher designed tasks, tests and checklists	5
3.3 Standardised Tests	6
3.4 Ready Set Go Assessments	6
3.5 Record Keeping	6
4. Planning and Preparation	7
4.1 Long Term and Short term Planning	7
4.2 Timetabling	7
4.3 Children with different educational needs	7
4.4 Homework	8
4.5 Resources	8
4.6 Technology	9
5. Staff Development	9
6. Parent and Community Links	10
7. Implementation and Review	10
8. Appendix A: Mathematical Language	11
9. Appendix B: Number Formation Rhymes	27
10. Appendix C: Table and Number facts	28
11. Appendix D: Mental Maths	29

1. Introductory Statement:

This Whole School Mathematics plan was formulated by the teaching staff of Pelletstown Educate Together National School during the school year 2019/2020. It will be reviewed in 2022/2023 or the year following a curriculum update.

1.1 Rationale:

The plan was created to provide an overview of teaching throughout the school in compliance with DES requirements in this curricular area.

It is designed to:

- Provide a unified approach to teaching Maths
- Identify and support best practise teaching and learning in the school
- Act as a resource for teachers and parents
- Facilitate the induction of new teachers, as well as the ease of movement of teachers between class levels, and the support setting

1.2 Vision:

Pelletstown E.T.N.S is a developing school where pupils will receive an education in Mathematics which will reflect the whole-school ethos of child-centred education and inclusion. The school is creating a learning environment which is accessible to all to ensure each child can reach their full potential in Mathematics. Children are presented with learning experiences that enable them to progress their mathematical understanding and skills at a level that is developmentally appropriate. We endeavour to provide Mathematics education that helps children to use Maths in their everyday lives; to apply and problem solve, to communicate and express, to integrate and connect and to reason mathematically.

1.3 Aims:

Pelletstown E.T.N.S fully endorses the aims of the Maths Curriculum (1999) in developing mathematical proficiency. It is taught at each class level and strives to:

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

2. Content:

2.1 The Maths Curriculum

Pelletstown E.T.N.S implements the full Maths Curriculum (strands: Alegbra, Data, Measures, Number and Shape and Space) and accordingly, the Maths curriculum is taught at all class levels. An overview of the content, approaches and language to be taught at each class levels can be found in the appendices. Maths lessons will begin with a minimum of 5 minutes of mental/oral mathematics based on the quick recall of number facts, counting forwards and backwards, followed by oral questions on based on previous and current topics.

2.2 Approaches and Methodologies

All Mathematics teaching is guided by the following teaching approaches and methodologies:

- **Active Learning and Guided Discovery:**
 - Children work actively in individual and collaborative settings.
 - Textbooks are used sparingly, as a resource only.
 - The teacher serves to elicit, support and extend children's prior and new learning.
 - Conceptual understanding takes precedence over rote use of procedures.
- **Multiple representations:**
 - All concepts, at every class level, will be introduced with the use of concrete materials.
 - These will be followed by the use of appropriate pictorial materials.
 - Children will use abstract representations following success in their use of concrete/pictorial materials.
- **Mathematical Language/talk and Discussion:**
 - Mathematical language will be modeled through explicit teaching.
 - Children will be given opportunity to use mathematical language in a variety of classroom configurations and settings (e.g. pair work).
 - Due attention will be given to the skill of communicating and expressing.
- **Skills through content:**
 - The skills of the curriculum are given due attention in teacher preparation and planning.

- Skills can be explicitly modeled in isolation, but their application will be embedded in teaching.

2.3 Maths Rich Environment :

Mathematics and numeracy provide a lens with which to view the world. Accordingly, children need every opportunity to apply their mathematical knowledge to their environment, and to use their environment to further their mathematical knowledge. The following approaches are used in the school to foster this reciprocal link:

- School Maths noticeboard
- Maths notice boards in classrooms and displays of children's works
- Frequent informal Maths trails (to find shapes, measure etc)
- More formal Maths trails (e.g. Maths Week)
- Informal and formal reference to the Maths Eyes approach

3 Assessment and Record Keeping:

3.1 Self Assessment:

Teachers will decide these strategies at their own discretion. Some recommended approaches include:

- Thumbs up/thumbs down
- Traffic Lights
- Two stars and a wish
- Conferencing

3.2 Teacher Designed Tasks, tests and checklists:

Teacher designed tasks, tests and checklists are used for assessment for and of learning. These tests and lists help to identify areas that require attention in upcoming weeks and terms. A teacher designed test is carried out at each class level at least once termly (usually towards the end of the term). Checklists are carried out where necessary. Teachers have discretion in designing these assessments at class level. Assessments drawn from Maths schemes (e.g. Planet Maths) are appropriate. Teachers may use their own discretion to assess more regularly, for example at the end of a particular topic. Teachers typically test tables on a weekly basis, though this is not obligatory. Children's strengths and weaknesses in Mathematics are outlined to parents formally at Parent-Teacher meetings and in Summer written reports (June). Difficulties that a child may be having are given particular attention.

3.3 Standardised Testing:

Standardised tests are used annually in every class from First Class upwards. The school uses the Sigma T from First Class onwards and the Drumcondra Test for Early Mathematics in Senior Infants. Results are communicated to parents of 2nd, 4th and 6th Class pupils via the school report in the month of June. When necessary, a face-to-face meeting may be arranged after the report has issued. Results are also used to inform interventions for Maths and planning.

3.4. Ready, Set, Go, Maths Assessments:

The significant goals outlined in the RSGM manuals are given particular attention in Junior and Senior infants. Teachers monitor children's attainment of these goals on an ongoing basis. This may involve working with one child during small group work (during in-class support time), and working with a different child on a different day. Particular attention is given to children's development of one to one correspondence and conservation of number in Junior Infants. Children who are having difficulty with these concepts are prioritised for remediation as soon as possible.

3.5 Record Keeping:

The following records are kept on Mathematical progress:

- Information as it relates to specific diagnoses and Maths difficulties are noted in children's Individual Pupil Profiles and Diagnostic Tests are kept in SEN files.
- RSGM Assessments should be passed from Junior Infants to Senior Infants, and onwards to First Class.
- SIGMA T and Drumcondra Test results are kept on each child's Aladdin profile
 - SIGMA T/Drumcondra Test response booklets are kept in each child's physical file
 - Class Assessment Folders are passed onto new teachers every year
- Teachers keep a record of any teacher designed tests run during the year in their assessment folder
- Teachers keep a record of tables test results in their assessment folder.
- Incidental notes and observations on a child's Mathematical development may be recorded in pupil profiles (e.g. learning support profiles passed to new teachers).

4 Planning and Preparation:

The planning for teaching and learning in Mathematics is informed by the following, in order:

1. The needs of the children in the class
2. This school plan and other pertinent plans (e.g. School Improvement Plan)

3. The Primary School Curriculum for the class level
4. Programmes being implemented in the school; e.g. Ready, Set, Go, Maths
5. The consolidation activities available in textbooks; e.g. Planet Maths

4.1 Long Term and Short Term Planning:

Long-term plans for mathematics are completed termly (for Droichead teachers) or yearly. Short Term plans are completed weekly (for Droichead teachers) or fortnightly. Each teacher will keep a copy of these plans in their folders and they will provide a monthly plan (*Cuntas Miosúil*) outlining all lessons taught to the Principal.

4.2 Timetabling:

All classes will comply with the minimum times for Mathematics set out in Circular 56/2011. That is:

- **Junior and Senior Infants:** 3 hours 25 minutes per week / 205 minutes
- **First- Sixth Class:** 4 hours 10 minutes per week / 250minutes

In most cases, these time allocations will be exceeded through integrated learning.

4.3 Children with different educational needs:

Pelletstown E.T.N.S has a diverse community of learners. These include children who:

- Need to work at a Mathematical level other than their class level
- Need extra support to work at class level
- Need specific support in particular areas of Maths
- Demonstrate exceptional Mathematical attainment and require further challenges

The primary model of support for Mathematics is in-class support and team teaching. However, this does not entirely preclude withdrawal teaching from occurring, after consultation between Class and Support Teachers regarding the best way to support a child or group of children. Particular emphasis is placed on collaborative teaching for active methodologies and programmes like Ready, Set, Go, Maths in the infant classes.

A combination of approaches for **differentiation** is employed in all classes, based on the needs of learners:

- **by process:** extended use of concrete materials, extended use of pictorial representations variety of mixed and ability groups and one to one/small group support.
- **by product:** partial completion, different tasks and different mode of presentation
- **by content:** different class level within same strand unit, different level of difficulty within same strand unit and different skills emphasis.

4.4 Homework:

In accordance with the school's Homework Policy, the time allocated for homework in all subjects is as follows:

- Junior Infants - 15mins
- Senior Infants - 20mins
- First Class - 25mins
- Second Class - 30mins

Mathematics homework is always given as consolidation of school work and the children should be able to complete it independently. Over the course of a school year, Maths homework should be a combination of mental, written and active work. Homework is often differentiated by the Class Teacher according to the level of each child and teachers often liaise with Support Teachers in doing so.

4.5 Resources:

Teaching mathematics developmentally requires a range of materials, including those that are purchased, school-made, or those that are readily available in the everyday classroom.

- A Maths Box including core stock of counters, dice and cubes are available in every classroom.
- A Ready, Set, Go, Maths resources Box for Junior and Senior Infants is available for shared use
- All Topic boxes (Time, Weight, Money, Capacity, Shape and Space etc) are stored in labelled boxes and used communally.
- Electronic resources will be made available on the shared drive.
- Internet resources accompany some of the programmes in use in the school (Planet Maths).
- Textbooks are available as a resource at each class level (Planet Maths is the core textbook)

4.6 Technology:

Technology plays an increasingly important role in real-life mathematics. A variety of technology resources are available for teaching maths in the school, including:

- Shared iPads
- PCs in every classroom /laptops in every Support Room
- Interactive Whiteboards
- Visualisers
- Mangahigh online subscription for 3rd and 4th Classes beginning in June 2020 with the possibility of extending to 6th Class in the future.

Teachers will use technology appropriately to enhance children's learning. This can include:

- Modelling the use of concrete materials under the visualiser
- Using iPads for station teaching
- Playing online games on the IWB
- Using the iPad camera app for Maths trails
- Practising numeral formation using drawing apps on iPads

5 Staff Development:

The Mathematics coordinator is responsible for professional development in the area of Mathematics. She will disseminate information regarding courses, websites and equipment. She will organize 'Maths Week' activities annually. A range of reference materials for Mathematics are available to staff on the Resource shelves.

Time can be made available at staff/ISM meetings to:

- Facilitate professional development from outside agencies (e.g. PDST/SESS)
- Promote the sharing of professional learning internally
- Discuss progress in Mathematics

6 Parent and Community Links:

Given our community focus, parents play an important role in the development of Mathematics in the school. Parent Meetings are held with each class level annually, in September/October, during which parents are informed of the new mathematics content and approaches their children will learn during the year.

8 Appendix A: Mathematical Language:

8.1 Vocabulary for core operations:

The following vocabulary is introduced at each class level. The language taught in previous class levels is maintained. Note that the term number sentences or number stories are used to describe mathematical operations. The term sum refers to addition only. All language will be explicitly modelled and used orally/aurally before progressing to written form (in First class on).

	Junior Infants	Senior Infants	First Class	Second Class	Third Class	Fourth Class	Fifth/Sixth Class
Equals sign =	altogether makes (the formal sign is <u>not</u> introduced in J.I)	is the same as equals =	Equals =	Equals =	equivalent		
Addition +	___ and ___ altogether makes ___ combine partition add	___ and/ add/ plus ___ is the same as ___ equals count on +	Addition Plus Add And	sum	Total increase	raise	
Subtraction -	Informal use by the teacher. (e.g. How many are left?)	___ take away ___ leaves ___ ___ subtract ___ leaves ___ (formal sign <u>not</u> introduced)	Subtraction Subtract Minus Less Difference	More than	decrease	reduce	
Multiplication			Double/ doubles skip counting 2's/5's and 10's	Skip counting 2's, 3's, 5's and 10's Repeated addition	Multiply ___ groups of ___ ___ times___	Product	Multiplicator Multiplicand
Division					Divide Share Split		Quotient Divisor Dividend

8.2 Language and presentation of formal algorithms:

The teaching of these procedures only follows extensive work with concrete materials and opportunities for the use of informal/child-invented strategies.

- Addition without renaming:

T U	I am adding eighty two plus fifteen.
8 2	I will start with the units. Two plus five is seven. I
+ 1 5	will write the seven under the units.
<hr/>	
9 7	Then I will add the tens. Eight tens plus one ten is nine tens. I will write nine under the tens. So eighty two plus fifteen is ninety seven.

- Addition with renaming:

T U	I am adding forty five plus thirty six. I will start
4 5	with the units. Five plus six is eleven. I cannot
+ 3 ₁ 6	write eleven under the units, so I will put down one
<hr/>	unit, and carry the one ten. Then I will add the
7 1	tens. Four tens plus three tens is seven tens, plus one more ten is eight tens. I will write eight under the tens. So forty five plus thirty six is seventy one.

- Subtraction without renaming:

T U	I am subtracting sixteen from seventy eight.
7 8	[Check if the number on the bottom is lesser in
-1 6	value] I will start with the units. Eight take away
<hr/>	six leaves two. I will write two under the units.
6 2	Then I will subtract the tens. Seven tens take away one ten leaves six tens. I will write six under the tens. So seventy eight subtract sixteen is sixty two.

- Subtraction with renaming:

$$\begin{array}{r}
 \text{T U} \\
 2315 \\
 -18 \\
 \hline
 17
 \end{array}$$

I am subtracting eighteen from thirty five. [Check if the number on the bottom is lesser in value] I will start with the units. I cannot subtract eight from five. I exchange a ten to make ten units. I cross out three, and that leaves two tens. When I bring that ten over into the units, I have fifteen. Fifteen take away eight is seven. I will write seven under the units. Then I will subtract the tens. Two tens take away one ten leaves one ten. I will write one under the tens. So thirty five take away eighteen is seventeen.

- Short Multiplication:

$$\begin{array}{r}
 \text{T U} \\
 14 \\
 \times 25 \\
 \hline
 70
 \end{array}$$

I am multiplying fourteen by five. *I will start with the units.* Four multiplied by five is twenty. I cannot write twenty under the units, so I will put down zero and carry over two tens. *Then I will multiply the tens.* One ten multiplied by five is five tens. I will add on the two tens. That gives me seven tens. So fourteen multiplied by five is seventy.

- Long Multiplication:

$$\begin{array}{r}
 \text{T U} \\
 413 \\
 \times 16 \\
 \hline
 258 \\
 +430 \\
 \hline
 \end{array}$$

I am multiplying forty three by sixteen. *I will multiply thirty three by six, and then by ten, and add the two together.* Three multiplied by six is eighteen. *I cannot write eighteen under the units,* so I will put down eight and carry over

6 8 8

the ten. Four tens multiplied by six is twenty four tens. Add the ten I carried over, and that gives twenty five tens. So six multiplied by forty three is two hundred and fifty eight. Next, I will multiply forty three by ten. I will put down a zero because I am multiplying by tens. Three multiplied by one is three. Four multiplied by one is four. So forty three multiplied by ten is three hundred and thirty. Now I must add up. *Eight plus zero is eight. Five plus three is eight. Two plus four is six.* So overall, forty three multiplied by sixteen is six hundred and eighty eight.

• Short Division:

$$4 \overline{) 914} \text{ r. } 2$$


I am dividing ninety four by four. I will divide the tens, then the units. Nine tens divided by four is two, with one ten left over. I will write the two in the tens space, and carry over the one ten. That makes fourteen units. Fourteen divided by four is three, with two left over. I will write the three in the units space. I have a remainder of two that I cannot divide equally. So ninety four divided by four is twenty three remainder two.

• Long Division:

(See examples below from Planet Maths Resource Book)

Long division
When we divide by a two-digit number we use the long division method.

$\begin{array}{r} 25 \\ 34 \overline{) 850} \\ - 68 \downarrow \\ \hline 170 \\ - 170 \\ \hline 000 \end{array}$ <p>Ans: 25</p>	$\begin{array}{r} 14 \\ 46 \overline{) 673} \\ - 46 \downarrow \\ \hline 213 \\ - 184 \\ \hline 29 \end{array}$ <p>Ans: 14 R 29</p>
--	--



The 3 is crossed out and brought down to here.

Long division with bigger numbers

We do long division with bigger numbers in the same way.

$$\begin{array}{r}
 279 \\
 28 \overline{) 7824} \\
 \underline{- 56} \\
 222 \\
 \underline{- 196} \\
 264 \\
 \underline{- 252} \\
 12
 \end{array}$$

The 2 is crossed out and brought down to here.

The 4 is crossed out and brought down to here.

Ans: 279 R 12

$$\begin{array}{r}
 218 \\
 43 \overline{) 9374} \\
 \underline{- 86} \\
 77 \\
 \underline{- 43} \\
 344 \\
 \underline{- 344} \\
 000
 \end{array}$$

Ans: 218

8.3 Mathematical Language for other strands:

All language will be explicitly modelled and used orally/aurally before progressing to written form (in First class on).

- Junior Infants:

Early Mathematical Skills			
<i>Classifying</i>	<i>Matching</i>	<i>Comparing</i>	<i>Ordering</i>
Colours Big, bigger biggest Long/tall Longer/taller Wide/ wider / widest Heavy / heavier / heaviest Is the same as/ is not the same as I like.... / I don't like Small /smaller/ smallest Short /shorter /shortest Narrow / narrower /narrowest Light /lighter / lightest Different to... Things that are .../ things that are not ...	More than Enough As many as	...than (e.g. longer than)	First Next Before Start Last After Finish

Number		
<i>Counting</i>	<i>Comparing and Ordering</i>	<i>Analysis of Number</i>
One (1) Two (2) Three (3) Four (4) Five (5) Six (6) Seven (7) Eight (8) Nine (9) Ten (10) None (0) Number How many? Count Count up to....	More than Same as First Too many Enough Less than/ fewer than As many as Last Not enough About the same as	___ and ___ altogether makes ___ ___ ___ and ___ makes ___ Zero (0) Left Add

Shape and Space		
<i>Spatial Awareness</i>	<i>3D Shapes</i>	<i>2D Shapes</i>
over up on In Straight lines Under Down Beside Outside Moving in... Curved lines	Roll/do not roll Corner Fit together/do not fit together Stack(ed)	Square Triangle Round Thick Shape Circle Rectangle Not round Thin Corner

Measures				
<i>Length</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>	<i>Money</i>
Long Longer than Short Shorter than	Heavy Heavier Balance Light Lighter Weigh	Full Empty Holds less than Nearly full	Morning Evening Night Day Lunchtime	Cent 1c 2c 5c

Tall Taller than Wide Wider than Narrow Narrower than		Holds more than Holds as much as	Dinnertime Bedtime Early Late Monday Tuesday Wednesday Thursday Friday Saturday Sunday	Buy Sell Spend Coins How much?
--	--	---	--	--

Data	
<i>Recognising and Interpreting Data</i>	
Sort Enough More than Less than As many as	

- Senior Infants:

Number		
<i>Counting</i>	<i>Comparing and Ordering</i>	<i>Analysis of Number</i>
Zero-twenty	Second Third How many more?	Number line/strip ___ plus ___ is the same as ___ ___ plus ___ equals count on + Count back ___ from ___ leaves ___ take away

Shape and Space		
<i>Spatial Awareness</i>	<i>3D Shapes</i>	<i>2D Shapes</i>
Above Near	Cube Cuboid	Straight Curved

Far Right Below Left Through Behind Stop	Sphere Cylinder Edge Corner Straight Curved Round Flat Roll Face	Smaller Flat Side Larger
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Measures				
<i>Length</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>	<i>Money</i>
As long as As wide as As high as High Higher Highest Longest Shortest Guess Measure Length Height Width	Weight Size Shape Balance Order Check Guess	Capacity Containers Fill Amount Compare Guess Check Record Results	Time Yesterday Tomorrow Today Day Week Seasons O'clock Birthday Soon Not yet Festivals (Christmas, Back to school...) Holidays	Cent (1- 20c) Change Cost Price Cheap Expensive Too much Too little Sell amount

Data
<i>Recognising and Interpreting Data</i>
Groups Criteria Criterion With/without Choose

- **First Class:**

Number				
<i>Counting and Numeration</i>	<i>Comparing and Ordering</i>	<i>Place Value</i>	<i>Fractions</i>	<i>Operations</i>
Re-count Number 0-99 Numeral Set Count on Count back Number line Hundred square Guess Estimate Compare Less than More than About the same as	How many First - tenth Patterns	Tens Units Value Greater Lower	Half Whole Set	Addition Number Number sentence Number line Hundred square Count on Count back Counting in twos/threes... Doubles Near double Pair Number stories Renaming Guess Estimate Check Notation board Left How many do I need? Fewer Subtraction Difference Symbols The same as Equals Number balance

Alegbra
<i>Extending and Using Patterns</i>
Odd Even Record Count in

Shape and Space		
<i>Spatial Awareness</i>	<i>3D Shapes</i>	<i>2D Shapes</i>
Between Underneath On top of Around Closed shape Open shape Shape Directions	3-D Slide Vertices/ Vertix	Semicircle Size Curved/not curved 2-D Number Length Side

Measures				
<i>Length</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>	<i>Money</i>
Length Width Height Guess Compare Measure Record Widest Metre Nearly a metre A bit more than 1m A bit less than 1m Standard units Same length as	Guess Compare Measure Record Heaviest Lightest Standard units Kilogram Same weight as... Largest Smallest	Measure Pour Litre (l) Holds the same amount as... Measure Standard unit	Months of the year Day before Day after Time Calendar Half past Clock face Clock hands Later Earlier	1c - 50c Equal value

Data
<i>Representing and Interpreting Data</i>
Pictograms Classify How many more? How many less?

- **Second Class:**

Number				
<i>Counting and Numeration</i>	<i>Comparing and Ordering</i>	<i>Place Value</i>	<i>Fractions</i>	<i>Operations</i>
0-199 Between Before After	Greater than, > Less than, < Ordinal number on the calendar Equal to =	Hundreds	Quarters	Sum More than

Alegbra
<i>Extending and using patterns</i>
Count on Count back Number patterns Group(s)

Shape and Space				
<i>Spatial Awareness</i>	<i>3D Shapes</i>	<i>2D Shapes</i>	<i>Symmetry</i>	<i>Angles</i>
Full Turn Half turn Quarter turn Forward Backwards	Cone	Oval Differences Two dimensional Half Quarter	Line symmetry Symmetrical Mirror image	Turn Corners Square corners

Measures				
<i>Length</i>	<i>Area</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>
Centimetre Trundle Wheel Tallest Shortest	Cover Space	Half kilogram Quarter kilogram	Half-litre Quarter litre	Quarter past Quarter to Date

Data
<i>Representing and Interpreting Data</i>
Table Chart Block Graph

- **Third Class**

<i>Number</i>	
<i>Place Value</i>	<i>Operations</i>
Whole numbers Thousand Notation board Base ten digit (one digit, two digit, three digit) Value Whole numbers Decimal numbers one place of decimals one decimal place	Rounding Repeated addition Multiplication Division Sharing Remainder Tenths Equal Groups Repeated subtraction half fractions equivalent fractions denominator numerator

Alegbra
<i>Number patterns and sequences</i>
Sequence(s) rules

Shape and Space			
<i>2D Shapes</i>	<i>3D Shapes</i>	<i>Symmetry</i>	<i>Angles</i>
Hexagon Regular shapes Irregular shapes Tessellate	Triangular Prism Pyramid Net Vertix/vertices/corners	Symmetrical Asymmetrical	Angles Parallell Perpendicular Right Angle Obtuse Angle Acute Angle Vertical Horizontal Clockwise

			Anti-Clockwise Greater than/Less than/Equal to
--	--	--	---

Measures				
<i>Length</i>	<i>Area</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>
Centimetre Convert	square	gram scale digital scale	milliliter container	Daily Weekly Monthly Annually Last year Last month Last week Past/to 5 minute intervals Analogue Digital
Data				
<i>Representing and Interpreting Data</i>		<i>Chance</i>		
Scale		Possible Impossible Might Certain Not sure Likely Unlikely Least likely Most likely Results		

- **Fourth Class:**

Number	
<i>Place Value</i>	<i>Decimals/Fractions</i>
Four digit	One place of decimals Two place of decimals Hundredths

Alegbra
<i>Number patterns and sequences</i>
Sequence(s) rules

Shape and Space		
<i>2D Shapes</i>	<i>Symmetry</i>	<i>Angles</i>
Equilateral Triangle Isosceles Triangle Scalene Triangle Parallelogram Rhombus Pentagon Octagon	Diagonal	Oblique Perpendicular Diagonals Intersecting lines Acute angle Obtuse angle Right Angle

Measures				
<i>Length</i>	<i>Area</i>	<i>Weight</i>	<i>Capacity</i>	<i>Time</i>
Perimeter Kilometre	Square centimetres Square metres	gram scale digital scale	Instrument of measurement	No new vocabulary
Data				
<i>Representing and Interpreting Data</i>			<i>Chance</i>	
Scale - 1 is to 2/5/10/100			Chance Likely Unlikely Never Definitely	

• Fifth Class:

<i>Number</i>			
<i>Operations</i>	<i>Fractions</i>	<i>Decimals/Fractions</i>	<i>Number Theory</i>
Algorithm	Improper fractions Mixed fractions	Percent	Prime number Composite number Square number Rectangular number Factor Multiple

<i>Alegbra</i>
<i>Directed Number</i>
Positive number Negative number

<i>Shape and Space</i>		
<i>2D Shapes</i>	<i>3D Shapes</i>	<i>Lines and Angles</i>
Quadrilateral Trapezium Diameter Radius	Tetrahedron	Reflex angle Straight angle Rotation Degrees Protractor Set square

<i>Measures</i>		
<i>Length</i>	<i>Area</i>	<i>Capacity</i>
Metric unit Millimetre	breadth	Graduated jug

<i>Data</i>	
<i>Representing and Interpreting Data</i>	<i>Chance</i>
Pie chart Statistics Most frequent Most popular	Outcome Processes Frequency table Frequency Chart

- Sixth Class:

<i>Number</i>			
<i>Operations</i>	<i>Fractions</i>	<i>Decimals/Fractions</i>	<i>Number Theory</i>
Compute	Ratio Natural number Multiple	Profit Loss Discount Interest Decrease	Square root Exponential Variable

<i>Alegbra</i>
<i>Directed Number</i>
Positive number Negative number

<i>Shape and Space</i>
Octahedron Circumference Coordinates Plot

<i>Measures</i>				
<i>Length</i>	<i>Area</i>	<i>Capacity</i>	<i>Time</i>	<i>Money</i>
Metric unit Millimetre	surface area acre hectare scale plan	Volume	Time zones Distance Average speed	Currency Convert Exchange rate
<i>Data</i>				
<i>Representing and Interpreting Data</i>				
Trend graph Data set				

9 Appendix B: Number Formation Rhymes

See:

<http://www.lansdowne.staffs.sch.uk/Numeracy/Number%20Formation%20Rhyme%20Cards.pdf>

0 - Around and round and round we go. When we get home we have a zero!

1 - Start at the top and down we run, that's the way we make a one!

2 - Around and back on the railroad track. Two, two two!

3 - Around the tree and around the tree, that's the way we make a three!

4 - Down and across and down some more, that's the way we make a four!

5 - Down and around and a flag on high, that's the way we make a five!

6 - Down we go and make a loop. Number six has a hoop!

7 - Across the sky and slant the line, makes a seven everytime!

8 - Make an 's' and do not wait. When it's joined up you have an eight!

9 - Make a loop and then a line. That's the way we make a nine!

10 Appendix C
Tables and Number facts:

Junior Infants	Senior Infants	First Class	Second Class	Third Class	Fourth/Fifth and Sixth Class
Number bonds to 5	Revise Number bonds to 5 Number bonds to 10	Revise Number bonds to 10 Number bonds to 20 Addition tables to 10 Skip counting (1,2,5 and 10)	Revision of number bonds Addition and Subtraction tables to 10 Skip counting (1,2,3, 4, 5 and 10)	All tables (1-10)	All tables

11 Appendix D: Mental Maths

- Addition and Subtraction Mental Strategies

The following strategies should be explicitly taught/revised at each class level, while drawing on those previously taught.

Junior Infants
Counting forwards and backwards

Senior Infants
Commutative property ($2+4 = 4+2$)
Counting forwards and backwards
Facts of 10

First Class
Commutative property

Counting forwards and backwards
Facts of 10
Doubles/Near doubles

Second Class
Counting forwards and backwards
Doubles/Near Doubles
Bridging through 10
Reordering
Think Addition (using addition facts for subtraction)
Skip Counting

Third Class
Counting forwards/backwards
Partitioning/Place Value
Skip Counting
Commutative property (multiplication strategy)
Distributive property (multiplication strategy)
Inverse relationship
Doubles/Near doubles
Using known facts

Fourth Class
Counting forwards/backwards
Compensating (addition strategy)
Doubles/Near doubles
Associative property (multiplication strategy)
Partitioning by Place Value
Using known facts
Partial products/quotients

Fifth/Sixth Class
Counting forwards/backwards
Keeping a constant distance (subtraction strategy)
Doubling/Halving
Factorisation
Rounding and Compensating
Using known facts