

## Maths Scheme 1<sup>st</sup> Class

### Aims:

- To provide the pupils of First with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
- Developing a positive attitude towards maths
- Developing problem solving abilities and the facility to apply maths to everyday life
- Enabling the children to use maths language effectively and accurately
- Enabling the child to acquire an understanding of mathematical concepts and processes to his/her level of development and ability.
- Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts

The scheme covers the five strands of the mathematics curriculum -

- Strand 1 Number
- Strand 2 Algebra
- Strand 3 Shape and space
- Strand 4 Measures
- Strand 5 Data

The following skills span the content of each of these five Strands

- Applying and problem solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

The content of the Maths Scheme for First Class builds on the work at the junior levels and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.

## Mathematical Yearly Overview for 1<sup>st</sup> Class

	Strand and Strand Unit	Linkage and Integration
<b>Term 1 (September to December)</b>	Repetition of previous work done in 3-6: addition, subtraction, static addition and counting to 100 number. Formation. 2D shapes. Introduction of Busy at Maths Introduction to money. Counting analysis of number. Ordinal numbers. Extending and using patterns. Problem solving: addition and subtraction. Spatial awareness. Money continued. Giving change	Art 2D shapes
<b>Term 2 (January to Easter)</b>	Introduction to length. More abstract work with addition, subtraction and multiplication. Introduction to division, consolidation of previous operations. Further exploration of Busy at Maths including money, time and calendar year Length: measuring/estimating/using metre stick Tables: near doubles (addition) Problem solving: fewer/more/altogether Introduction to 3D shapes Place value tens and units	Recognising 3D shapes in environment/games to do with this mystery bag with 3D shapes Advent Calendar Season chart for art Drawing 3D shapes
<b>Term 3 (Easter to May)</b>	Consolidation of previous operations. Addition, subtraction, multiplication and division. Introduction to fraction $\frac{1}{2}$ and $\frac{1}{4}$ clock-time, o'clock and $\frac{1}{2}$ past. Weight: concepts of estimation; Compare and measure use of kilos. Solving practical tasks and problems. Place value continued. Representing and Interpreting data Subtraction: difference between numbers, complementing and deducting. Problem solving. Number puzzles Extended work with 100 board, using patterns Mental strategies. Rounding numbers up and down. Introduction to capacity. Money	Drawing shapes; halving and cutting out – Art Shopping games Use of weather chart Science: floating/sinking Geometric shapes in Nature

	continued.	
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## Maths Language

- Class Development. Revise language already covered in previous classes.

### First Class

Regular/irregular shapes, Sphere, triangular sphere, prism, pyramid, Sides, angles, parallel and non-parallel lines, Tessellate, Nets, Symmetry, Vertical, horizontal and parallel lines, Clockwise/anti-clockwise, Gramme, kilogram, Possible, impossible, might, certain, not sure  
Roll, toss, spin, chance, random, Tenths, Minute, Equivalent, Bar chart

## Methodologies

A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum. The following approaches will be employed to enhance each child's mathematical education;

- **Guided discussion**-includes discrete teaching of discussion skills such as: turn –taking, active listening, positively responding to peers, clarity and confidence in giving opinions
- **Hands on approach**- pairs or individually
- **Maths Language**-consistency in use of language, symbols and directionality in computation work
- **Estimation procedures**-estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies**-front end strategy, clustering strategy, rounding strategy, special strategy

- **Problem Solving**-estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem
- **Use of Environment**-Mathematical Trails
- **IT Hub and I-pads**- to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the internet.

## Differentiation

Whole class teaching of maths will include a range of differentiation strategies to support less able and better able pupils and e.g. variations in computation practice work, mixed ability group work, peer tutoring, extension and extra practice activities available to students, additional use of manipulatives. There will be explicit teaching of Maths language. Purposeful practice will be practiced through maths projects, worksheets, collaborative group tasks, maths games and software.

Children in first class may benefit from supplementary support in numeracy from time to time. There will be a team approach to the planning of their work with the emphasis on consolidating key concepts and reinforcing activities. They may focus on a modified/extension/consolidation/reinforcement programme of the first class mathematical scheme of work. See Learning Support Policy for further guidance.

## Assessment

Assessment is a continuous, dynamic informal and formal process.

The following assessment tools are a menu of concepts that will be used

- **Teacher observation**-this is ongoing and will be used as follows: to check understanding of concepts, correct use of methodologies, layout and presentation of work skills, engagement in pair or group activities. Checklists.
- **Error Analysis/ Interview**-may be used if more detailed information necessary.
- **Teacher designed tasks and tests**-daily oral tables and mental maths, weekly written table's tests, termly written revision tests based on the class textbook.
- **Work samples**-used to support improvements in layout and presentation of work, to identify and correct common computation and methodology mistakes and to affirm children's progress and development. Samples to be kept in folder.
- **Pupil profiles**-compilation of test results and work samples, kept in folder in classroom and used for reporting to parents and other teachers.
- **Standardised testing**- Sigma –T administered to all pupils by class teacher in November.
- **Diagnostic testing**-administered by the learning support teacher, subsequent support strategies devised in consultation with class teacher etc.

## Resources/ Manipulatives

The following resources will be made available and used in the delivery of the Maths Programme in [Third](#) Class;

Number	Algebra	Shape and Space	Measures	Data
100 square coins receipts fraction chart	100 square  number lines	mirror 2- D and 3-D shapes nets tangram sets	Rulers meter sticks weighing scales stop watch Analogue clock, Digital clock atlas measuring tape trundle wheel containers measuring jugs	stop watch dice Tables and charts from newspapers/magazines tangram sets Playing cards

## Maths Scheme 2<sup>nd</sup> Class

### General and overall aims:

- To provide the pupils of second class with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
  - Developing a positive attitude towards maths
  - Developing problem solving abilities and the facility to apply maths to everyday life
  - Enabling the children to use maths language effectively and accurately
  - Enabling the child to acquire an understanding of mathematical concepts and processes to his/her level of development and ability.
  - Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts

The scheme covers the five strands of the mathematics curriculum -

- Strand 1 Number
- Strand 2 Algebra
- Strand 3 Shape and space
- Strand 4 Measures
- Strand 5 Data

The following skills span the content of each of these five strands:

### Applying and Problem Solving

- ✓ Select appropriate materials, concepts and processes for mathematical tasks and applications
- ✓ Apply concepts and processes in a variety of contexts
- ✓ Analyse problems and plan an approach to solving them
- ✓ Reflect upon and evaluate solutions to problems
- ✓ Select and apply a variety of strategies to complete tasks and projects or to solve problems

### Communicating and Expressing

- ✓ Discuss and explain the processes used and the results of mathematical activities and problems

- ✓ Listen to and discuss other children's mathematical descriptions and explanations
- ✓ Discuss and record the processes and results of work using a variety of methods
- ✓ Discuss problems presented verbally and carry out analyses

### **Integrating and Connecting**

- ✓ Connect informally acquired mathematical ideas and processes with formal mathematical ideas and processes
- ✓ Understand the connections between mathematical procedures and the concepts they use
- ✓ Recognise mathematics in the environment
- ✓ Represent mathematical ideas and processes in different modes: verbal, pictorial and symbolic
- ✓ Recognise and apply mathematical ideas and processes in other areas of the curriculum

### **Reasoning**

- ✓ Make hypotheses and carry out experiments to test them
- ✓ Make informal deductions involving a small number of steps
- ✓ Reason systematically in a mathematical context
- ✓ Justify processes and results of mathematical activities and problems

### **Implementing**

- ✓ Devise and use mental strategies and procedures for carrying out mathematical tasks
- ✓ Use appropriate manipulatives to carry out mathematical procedures
- ✓ Execute standard procedures efficiently with a variety of tools

### **Understanding and Recalling**

- ✓ Understand and recall terminology, facts and definitions

The content of the Maths Scheme for Second Class builds on the work from 1<sup>st</sup> class and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.

## Mathematical Yearly Overview for 2<sup>nd</sup> Class

	Strand and Strand Unit	Linkage and Integration
Term 1 September	<p><b>Strand: Number</b> - 1<sup>st</sup> Class Revision Look Back , Hundreds Square, Table Tips , Addition without regrouping , Rounding ,Subtraction, Greater Than Less Than and Equals</p> <p><b>Strand: Shape and Space</b> – 2D Shapes and Patterns</p>	<p><b>Physical Education:</b> Athletics, jumping patterns, creating shapes with our bodies</p> <p><b>Visual Arts:</b> Greater Than Less Than crocodiles, Drawing.</p>
October	<p><b>Strand: Number</b> - Addition Table Tips 3, 4 and 5 , The Hundreds Square</p> <p><b>Strand: Algebra</b> –Pattern</p> <p><b>Strand: Measures</b> – Money (up to and including 50c)</p>	<p><b>Drama:</b> Shop Role Play</p> <p><b>Visual Arts:</b> Patterns, Drawing, Paint and Colour</p>
November	<p><b>Strand: Number</b> – Revision of Hundreds Square and Patterns on Hundreds Square (link to money change given)</p> <p><b>Strand: Measures</b> – Money (up to and including €1) oral problems, hands on work with money</p>	<p><b>Drama:</b> Role Plays (with real money)</p> <p><b>Music:</b> Money Song</p>
December	<p><b>Strand: Number</b> – Place Value, Addition (Regrouping)</p> <p><b>Strand: Shape and Space</b> – Symmetry (line of symmetry, symmetrical shapes)</p> <p><b>Strand: Data</b> – Representing and Interpreting Data, Bar Charts, Line Graphs, Pictograms</p>	<p><b>Visual Arts:</b> creating bar charts, block graphs</p> <p><b>English:</b> descriptive language, oral language, questioning skills for collection of Data</p> <p><b>SESE:</b> Our Environment – collecting and representing data on how people travel to school</p> <p><b>SPHE:</b> Road safety when travelling to school</p>
Term 2 January	<p><b>Strand: Number</b> – Place Value (HTU), Fractions</p> <p><b>Strand: Measures</b>– Time, introduction to time ( <math>\frac{1}{4}</math> past, <math>\frac{1}{2}</math> past, <math>\frac{1}{4}</math> to and o'clock)</p>	<p><b>Visual Arts:</b> Manipulating Fractions, Creating Time clocks</p> <p><b>Music:</b> Time song</p> <p><b>Physical Education:</b> What time is it Mr. Wolf?</p> <p><b>Gaeilge:</b> Cén t-am é?</p>
February	<p><b>Strand: Number</b> – Subtraction with renaming, recap on Hundreds Square Revision</p>	<p><b>Physical Education:</b> measuring the length of the hall , creating estimates</p>



	<b>Strand: Measures</b> – Length and Weight, length and weight word problems	<b>English:</b> Oral Language, Positional Language
<b>March</b>	<b>Strand: Number</b> – Continued focus on subtraction with renaming, recap of Place Value (HTU) word sentences, numerical value in words <b>Strand: Measures</b> – Area link with 2D shapes	<b>Physical Education:</b> finding area of hall, yard. Athletics <b>SESE History:</b> Our local environment, change and continuity (Area – distance)
<b>Term 3</b> <b>April</b>	<b>Strand: Number</b> – addition with regrouping and carrying over <b>Strand: Shape and Space</b> – 3D shapes, revision of 2D shapes <b>Strand: Algebra</b> – patterns 3's and 6's <b>Strand: Measures</b> – money up to and including €2	<b>Visual Art:</b> Fabric and Fibre Patterns <b>English:</b> oral word problems, listening skills <b>SESE Science and Geography:</b> 3D shapes in their local environment
<b>May</b>	<b>Strand: Number</b> – recap of work in 2 <sup>nd</sup> class, subtraction, addition etc., classroom maths trail <b>Strand: Algebra</b> – Patterns <b>Strand: Measures</b> – capacity, hands on work, pouring, measuring	<b>Gaeilge:</b> bia, ag líonadh rudaí, uisce srl. <b>SESE Science:</b> Patterns in the local environment <b>Linkage:</b> Weight and Fractions

## Maths Language

- Class Development. Revise language already covered in previous classes.

### Second Class:

Quarter, Cone, oval, Metre, centimeter, Euro Symmetry, Area, Digital clock/time, Block graph, Corners Between, underneath, on top of, around, through, left, right, Square, rectangle, triangle, circle, semicircle, Half, Cube, cuboid, cylinder, sphere, Length, width, height, measure, nearly a metre, a bit more than/a bit less than, Heavy, heavier, heaviest, light, lighter, lightest, balance, Pour, fill, full, empty, holds more, less or the same amount as, Reading day, date and month using calendar, Hour, half hour, Metre, litre, kilogram

## Methodologies

A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum. The following approaches will be employed to enhance each child's mathematical education;

- **Guided discussion**-includes discrete teaching of discussion skills such as: turn –taking, active listening, positively responding to peers, clarity and confidence in giving opinions
- **Hands on approach**- pairs or individually
- **Maths Language**-consistency in use of language, symbols and directionality in computation work
- **Estimation procedures**-estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies**-front end strategy, clustering strategy, rounding strategy, special strategy
- **Problem Solving**-estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem
- **Use of Environment**-Mathematical Trails
- **IT Hub and I-pads**- to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the internet.

## Differentiation

Whole class teaching of maths will include a range of differentiation strategies to support less able and better able pupils and e.g. variations in computation practice work, mixed ability group work, peer tutoring, extension and extra practice activities available to students, additional use of manipulatives. There will be explicit teaching of Maths language. Purposeful practice will be practiced through maths projects, worksheets, collaborative group tasks, maths games and software.

Children in second class may benefit from supplementary support in numeracy from time to time. There will be a team approach to the planning of their work with the emphasis on consolidating key concepts and reinforcing activities. They may focus on a modified/extension/consolidation/reinforcement programme of the second class mathematical scheme of work. See Learning Support Policy for further guidance.

## Assessment

Assessment is a continuous, dynamic informal and formal process.

The following assessment tools are a menu of concepts that will be used

- **Teacher observation**-this is ongoing and will be used as follows: to check understanding of concepts, correct use of methodologies, layout and presentation of work skills, engagement in pair or group activities. Checklists.
- **Error Analysis/ Interview**-may be used if more detailed information necessary.
- **Teacher designed tasks and tests**-daily oral tables and mental maths, weekly written table's tests, termly written revision tests based on the class textbook.
- **Work samples**-used to support improvements in layout and presentation of work, to identify and correct common computation and methodology mistakes and to affirm children's progress and development. Samples to be kept in folder.
- **Pupil profiles**-compilation of test results and work samples, kept in folder in classroom and used for reporting to parents and other teachers.
- **Standardised testing**- Sigma –T administered to all pupils by class teacher in November.
- **Diagnostic testing**-administered by the learning support teacher, subsequent support strategies devised in consultation with class teacher etc.

## Resources/ Manipulatives

The following resources will be made available and used in the delivery of the Maths Programme in Second Class;

Number	Algebra	Shape and Space	Measures	Data
100 square Coins, real money receipts fraction chart	100 square number lines	mirror 2- D and 3-D shapes nets tangram sets Insets	Rulers meter sticks weighing scales stop watch Analogue clock, Digital clock atlas measuring tape trundle wheel containers measuring jugs	stop watch dice Tables and charts from newspapers/magazines tangram sets Playing cards

## Maths Scheme 3rd Class

### Aims:

- To provide the pupils of third with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
- Developing a positive attitude towards maths
- Developing problem solving abilities and the facility to apply maths to everyday life
- Enabling the children to use maths language effectively and accurately
- Enabling the child to acquire an understanding of mathematical concepts and processes to his/her level of development and ability.
- Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts

The scheme covers the five strands of the mathematics curriculum -

- Strand 1 Number
- Strand 2 Algebra
- Strand 3 Shape and space
- Strand 4 Measures
- Strand 5 Data

The following skills span the content of each of these five Strands

- Applying and problem solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

The content of the Maths Scheme for Third Class builds on the work at the junior levels and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.

### Mathematical Yearly Overview for 3<sup>rd</sup> Class

	Strand and Strand Unit	Linkage and Integration
<b>Term 1 (September to December)</b>	<ul style="list-style-type: none"> <li>➤ Revision: Strand from 2<sup>nd</sup> class</li> <li>➤ <b>Strand 1 Number:</b> Place Value (Estimating), Addition (using bigger numbers), Subtraction 2 &amp; 3 digits, Add and subtract with and without renaming.</li> <li>➤ <b>Strand 2 Algebra:</b> Word sentences</li> <li>➤ <b>Strand 3: Shape and Space</b> Identify, describe and classify 2-D shapes, Explore and describe properties, Identify 2D shapes in environment, Tessellation</li> <li>➤ <b>Strand 1 Number:</b> Subtraction, Add and subtract, without and with renaming, within 999 estimate sums and differences, Solve Word Problems</li> <li>➤ <b>Strand 5 Data:</b> Representing and Interpreting Data, using pictograms, block graphs and bar charts</li> <li>➤ <b>Strand 1:</b> Addition, Add without and with renaming, Solve word problems</li> <li>➤ <b>Strand 1:</b> Multiplication, repeated addition, number patterns and sequences</li> <li>➤ <b>Strand 1:</b> Division: Equal sharing, repeated subtraction diagrams</li> <li>➤ <b>Strand 1:</b> Fractions, Halves, quarters, eighths, fraction wall, equivalent, folding, ordering</li> <li>➤ <b>Strand 4 Measures:</b> Money, Renaming euro as cents, name and record one step problems</li> <li>➤ <b>Strand 1:</b> Multiplication &amp; Division, x3, 6, 9</li> </ul>	<p><b>Visual Arts:</b> Drawing &amp; Construction, Exploring design using 2 D Shapes, Making Occasion Cards</p> <p><b>Physical Education:</b> Dance, Gymnastics</p> <p><b>Geography/Science:</b> The Physical World, The Natural Environment , Energy and Forces</p> <p><b>History:</b> Early People and Ancient Societies</p>
<b>Term 2 (January to Easter)</b>	<ul style="list-style-type: none"> <li>➤ <b>Strand 5:</b> Chance, Identify and record outcomes of simple random processes</li> <li>➤ <b>Strand 4 Measures:</b> Time, Sense of time, Analogue/Digital clock, 5 minute interludes</li> <li>➤ <b>Strand 1:</b> Multiplication &amp; Division, 5 and 10, Patterns, Repeated</li> </ul>	<p><b>Fractions – Area</b></p> <p><b>Visual Arts:</b> Drawing, Pattern, Tiles – awareness of line, shape and construction</p> <p><b>History:</b> Sequencing of events</p> <p><b>Physical Education:</b> Athletics, Tennis and</p>

	<p>addition/subtraction, sequences</p> <ul style="list-style-type: none"> <li>➤ <b>Strand 1: Fractions</b> Halves, quarters, eighths and tenths, fraction wall, equivalent, folding, ordering.</li> <li>➤ <b>Strand 1: Decimals</b> Compare and order, problem solving</li> <li>➤ <b>Strand 3:</b> Shape &amp; Space 2D and 3D shapes, Identify, describe and classify 2-D shapes, Explore and describe properties, Identify 2D shapes in environment, Tessellation, Nets, Practical Tasks and Problems</li> <li>➤ <b>Strand 4:</b> Length, m, cm, estimate, compare, measure, record, rename, practical tasks and problems</li> <li>➤ <b>Strand 1:</b> Multiplication and Division x 7 Patterns, Repeated addition/subtraction, sequences</li> <li>➤ <b>Strand 3:</b> Lines and Angles, Identify, describe and classify vertical, horizontal and parallel lines , Classify angles as greater than, less than or equal to a right angle</li> </ul>	Hockey
<p><b>Term 3 (Easter to May)</b></p>	<ul style="list-style-type: none"> <li>➤ <b>Strand 1:</b> Multiplication, multiplying by one digit, 0, 1 and 10, multiply by a 2 digit number 0-10.</li> <li>➤ <b>Strand 1:</b> Division, number facts, problem solving real life, dividing by 2 digits</li> <li>➤ <b>Strand 4:</b> Money, recognise, exchange and use coins and paper money up to €10 note, practical activities, using euro and cent.</li> <li>➤ <b>Strand 4:</b> Time, days, months, seasons</li> <li>➤ <b>Strand 4:</b> Weight, kilogrammes, grammes, add, subtract, estimate, record, problem solve</li> <li>➤ <b>Strand 4:</b> Area, regular, irregular</li> <li>➤ <b>Strand 4:</b> Capacity, litres, millilitres, add and subtract amounts &lt;1000 (no borrowing from litres).</li> <li>➤ <b>Strand 4:</b> Money, recognise and exchange coins and paper money up to and €20</li> </ul>	<p><b>Music</b> – Shape &amp; space  <b>Geography</b> – Human Environments  <b>Visual Arts</b> – Paint and Colour</p>

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## Maths Language

- Class Development. Revise language already cover in previous classes.

### Math's Language from previous classes:

Quarter, Cone, Oval, Metre, Centimetre, Euro, Symmetry, Area, Digital Clock, Time, Block Graph, Corners

### Third Class

Regular/irregular shapes, Sphere, triangular sphere, prism, pyramid, Sides, angles, parallel and non-parallel lines, Tessellate, Nets, Symmetry, Vertical, horizontal and parallel lines, Clockwise/anti-clockwise, Gramme, kilogram, Possible, impossible, might, certain, not sure  
Roll, toss, spin, chance, random, Tenths, Minute, Equivalent, Bar chart

## Methodologies

A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum. The following approaches will be employed to enhance each child's mathematical education;

- **Guided discussion-includes discrete teaching of discussion skills such as:** turn –taking, active listening, positively responding to peers, clarity and confidence in giving opinions
- **Hands on approach-** pairs or individually



- **Maths Language**-consistency in use of language, symbols and directionality in computation work
- **Estimation procedures**-estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies**-front end strategy, clustering strategy, rounding strategy, special strategy
- **Problem Solving**-estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem, Montessori materials used in previous classes
- **Use of Environment**-Mathematical Trails
- **IT Hub and I-pads**- to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the internet.

## Differentiation

Whole class teaching of maths will include a range of differentiation strategies to support less able and better able pupils and e.g. variations in computation practice work, mixed ability group work, peer tutoring, extension and extra practice activities available to students, additional use of manipulatives. There will be explicit teaching of Maths language. Purposeful practice will be practiced through maths projects, worksheets, collaborative group tasks, maths games and software.

Children in third class may benefit from supplementary support in numeracy from time to time. There will be a team approach to the planning of their work with the emphasis on consolidating key concepts and reinforcing activities. They may focus on a modified/extension/consolidation/reinforcement programme of the third class mathematical scheme of work. See Learning Support Policy for further guidance.

## Assessment

Assessment is a continuous, dynamic informal and formal process.

The following assessment tools are a menu of concepts that will be used

- **Teacher observation**-this is ongoing and will be used as follows: to check understanding of concepts, correct use of methodologies, layout and presentation of work skills, engagement in pair or group activities. Checklists.
- **Error Analysis/ Interview**-may be used if more detailed information necessary.
- **Teacher designed tasks and tests**-daily oral tables and mental maths, weekly written table's tests, termly written revision tests based on the class textbook.
- **Work samples**-used to support improvements in layout and presentation of work, to identify and correct common computation and methodology mistakes and to affirm children's progress and development. Samples to be kept in folder.
- **Pupil profiles**-compilation of test results and work samples, kept in folder in classroom and used for reporting to parents and other teachers.
- **Standardised testing**- Sigma –T administered to all pupils by class teacher in November.
- **Diagnostic testing**-administered by the learning support teacher, subsequent support strategies devised in consultation with class teacher etc.

#### Resources/ Manipulatives

The following resources will be made available and used in the delivery of the Maths Programme in [Third](#) Class;

Number	Algebra	Shape and Space	Measures	Data
100 square coins receipts fraction chart divided circles fraction games	100 square  number lines	mirror 2- D and 3-D shapes nets tangram sets	Rulers meter sticks weighing scales stop watch Analogue clock, Digital clock atlas measuring tape trundle wheel containers measuring jugs loop games	stop watch dice Tables and charts from newspapers/magazines tangram sets Playing cards

## Maths Scheme Fourth Class

### Aims:

- To provide the pupils of fourth with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
- Developing a positive attitude towards maths
- Developing problem solving abilities and the facility to apply maths to everyday life
- Enabling the children to use maths language effectively and accurately
- Enabling the child to acquire an understanding of mathematical concepts and processes to his/her level of development and ability.
- Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts

The scheme covers the five strands of the mathematics curriculum -

- Strand 1 Number
- Strand 2 Algebra
- Strand 3 Shape and space
- Strand 4 Measures
- Strand 5 Data

The following skills span the content of each of these five Strands

- Applying and problem solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

The content of the Maths Scheme for Fourth Class builds on the work at the junior levels and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.

Mathematical Yearly Overview for Fourth Class

	Strand and Strand Unit	Linkage and Integration
<p><b>Term 1 (September to December)</b></p>	<p><b>Revision</b> <i>The child will be enabled to...</i></p> <p><b>Number</b> – Place Value</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> </ul> <p><b>Number</b> – Operations: <i>Addition &amp; Subtraction</i></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> <li>• Use a calculator to develop problem-solving strategies and verify estimations</li> </ul> <p><b>Number</b> – Operations: <i>Multiplication</i></p> <ul style="list-style-type: none"> <li>• Develop an understanding of multiplication as repeated addition and vice versa.</li> <li>• Solve and complete practical tasks and problems involving multiplication of whole numbers.</li> </ul> <p><b>Number</b> – Operations: <i>Division</i></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 two-digit number by a one-digit number without remainders</li> <li>• Solve and complete practical tasks and problems involving division of whole numbers</li> </ul> <p><b>Number</b> – Fractions:</p>	<p><b>Gaeilge:</b> Siopa Eadaí</p>

- 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
- Calculate a fraction of a set using concrete materials
- Solve and complete practical tasks and problems involving fractions

**Number – Decimals:**

- Identify tenths and express in decimal form
- Order decimals on the number line
- Solve problems involving decimals
- Express tenths and hundredths as fractions and decimals

**Data – Representing and interpreting data**

- Read and interpret pictograms, block graphs and bar charts
- Read and interpret simple pie charts
- Collect, organise and represent data using pictogram, block graphs and pie charts
- Represent numbers on a tally

**Shape & Space - 2D Shapes:**

- Identify, describe and classify 2-D shapes: *equilateral, isosceles and scalene triangle, parallelogram, rhombus, pentagon, octagon*
- Construct and draw 2-D shapes
- Identify the use of 2-D shapes in the environment
- Solve and complete practical tasks and problems involving 2-D shapes.

**Shape & Space - Lines & Angles:**

- Identify, describe and classify oblique and perpendicular lines
- Draw, discuss and describe intersecting lines and their angles
- Classify angles as greater than, less than or equal to a right angle
- Solve problems involving lines and angles.

**Measures – Money:**

**Art:** Drawing- Pie charts, bar charts and pictogram  
**English:** Representing & utilising information.  
**Science:** Heat  
**Science:** Living things

**Art:** Construction- Exploring design using 2D shapes.

**Science:** Forces

**Gaeilge:** Siopa eadaí  
**Science:** Forces



	<ul style="list-style-type: none"> <li>• Solve problems involving decimals.</li> <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>• Add and subtract whole numbers and decimals up to two places</li> </ul> <p><b>Number – 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, distributive and associative properties of multiplication</li> <li>• Use concrete materials and charts to establish associative property, <i>e.g. <math>(3 \times 4) \times 5 = 3 \times (4 \times 5)</math></i></li> <li>• multiply a two-digit or three-digit number by a one or two-digit number</li> <li>• Solve and complete practical tasks and problems involving multiplication of whole numbers.</li> </ul> <p><b>Number – Division:</b></p> <ul style="list-style-type: none"> <li>• Solve problems involving decimals.</li> <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>• Add and subtract whole numbers and decimals up to two places</li> </ul> <p><b>Shape &amp; Space: Symmetry</b></p> <ul style="list-style-type: none"> <li>• Identify line symmetry in the environment.</li> <li>• Identify lines of symmetry as horizontal, vertical and diagonal.</li> <li>• Use understanding of line symmetry to complete missing half of shape, pattern or picture.</li> </ul>	<p><b>Visual arts:</b> Drawing and paint &amp; colour</p>
<p><b>Term 3 (Easter to May)</b></p>	<p><b>Number – Multiplication (further work and consolidation)</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, distributive and associative</li> </ul>	<p><b>Science:</b> Materials, living things</p>

properties of multiplication

- Use concrete materials and charts to establish associative property, *e.g.  $(3 \times 4) \times 5 = 3 \times (4 \times 5)$*
- multiply a two-digit or three-digit number by a one or two-digit number
- Solve and complete practical tasks and problems involving multiplication of whole numbers.

**Number- Place value**

- Explore and identify place value in whole numbers, 0-9999.
- Read, write and order four-digit numbers and solve simple problems.
- Round whole numbers to the nearest thousand.
- Explore and identify place value in decimal numbers to two places of decimals.

**Number – Decimals**

- Solve problems involving decimals.
- Identify place value of whole numbers and decimals to two places and write in expanded form
- Add and subtract whole numbers and decimals up to two places
- Multiply and divide a decimal number up to two places by a single digit whole number.

**Measures – Length (further work and consolidation)**

- Estimate, compare, measure and record lengths of objects, using appropriate metric units.
- Rename units of length using decimal or fraction form.
- Understand, estimate and measure the perimeter of 2D shapes
- Solve and complete practical tasks and problems involving the addition , subtraction and simple division of units of length(m, cm, km)

**Measures – Weight**

- Estimate, compare, measure and record the weight of variety of objects.
- Rename units of weight in kg and g.
- Rename units of weight using decimal and fraction.

**Science:** Energy & forces

**Science:** Materials

**History:** Stories from the lives of people in the past

**Science:** Living things

**Science:** Materials



- Solve and complete practical tasks and problems involving addition, subtraction, multiplication & division of units of weight.

### Revision

#### Shape & Space – 3D shapes

- Identify, describe and classify 3-D shapes, including cube, cuboid, cylinder, cone, sphere, triangular prism, and pyramid.
- Establish and appreciate that when prisms are sliced through (in the same direction) each face is equal in shape and size.
- Explore and describe the relationship of 3-D shapes with constituent 2-D shapes
- Construct 3-D shapes construct from 2-D shapes
- Solve and complete practical tasks and problems involving 2-D and 3-D shapes.
- Identify the use of 3-D shapes in the environment.

#### Measures – Money

- Rename amounts of money as euro or cents and record using € symbol and decimal point  $125 \text{ cents} = €1.25$   $€3.56 = 356 \text{ cents}$ .
- Solve and complete practical one-step and two-step problems and tasks involving the addition, subtraction, multiplication and simple division of money.

#### Measures – Time

- Consolidate and develop further a sense of time passing
- Read time in one-minute intervals on analogue and digital clock (12-hour)
- Express digital time as analogue time and vice versa
- Read and interpret simple timetable
- Rename minutes as hours and hours as minutes
- Solve and complete practical tasks and problems involving times and dates and the addition and subtraction of hours and minutes

#### Measures – Capacity

- Estimate, compare, measure and record capacity using appropriate metric units (l, ml) and selecting suitable instruments of measurement

**Visual arts:** Construction & tessellation

**Science:** Energy & Forces

**Science:** Living things

**History:** Shops through the ages

**Science:** Switch it on

**Science:** Materials

**Geography:** Weather, climate & atmosphere

	<ul style="list-style-type: none"> <li>• Become familiar with major and minor markings on measuring containers (e.g. 100 ml markings, 1–2 l, 1–4 l )</li> <li>• Rename units of capacity in l and ml.</li> <li>• Rename units of capacity using decimal and fraction form.</li> </ul> <p><b>Algebra</b> – Number sentences</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> <p><b>Data</b> – Chance</p> <ul style="list-style-type: none"> <li>• Use vocabulary of uncertainty and chance: <i>chance, likely, unlikely, never, definitely</i></li> <li>• Order events in terms of likelihood of occurrence</li> <li>• Identify and record outcomes of simple random processes</li> </ul> <p><b>Revision</b></p>	<p><b>English:</b> Writing – using chance vocabulary in writing &amp; oral language</p>
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## Maths Language

- Class Development. Revise language already cover in previous classes.

### Fourth Class

As Third class plus:

Equilateral, isosceles, scalene triangle, parallelogram, rhombus, pentagon, octagon, diagonal, oblique, perpendicular lines.

Acute, obtuse and right angles.

Perimeter

Hundredths

Chance, likely, unlikely, never, definitely.

Bar line graph, scale

## Methodologies

A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum. The following approaches will be employed to enhance each child's mathematical education;

- **Guided discussion-includes discrete teaching of discussion skills such as:** turn –taking, active listening, positively responding to peers, clarity and confidence in giving opinions
- **Hands on approach-** pairs or individually
- **Maths Language-** consistency in use of language, symbols and directionality in computation work
- **Estimation procedures-** estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies-** front end strategy, clustering strategy, rounding strategy, special strategy
- **Problem Solving-** estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem
- **Use of Environment-** Mathematical Trails
- **IT Hub and I-pads-** to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the internet.
- **Collaborative & co-operative group work:** turn taking, giving ideas /opinions, working collaboratively to complete a problem.

## Differentiation

Whole class teaching of maths will include a range of differentiation strategies to support less able and better able pupils and e.g. variations in computation practice work, mixed ability group work, peer tutoring, extension and extra practice activities available to students, additional use of manipulatives. There will be explicit teaching of Maths language. Purposeful practice will be practiced through maths projects, worksheets, collaborative group tasks, maths games and software.

Children in fourth class may benefit from supplementary support in numeracy from time to time. There will be a team approach to the planning of their work with the emphasis on consolidating key concepts and reinforcing activities. They may focus on a modified/extension/consolidation/reinforcement programme of the fourth class mathematical scheme of work. See Learning Support Policy for further guidance.

## Assessment

Assessment is a continuous, dynamic informal and formal process.

The following assessment tools are a menu of concepts that will be used

- **Teacher observation**-this is ongoing and will be used as follows: to check understanding of concepts, correct use of methodologies, layout and presentation of work skills, engagement in pair or group activities. Checklists.
- **Error Analysis/ Interview**-may be used if more detailed information necessary.
- **Teacher designed tasks and tests**-daily oral tables and mental maths, weekly written table's tests, termly written revision tests based on the class textbook.
- **Work samples**-used to support improvements in layout and presentation of work, to identify and correct common computation and methodology mistakes and to affirm children's progress and development. Samples to be kept in folder.
- **Pupil profiles**-compilation of test results and work samples, kept in folder in classroom and used for reporting to parents and other teachers.
- **Standardised testing**- Sigma –T administered to all pupils by class teacher in November.
- **Diagnostic testing**-administered by the learning support teacher, subsequent support strategies devised in consultation with class teacher etc.

## Resources/ Manipulatives

The following resources will be made available and used in the delivery of the Maths Programme in Fourth Class;

Number	Algebra	Shape and Space	Measures	Data
100 square fraction chart Unifix cubes Montessori fraction materials Fraction walls Calculators Dice Individual white boards Interlocking cubes	Geometric cabinet Unifix cubes Individual white boards 100 square Number line	2- D and 3-D shapes nets Geometric cabinet Lollipop sticks Straws Individual white boards Geo-strips	Stop watch Metre stick Ruler Trundle wheel Measuring tape Containers Measuring jug Measuring spoons Funnel Graduated cylinder Weighing scales Spring balance Analogue clock, Digital clock atlas Money & cash register Individual white boards Egg timer	stop watch dice Tables and charts from newspapers/magazines Tangram sets Playing cards Dice Tables & charts from newspapers and magazines Coins Egg timer Individual white boards

## Maths Scheme 5th Class

### Aims:

- To provide the pupils of fifth with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
- Developing a positive attitude towards maths
- Developing problem solving abilities and the facility to apply maths to everyday life
- Enabling the children to use maths language effectively and accurately
- Enabling the child to acquire an understanding of mathematical concepts and processes to his/her level of development and ability.
- Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts

The scheme covers the five strands of the mathematics curriculum -

- Strand 1 Number
- Strand 2 Algebra
- Strand 3 Shape and space
- Strand 4 Measures
- Strand 5 Data

The following skills span the content of each of these five strands -

- Applying and problem solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

The content of the Maths Scheme for Fifth Class builds on the work at the junior levels and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.

### Mathematical Yearly Overview for 5<sup>th</sup> Class

	Strand and Strand Unit	Linkage and Integration
<b>Term 1</b> <b>(September to December)</b>	<b>Revision</b> <b>Strand 1 Number:</b> Place Value <b>Strand 1 Number:</b> Addition and subtraction <b>Strand 5 Data:</b> Data <b>Strand 1 Number:</b> Multiplication <b>Strand 3 Shape and Space:</b> 2D Shapes <b>Strand 1 Number:</b> Division <b>Strand 1 Number:</b> Fractions Mental strategies, puzzles and problem solving <b>Strand 3 Shape and Space:</b> Lines & Angles <b>Strand 1 Number:</b> Decimals	<b>History:</b> Timelines  <b>Geography:</b> Maps & Globes <b>Visual Arts:</b> Exploring design using 2D shapes
<b>Term 2</b> <b>(January to Easter)</b>	<b>Revision</b> <b>Strand 1 Number:</b> Number Theory <b>Strand 1 Number:</b> Multiplication <b>Strand 4 Measures:</b> Length <b>Strand 1 Number:</b> Division <b>Strand 1 Number:</b> Percentages <b>Strand 4 Measures:</b> Time Mental strategies, puzzles and problem solving <b>Strand 1 Number:</b> Fractions, Decimals & Percentages <b>Strand 4 Measures:</b> Money	<b>Science:</b> Heating and cooling Living Things <b>Geography:</b> Natural Environments  <b>P.E.:</b> Using the stopwatch to calculate speeds in athletics and dance <b>Music:</b> Listening and responding to music that is tempo <b>Geography:</b> Weather, climate and atmosphere Science:
<b>Term 3</b> <b>(Easter to June)</b>	<b>Revision</b> Mental strategies, puzzles, maths trail, word to number puzzles and problem solving <b>Strand 1 Number:</b> Fractions, Decimals & Percentages <b>Strand 4 Measures:</b> Area <b>Strand 2 Algebra:</b> Directed Numbers <b>Strand 3 Shape and Space:</b> The Circle <b>Strand 2 Algebra:</b> Rules & Properties <b>Strand 4 Measures:</b> Weight <b>Strand 2 Algebra:</b> Equations <b>Strand 3 Shape and Space:</b> 3-D Shapes <b>Strand 5 Data:</b> Data <b>Strand 4 Measures:</b> Capacity	<b>English:</b> Oral language  <b>Visual arts:</b> Looking and responding-use of 3D shapes in sculpture, local sculpture and some famous examples Construction Patterns <b>Science:</b> Properties & characteristics of materials

## Maths Language

- Class Development. Revise language already cover in previous classes.

### **Fifth Class**

As Fourth class plus:

- ✓ Thousandths
- ✓ Prime and composite numbers Square and rectangular numbers Factors, multiples
- ✓ Positive and negative numbers
- ✓ Equations
- ✓ Quadrilaterals
- ✓ Diameter, radius, chord, circumference, arc, sector, tangent
- ✓ Tetrahedron
- ✓ Vertices
- ✓ Reflex angle, degrees
- ✓ Millimetre
- ✓ Square metres/centimetres
- ✓ Millilitres
- ✓ Pie chart, multiple bar chart
- ✓ Statistics
- ✓ Likelihood
- ✓ Rotation



## Methodologies

A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum. The following approaches will be employed to enhance each child's mathematical education;

- **Guided discussion-includes discrete teaching of discussion skills such as:** turn-taking, active listening, positively responding to peers, clarity and confidence in giving opinions
- **Hands on approach-** pairs or individually
- **Maths Language-**consistency in use of language, symbols and directionality in computation work
- **Estimation procedures-**estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies-**front end strategy, clustering strategy, rounding strategy, special strategy
- **Problem Solving-**estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem
- **Use of Environment-**Mathematical Trails
- **IT Hub and I-pads-** to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the internet.

## Differentiation

Whole class teaching of maths will include a range of differentiation strategies to support less able and better able pupils and e.g. variations in computation practice work, mixed ability group work, peer tutoring, extension and extra practice activities available to students, additional use of manipulatives. There will be explicit teaching of Maths language. Purposeful practice will be practiced through maths projects, worksheets, collaborative group tasks, maths games and software.

Children in fifth class may benefit from supplementary support in numeracy from time to time. There will be a team approach to the planning of their work with the emphasis on consolidating key concepts and reinforcing activities. They may focus on a modified/extension/consolidation/reinforcement programme of the fifth class mathematical scheme of work. See Learning Support Policy for further guidance.

## Assessment

Assessment is a continuous, dynamic informal and formal process.

The following assessment tools are a menu of concepts that will be used

- **Teacher observation**-this is ongoing and will be used as follows: to check understanding of concepts, correct use of methodologies, layout and presentation of work skills, engagement in pair or group activities. Checklists.
- **Error Analysis/ Interview**-may be used if more detailed information necessary.
- **Teacher designed tasks and tests**-daily oral tables and mental maths, weekly written table's tests, termly written revision tests based on the class textbook.
- **Work samples**-used to support improvements in layout and presentation of work, to identify and correct common computation and methodology mistakes and to affirm children's progress and development. Samples to be kept in folder.
- **Pupil profiles**-compilation of test results and work samples, kept in folder in classroom and used for reporting to parents and other teachers.
- **Standardised testing**- Sigma –T administered to all pupils by class teacher in April/May.
- **Diagnostic testing**-administered by the learning support teacher, subsequent support strategies devised in consultation with class teacher etc.

## Resources/ Manipulatives

The following resources will be made available and used in the delivery of the Maths Programme in Fifth Class;

Number	Algebra	Shape and Space	Measures	Data
100 square Calculator Coins Receipts Bank statements Bank cards Fractions chart 12-hour clock 24-hour clock	Thermometer Golf score cards Number lines	Protractor Set squares Geo strips Compass Mirror 3-D shapes Tangram sets	Rulers Meter sticks Weighing scales Stop watch Analogue clock, Digital clock Atlas Measuring tape Trundle wheel Containers Measuring jugs	Stop watch Dice Tables and charts from newspapers/magazines Tangram sets Playing cards

## Mount Anville Montessori Junior School

### Maths Scheme of Work – 6<sup>th</sup> Class

#### Aims

- To provide the 6<sup>th</sup> class pupils with a maths programme that is developmentally appropriate and socially relevant.
- To support the aims of the primary curriculum for maths by:
  - Developing a positive attitude towards maths
  - Developing problem solving abilities and the facility to apply maths to everyday life
  - Enabling the children to use maths language effectively and accurately
  - Enabling the child to acquire an understanding of mathematical concepts and processes to her level of development and ability.
  - Enabling the children to acquire proficiency in fundamental maths skills and in recalling basic number facts
  - Enabling the children to become familiar with the following key aspects; constructivism, language, estimation, mental mathematics and problem-solving (*'Mathemagic 6' teacher's resource book*).

#### **The scheme covers the five strands of the mathematics curriculum:**

- Strand 1: Number
- Strand 2: Algebra
- Strand 3: Shape and Space
- Strand 4: Measures
- Strand 5: Data

#### **The following skills span the content of each of these five strands:**

- Applying and problem solving
- Communicating and expressing
- Integrating and connecting
- Reasoning
- Implementing
- Understanding and recalling

*The content of the Maths Scheme for 6<sup>th</sup> Class aims to build on the work at the previous class levels and will consolidate and develop the pupils' experience, skills and mathematical knowledge in an environment that promotes enthusiasm, curiosity and creativity in the child.*

## Mathematical Yearly Overview for 6<sup>th</sup> Class

Term	Strand, Strand Unit & Learning Objectives	Linkage and Integration
<p><b>Term 1</b> (August to December)</p>	<p><b><u>Place Value</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Place value</li> <li>✓ <i>Learning Objectives:</i> Read; write and order whole numbers; identify place value in whole numbers; round whole numbers.</li> </ul> <p><b><u>Addition and subtraction</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Operations</li> <li>✓ <i>Learning Objectives:</i> Add and subtract whole numbers, without and with a calculator.</li> </ul> <p><b><u>Data 1</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Data</li> <li>✓ <i>Strand Unit:</i> Representing and Interpreting Data</li> <li>✓ <i>Learning Objectives:</i> Organise and represent data using trend graphs; read and interpret trend graphs; compile and use simple data sets; explore and calculate averages of data sets.</li> </ul> <p><b><u>Multiplication 1</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Operations</li> <li>✓ <i>Learning Objectives:</i> Multiply a decimal by a whole number, without and with a calculator.</li> </ul> <p><b><u>Lines and angles</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Shape and Space</li> <li>✓ <i>Strand Unit:</i> Lines and angles</li> </ul>	<p><i><u>Linkage:</u></i> operations, decimals, problem-solving.</p> <p><i><u>Linkage:</u></i> place value, measures, problem-solving</p> <p><i><u>Linkage:</u></i> operations, fractions, 2-D, 3-D shapes, number pattern, measures. <i><u>Integration:</u></i> Geography: Human Environment</p> <p><i><u>Linkage:</u></i> decimals, problem-solving, addition, measures, division. <i><u>Integration:</u></i> Geography: Human Environment.</p>

	<p>✓ <i>Learning Objectives:</i> Classify and describe angles and relate angles to shape; recognise angles in terms of a rotation; estimate, measure and construct angles in degrees.</p> <p><b><u>Division 1</u></b></p> <p>✓ <i>Strand:</i> Number</p> <p>✓ <i>Strand Unit:</i> Operations</p> <p>✓ <i>Learning Objectives:</i> Divide a four-digit number by a two-digit number, without and with a calculator; divide a decimal by a whole number.</p> <p><b><u>Fractions 1</u></b></p> <p>✓ <i>Strand:</i> Number</p> <p>✓ <i>Strand Unit:</i> Fractions</p> <p>✓ <i>Learning Objectives:</i> Compare and order fractions and identify equivalent forms of fractions; express improper fractions as mixed numbers and vice versa and position them on the number line; add and subtract simple fractions and simple mixed numbers; multiply a fraction by a fraction; express tenths, hundredths and thousandths in both fractional and decimal form.</p> <p><b><u>Fractions 2</u></b></p> <p>✓ <i>Strand:</i> Number</p> <p>✓ <i>Strand Unit:</i> Fractions</p> <p>✓ <i>Learning Objectives:</i> Divide a whole number by a unit fraction; understand and use simple ratios.</p> <p><b><u>2-D shapes</u></b></p> <p>✓ <i>Strand:</i> Shape and Space</p> <p>✓ <i>Strand Unit:</i> 2-D shapes</p> <p>✓ <i>Learning Objectives:</i> Make informal deductions about 2-D shapes and their properties; use angle and line properties to classify and describe triangles and quadrilaterals; construct triangles from given sides or angles; identify the properties of the circle; construct a circle of given radius or diameter ; tessellate combinations of 2-D shapes.</p>	<p><i>Linkage:</i> 2D and 3D shapes, estimation</p> <p><i>Integration:</i> Geography: Natural environments Physical education: Athletics; Outdoor and adventure activities.</p> <p><i>Linkage:</i> decimals, subtraction, multiplication, place value, fractions, money, problem-solving.</p> <p><i>Integration:</i> Geography: Human Environment</p> <p><i>Linkage:</i> decimals, percentages, measures, operational, problem-solving</p> <p><i>Integration:</i> Geography: Human Environment</p> <p><i>Linkage:</i> decimals, percentages, measures, operational, problem-solving</p> <p><i>Integration:</i> Geography: Human Environment</p> <p><i>Linkage:</i> spatial awareness, 2D shapes, fractions, area, symmetry, angles, and pattern.</p>
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	<p><b><u>Length</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Measures</li> <li>✓ <i>Strand Unit:</i> Length</li> <li>✓ <i>Learning Objectives:</i> Select and use appropriate instruments of measurement; rename measures of length; estimate and measure the perimeter of regular and irregular shapes; use and interpret scales on maps and plans.</li> </ul> <p><b><u>Division 2</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Operations</li> <li>✓ <i>Learning Objectives:</i> Divide a decimal number by a decimal, without and with a calculator.</li> </ul> <p><b><u>Fractions, decimals and percentages 1</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Fractions, decimals and percentages</li> <li>✓ <i>Learning Objectives:</i> Use percentages and relate them to fractions and decimals; compare and order percentages of numbers.</li> </ul> <p><b><u>Time</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand :</i> Measures</li> <li>✓ <i>Strand Unit:</i> Time</li> <li>✓ <i>Learning Objectives:</i> Explore the relationship between time, distance and average speed; explore international time zones.</li> </ul> <p><b><u>Mental Strategies 2/Chapter 23: Problem-Solving 2</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand/Strand Unit:</i> Mental Strategies &amp; Problem Solving</li> <li>✓ <i>Learning Objectives:</i> Pupils will be enabled to recognise and revise concepts of multiplication; division; place value; solve worded problems</li> </ul> <p><b><u>Fractions, decimals and percentages 2</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> </ul>	<p><i><u>Linkage:</u></i> counting and numeration, operations, data, weight, capacity, area, estimation.</p> <p><i><u>Integration:</u></i> Geography: Natural environments Physical education: Athletics; Outdoor and adventure activities.</p> <p><i><u>Linkage:</u></i> decimals, subtraction, multiplication, place value, fractions, money, problem-solving.</p> <p><i><u>Integration:</u></i> Geography: Human Environment</p> <p><i><u>Linkage:</u></i> decimals, place value, fractions, problem-solving, operations</p> <p><i><u>Integration:</u></i> Geography: Human Environment</p> <p><i><u>Linkage:</u></i> counting and numeration, operations, data, fractions, ordinal numbers.</p> <p><i><u>Integration:</u></i> Physical education: Athletics</p> <p><i><u>Linkage:</u></i> multiplication, division, numeration, counting, problem-solving</p>
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	<ul style="list-style-type: none"> <li>✓ <i>Strand Unit:</i> Fractions, decimals and percentages</li> <li>✓ <i>Learning Objectives:</i> Use percentages and relate them to fractions and decimals; compare and order percentages of numbers; solve problems involving percentages, profit and loss</li> </ul> <p><b><u>Area</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Measures</li> <li>✓ <i>Strand Unit:</i> Area</li> <li>✓ <i>Learning Objectives:</i> Recognise that the length of the perimeter of a rectangular shape does not determine the area of the shape; calculate the area of regular and irregular 2-D shapes; measure the surface area of specified 3-D shapes; calculate area using acres and hectares; identify the relationship between square metres and square centimetres; find the area of a room from a scale plan</li> </ul> <p><b><u>Rules and Properties</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Algebra</li> <li>✓ <i>Strand Unit:</i> Rules and Properties</li> <li>✓ <i>Learning Objectives:</i> Know simple properties and rules about brackets and priority of operation; identify relationships and record symbolic rules for number pattern</li> </ul> <p><b><u>Variables</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Review</li> <li>✓ <i>Learning Objectives:</i> Pupils will be enabled to review multiplication, number theory and length concepts previously explored</li> </ul>	<p><u>Linkage:</u> fractions, decimals, measures, problem-solving, operations, place value</p> <p><u>Linkage:</u> counting and numeration, length, 2-D shapes, lines and angles</p> <p><u>Integration:</u> Visual arts – drawing rooms/plans. Geography – Human Environments</p> <p><u>Linkage:</u> operations, problem-solving, number theory, equations</p> <p><u>Linkage:</u> multiplication, operations, shape, algebra</p>
<p><b>Term 3</b> (Easter to</p>	<p><b><u>Fractions, decimals and percentages 3</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> </ul>	<p><u>Linkage:</u> fractions, decimals, percentages, measures, operational, problem-solving</p>

<p>end of academic year)</p>	<ul style="list-style-type: none"> <li>✓ <i>Strand Unit:</i> Fractions, decimals and percentages</li> <li>✓ <i>Learning Objectives:</i> Use percentages and relate them to fractions and decimals; compare and order percentages of numbers; solve problems involving percentages, profit and loss, discount increases and decreases</li> </ul> <p><b><u>Money</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Measures</li> <li>✓ <i>Strand Unit:</i> Money - Euro</li> <li>✓ <i>Learning Objectives:</i> Explore value for money; convert currencies to euro and vice versa; solve problems relating to VAT and interest</li> </ul> <p><b><u>Directed Numbers</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Directed Numbers</li> <li>✓ <i>Learning Objectives:</i> Identify positive and negative numbers on the number line; add simple positive and negative numbers on the number line</li> </ul> <p><b><u>The Circle</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Shape and Space</li> <li>✓ <i>Strand Unit:</i> 2-D Shapes</li> <li>✓ <i>Learning Objectives:</i> Identify the properties of the circle; construct a circle of given radius or diameter; calculate the area of a circle by counting squares</li> </ul> <p><b><u>Look Back</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Review</li> <li>✓ <i>Learning Objectives:</i> Pupils will be enabled to review multiplication, number theory and length concepts previously explored</li> </ul> <p><b><u>Weight</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Measures</li> <li>✓ <i>Strand Unit:</i> Weight</li> </ul>	<p><b><u>Integration:</u></b></p> <p><b><u>Linkage:</u></b> comparing, place value, operations, counting and numeration, pattern, problem-solving</p> <p><b><u>Integration:</u></b> Geography – Modern Industries in Ireland</p> <p><b><u>Linkage:</u></b> operations, place value, addition, subtraction</p> <p><b><u>Integration:</u></b></p> <p><b><u>Linkage:</u></b> spatial awareness, fractions, 2-D shapes, area, symmetry, angles</p> <p><b><u>Integration:</u></b> Visual arts – drawing/constructing objects using circles. Geography – Human Environments</p> <p><b><u>Linkage:</u></b> counting and numeration, multiplication, number theory, length, units of measurement</p> <p><b><u>Linkage:</u></b> counting and numeration, data, length, capacity, operations, estimation, fractions</p>
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	<ul style="list-style-type: none"> <li>✓ <i>Learning Objectives:</i> Select and use appropriate instruments of measurement; rename measures of weight</li> </ul> <p><b><u>3-D Shapes</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Shape and Space</li> <li>✓ <i>Strand Unit:</i> 3-D Shapes</li> <li>✓ <i>Learning Objectives:</i> Identify and examine 3-D shapes and explore relationships; draw nets of simple 3-D shapes and construct the shapes</li> </ul> <p><b><u>Data 2</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Data</li> <li>✓ <i>Strand Unit:</i> Representing and Interpreting Data</li> <li>✓ <i>Learning Objectives:</i> Organise and represent data using pie charts and trend graphs; read and interpret trend graphs and pie charts; compile and use data sets; explore and calculate averages of simple data sets; use data sets to solve problems</li> </ul> <p><b><u>Capacity</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Measures</li> <li>✓ <i>Strand Unit:</i> Capacity</li> <li>✓ <i>Learning Objectives:</i> Select and use appropriate instruments of measurement; rename measures of capacity; find the volume of a cuboid</li> </ul> <p><b><u>Chance</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Data</li> <li>✓ <i>Strand Unit:</i> Chance</li> <li>✓ <i>Learning Objectives:</i> Identify and list all possible outcomes of simple random processes; estimate the likelihood of occurrence of events; construct and use frequency charts and tables</li> </ul> <p><b><u>Equations</u></b></p>	<p><i>Linkage:</i> 2-D shapes, symmetry, lines and angles, area, number pattern, fractions</p> <p><i>Integration:</i> Visual Arts – Looking &amp; responding/Construction; Cubism, Picasso</p> <p><i>Linkage:</i> counting, operations, fractions, 2-D shapes, 3-D shapes, number pattern, measures</p> <p><i>Integration:</i> English – Oral language – discussing statistics from ‘News2day’.</p> <p><i>Linkage:</i> counting and numeration, data, length, weight, operations, estimation, fractions</p> <p><i>Integration:</i> SESE – Science; volume, capacity</p> <p><i>Linkage:</i> data, fractions</p>
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	<ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Algebra</li> <li>✓ <i>Strand Unit:</i> Equations</li> <li>✓ <i>Learning Objectives:</i> Translate word problems with a variable into number sentences; solve one-step number sentences and equations</li> </ul> <p><b><u>Maths Trail/Puzzles/Look Back</u></b></p> <ul style="list-style-type: none"> <li>✓ <i>Strand:</i> Number</li> <li>✓ <i>Strand Unit:</i> Review</li> <li>✓ <i>Learning Objectives:</i> Pupils will be enabled to review general problem solving, length, time, fractions, decimals, percentages</li> </ul>	<p><u>Linkage:</u> operations, variables, rules and properties, problem-solving</p> <p><u>Integration:</u> SESE – Science; volume, capacity</p> <p><u>Linkage:</u> counting and numeration, data, length, weight, operations, estimation, fractions, decimals, percentages, 2-D shapes, 3-D shapes</p> <p><u>Integration:</u> Visual arts, English; oral language, Geography; Human Environments</p>
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### Maths Language

- Class Development: Revise maths language already cover in previous classes.

**Sixth Class:**

Count, equal groups of , times, multiply, total, amount, columns, rows , repeated, estimate, long division, long multiplication, places of decimal, calculator, denominator, numerator, improper, mixed numbers, tenths, hundredths, thousandths, equivalence, compare, order, simplify, shape, problem-solving, odd, even, square, rectangular, triangular, composite, prime factors, multiples, divisors, common, square root, frame, pattern, sequence, order, describe, predict, order, priority, symbols, signs, values, properties, brackets, variable, complex, frame, order, angle, corner, square corner, right angle, vertical, parallel, rotation, clockwise, anti-clockwise, greater and less than, acute, obtuse, diagonal, strut, perpendicular, reflex, sum, degrees, protractor, construct, length, width, metre, centimetre, millimetre, metre stick, perimeter, area, weight, balance, heavy, light, heavier, lighter, kilogram, half, quarter, grams, tonnes, litre, millilitre, empty, capacity, cylinder, volume, seasons, days, months, hours, minutes, digital, quarter past/to, half past/to, o clock , 24 hour, distance, speed, international zone, collect, data, record, construct, tally, pictogram, bar chart, title, data set, investigate, average, convert, chance, impossible, possible, likelihood, unlikely, likely, predict, probable, improbable, experiment, actual, frequently, outcome, occurrence, might, certain, not toss, spin, random, expect, share, equally, fair, groups, repeat repeated subtraction, how many times, divide, divided by/into, left over, places of decimals, round, relationship,

simplify, positive, negative, increase, decrease, compare, balance.

## Methodologies

*A variety of methodologies is an important aspect of the maths programme as it helps children with differing learning styles to access the curriculum.*

*The following approaches will be employed to enhance each child's mathematical education;*

- **Guided discussion-includes discrete teaching of discussion skills such as:** turn –taking, active listening, positively responding to peers, clarity and confidence in giving opinions, cooperative learning and pupil self-assessment and peer-assessment
- **Active Learning:** paired work, collaborative groups or individual work
- **Maths Language:** consistency in use of language, symbols and directionality in computation work
- **Estimation procedures:** estimate first, write down your estimate, solve the problem, compare your estimate with the actual result
- **Estimation strategies:** front end strategy, clustering strategy, rounding strategy
- **Problem Solving:** estimating, making a model , drawing a diagram, trial and error, making a table or chart of the information, patterns in problems, guesstimate, breaking down into parts, number sentences, manipulatives, act out problem , solving a simpler version of the problem
- **Use of Environment:** Mathematical Trails, constructing circles, identifying 2-D and 3-D shapes
- **IWB/Apple TV:** to be used as a teaching tool and to access supplementary materials and information from the internet
- **IT Hub and I-pads:** Also to be used as a teaching tool/ aid to address drill and practice and to access supplementary materials and information from the intern