

■ Title **St. Colman's Mathematics Plan**

■ **Introductory Statement and Rationale**

(a) **Introductory Statement**

This plan was formulated by the teaching staff of St. Colman's in consultation with the Board of Management, SDPS and PCSP cuiditheoir. The original plan was presented to the Board for ratification in 2011. The latest review took place in early 2014.

(b) **Rationale**

- To benefit teaching and learning in our school
- To conform to principles of learning outlined in the Primary School Curriculum
- To review the existing plan for mathematics

■ **Vision and Aims**

(a) **Vision**

Our school cherishes all pupils equally and, to aid them in achieving their true potential we realise that mathematics encompasses a body of knowledge, skills and procedures that are essential for child and adult

(b) **Aims**

We endorse the aims of the Primary School Curriculum for mathematics

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

■ **Curriculum Planning**

1. Strands and Strand Units

Outline Scheme of Work (Plan)

Junior Infants

TERM 1

<i>Strand</i>	<i>Strand Unit</i>
	EMA Classifying on the basis of one attribute Similar objects Colour Size Texture Set and complement of set 3-D shape (roll/can't roll) 2 D-Shape (circle, square)
	Comparing and Ordering Length
	Matching Equivalent sets Equivalent sets (using one-to-one correspondence)
Number	Counting the number of objects in a set Comparing and ordering Analysis of Number Develop understanding of conservation of number 1 Develop understanding of conservation of number 2
Algebra	Extend patterns in colour, shape and size
Shape and space	Spatial Awareness 3-D Shape , regular, irregular 2-D Shape , square, circle
Measure	Length
Data	Sort and classify sets of objects by one criterion Match sets, equal and unequal Recognise and interpret a set of simple mathematical data using real objects, models and pictures (See Classifying and Matching)
Outline Scheme of Work (Plan)	
Junior Infants	

TERM 2

**Strand
EMA**

Strand Unit
Classifying on the basis of one attribute
Colour
Set and complement of set

Number

Counting the number of objects in a set

Comparing and ordering

Length
Thickness
Width
Height
Weight

Analysis of Number

Numeration
Develop understanding of conservation of number 3
Develop understanding of conservation of number 4
Review understanding of conservation of number 1-3
Review understanding of conservation of number 1-4

Develop understanding of conservation of number 5

Combining

Algebra

Extend patterns in colour, shape and size

Shape and Space

Spatial Awareness
2-D Shape: triangle, rectangle

Measures

Length
Thickness
Width
Height
Weight
Time

Data

Sort and classify sets of objects by one criterion
Match sets, equal and unequal
Recognise and interpret a set of simple mathematical data using real objects, models and pictures
(See Counting, Comparing and Ordering)

Outline Scheme of Work (Plan)

Junior Infants

Term 3

Strand
Number

Strand Unit
Counting

Comparing and Order

Analysis of Number
(Numeration (Review 1-5)
Subitising
Zero

Combining

Partitioning

Shape and Space

Spatial Awareness

Measures

Length
Weight
Capacity
Money

Data

Sort and classify sets of objects by one criterion
Match sets, equal and unequal
Recognise and interpret a set of simple mathematical data using real objects, models and pictures
(See Classifying and Matching;
Counting, Comparing and Ordering)

Outline Scheme of Work (Plan)

Senior Infants

TERM 1**Strand****Stand Unit**

Number

Counting**Analysis of Number**

Numeration (Review)

the empty set and numeral zero

Comparing and OrderingEquivalent and non-equivalent sets
ordinal number**Analysis of Number**

Combining

Numeration

Number 6

Number 7

Explore components of number 6

Explore components of number 7

Partitioning

Number 2-5

Algebra**Extend patterns** in colour, shape and size

Shape and Space

3-D Shape: cube, cuboid, cylinder, sphere

Measures

Time

Sequence events

Season: autumn, winter

Length

Longer than/wider than

Taller than

Data

Sort and classify set of objects by one criterion**General Review:****General Review:****General Review:****Number****Algebra****Measures****Outline Scheme of Work (Plan)****Senior Infants****TERM 2****Strand Unit**

Number

**Counting
Comparing and Ordering**

Analysis of Number

Numeration
number 8
number review
number 9
number 10

Combining

Explore components of number 8 (story of 8)
Explore components of number 9 (story of 9)

Combining and partitioning
Review components of number 6
Review components of number 7

Shape and Space

Spatial Awareness

Left/right
2-D Shape: rectangle, circle,
square, triangle

Measure

Length **taller than**
Weight

Time Season: Spring

General Review:

General Review:
General Review:

Number

Measures
Shape and Space

Outline Scheme of Work (Plan)
Senior Infants

TERM 3

Strand Unit

Number

Comparing and Ordering

Analysis of Number

Numeration

Combining

Explore components of number 10 (story of 10)

Combining and Partioning

Review components of number 7 (story of 7)

Review components of number 8 (story of 8)

Review components of number 9 (story of 9)

Review components of number 10 (story of 10)

Partitioning

Components of 10

Measures

Length

Capacity

Money

Time

Seasons: Summer: review

Hours

Days

Data

**Recognise and interpret data
using real objects, models and pictures**

General Review:

General Review:

General Review:

General Review:

General Review:

Number

Algebra

Shape and Space

Measures

Data

First Class

Planning Grid-Term 1

STRAND Number

Strand Unit	Objective
<i>Counting and numeration</i>	Read, write and order numerals 0-20; use number words
<i>Comparing and ordering</i>	<i>Ordinal numbers first-teeth</i>
<i>Addition</i>	Combining sets to 20; Two and three addends to 20; Explore, develop and apply commutative and associative properties of addition; Develop recall strategies for addition facts; Solve problems involving addition.
Place value	Group and count in tens and units using lollipop sticks, abacus, notation board to 20
Subtraction	Subtraction as deducing 0-20

STRAND Measures

Strand Unit	Objective
<i>Length</i>	Estimate, compare, measure and record length using non-standard units; Solve practical tasks and problems
<i>Time</i>	Sequence different events associated with different days of the week

STRAND Shape and Space

Strand Unit	Objective
<i>Strand Unit</i>	Sort, describe, compare and name shapes; Combine and partition 2-D shapes
Spatial Awareness	Explore and use the vocabulary of spatial relations

STRAND Data

Strand Unit	Objective
<i>Representing and interpreting data</i>	Interpret data in rows using pictures; Sort and classify objects by two criteria
<i>Problem-solving</i>	<i>Logical reasoning; Use or make a table</i>

Planning Grid-Term 2

STRAND Number

Strand Unit	Estimate the number of objects in a set 0-
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	20; Read, write and order numerals to 50/100
Addition	Add number to 50/99 without renaming; Add number to 50/99 with renaming; Solve problems involving subtraction
Subtraction	Subtraction as difference 0-20; Subtraction as complementing to 0-20 Subtraction as taking away 0-20; Develop recall strategies for subtraction facts; Solve problems involving subtraction
Place value	Group and count in tens and units to 50/99; Number words
Fractions	Identify shapes divided in two equal parts identify of half sets to 20

STRAND Algebra

Strand Unit	Objective
Extending and using pattern	Recognise and explore patterns in 2s; Recognise and explore odd and even numbers

STRAND Measures

Strand Unit	Objective
Time	Read the time in hours on 12-hour clock
Weight	Estimate, compare, measure and record using non-standard units; estimate, compare, measure and record using standard unit (kilogram); solve practical task and problems
Money	Recognise, exchange and use coins to the value of 10c/20c

STRAND Shape and Space

Strand Unit	Objective
3-D Shapes	<i>Describe, compare and name shapes</i>
<i>Problem-solving</i>	Use or look for a pattern; Making and organise list

PLANNING GRID-TERM 3

Strand Number

Strand Unit	Objective
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Counting and numeration	Read, write and order numerals to 100
Addition	Estimate sum by adding tens; Number sentences; Solve problem involving addition
Subtraction	Subtract numbers without renaming with 99; Estimate difference by subtraction
Fractions	Identify half of sets to 20; Solve problems

Strand Algebra

Strand Unit	Objective
Extending and using pattern	Recognise and explore pattern using the 100 square

STRAND Measures

Strand Unit	Objective
Capacity	Estimate, compare, measure and record capacity using non-standard units; Estimate, compare, measure and record capacity using standard unit (the litre); Solve practical tasks and problems
Time	Read day, date and month using calendar, use vocabulary of time to sequence events; read the time in hours and half-hours on 12-hour clock
Money	Recognise, exchange and use to value of 50c; Solve problems.

2ND CLASS

PLANNING GRID-TERM 1

STRAND Number

Strand Unit	Objective
Addition	Combining and partitioning sets to 20; explore, develop and apply commutative and associative properties of addition; develop recall strategies for addition facts to 20; add number without and with renaming with 99; solve two problems involving addition.
Subtraction	Subtraction as deducting, difference and complementing 0-20; subtraction without renaming within 99; solve two-step problems involving subtraction
Counting and numeration	Estimate the number of objects in a set 0-20
Comparing and ordering	Compare equivalent and non-equivalent sets; use symbols $<$, $>$, $=$
Place value	Explore, identify and record place value to 199

STRAND Algebra

Extend Unit	Objective
Extending and using pattern	Recognise patterns and predict subsequent numbers; recognise and explore patterns using the hundred square

STRAND Measures

Strand Unit	Objective
Time	Read day, date and month using calendar

STRAND Shape and Space

Strand Unit	Objective
2-D Shapes	Sort, describe, compare and name shapes; combine and partition 2-D shapes
Angles	Explore and recognise angles in the environment
Asymmetry	Identify line symmetry in shapes and in the environment

STRAND Data

Strand Unit	Objective
Representing and interpreting data	Read and interpret pictograms; represent, read and interpret block graphs

PLANNING GRID-TERM 2**STRAND Number**

Strand Unit	Objective
Counting and numeration	Estimate using rounding strategies
Addition	Estimate sum by rounding tens; subtraction with renaming within 99; solve problems involving subtraction
Subtraction	Estimate differences by rounding tens; subtraction with renaming with 99; solve problems involving subtraction
<i>Place value</i>	Rename numbers as tens and units
Fractions	Divide shapes in half; identify half of sets to 20; identify quarters of shapes; identify relationship between half and quarters of sets to 20

STRAND Measures

Strand Unit	Objective
Money	Recognise, exchange and use coins to the value of €1
Weight	Estimate, compare, measure and record using non-standard units; estimate, compare, measure and record using standard unit the kilograms; estimate, compare, measure and record using standard unit the $\frac{1}{2}$ kg and $\frac{1}{4}$ kg.
Length	Estimate compare and measure using non-standard units; estimate, compare measure and record using $\frac{1}{2}$ m and $\frac{1}{4}$ m; estimate, compare, measure and record
Time	Use vocabulary to sequence events; record time using simple devices; read the time in hours and half-hours on the 12-hour analogue and digital clock; read the time in quarter-hours

STRAND Shape and Space

Strand Unit	Objective
3-D Shapes	Describe, compare and name shapes; explore relationship with 2-D shapes

<i>Problem-solving</i>	<i>Use or look for a pattern</i>
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PLANNING GRID-Term 3

STRAND Number

Strand Unit	Objective
<i>Addition</i>	Repeated addition in 2s, 3s, 4s, 5s, 6s, and 10s; solve problems involving addition
Subtraction	<i>Solve problems involving subtraction</i>
Fractions	<i>Identify half of sets to 20</i>

STRAND Algebra

Strand Unit	Objective
Extending and using pattern	Recognise and explore pattern in 2s, 3s, 4s, 5s, 6s, and 10s; recognise and explore patterns using the 100 square

STRAND Measures

Strand Unit	Objective
Capacity	Estimate, compare, measure and record capacity using non-standard units; estimate, compare, measure and record capacity using the litre; estimate, compare, measure and record capacity using $\frac{1}{2}$ l and $\frac{1}{4}$ l
Area	Compare and measure surface area; estimate and measure surface using non-standard units
Money	Recognise, exchange and use coins to value of €2; calculate change up to €1
Problem-solving	<i>Make an organised list; use or make a picture; act out or use objects</i>

PLANNING GRID-Term 1

STRAND Number

Strand Unit	Objective
Place value	Explore, identify and record place value from 100-999; read, write and order 3-digit number
Addition	Add numbers to 999 without and with renaming
Subtraction	Subtract numbers without and with renaming within 999
Multiplication	Multiplication as repeated addition of groups of 2,4,8 and 3,6,9; develop multiplication facts within 100
Division	Division as sharing and as repeated subtraction of groups of 2, 4, 8, and 3, 6, 9 without remainders; develop division facts within 100; divide a 1-digit or 2-digit number by a 1-digit number without remainders
Fractions	Identify fractions and equivalent forms of fractions with denominators of 2, 4 and 8, compare and order fractions and position on the number line; calculate a fraction of a set; calculate a unit fraction of a number; calculate a number given a unit fraction of the number; solve practical tasks and problems

STRAND Algebra

Strand Unit	Objective
Extending and using pattern	Explore, recognise and record pattern 0-999, explore, extend and describe sequences; use pattern as an aid for memorisation of number facts

STRAND Measures

Strand Unit	Objective
Length	Estimate, compare, measure and record length using appropriate metric units; rename units of length in m and cm; solve practical tasks and problems

STRAND Shape and Space

Strand Unit	Objective
3-D Shape	Identify, describe and classify 3-D shapes; explore, describe and compare the properties of 3-D shapes; explore and describe the relationship with 2-D shapes; construct 3-D shapes, solve practical tasks and problems involving 2-D shapes and 3-D shapes

STRAND Data

Strand Unit	Objective
Representing and interpreting data	Read and interpret pictograms, block graphs and bar charts; collect, organise and represent data using pictograms, block graphs and bar charts; use data sets to solve problems.
Problem solving	

PLANNING GRID-TERM 2

Strand Number

Strand Unit	Objective
Addition	Develop mental strategies for addition
Multiplication	Multiplication as repeated addition of groups of 5, 10 and 7; develop multiplication facts within 100; solve practical tasks and problems
Division	Division as sharing and as repeated addition in groups of 5,10, and 7 without and with remainders; develop division facts within 100; divide a 1-digit number and a 2-digit number by a 1-digit number and 2-digit number by a 1-digit number without and with remainders; solve practical tasks and problems.
Place value	Round whole number to the nearest 10,100
Fractions	Identify fractions and equivalent forms of fractions with denominators of 2, 4, 8 and 10; calculate a fraction of a set; develop relationship between fractions and division
Decimals	Identify tenths and express in decimal form; order decimals on the number line.

STRAND Measures

Strand Unit	Objective
Area	Estimate, compare and measure the area of regular and irregular shapes
Time	Consolidate and develop a further sense of 'time passing' read time in five-minutes intervals on analogue and digital clock; record time analogue and digital time
Capacity	Estimate, compare, measure and record capacity using appropriate metric units; solve practical tasks and problems
Symmetry	Identify line symmetry in the environment; identify and draw line of symmetry in 2-D shapes
Problem solving	

STRAND Number

Strand Unit	Objective
Multiplication	Explore, understand and apply the zero, commutative and distributive properties; multiply a 1-digit number by 0-10, solve and complete practical tasks and problems

STRAND Algebra

Strand Unit	Objective
Number sentences	Translate an addition or subtraction number sentence with a frame into a word problems; solve one-step problems

STRAND Shape and Space

Strand unit	Objective
Lines and Angles	Identify, describe and classify vertical, horizontal and parallel lines, recognise an angle in terms of a rotation; classify angles as greater than, less than or equal to a right angle
2-D shapes	Identify, describe and classify shapes; explore, describe and combine, tessellate and make patterns with 2-D shapes; combine, tessellate and make patterns with 2-D shapes in the environment; solve practical tasks and problems.

STRAND Measures

Weight	Estimate, compare, measure and record weight using appropriate metric units; solve practical tasks and problems involving addition and subtraction
Money	Rename amounts of euro or cent and record using symbols and decimal points; solve one-step problems involving addition and subtraction
Time	Consolidate and develop a sense of time passing, read time in five-minute intervals on analogue and digital clock (12 hour); record time in analogue and digital forms; read and interpret simple timetable; rename hours as hours and minutes; read dates from calendars and express weeks as days and vice versa.
Chance	Use vocabulary of uncertainty and chance; order events in terms of likelihood of occurrence; identify and record outcomes of simple random processes
Problem solving	

STRAND Number

Strand Unit	Objective
Place Value	Explore, identify and record place value to 9999; read, write and order four digit numbers
Addition	Add numbers to 9999 without and with renaming
Subtraction	Subtract numbers within and with renaming within 9999
Multiplication	Multiplication as repeated addition of groups ; explore, understand and apply the properties of multiplication; develop multiplication facts with 100; multiply a two-digit number by a one-digit number.
Division	Division as sharing and as repeated subtraction of groups without and with remainders; develop and recall division facts within 100; divide a two-digit number by a one digit number by a one digit number without and with remainders
Fractions	Identify fractions and equivalent form of fractions with denominators of 3,6,9,12,5 and 10; compare, and order fractions and position on the number line; calculate a fraction of a set, calculate a number given a multiple fraction of the number; solve practical tasks and problems.
Decimals	Express tenths and hundredths as fractions and decimals; identify place value of whole numbers and decimals to two places and write in expanded form; order decimals on the number line.

STRAND Algebra

Strand Unit	Objective
Extending and using pattern	Explore, recognise and record pattern 0-9999; explore, extend and describe sequences; use pattern as an aid for memorisation of number facts.

STRAND Measures

Strand Unit	Objective
Money	Rename amounts of euro or cent and record using symbols and decimal point; solve one-step problems involving addition and subtraction

STRAND Shapes and Space

Strand Unit	Objective
2-D Shapes	Identify, describe and classify 2-D shapes; explore, describe and compare the properties of 2-D shapes; construct and draw 2-D shapes; identify the use of 2-D shapes in the environment.
Lines and 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

STRAND Data

Strand Unit	Objective
Representing and interpreting data	Collect, organise and represent, data using pictograms, block graphs and bar-charts and bar-line charts; read and interpret bar-line graphs and simple pie charts; use data sets to solve problems
Problems Unit	

PLANNING GRID TERM 2**STRAND Number**

Strand Unit	Objective
Multiplication	Multiplication as repeated addition of groups; explore, understand and apply the properties of multiplication; develop multiplication facts within 100; multiply a two-digit or two digit number
Division	Division as sharing without and with remainders; develop and recall division facts within 100; divide a two-digit number or three-digit number by a one-digit number without or with remainders; solve practical tasks and problems
Place Value	Round whole numbers to the nearest 10,100,1000; use calculator to check estimates
Decimals	Express tenths and hundredths as fractions and 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 place

STRAND Measures

Strand Unit	
Length	Estimate, compare, measure and record length using appropriate metric units; rename units of length in decimal or fraction form; understand, estimate and measure the perimeter of regular 2-D
Area	Estimate, compare and measure the area of regular and irregular shapes
Time	Consolidate and develop a further sense of time passing; read time in one minute intervals on analogue and digital clocks; express digital time as analogue time and vice versa
Weight	Estimate, compare, measure and record weight using appropriate metric units; rename units of weight using decimal or fraction form; solve practical tasks and problems
Symmetry	Identify line symmetry in the environment; identify lines of symmetry as horizontal, vertical or diagonal; use understanding of line symmetry to complete missing half of a shape, picture or pattern.
Problem-solving	

PLANNING GRID-TERM 3

STRAND Number

Strand Unit	Objective
Multiplication	Develop mental strategies for multiplication
Decimals	Identify place value of whole numbers and decimals to two places by a one-digit whole number; solve problems involving decimals

STRAND Algebra

Strand Unit	Objective
Number sentences	Translate an addition, subtraction, multiplication or division number sentence with a frame into a word problem; translate a one-step word problem into a number sentence; solve one-step problems

STRAND Shape and Space

<i>Strand Unit</i>	<i>Objective</i>
3-D Shapes	Identify, describe and classify 3-D shapes; establish and appreciate properties of prisms; explore and describe the relationship of 3-D shapes with constituent 2-D shapes; construct 3-D shapes; solve practical tasks and problems

STRAND Measures

Strand Unit	Objective
Money	Rename amounts of euro or cent and record using symbols and decimal point; solve one-step problems
Time	Consolidate and develop a sense of time passing, read time in one-minute intervals on analogue and digital clock (12 hours); express digital time as analogue time and vice-versa; read and interpret simple timetables; rename hours as hours and minutes
Capacity	Estimate, compare, measure and record capacity using decimal or fraction form; solve practical tasks and problems.
Chance	Use vocabulary of uncertainty and chance; order events in terms of likelihood of occurrence; identify and record outcomes of simple random processes
Problem-solving	

PLANNING GRID-Term 1

Fifth Class

Place Value	Read, write and order whole numbers; identify place value in whole
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	numbers round whole numbers
Addition and subtraction	Add and subtract whole numbers without and with a calculator
Multiplication	Multiply a whole number or a decimal (up to three places) by a whole number, without and with a calculator.
Division	Divide a three-digit number by a two-digit number without and with a calculator
Fractions	Compare and order fractions and identify equivalent fractions with denominators of 2-12; 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 whole number; multiply a fraction by a whole number; express tenths, hundredths and thousandths in both fractional and decimal form
Decimals	Express tenths as fractions and decimals; identify place value of whole numbers and decimals to two places and write in expanded form; order decimals on the number line; develop relationship between fractions and decimals; compare and order fractions and decimals; solve problems involving operations with whole numbers, fractions and decimals.

STRAND Shape and Space

Stand Unit	Objective
2-D Shape	Make informal deductions about shapes and their properties ; use angle and line properties to classify and describe triangle and quadrilaterals; tessellate combinations of 2-D shapes; use 2-D shapes and properties to solve problems
Lines and Angles	Recognise, classify and describe angles and relate angles to shaped and the environment; recognise angles in terms of a rotation; estimate, measure and construct angles in degrees; explore the sum of the angles in a triangle

STRAND Data

Strand Unit	Objective
Representing and interpreting data	Collect, organise and represent data using pictograms, single and multiple bar charts and pie charts; compile and use simple data sets; use data sets to solve problems

STRAND Number

Strand Unit	Objective
Number Theory	Identify simple prime and composite numbers; identify square and rectangular numbers; identify factors and multiples
Multiplication	Multiply a decimal (up to three places) by a whole number, without and with a calculator.
Division	Divide a decimal number by a whole number, without and with a calculator.
Percentages	Explore the relationship between fractions and percentages; compare and order fractions and percentages
Fractions, decimals and percentages	Explore the relationship between fractions, decimals and percentages; compare and order fractions, decimals and percentages; solve problems involving operations with whole numbers, fractions, decimals and simple percentages

STRAND Algebra

Strand Unit	Objective
Directed number	Identify positive and negative numbers in context
Rules and properties	Explore and discuss simple properties and rules about brackets and priority of operation; identify relationships and record verbal and simple symbolic rules for number patterns

STRAND Measures

Strand Unit	Objective
Length	Select and use appropriate instruments of measurement; estimate and measure length using appropriate metric units; understand, estimate and measure the perimeter of rectangular 2-D shapes
Area	Discover the area of the rectangle; estimate and measure the area of regular and irregular 2-D shapes; calculate area using square centimetres and square metres
Time	Read and interpret timetables and the 24-hour clock; interpret and convert between times in 12 hour format
Money	Compare value for money using the unitary method

STRAND Shape and Space

Strand Unit	Objective
2-D shapes	Identify the properties of the circle; construct a circle of a given radius
Problem-solving	

PLANNING GRID-Term 3

Strand Unit	Objective
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Equations	Translate number sentences with a frame into word problems and vice versa; solve one-step number sentences and equations
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STRAND Shape and Space

Strand Unit	Objective
3-D shapes	Identify and examine 3-D shapes and explore relationships including tetradedron (faces, edges and vertices); draw nets from simple 3-D shapes and construct them

STRAND Measures

Strand	Objective
Weight	Select and use appropriate instruments; estimate and measure weight using appropriate metric units
Capacity	Select and use appropriate instruments of measurement; estimate and measure capacity

STRAND Data

Strand Unit	Objective
Change	Identify and list all possible outcomes of simple random processes, estimate the likelihood of occurrence of events; construct and use frequency charts and tables
Representing and Interpreting Data Problem solving	Collect, organise and represent data using pictograms; single and multiple bar charts and simple pie charts; compile and use simple data sets; use data sets to solve problems

Place Value	Read, write and order whole numbers; identify place value in whole numbers; round whole numbers
Addition and subtraction	Add and subtract whole numbers; without and with calculator
Multiplication	Multiply a decimal by a whole number; without and with a calculator
Division	Divide a four-digit number by a two-digit number without and with a calculator; divide a decimal number by a whole number
Fractions	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 fractional form; divide a whole number by a unity fraction; understand and use simple ratios.
Decimals	Identify place value in decimals; round decimals to fractions; estimate sums and differences of decimals; add and subtract decimals to three places.

STRAND Shape and Space

Strand Unit	Objective
2-D shape	Make deductions about shape and their properties; use angle and line properties to classify and describe triangle and quadrilaterals; construct triangle from given sides or angles; tessellate combinations of 2-D shapes; classify 2-D shapes according to their lines of symmetry and properties to solve problems.
Lines and angles	Recognise, classify and describe angles and relate angles in terms of rotation; estimate, measure and construct angles in degrees.

STRAND Data

Strand Unit	Objective
Representing and interpreting data	Collect, organise and represent data using trend graphs; compile and use simple data sets; explore and calculate averages of data sets
Problem-solving	

PLANNING GRID-Term 2

Strand Unit	Objective
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Number theory	Identify simple prime and composite number; identify and explore square numbers; explore and identify simple square roots; identify common factors and multiples; write whole numbers in exponential form
Multiplication	Multiply a decimal, without and with a calculator
Division	Divide a decimal number by a decimal, without and with a calculator
Fractions, decimals and percentages	Use percentages and relate them to fractions and decimals; compare and order percentages of numbers; solve problems involving percentages; profit and loss, increases/decreases

STRAND Algebra

Strand Unit	Objective
Directed numbers	Identify positive and negative numbers on the number line; add simple positive and negative numbers on the number line
Rules and properties	Know simple properties and rules about brackets and priority of operation; identify relationships and record symbolic rules for number patterns

STRAND Measures

Strand Unit	Objective
Length	Select and use appropriate instruments of measurement; rename measures of length; estimate and measure the perimeter of regular 2-D shapes; use and interpret scales on maps and plans
Area	Explore relationship between area and perimeter; calculate area of regular and irregular shapes; measure surface area of 3-D shapes; calculate area using ares and hectares; identify relationship between square metres and square centimetres; find area using a scale plan
Time	Explore the relationship between time, distance and average speed, explore international time zones.
Money	Explore value for money; convert currencies to Euro and vice versa; solve problems relation to vat and interest

STRAND Shape and Space

Strand Unit	Objective
2-D shapes	Identify the properties of a circle, construct a circle of a given radius or diameter; calculate the area of the circle by counting square
Problem-solving	

PLANNING GRID-Term 3

STRAND Algebra

Strand Unit	Objective
Equations	Translate word problems with variable into number sentences; solve one-step number sentences and equations
Variables	Explore the concept of a variable in the context of simple patterns; tables and simple formulae and substitute values for variables

STRAND Shape and Space

Strand Unit	Objective
3-D shapes	Identify and examine 3-D shapes and explore relationship; draw nets of simple 3-D shapes and construct them.

STRAND Measures

Weight	Objective
Capacity	Select and use appropriate instruments of measurement; rename of capacity; find the volume of a cuboid.

STRAND Data

Strand Unit	Objective
Chance	Identify and list possible outcomes of simple random processes; estimate the likelihood of occurrence of events, construct and use frequency charts and tables
Representing and interpreting data	Collect, organise and represent data using pie charts and trend graphs, read and interpret trend graphs and pie charts, compile and use simple data sets to solve problems; explore and calculate averages of simple data sets, use data sets to solve problem
Problem-solving	

2. Approaches and Methodologies

Approaches and Methodologies

General: All children will be provided with the opportunity to access all strands of the mathematics curriculum. Less emphasis and reliance will be placed on textbooks and workbooks and more on active learning strategies. Textbooks in use will be in line with the content objective for the class level. We will use appropriate concrete materials in all classes. Formulae will be discovered by children rather than being taught by rote. An emphasis will be placed on simple fraction families in senior classes.

Talk and Discussion: Talk and discussion in mathematics is an integral part of the learning process. Opportunities will be given to pupils to explain how they got the answers to a problem, to discuss alternative ways of approaching a problem and to give oral descriptions of group solutions.

Collaborative and co-operative learning: The children will learn the skills needed to work as a group rather than just in a group, e.g. listening to others, turn taking, appreciating that others' opinions are important. A variety of organisational styles e.g. pair work, group work and whole class work will be used.

Problem Solving: In making problem solving more accessible and realistic for children teachers will use checkable answers or a calculator for larger numbers as part of their programme. All pupils from Infants to Sixth class will, including those with special needs will have the opportunity to experience problem-solving activities.

Using the Environment: The school environment will be used to provide opportunities for mathematical learning. If mathematic trails are developed outside of school grounds, the safety of our pupils will be considered.

3. Assessment and Record Keeping

1. Teacher Observation
2. Teacher designed tests and tasks
3. Work samples and projects
4. Diagnostic Tests (mainly resource/learning support)

Standardised tests will be used in accordance with instructions given with tests. Information gathered during assessment will be shared with parents at parent/teacher meetings, through school reports. Parents will be asked to sign teacher designed tests to ensure they are aware of their child's level of performance. If their child needs help they will be informed immediately and advised on how they may help their child at home.

4. Children with Different Needs

(1) Children with learning difficulties

Children with special needs will be provided with access to all strands of the mathematics curriculum. Teachers in mainstream classes may use a differentiated programme to cater for children with learning difficulties. Supplementary teaching will be available for them also. Software/websites will be used to support teaching and learning for children with special needs.

(2) Children with exceptional ability

A differentiated programme may be used to provide challenges for pupils with exceptional ability. They will be facilitated to work on independent mathematical research projects. ICT will also be used to support their work.

5. Equality of Participation and Access

Equal opportunities will be given to boys and girls to participate in discussions, use of manipulatives, presentations etc. Provision in the teaching of mathematics will be made to ensure the needs of members of the Traveller community, children experiencing any form of disadvantage, children with disabilities, families with literacy problems and families of whom English is not the first language achieve their potential.

■ Organisational Planning

6. Timetable

Under the Numeracy Improvement Strategy we have increased the time for maths to a total of 4 hrs for infants and a total of 5 hrs for mathematics for all other classes each week.

7. Homework

The purpose of assigning mathematics homework is to reinforce class work and to widen experiences begun in the classroom, for example work with capacity or finding the area of a room.

Homework encourages organisational skills and the ability to work independently.

Communication with parents about correct terminology and methods being used by the children will take place at meetings and written guidance will also be used. Homework assignments should be realistic, practical and relevant. Homework should also reflect the active learning approach as described in the curriculum. Homework will be differentiated to take into account the range of abilities within the class. Children attending resource/learning support will not go home with two sets of homework.

8. Resources and ICT Please see maths equipment

Textbooks

Planet Maths to be used as school text book.

1. Teachers are encouraged to use the Maths textbook as a resource only.
2. Teachers are encouraged to use concrete materials as much as possible.
3. Teachers are discouraged from basing all maths in the text book.
4. Maths textbooks are decided on collectively and are purchased through the school Book Rental Scheme in senior classes.

Calculators

- These are used formally from 4th Class onwards.
- Calculators can make problem-solving more accessible to low achieving children who might otherwise never experience correct problem solution because of frequent computational errors.
- By removing the obstacles of what, for some children, are complicated algorithms, more time is available for discussing what the problem is, possible strategies for solving it and developing estimation skills.
- Use of calculators also make children more aware of the number system and relationships within, i.e., place-value, patterns etc.
- Calculators help to create a more positive can-do attitude in children towards the subject.
- Calculators can also be used for children to check their answers and in some cases to correct their assignments.
- Box of calculators to be kept in an agreed central store..

9. Individual Teachers' Planning and Reporting

Each class teacher prepares an agreed annual Scheme of Work for Mathematics, which he/she will follow. Short term planning will be done on a fortnightly basis.

10. Staff Development

Access to current research, reference books ,resource materials ,websites etc for teachers will be the responsibility of principal .Teachers will be encouraged to attend relevant courses and Board may incur cost of course fees.

11. Parental Involvement

Parents will be made aware of the content of the mathematics programme, policies and the approaches/methodologies used in the school at class meetings, in writing and on our website. Parents will be asked to support the learning of mathematics by monitoring homework and by assisting children in implementing our Language Pack Programme in junior classes.

12.

Problem-Solving Strategies

- **Act out or use objects:** Encourage the children to either act out the problem or to use objects which may help solve it.
- **Make a picture/diagram:** Try to illustrate the problem with the help of a picture or a diagram.
- **Use or make a table:** Put the information you have on a table so you can organise it better.
- **Make an organised list:** Organise your information in an organised way so you don't leave any out.
- **Guess and check:** Encourage children to 'have a go' but also to refine their guesses.
- **Use or look for a pattern:** Examine the information.
- **Work backwards:** Given the information in the problem, it may be easier to work backwards to find the original starting point.
- **Use logical reasoning:** Try to see a relationship between pieces of information.
- **Make it simpler:** There are two ways to make problems simpler. Either break the problem up into parts and solve each part individually or else replace large or complex figures with simpler ones.

Brainstorm: In a whole-class situation, focus a discussion which may direct the pupils to solve a

problem, perhaps, using some of the other strategies.

■ **Success Criteria**

- 1.Feedback from teachers//pupils/parents
- 2.Feedback from secondary schools
- 3.Feedback from inspectors
- 4.Assesment results eg. Drumcondra

■ **Implementation**

- (a) **Roles and Responsibilities** Implementation will be responsibility of all school staff.
- (b) **Timeframe** This plan will be implemented immediately.

■ **Review**

- (a) **Roles and Responsibilities** Principal will organise review.
- (b) **Timeframe** 2017/18 School Year

■ **Ratification and Communication**

- **This policy was ratified by Board OF Management at its meeting on 11/2/15**

