

Scoil Chiaráin Naofa Whole School Mathematics Plan

Introduction

This Whole School Mathematics plan was formulated by the teaching staff of Scoil Chiaráin Naofa in 2008 and was reviewed during the school year 2021/2022. It will be reviewed in 2024/2025 or the year following a curriculum update.

Rationale

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

It is designed to:

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

Vision and Aims

Vision: In our school we recognise the potential of each child in our care and we endeavour to create a learning environment in which each child can achieve their full potential in the area of Mathematics.

Aims: We endorse the aims and objectives of the 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 recalling basic number facts.
- To ensure the use of a variety of approaches and methodologies so that children of every ability can be challenged and stimulated.

Content

The Primary Maths Curriculum consists of the following strands and strand units:

STRANDS	STRAND UNITS
Early Mathematical Activities (Infants)	Classifying, Matching, Comparing Ordering
Number	Counting, Comparing and Ordering, Analysis of Number (introduced in Infants) Numeration, Place Value, Operations: Addition, Subtraction, Fractions (introduced in 1st 2nd) Multiplication, Division, Decimals (introduced in 3rd/4th) Percentages, Number theory (introduced in 5th/6th)
Algebra	Extending patterns (introduced in Infants) Extending and using patterns (introduced in 1st/2nd) Number patterns and sequences, Number sentences (introduced in 3rd/4th) Directed numbers, Rules and properties, Variables, Equations (introduced in 5th/6th)
Shape and Space	Spatial Awareness, 2D shapes 3D shapes (introduced in Infants) Symmetry, Angles (introduced in 1st/2nd) Lines and angles (introduced in 3rd/4th)
Measures	Length, Weight, Capacity, Time, Money (introduced in infants) Area (introduced in 1st/2nd)
Data	Recognising and interpreting data (introduced in Infants)

See Appendix B: Primary Maths Curriculum in Detail.

Approaches and Methodologies:

The following approaches and methodologies are used:

- Talk and discussion: Talk and discussion is seen as an integral part of the learning process and opportunities should be provided during the maths class for children to discuss problems with the teacher, other individual children and in groups.
- Collaborative and co-operative learning: The maths curriculum allows opportunities for the children to work in pairs/small groups. It provides opportunities to learn the skills needed for turn taking, listening to others and taking on responsibility for particular tasks within a group e.g. measurement.
- Active learning and guided discovery: A hands-on approach is essential if children are to understand mathematical concepts. They will need a wide variety of materials when exploring tasks. This is important right through to sixth class and will require access to a considerable amount of equipment. The use of concrete equipment will be necessary in all strands. Working with equipment can be done individually, in pairs or in groups, depending on the task. Mathematical games are used formally and informally to support and consolidate learning i.e. matching, multiplication facts.
- Problem solving: The Read, Underline, Draw and Estimate R.U.D.E. problem solving mnemonic is the principal problem solving strategy used in the school. Early problem solving will be taught informally through games. Problem solving will form part of each Maths lesson whenever possible. Problems will be presented to children in a variety of ways e.g. word problems, practical tasks, open-ended investigations, puzzles, games.
- Estimation strategies for numbers: Estimation strategies listed in the Teacher Guidelines pages 22 and 23 include front end strategy, clustering strategy, rounding strategy and special numbers strategy.
- Using the environment: Teachers are encouraged to create a Maths-rich environment in their classrooms. The school building and grounds are used as a resource to aid with the teaching of Maths. Teachers use the school environment to provide opportunities for Mathematical problem solving.
- Use of ICT: all classrooms have an interactive whiteboard and children are provided with access to tablets and laptops throughout the school to access subscription Maths activity packages, engage in station teaching activities, use the internet to access information, represent data, and for number fact recall practice games.
- Skills through content: through the study of the various strands in the Maths curriculum children will acquire skills such as applying and problem solving, communicating and expressing, integrating and connecting, understanding and recalling, reasoning and implementing.
- Mathematical trails: Maths trails are used outdoors to help teach Mathematical skills and concepts in the school grounds and in the locality.

- Integration, linkage and cross-strand planning: Teachers' planning In SESE, Physical Education, Aistear etc. gives due consideration to opportunities to integrate Maths into other curricular areas, and planning in Maths seeks to link elements of the Maths curriculum with each other.

Assessment

Assessment is an essential element of the school plan for mathematics. It is used to monitor pupil progress and to inform future planning. Knowledge, skills development, disposition and participation levels are assessed by teachers. Teachers select from the following range of assessment approaches:

- Teacher observation
- Teacher-designed tests and tasks
- Work samples, portfolios and projects
- Curriculum profiles
- Mastery records
- Diagnostic tests
- Standardised tests
- Self-Assessment.

As part of our whole school assessment the Drumcondra Maths assessments are administered annually from first class to sixth class. In Senior Infants the Drumcondra Early Numeracy test is administered. The results inform planning and intervention and are communicated to parents.

Record Keeping

Records on Mathematical attainment include:

- Results of teacher designed tests
- Teacher's incidental notes and observations on a child's progress
- Results of standardised tests stored on Aladdin
- Information relating to children in receipt of supplementary support is stored in their Student Support File.

Children with different educational needs

School planning and class planning should consider the diverse range of learners in the school including children who:

- Need extra support to work at class level
- Need specific support in particular areas of Maths

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- Need to work at a Mathematical level other than their class level
- Demonstrate exceptional Mathematical attainment and require further challenges

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

- By process: extended use of concrete materials, extended use of pictorial representations variety of mixed and ability groups and one to one/small group support.
- By product: partial completion, different tasks and different mode of presentation.

- By content: different class level within same strand unit, different level of difficulty within same strand unit and different skills emphasis.

Children who obtain STen scores of 4 or lower in standardised tests are given priority for receiving individual or small group support from the Special Education Teaching staff. Early intervention, team teaching, and station teaching are strategies employed to support children's progress in Maths.

Equality of Participation and Access

The school plan for Maths is designed to provide all children with full access to all aspects of the Maths curriculum. All children have access to the services, facilities and amenities in the school.

Resources

The school recognises the importance of concrete materials in the development of Mathematical concepts for children in all classes. Each classroom is equipped with Mathematical resources suitable to that level. In addition, the school maintains Mathematical resource boxes relating to various strand units of the Maths curriculum which are stored centrally and available to teachers throughout the school.

Language of Mathematics

See Appendix A: Language of Mathematical Operations.

Staff Development

Teachers are informed of maths related courses and encouraged to attend, and information acquired through these courses is made available to other staff members. Time is allocated at staff meetings for the discussion of Maths related topics when necessary.

Parental Involvement

Parents are encouraged to take an active role in their child's Mathematical development through:

- Engaging with information provided to parents of newly enrolled children
- Attending parent-teacher meetings
- Helping their children with homework

Success Criteria

The success of this plan will be measured using the following criteria:

- Teaching of Maths in the school will follow this policy and employ a consistent and scaffolded approach to content and methodology.
- On-going assessment and standardised tests will show pupils are developing a level of attainment in Maths appropriate to their age and ability.

Implementation and review

This policy will be implemented by the entire teaching staff of the school and will be reviewed in 2024/2025, or the year following a Maths curriculum update.

This Whole School Plan was ratified by the Board of Management of Scoil Chiaráin Naofa on September 2022

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Signed: *Martina Tarpey*

(Principal)

Appendix A: Language of Mathematical Operations

Language of Addition, Partitioning and Combining

Junior Infants

And, make

Step 1 e.g. 2 swans and 2 swans make 4

2 and 2 makes 4

Senior Infants

Step 1 e.g. 2 **plus** 2 is the same as 4

3 plus 1 **is the same as** 4

sign = can be used in books, B.B. but call it, is the same as 4.

Combining

Step 2

e.g. 4 is the same as 2 and 2

4 = 2+

is the same as =

4 is the same as 2 and 2 or 4 **equals** 2 and 2

Step 3

2 plus 2 equals 4

Step 4

2 **count on** 2 (on mat) is 4 (gives, lands on, makes)

Step 5

1 set being **more than** another set.

5 objects is more than 3 by 2

1st Class

7 **and** 2

7 **add on** 2 {7 is more than 5 by---

{7 is how much more than 5}

What is 2 more than 5?

2nd Class

Find **the sum of** 7 and 2 e.g. $7+2 = 9$

What's the sum of 7 and 2

The **total** of €7 and €2 is €9

and - Who can use the word add.

add - 7 add 2, 2 add 7

plus

total

more than 2 more than 7 is 9

sum of Give them those as spellings

9

2

7

3rd and 4th Class

Revise and Consolidate

5th Class

Increase 200 by 20%

A **positive** no. on the number line

6th Class

V.A.T., increase by 21% in Problem Solving

Simple Interest

Profit – Increase

Sale Price

Language of Subtraction

Junior Infants

Solve simple oral problems 0 – 5 using concrete materials.

Senior Infants

Solve simple oral and pictorial problems 0 – 10

7 birds 2 fly away. **Cross out** the 2.

1st Class

7 **take away** 2 equals 5.

7 **minus** 2 equals 5

7 **subtract** 2 equals 5

2 **less than** 7 is 5

2nd Class

What's the **difference between** 7 and 5.

Graphs are helpful to show it.

3rd and 4th Class

Revise and consolidate.

5th Class

Decrease

6th Class

discount

loss

reduction

negative numbers

Language of Multiplication

3rd Class

2 **multiply by** 3 equals 6

$$2 \times 3 = 6$$

$$2 \text{ groups of } 3 = 6$$

2 **times** 3 is 6

The **product of** 2 and 3 is 6

2 multiplied by 3 is 6

2 **3's are** 6

4th Class

Revise above.

5th Class

Multiples

Of means multiply

Gives me 2 of those bars of chocolate.

$$5^2 = 5 \text{ by } 5$$

or 5 to **the power of** 2

6th Class

5 to **the index** of 2

5 to the **exponent of** 2

{to the power of}

4 to **the power of** 3

Language of Division

LCM

3rd Class

$$6 \div 2 = 6$$

6 sweets **share among** 2 pupils equally

Each gets 3 sweets.

6 **divided by** 2 is 3

How many 2's in 6.

2 into 6 goes 3

Factors of 6 are 2 and 3

4th Class

Revise and Consolidate.

5th Class

Numerator, Denominator, Divisor (Factor) and equivalent fractions.

6th Class

HCF

Ratio (gone from V to VI)

$$2 : 1 = 4 : 2$$

Two is to one represents the same ratio as 4 is to 2.

1 square represents 10 people (graph).

Tables 1st Class – 6th Class

Adding - Say

2 and 1 is 3
 2 and 2 is 4
 2 and 3 is 5 etc.

t u	t u		
1 4	1 1		14
	29	29	
<u>+1 6</u>	<u>+ 9</u>	<u>-14</u>	<u>+29</u>
3 0	2 0		43
	43	15	

Start at the **top** with the units and add downwards initially

Subtraction (Take Away) Tables - Say

2 take 2 = 0
 3 take 2 = 1
 4 take 2 = 2 etc.

Example
 24

-16

- a) Say 4 take 6, I cannot do.
- b) Rename (Explain this on parents' sheet)
 I need a ten. Cross out 2 ten and I am left with 1 ten.
 Bring over 1 ten to units side and now you have 14 units.
- c) 14 take 6 is 8 (read from top)
- d) 1 take 1 is 0

Please do not say '**from**' i.e **4 from 6**

Multiplication - Say

$1 \times 2 = 2$ Say 1 two is 2

$2 \times 2 = 4$ 2 twos are 4

$3 \times 2 = 6$ 3 twos are 6

$$\begin{array}{r} 34 \\ \times 6 \\ \hline \end{array}$$

Start at bottom of sums. Say 6 fours are 24 put down my 4 and carry my 2 tens, 6 threes are 18 plus the 2 tens, make 20. Write down 20 ANS. - 204

Division - Say

36	
4	9

$2 \div 2 = 1$ Start in the middle. 2 into 2 go 1

$4 \div 2 = 2$ 2 into 4 goes 2

$6 \div 2 = 3$ 2 into 6 goes 3

TAKE AWAY 'RENAME'

$$\begin{array}{r} \text{T} \quad \text{u} \\ 5 \quad 4 \\ - 2 \quad 9 \\ \hline \end{array}$$

* **Start at the top of the sum.**

Say 4 take 9 - I cannot do.

$$\begin{array}{r} \text{t} \quad \text{u} \\ 5 \quad 4 \\ - 2 \quad 9 \\ \hline \end{array}$$

* Go over to the '5' tens and take 1 ten – Cross out 5 and write 4 up over it/ beside it.

$$\begin{array}{r} \text{t} \quad \text{u} \\ 5 \quad 4 \\ - 2 \quad 9 \\ \hline \end{array}$$

* Bring the ten over to units side and it becomes 14 units (10u + 4u)
5t 4u renamed to 4t 14u

$\begin{array}{r} \text{t u} \\ 54 \\ - 29 \\ \hline 5 \end{array}$	<p>* Now start at the top of the sum with units. Say 14 take away 9 is 5 Write down the 5</p>
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$\begin{array}{r} \text{t u} \\ 54 \\ - 29 \\ \hline 25 \end{array}$	<p>* Go to tens side Say 4 take away 2 is 2 Write down 2 Answer 25</p>
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RENAME in the Hundreds

$\begin{array}{r} \text{h t u} \\ 236 \\ - 189 \\ \hline \end{array}$	<p>* Say 6 take 9 I cannot do Rename.</p>
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$\begin{array}{r} \text{h t u} \\ 236 \\ - 189 \\ \hline \end{array}$	<p>* Go to tens. Cross off the 3 and write 2</p>
---	--

$\begin{array}{r} \text{h t u} \\ 236 \\ - 189 \\ \hline \end{array}$	<p>* Bring 1 ten over to units. It becomes 16 units.</p>
---	--

$\begin{array}{r} \text{h t u} \\ 236 \\ - 189 \\ \hline 7 \end{array}$	<p>* Say 16 take away 9 is 7. Write down 7.</p>
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$$\begin{array}{r}
 \text{h t u} \\
 236 \\
 - 189 \\
 \hline
 7
 \end{array}$$

- * Go to tens. Say 2 take 8 I cannot do.
Rename

$$\begin{array}{r}
 \text{h t u} \\
 236 \\
 - 189 \\
 \hline
 7
 \end{array}$$

- * Go to hundreds. Cross off the 2h and left with 1. Write up 1.

$$\begin{array}{r}
 \text{h t u} \\
 236 \\
 - 189 \\
 \hline
 47
 \end{array}$$

- * Bring 1h over to tens and it becomes 12t.
Say 12 take away 8 is 4.
Write down 4 under t.

$$\begin{array}{r}
 \text{h t u} \\
 236 \\
 - 189 \\
 \hline
 047
 \end{array}$$

- * Go to hundreds. Say 1 take away 1 is zero. Write down 0
Answer 47
36 is the same as 2t and 16u
72 is the same as 6t and 12u
236 is the same as 1h, 12t and 16u.

$$\begin{array}{r}
 \text{h t u} \\
 400 \\
 - 39 \\
 \hline
 \end{array}$$

- * Always start from top of sum.
Say 0 take 9 I cannot do
Rename.

$$\begin{array}{r}
 \text{h t u} \\
 400 \\
 - 39 \\
 \hline
 \end{array}$$

- * Go to tens. Nothing there.

$$\begin{array}{r}
 \text{h t u} \\
 \end{array}$$

- * Go to the hundreds.

$$\begin{array}{r} 400 \\ - 39 \\ \hline \end{array}$$

Cross off the 4 and your left with 3h

Write it up.

$$\begin{array}{r} \text{h t u} \\ 400 \\ - 39 \\ \hline \end{array}$$

* Bring 1h to the tens and it becomes 10t.

Write up 10 tens.

$$\begin{array}{r} \text{h t u} \\ 400 \\ - 39 \\ \hline \end{array}$$

* Now rename that 10 again.

Cross off the 10t and left with 9t.

$$\begin{array}{r} \text{h t u} \\ 400 \\ - 039 \\ \hline 361 \end{array}$$

* Bring 1t it over to the units and it becomes 10u.

$$\begin{array}{r} \text{h t u} \\ 400 \\ - 039 \\ \hline 361 \end{array}$$

* Say 10u take 9u is 1u

9t take 3t is 6t

3h take 0h is 3h

Answer 361.

RENAME in the THOUSANDS

$$\begin{array}{r} 1000 \\ - 358 \\ \hline \end{array}$$

* Go to thousands. Cross off the 1 and rename as 0. Take 1ths to hundreds. Now you have 10h.

$$\begin{array}{r} 1000 \\ - 358 \\ \hline \end{array}$$

* Go to hundreds. Rename 10h to 9h's and take 1h to tens.

1000

358

1000

358

642

* Go to tens. Rename 10 ten's to 9 ten's.

Bring over 1 ten to units

* Say 10 take 8 = 2

Say 9 take 5 = 4

Say 9 take 3 = 6

Say 0 take 0 = 0

Appendix B: Primary Maths Curriculum in Detail

Junior Infants			
Strands	Strand Unit	Content/Learning Objectives	Curriculum
Early Mathematical Activities	Classifying	<ul style="list-style-type: none"> Classify objects on the basis of one attribute, such as colour, shape, texture or size. Identify the complement of a set. 	Page 20
	Matching	<ul style="list-style-type: none"> Match equivalent and non-equivalent sets using one-to-one correspondence. 	Page 20
	Comparing	<ul style="list-style-type: none"> Compare objects according to length, width, height, weight, quantity, thickness or size. Compare sets without counting. 	Page 21
	Ordering	<ul style="list-style-type: none"> Order objects according to length or height. Order sets without counting. 	Page 21
Number	Counting	<ul style="list-style-type: none"> Count numbers of objects in a set 1-10. 	Page 22
	Comparing and ordering	<ul style="list-style-type: none"> Compare equivalent and non-equivalent sets 1-5 by matching without using symbols. Order sets of objects by number 1-5. Use the language of ordinal number: first, last. 	Page 22
	Analysis of number (Combining, Partitioning and Numeration)	<ul style="list-style-type: none"> Explore the components of number 1-5. Combine sets of objects, totals 5. Partition sets of objects 1-5. Develop an understanding of the conservation of number 1-5. Read, write and order numerals 1-5. Identify the empty set and the numeral zero. Tell at a glance the number of objects in a set, 1-5 Solve simple oral problems, 0-5. 	Page 23-25
Algebra	Extending Patterns (Integration)	<ul style="list-style-type: none"> Identify, copy and extend patterns in colour, shape and size. 	Page 26
Shape and Space	Spatial Awareness	<ul style="list-style-type: none"> Explore, discuss, develop and use vocabulary of spatial relations. 	Page 28
	3-D shapes	<ul style="list-style-type: none"> Sort 3-D shapes, regular and irregular. Solve tasks and problems involving shape. 	Page 28
	2-D shapes (Integration)	<ul style="list-style-type: none"> Sort and name 2-D shapes: square, circle, triangle, rectangle. Use suitable structured materials to create pictures. Solve problems involving shape. 	Page 29
Measures	Length (Integration)	<ul style="list-style-type: none"> Develop and understanding of the concept of length through exploration, discussion and use of appropriate vocabulary. Compare and order objects according to length or height. 	Page 30
	Weight (Integration)	<ul style="list-style-type: none"> Develop and understanding of the concept of weight through exploration, handling of objects, and the use of appropriate vocabulary. Compare objects according to weight. 	Page 31
	Capacity	<ul style="list-style-type: none"> Develop and understanding of the concept of 	Page 32

		<p>capacity through exploration and the use of appropriate vocabulary.</p> <ul style="list-style-type: none"> • Compare containers according to capacity. 	
	Time (Integration)	<ul style="list-style-type: none"> • Develop and understanding of the concept of time through the use of appropriate vocabulary. • Sequence daily events or stages in a story. 	Page 33
	Money	<ul style="list-style-type: none"> • Recognise and use coins (up to 5 cents). • Solve practical tasks and problems using money. 	Page 34
Data	Recognising and interpreting data	<ul style="list-style-type: none"> • Sort and classify sets of objects by one criterion • Match sets, equal and unequal • Represent and interpret a set of simple mathematical data using real objects and pictures 	Page 35

Senior Infants

Strands	Strand Unit	Content/Learning Objectives	Curriculum
Early Mathematical Activity (Revision)	Classifying, Matching (Revision)	<ul style="list-style-type: none"> Classify objects on the basis on one attribute. Identify the complement of a set. Match equivalent and non-equivalent sets. 	(Revision)
Number	Counting	<ul style="list-style-type: none"> Count the number of objects in a set, 0-20. 	Page 22
	Comparing and ordering	<ul style="list-style-type: none"> Compare equivalent and non-equivalent sets 0-10 by matching. Order sets of objects by number 0-10. Use the language of ordinal number: first, second, third, last. 	Page 22
	Analysis of number (Combining, Partitioning and Numeration)	<ul style="list-style-type: none"> Explore the components of number 1-50. Combine sets of objects, totals to 10. Partition sets of objects, 0-10. Use the symbols + and – to construct word sentences involving addition. Develop an understanding of the conservation of number 0-10. Read, write and order numbers 0-10. Identify the empty set and numeral zero. Estimate the number of objects in a set, 2-10. Solve simple oral and pictorial problems , 0-10. 	Page 23-25
Algebra	Extending Patterns (Integration)	<ul style="list-style-type: none"> Identify, copy and extend patterns in colour, shape, size and number (3-4 elements). Discover different arrays of the same number. Recognise patterns and predict subsequent numbers. 	Page 26
Shape and space	Spatial Awareness	<ul style="list-style-type: none"> Explore, discuss, develop and use the vocabulary of spatial relations. 	Page 28
	3-D shapes	<ul style="list-style-type: none"> Sort, describe and name 3-D shapes: cube, cuboid, sphere and cylinder. Combine 3-D shapes to make other shapes. Solve tasks and problems involving shape. 	Page 29
	2-D shapes (Integration)	<ul style="list-style-type: none"> Sort, describe and name 2-D shapes: square, circle, triangle, rectangle. Combine and divide 2-D shapes to make larger or smaller shapes. Solve problems involving shape and space. Give simple moving and turning directions. 	Page 29
Measures	Length (Integration)	<ul style="list-style-type: none"> Develop and understanding of the concept of length through exploration, discussion, and use of appropriate vocabulary. Compare and order objects according to length or height. Estimate and measure length in non-standard 	Page 30

		<ul style="list-style-type: none"> units. Select and use appropriate non-standard units to measure length, width or height. Discuss reasons for choice. 	
	Weight (Integration)	<ul style="list-style-type: none"> Develop and understanding of the concept of weight through exploration, handling of objects and use of appropriate vocabulary. Compare and order objects according to weight. Estimate and weigh in non-standard units Select and use appropriate non-standard units to weigh objects. 	Page 31
	Capacity	<ul style="list-style-type: none"> Develop and understanding of the concept of capacity through exploration and the use of appropriate vocabulary Compare and order containers according to capacity. Estimate and measure capacity in non-standard units. Select and use appropriate non-standard units to measure capacity. 	Page 32
	Time (Integration)	<ul style="list-style-type: none"> Develop and understanding of the concept of time through the use of appropriate vocabulary. Sequence daily and weekly events or stages in a story. Read time in one-hour intervals. 	Page 33
	Money	<ul style="list-style-type: none"> Recognise coins up to 20cents and use coins up to 10 cents. Solve practical tasks and problems using money. 	Page 34
Data	Recognising and interpreting data	<ul style="list-style-type: none"> Sort and classify sets of objects by one and two criteria. Represent and interpret data in two rows or columns using real objects, models and pictures. 	Page 35

First Class

Strand	Strand Unit	Content/Learning Objectives	Curriculum
Number	Counting and numeration	<ul style="list-style-type: none"> Count the numbers of objects in a set. Read, write and order numerals 0-99. Estimate the number of objects in a set 0-20. 	Page 40
	Comparing and Ordering	<ul style="list-style-type: none"> Compare equivalent and non-equivalent sets 0-20. Order sets of objects by number. Use the language of ordinal number, first to tenth. 	Page 41
	Place Value (addition and subtraction)	<ul style="list-style-type: none"> Explore, identify and record place value 0=99. 	Page 41
	Operations	<ul style="list-style-type: none"> Addition: Develop and understanding of addition by combining or partitioning sets, use concrete materials 0-20. Explore, develop and apply the commutative, associative and zero properties of addition. Develop and/or recall mental strategies for addition facts within 20. Construct number sentences and number stories; solve problems involving addition within 20. Add number without and with renaming within 99. Explore and discuss repeated addition and group counting. Subtraction: Develop an understanding of subtraction as deducting, as complementing and as difference 0-20. Develop and/or recall mental strategies for subtraction 0-20. Construct number sentences and number stories; solve problems involving subtraction. Estimate differences within 99. Use the symbols +, -, = . Solve one-step problems involving addition and subtraction. 	Pages 42-45
	Fractions (Linkage)	<ul style="list-style-type: none"> Establish and identify half of sets to 20 	Pages 45
Algebra	Extending and using patterns	<ul style="list-style-type: none"> Recognise pattern, including odd and even numbers. Explore and use patterns in addition facts. Understand the use of a frame to show the presence of an unknown number. 	Page 46
Shape and	Spatial	<ul style="list-style-type: none"> Explore, discuss, develop and use the 	Pages 48

Space	awareness	<p>vocabulary of spatial relations.</p> <ul style="list-style-type: none"> • Give and follow simple directions within classroom and school settings. 	
	2-D shapes (Linkage, integration)	<ul style="list-style-type: none"> • Sort, describe, compare and name 2-D shapes: square, rectangle, triangle, circle, semicircle. • Construct and draw 2-D shapes. • Combine and partition 2-D shapes. • Identify halves of 2-D shapes. 	Page 49
	3-D shapes (Linkage)	<ul style="list-style-type: none"> • Describe, compare and name 3-D shapes, including cube, cuboid, cylinder and sphere. • Discuss the use of 3-D shapes in the environment. • Solve and complete practical tasks and problems involving 2-D and 3-D shapes. • Explore the relationship between 2-D and 3-D shapes. 	Page 50
	Symmetry	<ul style="list-style-type: none"> • Identify line symmetry in shapes and in the environment. 	Page 51
	Angles (Integration)	<ul style="list-style-type: none"> • Explore and recognise angles in the environment. 	Page 51
	Area (Linkage)	<ul style="list-style-type: none"> • Estimate and measure area using non-standard units. 	Page 53
	Weight	<ul style="list-style-type: none"> • Estimate, compare and record weight using non-standard units. • Select and use appropriate non-standard measuring units and instruments. • Estimate, measure and record weight using standard unit (the kilogram) and solve simple problems. 	
	Capacity	<ul style="list-style-type: none"> • Estimate, compare, measure and record capacity using non-standard units. • Select and use appropriate non-standard measuring units and instruments. • Estimate, measure and record capacity using standard unit (the litre) and solve simple problems. 	Page 55
	Time	<ul style="list-style-type: none"> • Use the vocabulary of time to sequence events. • Read and record time using simple devices. • Read time in hours and half-hours on 12-hour analogue clock. • Read day, date and month using a calendar. 	Page 56
	Money	<ul style="list-style-type: none"> • Recognise, exchange and use coins up to the value of 50 cents. • Calculate how many items may be bought with a given sum. 	Page 57
Data	Representing and interpreting data (Integration).	<ul style="list-style-type: none"> • Sort and classify objects by two and three criteria. • Represent and interpret data in two, three or four rows or columns using real objects, models and pictures. 	Page 58
Tables		<ul style="list-style-type: none"> • Addition (1-10) • Subtraction (1-10) 	

Second Class

Strand	Strand Unit	Content/Activities	Curriculum
Number	Counting and numeration	<ul style="list-style-type: none"> Count the number of objects in a set. Read, write and order numerals 0-199. Estimate the number of objects in set 0-20. 	Page 40
	Comparing and Ordering	<ul style="list-style-type: none"> Compare equivalent and non-equivalent sets 0-20. Use the language of ordinal number. 	Page 41
	Place Value (addition and subtraction)	<ul style="list-style-type: none"> Explore, identify and record place value 0-99. 	Page 41
	Operations	<ul style="list-style-type: none"> Addition: Develop an understanding of addition by combining or partitioning sets. Explore, develop and apply commutative, associative and zero properties of addition. Develop and recall mental strategies for addition facts within 20. Construct number sentences and number stories; solve problems involving addition within 99. Add numbers without and with renaming within 99. Explore and discuss repeated addition and group counting. Subtraction: Develop and understanding of subtraction as deduction, as complementing and as difference. Develop and recall mental strategies for subtraction 0-20. Construct number sentences involving subtraction of whole numbers; solve problems involving subtraction. Estimate differences within 99. Subtract numbers without and with renaming within 99. Use the symbols +, -, =, <, >. Solve one-step and two-step problems involving addition and subtraction. 	Pages 42-45
Shape and space	Spatial awareness	<ul style="list-style-type: none"> Explore, discuss, develop and use the vocabulary of spatial relations. Give and follow simple directions within classroom and school settings, including turning directions using half and quarter turns 	Pages 48
	2-D shapes (Linkage, integration)	<ul style="list-style-type: none"> Sort, describe, compare and name 2-D shapes: square, rectangle, triangle, circle, semicircle, oval. Construct and draw 2-D shapes. Combine and partition 2-D shapes. Identify half and quarter of shapes. Identify and discuss the use of 2-D shapes in the environment. 	Page 49

	3-D shapes (Linkage)	<ul style="list-style-type: none"> Describe, compare and name 3-D shapes, including cube, cuboid, cylinder, sphere and cone. Discuss the use of 3-D shapes in the environment. Solve and complete practical tasks and problems. involving 2-D and 3-D shapes. Explore the relationship between 2-D and 3-D shapes. 	Page 50
	Symmetry	<ul style="list-style-type: none"> Identify line symmetry in shapes and in the environment. 	Page 51
	Angles (Integration)	<ul style="list-style-type: none"> Explore and recognise angles in the environment. 	Page 51
Measures	Length (Linkage)	<ul style="list-style-type: none"> Estimate, compare, measure and record length using non-standard units. Select and use appropriate non-standard measuring units/instruments. Estimate, measure and record length using metre and centimetre. Solve and complete practical tasks and problems involving length. 	Pages 52,53
	Area (Linkage)	<ul style="list-style-type: none"> Estimate and measure area using non-standard units. 	Page 53
	Capacity	<ul style="list-style-type: none"> Estimate, compare, measure and record the capacity of a wide variety of containers using non-standard units. Select and use appropriate non-standard measuring units and instruments. Estimate, measure and record capacity using litre, half-litre and quarter-litre bottles and solve simple problems. 	Page 55
	Time	<ul style="list-style-type: none"> Use the vocabulary of time to sequence events. Read and record time using simple devices. Read time in hours, half-hours and quarter-hours on 12-hour analogue clock. Read time in hour and half-hours on digital clock. Read day, date and month using calendar and identify the season. 	Page 56
	Money	<ul style="list-style-type: none"> Recognise, exchange and use coins up to the value of 2 euro. Write the value of a group of coins; record money amount as cents and later as euro. 	Page 57
Data	Representing and interpreting data (Integration).	<ul style="list-style-type: none"> Sort and classify objects by two and three criteria. Represent, read and interpret simple tables and charts (pictograms). Represent, read and interpret simple block graphs. 	Page 58
Tables		<ul style="list-style-type: none"> Addition (1-10) Subtraction (1-10) 	

Third Class

Strand	Strand Unit	Content/Learning Objectives	Curriculum
Number	Place Value	<ul style="list-style-type: none"> • Explore and identify place value in whole numbers 0-999. • Read, write and order three-digit numbers. • Round whole numbers to the nearest ten or hundred. • Explore and identify place value in decimal numbers to one place or decimals. 	Page 64
	Operations (Addition, subtraction, multiplication and division)	<ul style="list-style-type: none"> • Addition and Subtraction. • Add and subtract, without and with renaming, within 999. • Subtraction: Borrow Pay Back method to be introduced at the end of January • Know and recall addition and subtraction facts. • Solve word problems involving addition and subtraction. • Multiplication. • Develop an understanding of multiplication as repeated addition and vice versa. • Explore, understand and apply the zero, commutative and distributive properties of multiplication. • Develop and/or recall multiplication facts within 100. • Multiply a one-digit or two-digit number 0-10. • Solve and complete practical tasks and problems involving multiplication of whole numbers. • Division. • Develop an understanding of division as sharing and as repeated subtraction, without and with remainders. • Develop and/or recall division facts within 100. • Divide a one-digit or two-digit number by a one-digit number without and with remainders. • Solve and complete practical tasks and problems involving division of whole numbers. 	Pages 65-68
	Fractions	<ul style="list-style-type: none"> • Identify fractions and equivalent forms of fractions with denominations 2, 4, 8 and 10. • Compare and order fractions with appropriate denominators and position on the number line. • Calculate a fraction of a set using concrete materials. • Develop an understanding of the relationship between fractions and division. • Calculate a unit fraction of a number and calculate a number, given a unit fraction of the number. • Solve and complete practical tasks and problems involving fractions. 	Pages 68-69
	Decimals	<ul style="list-style-type: none"> • Identify tenths and express in decimal form. • Order decimals on the number line. 	Pages 69

		<ul style="list-style-type: none"> Solve problems involving decimals. 	
Shape and space	2-D shapes (Linkage and Integration)	<ul style="list-style-type: none"> Identify, describe and classify 2-D shapes: square, rectangle, triangle, hexagon, circle, semicircle, oval and irregular shapes. Explore, describe and compare the properties (sides, angles, parallel and non-parallel lines) of 2-D shapes. Construct and draw 2-D shapes. Combine,, tessellate and make patterns with 2-D shapes. Identify the use of 2-D shapes in the environment. Solve and complete practical tasks and problems involving 2-D shapes. 	Page 72
	3-D shapes (Integration)	<ul style="list-style-type: none"> Identify, describe and classify 3-D shapes, including cube, cuboid, cylinder, cone, sphere, triangular prism, pyramid. Explore, describe and compare the properties of 3-D shapes. Explore and describe the relationship of 3-D shapes with constituent 2-D shapes. Construct 3-D shapes. Solve and complete practical tasks and problems involving 2-D and 3-D shapes. 	Page 73
	Symmetry (Linkage)	<ul style="list-style-type: none"> Identify line symmetry in the environment. Identify and draw lines of symmetry in two-dimensional shapes. 	Page 74
	Lines and angles (Integration)	<ul style="list-style-type: none"> Identify, describe and classify vertical, horizontal and parallel lines. Recognise and angle in terms of a rotation. Classify angles as greater than, less than or equal to a right angle. Solve problems involving lines and angles. 	Page 75
Measures	Length (Integration)	<ul style="list-style-type: none"> Estimate, compare, measure and record length of a wide variety of objects using appropriate metric units (m, cm). Rename units of length in m and cm. Solve and complete practical tasks and problems involving the addition and subtraction of units of length (m, cm). 	Page 76
	Area (Linkage)	<ul style="list-style-type: none"> Estimate, compare and measure the area of regular and irregular shapes. 	Page 77
	Time (Integration)	<ul style="list-style-type: none"> Consolidate and develop further 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 timetables. 	Pages 79,80

		<ul style="list-style-type: none"> • Rename minutes as hours and hours as minutes. • Read dates from calendars and express weeks as days and vice versa. • Solve and complete practical tasks and problems involving times and dates. 	
	Money (Integration)	<ul style="list-style-type: none"> • Rename amounts of euro or cents and record using symbols and decimal point. • Solve and complete one-step problems and tasks involving the addition and subtraction of money. 	Page 81
Data	Representing and interpreting data (Linkage and Integration)	<ul style="list-style-type: none"> • Collect, organise and represent data using pictograms, block graphs and bar charts. • Read and interpret tables, pictograms, block graphs and bar charts. • Use data sets to solve and complete practical tasks and problems. 	Page 82
	Chance (Integration)	<ul style="list-style-type: none"> • Use vocabulary of uncertainty and chance: possible, impossible, might, certain, not sure. • Order events in terms of likelihood of occurrence • Identify and record outcomes of simple random processes. 	Page 83
Tables		<ul style="list-style-type: none"> • Addition • Subtraction • Multiplication • Division 	

Fourth Class

Strand	Strand Unit	Content/Learning Objectives	Curriculum
Number	Place Value	<ul style="list-style-type: none"> 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. 	Page 64
	Operations (Addition, subtraction, multiplication and division)	<ul style="list-style-type: none"> Add and subtract, without and with renaming, within 9999. Know and recall addition and subtraction facts. Solve word problems involving addition and subtraction. Develop and understanding of multiplication as repeated addition and vice versa. Explore, understand and apply the zero, commutative and distributive properties of multiplication. Develop and/or recall multiplication facts within 100. Multiply a two-digit or three digit number by a one or two-digit number. Use a calculator to check estimates. Solve and complete practical tasks and problems involving multiplication of whole numbers Develop an understanding of division as sharing and as repeated subtraction, without and with remainders. Develop and/or recall division facts within 100. Divide a three-digit number by a one-digit number without and with remainders. Use a calculator to check estimates. Solve and complete practical tasks and problems involving division of whole numbers. 	Pages 65-68
	Fractions	<ul style="list-style-type: none"> Identify fractions and equivalent forms of fractions with denominations 2, 3, 4, 5, 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. Calculate a number, given a multiple fraction of the number. Express one number as a fraction of another number. Solve and complete practical tasks and problems involving fractions. 	Pages 68-69
	Decimals	<ul style="list-style-type: none"> Express tenths and hundredths as fractions and decimals. Identify place value of whole numbers and decimals to two places and write in expanded 	Pages 69

		<p>form.</p> <ul style="list-style-type: none"> • Order decimals on the number line. • 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. • Solve problems involving decimals. 	
Algebra	Number patterns and sequences	<ul style="list-style-type: none"> • Explore, recognise and record patterns in number, 0-9999. • Explore, extend and describe sequences. • Use patterns as an aid in the memorisation of number facts. 	Page 70
	Number sentences	<ul style="list-style-type: none"> • Translate and addition , subtraction, multiplication or division number sentence with a frame into a word problem (frame not in initial position). • Translate a one-step word problem into a number sentence. • Solve one-step number sentences. 	Page 71
	2-D shapes (Linkage and Integration)	<ul style="list-style-type: none"> • Identify, describe and classify 2-D shapes: equilateral, isosceles and scalene triangle, parallelogram, rhombus, pentagon, octagon. • Explore, describe and compare the properties (sides , angles, parallel and non-parallel lines) of 2-D shapes. • Construct and draw 2-D shapes. • Combine, tessellate and make patterns with 2-D shapes. • Identify the use of 2-D shapes in the environment. • Solve and complete practical tasks and problems involving 2-D shapes. 	Page 72
	3-D shapes (Integration)	<ul style="list-style-type: none"> • Identify, describe and classify 3-D shapes, including cube, cuboid, cylinder, cone, sphere, triangular prism, 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. • Solve and complete practical tasks and problems involving 2-D and 3-D shapes. 	Page 73
	Symmetry (Linkage)	<ul style="list-style-type: none"> • 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. 	Page 74
	Lines and angles (Integration)	<ul style="list-style-type: none"> • 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. 	Page 75

	Weight	<ul style="list-style-type: none"> Estimate, compare, measure and record the weight of a wide variety of objects using appropriate metric units (kg, g) and selecting suitable instruments of measurement. Rename units of weight in kg and g. Rename units of weight using decimal or fraction form. Solve and complete practical tasks and problems involving the addition, subtraction, multiplication and simple division of units of weight (kg and g). 	Page 77
	Capacity	<ul style="list-style-type: none"> Estimate, compare, measure and record capacity using appropriate metric (l, ml) and selecting suitable instruments of measurement. Rename units of capacity in l and ml Rename units of capacity using decimal and fraction form. Solve and complete practical tasks and problems involving the addition, subtraction, multiplication and simple division of units of capacity (l, ml). 	Page 78
	Time (Integration)	<ul style="list-style-type: none"> Consolidate and develop further a sense of time. 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 timetables. Rename minutes as hours and hours as minutes. Read dates from calendars and express weeks as days and vice versa. Solve and complete practical tasks and problems involving times and dates and the addition and subtraction of hour and minutes. 	Pages 79,80
	Money (Integration)	<ul style="list-style-type: none"> Rename amounts of money as euro or cents and record using euro symbol and decimal point. Solve and complete practical one-step and two-step problems and tasks involving the addition, subtraction, multiplication and simple division of money. 	Page 81
Data		<ul style="list-style-type: none"> Collect, organise and represent data using pictograms, block graphs, bar charts, and bar-line graphs incorporating the scales 1:2, 1:5, 1:10 and 1:100 Read and interpret bar-line graphs and simple pie charts. Use data sets to solve and complete practical tasks and problems. 	
Chance		<ul style="list-style-type: none"> Use vocabulary of uncertainty and chance. Order events on terms of likelihood of occurrence. Identify and record outcomes of simple random processes. 	
Tables		<ul style="list-style-type: none"> Addition Subtraction Multiplication 	

		• Division	
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Fifth Class

Strand	Strand Unit	Content/Learning Objectives	Curriculum
Number	Place Value	<ul style="list-style-type: none"> Read, write and order whole numbers and decimals. Identify place value in whole numbers and decimals. Round whole numbers and round decimals. 	Page 88
	Operations	<ul style="list-style-type: none"> Estimate sums, differences, products and quotients of whole numbers. Add and subtract whole numbers and decimals (to three decimal places) without and with a calculator. Multiply a decimal (up to three places) by a whole number, without and with a calculator. Divide a three-digit number by a two-digit number, without and with a calculator. Divide a decimal number by a whole number, without and with a calculator. 	Pages 88,89
	Fractions	<ul style="list-style-type: none"> Compare and order fractions and identify equivalent forms of fractions with denominators 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. Express tenths, hundredths and thousandths in both fractional and decimal form. 	Pages 89,90
	Decimals and percentages (Linkage and Integration)	<ul style="list-style-type: none"> Develop and understanding of simple percentages and relate them to fractions and decimals. Compare and order fractions and decimals. Solve problems involving operations with whole numbers, fractions, decimals and simple percentages. 	Page 91
	Number theory	<ul style="list-style-type: none"> Identify simple prime and composite numbers. Identify square and rectangular numbers. Identify factors and multiples. 	Page 92
Algebra	Directed numbers (Integration)	<ul style="list-style-type: none"> Identify positive and negative numbers in context. 	Page 94
	Rules and properties	<ul style="list-style-type: none"> Explore and discuss simple properties and rules about brackets and priority of operation. Identify relationships and record verbal and simple symbolic rules and number patterns. 	Page 95
	Variables		Page 96
	Equations	<ul style="list-style-type: none"> Translate number sentences with a frame into word problems and vice versa. Solve one-step number sentences and equations. 	Page 97
Shape and	2-D shapes	<ul style="list-style-type: none"> Make informal deductions about 2-D shapes and 	Pages 98,99

space		<p>their properties.</p> <ul style="list-style-type: none"> • Use angle and line properties to classify and describe triangles and quadrilaterals. • Identify the properties of the circle. • Construct a circle of given radius or diameter. • Tessellate combinations of 2-D shapes. • Classify 2-D shapes according to their lines of symmetry. • Use 2-D shapes and properties to solve problems. 	
	3-D shapes (Integration)	<ul style="list-style-type: none"> • Identify and examine 3-D shapes and explore relationships, including tetrahedron (faces, edges and vertices). • Draw the nets of simple 3-D shapes and construct the shapes. 	Page 99
	Lines and angles	<ul style="list-style-type: none"> • Recognise, classify and describe angles and relate angles to shape 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. 	Pages 100, 101
Measures	Length (Integration)	<ul style="list-style-type: none"> • Select and use appropriate instruments of measurement. • Estimate and measure length using appropriate metric units. • Estimate and measure the perimeter of regular and irregular shapes. 	Page 102
	Area	<ul style="list-style-type: none"> • Discover that the area of a rectangle is length by breadth. • Estimate and measure the area of regular and irregular 2-D shapes. • Calculate area using square centimetres and square metres. • Compare visually square metres and square centimetres. 	Page 103
	Weight	<ul style="list-style-type: none"> • Select and use appropriate instruments of measurement. • Estimate and measure weight using appropriate metric units. 	Page 104
	Capacity	<ul style="list-style-type: none"> • Select and use appropriate instruments of measurement. • Estimate and measure capacity using appropriate metric units. 	Pages 104, 105
	Time (Linkage and Integration)	<ul style="list-style-type: none"> • Read and interpret timetables and the 24-hour clock (digital and analogue). • Interpret and convert between times in 12-hour and 24-hour format. 	Page 105
	Money (Linkage)	<ul style="list-style-type: none"> • Compare 'value for money' using unitary method. 	Pages 106, 107.
Data	Representing and interpreting data (Linkage and Integration)	<ul style="list-style-type: none"> • Collect, organise and represent data using pictograms, single and multiple bar charts and simple pie charts • Read and interpret pictograms, single and multiple bar charts, and pie charts • Compile and use simple data sets • Explore and calculate averages of simple data 	Pages 108, 109

		<ul style="list-style-type: none"> sets • Use data sets to solve problems 	
Chance		<ul style="list-style-type: none"> • Identify and list all possible outcomes of simple random processes • Estimate the likelihood of occurrence of events • Construct and use frequency charts and tables 	Pages 109-111
Tables		<ul style="list-style-type: none"> • Addition • Subtraction • Multiplication • Division 	

Sixth Class

Strand	Strand Unit	Content/Learning Objectives	Curriculum
Number	Place Value	<ul style="list-style-type: none"> Read, write and order whole numbers and decimals. Identify place value in whole numbers and decimals. Round decimals. 	Page 88
	Operations	<ul style="list-style-type: none"> Estimate sums, differences, products and quotients of decimals. Add and subtract whole numbers and decimals (to three decimal places) without and with a calculator. Multiply a decimal by a decimal, without and with a calculator. Divide a four-digit number by a two-digit number without and with a calculator. Divide a decimal number by a decimal, without and with a calculator. 	Pages 88,89
	Fractions	<ul style="list-style-type: none"> 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. Divide a whole number by a unit fraction. Understand and use simple ratios. 	Pages 89,90
	Decimals and percentages (Linkage and Integration)	<ul style="list-style-type: none"> Use percentages and relate them to fractions and decimals. Compare and order percentages of numbers. Solve problems relating to profit and loss, discount, VAT, interest, increases, decreases. 	Page 91
	Number theory	<ul style="list-style-type: none"> Identify simple prime and composite numbers. Identify and explore square numbers. Explore and identify simple square roots. Identify common factors and multiples. Write whole numbers in exponential form. 	Page 92
	Variables	<ul style="list-style-type: none"> Explore the concept of a variable in the context of simple patterns, tables and simple formulae and substitute values for variables. 	Page 96
	Equations	<ul style="list-style-type: none"> Translate word problems with a variable into number sentences. Solve one-step number sentences and equations. 	Page 97
Shape and space	2-D shapes	<ul style="list-style-type: none"> 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 and angles Identify the properties of the circle. Construct a circle of given radius or diameter. Tessellate combinations of 2-D shapes. Classify 2-D shapes according to their lines of 	Pages 98,99

		<ul style="list-style-type: none"> symmetry. Plot simple co-ordinates and apply where appropriate. Use 2-D shapes and properties to solve problems. 	
	3-D shapes (Integration)	<ul style="list-style-type: none"> Identify and examine 3-D shapes and explore relationships, including octahedron (faces, edges, and vertices). Draw the nets of simple 3-D shapes and construct the shapes. Recognise, classify and describe angles and relate angles to shape. Recognise angles in terms of rotation. Estimate, measure and construct angles in degrees. Explore the sum of the angles in a quadrilateral. 	Page 99
Measures	Length	<ul style="list-style-type: none"> 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. 	
	Area	<ul style="list-style-type: none"> 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 the area using acres and hectares. Identify the relationship between square metres and square centimetres. Find the area of a room from a scale plan. 	Page 103
	Weight	<ul style="list-style-type: none"> Select and use appropriate instruments of measurement Rename measures of weight. 	Page 104
	Capacity	<ul style="list-style-type: none"> Select and use appropriate instruments of measurement. Rename measures of capacity. Find the volume of cuboid experimentally. 	Pages 104, 105
	Time (Linkage and Integration)	<ul style="list-style-type: none"> Explore international time zones. Explore the relationship between time, distance and average speed. 	Page 105
	Money (Linkage)	<ul style="list-style-type: none"> Explore value for money. Convert other currencies to euro and vice versa. 	Pages 106, 107.
Data	Representing and interpreting data (Linkage and Integration)	<ul style="list-style-type: none"> 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. Explore and calculate averages of simple data sets. Use data sets to solve problems. 	Pages 108, 109
	Chance (Integration)	<ul style="list-style-type: none"> Identify and list all possible outcomes of simple random processes. Estimate the likelihood of occurrence of events: order on a scale from 0 to 100%, 0 to 1. 	Pages 109-111

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		<ul style="list-style-type: none">• Construct and use frequency charts and tables.	
Tables		<ul style="list-style-type: none">• Addition• Subtraction• Multiplication• Division	