

## **A Curriculum for Excellence and Maths in Action.**

### ***The Four Capacities***

The Curriculum for Excellence has as a stated aim, the desire to bring out in students four attributes (the four capacities)

- Successful Learners
- Confident Individuals
- Responsible Citizens
- Effective Contributors.

The Maths in Action series works at providing this, and has always done so.

- Clear exposition of topics, an abundance of examples to try and regular checking up on progress at each stage all assist in making the student a *successful learner*;
- Well graded material with a planned progression, gets the student to experience genuine achievement and a feeling of success contributing to their development as *confident individuals*;
- Relevant material applied across many contexts and subjects highlight for the student the importance of mathematics in our society today; social arithmetic such as earning, spending, taxation, insurance, borrowing, appreciation, depreciation, *inter alia* will bring out the *responsible citizen*.
- Opportunities exist throughout the resource for group discussions and group activities. Historical notes provide openers which the students can exploit to show their knowledge or to research on the web and report back. ICT notes provide instructions which will allow the keen student to make interactive worksheets for others.

Participation and involvement are positively encouraged in the 'teacher's and resource packs which accompany the main texts. Being an *effective contributor* is an expectation rather than a hope.

### ***The Principles***

**The following principles should apply at each stage when designing a curriculum**

- Challenge and Enjoyment
- Breadth
- Progression
- Depth
- Personalisation and Choice
- Coherence
- Relevance

The emphasis on each will differ according to the developmental needs of the student.

#### ***Challenge and Enjoyment***

The Maths in Action series is designed to offer differing levels of achievement to all pupils offering them challenges appropriate to their current stage of development. Activities and games described in the resource books offer formative fun.

#### ***Breadth***

Ideas in the resource and teacher's book give ideas and instructions for going beyond the textbook when delivering the curriculum. The use of Powerpoint and Excel is

encouraged at every chapter. History notes, puzzles and contexts continually hint at other avenues to explore.

### *Progression*

The series is structured to provide a smooth progression from Primary to an appropriate level in Standard Grade. It has been mindful that not all pupils will develop at the same rate. Three broad avenues of development and progression have been identified and suitable units of work devised for each. Bridges are provided to allow for late development.

### *Depth*

Opportunities are built in to give the student the chance to explore the depths of a topic to meet the richer material to be found therein and to avoid them being prematurely rushed into the next topic and the next level. It is the richness which will ultimately attract a student to the topic rather than skimming through topic after topic without laying a foundation of understanding.

### *Personalisation and Choice*

The series is structured to facilitate the teacher's approach to individual needs. The three main routes through S1 and S2 courses contain many bridges to allow transfer from one to the other as the occasion arises. The structure allows the teacher to form schemes of work which are not too far adrift when such a transfer is needed.

### *Coherence*

The contexts and content and historical notes aim at providing a coherence and a unified feel to the subject while highlighting links to other subjects. Maths across the curriculum is addressed by the provision of 'booklets' for other departments in the resources.

### *Relevance*

One of the motivating forces for the authors was the desire to never have to hear the question, "Why are we learning this?". Wherever possible a justification for learning a topic is developed. Context and application are ubiquitous.

What follows are particular outcomes and experiences as defined by the CfE working party for consultation. Associated with them are the notes of where in the Maths in Action series these are principally addressed.

Remember that the books and supplementary materials are just one resource. It is the management of these resources and their integration into the teacher's methods along with personal complementary materials which will make it exact for a Curriculum for excellence.

### **The Present resource.**

Level A material is to be found in the Level B book (S1<sup>B</sup> Teacher resource CD).

This provides plenty of ideas for pre-level B experiences.

Level B is covered by S1<sup>B</sup> and in the 'Looking Back' sections (LB) of each chapter of S1<sup>1</sup> which is aimed at giving a *full* coverage to level C.

Note that the superscripts in the titles give an indication of difficulty level.

For example, S2<sup>1</sup> is aimed at giving a *full* coverage to level D using a less demanding approach (as defined by the demands on problem solving [PS]) than S1<sup>2</sup> which is also aimed at giving a *full* coverage to level D to the more able students a year earlier. S1<sup>2</sup> also aims to give a *minimum* coverage to level E i.e. all the attainment targets are met and exercised but not fully explored and extended as they are in S2<sup>2</sup>. The table below shows where the level content is to be found and which resource addresses it.

Resource	Coverage of 5-14 outcomes					
	A	B	C	D	E	F
1 <sup>B</sup>	CD & LB	Full				
1 <sup>1</sup>		LB	Full			
1 <sup>2</sup>			LB	Full + PS	Min	
1 <sup>3</sup>				LB	Full + PS	
2 <sup>1</sup>			LB	Full		
2 <sup>2</sup>				LB	Full + PS	Min
2 <sup>3</sup>					LB	Full + PS

Each chapter reference below, unless otherwise stated, covers the student book and the teacher's materials where the level is given *full* coverage. The table above will allow the user to see where else there is suitable source, including the spreadsheets (*directions* on the Teacher's Book or *actual* in the CDROM).

Throughout the series, similar chapter names have been used to facilitate planning, transference of students from one section to another, to allow students from different levels to discuss their progress on the playground and to simplify exercises such as this mapping.

The mapping below relates two things:

*In Black:* the Curriculum for Excellence outcomes and experiences as detailed in the consultation document (consultation closed at the end of June).

*In Blue:* References to individual chapters in particular parts of the Maths in Action resource which address the CfE outcome, with 5-14 labelling added to assist in the cross-matching.

Number, Money and Measure	Early	First	Second	Third	Fourth
<b>Estimation and Rounding</b>		Estimate, calculate, check. <b>MNU 101A</b>	Routinely estimate , calculate, check. <b>MNU 201A</b>	Round to an appropriate degree of accuracy, in context. <b>MNU 301A</b>	Inaccuracy and error, tolerance, appropriate degree of accuracy <b>MNU 401A</b>
<b>Maths in Action</b>		<i>Level A is on CD for 1<sup>B</sup></i> Ch 9. Length Ch 14. Volume, weight <i>Level B (1<sup>B</sup>)</i> Ch 4. Whole numbers 2 Ch 9. Length Ch 14. Volume, weight <i>Level C (1<sup>1</sup>)</i> Ch 1 Whole numbers (teacher notes state that 'estimate, calculate, check' should be encouraged wherever possible i.e. the skill is embedded).	<i>Level D/E (1<sup>2</sup>)</i> Ch 1 Whole numbers	<i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers Ch 2 Decimals	<i>General Level (3<sup>2</sup>)</i> Ch1 Calculations and the calculator
<b>Number Processes</b>	Numbers represent quantities, counting, create sequences, describe order. <b>MNU001B</b>	Whole numbers, importance of zero, place value. <b>MNU 102B</b>	Work with whole numbers, decimal fractions, place value. <b>MNU 202B</b>		
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 1. Whole numbers	<i>Level B (1<sup>B</sup>)</i> Ch 1. Whole numbers Ch 4. Whole numbers <i>Level C (1<sup>1</sup>)</i> Ch 1. Whole numbers Ch 2. Decimals	<i>Level C (1<sup>1</sup>)</i> Ch 1. Whole numbers Ch 2. Decimals <i>Level D/E (1<sup>2</sup>)</i> Ch 1 Whole numbers Ch 2 Decimals	<i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers <i>Ch 4 Algebraic notation: expressions and formulae</i>	
<b>Addition, Subtraction, Multiplication and Division</b>	Practical materials, 'count on and back' to understand addition and subtraction, record solutions in different ways. <b>MNU002C</b>	Use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills. <b>MNU 103C</b>	Solve problems involving whole numbers using a range of methods, <b>MNU 203C</b> Solve problems involving decimal fractions <b>MNU 204C</b> Order of operations <b>MTH 205C</b>	Solve number problems in familiar contexts, <b>MNU 302C</b> Continue to recall number facts quickly and accurately in calculations. <b>MNU 303C</b>	Solve problems in unfamiliar contexts. <b>MNU 402C</b> Brackets and correct order of operations <b>MTH 403C</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 1. Whole numbers	<i>Level A is on CD for 1<sup>B</sup></i> Ch 1. Whole Number Ch 11 Whole Number <i>Level B (1<sup>B</sup>)</i> Ch 1. Whole numbers Ch 4. Whole numbers Ch11 Maths in Context <i>Level C (1<sup>1</sup>)</i> Ch 1. Whole numbers	<i>Level D/E (1<sup>2</sup>)</i> Ch 1 Whole numbers Ch 2 Decimals	<i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers Ch 2 Decimals	<i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers Ch 4 Algebraic notation: expressions and formulae. <i>General Level (3<sup>2</sup>)</i> Ch1 Calculations and the calculator for brackets and order; Problem solving throughout book.
<b>Negative Numbers</b>			Extend the number line to include negative numbers; work with integers in context. <b>MNU 206D</b>	Solve simple problems in context using integers. <b>MNU 304D</b>	
<b>Maths in Action</b>			<i>Level D/E (1<sup>2</sup>)</i> Ch 6 Time and Temperature	<i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers	

			Ch 7 Position and Movement (extending coord-axes.) <i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers		
<b>Multiples, Factors and Primes</b>			Explore patterns and relationships in multiplication and division; multiples and factors of numbers. <b>MTH 207E</b>	Strategies for finding common multiples and common factors; solve related problems. <b>MTH 305E</b> Prime numbers; explain their application in today's world. <b>MTH 306E</b>	
<b>Maths in Action</b>			<i>Level D/E (1<sup>2</sup>)</i> Ch 1 Whole numbers <i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers	<i>Level D/E (1<sup>2</sup>)</i> Ch 1 Whole numbers <i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers	
<b>Powers and Roots</b>				Powers, vocabulary and notation, evaluate powers of whole numbers mentally or using technology. <b>MTH 307F</b>	Relationship between powers and roots; evaluate whole number powers and roots, of any appropriate number. <b>MTH 404F</b>
<b>Maths in Action</b>			<i>Level D/E (1<sup>2</sup>)</i> Ch 12 Letters, numbers, sequences	<i>Level D/E (1<sup>2</sup>)</i> Ch 12 Letters, numbers, sequences <i>Level E/F (2<sup>2</sup>)</i> Ch 1 Whole numbers and integers	<i>General Level (3<sup>2</sup>)</i> Ch1 Calculations and the calculator
<b>Scientific Notation</b>					Work with scientific notation <b>MTH 405G</b>
<b>Maths in Action</b>					<i>Level E/F (2<sup>2</sup>)</i> Ch 2 Decimals <i>General Level (3<sup>2</sup>)</i> Ch1 Calculations and the calculator
<b>Fractions, Decimals and Percentages</b>	Share out a group of items by making smaller groups; split a whole object into smaller parts. <b>MNU003H/C</b>	Fractions (practical activities), • single item shared equally • notation and vocabulary • where simple fractions lie on the number line. <b>MNU104H</b>  Find a fraction of an amount by division. <b>MNU105H</b>  Simple equivalent fractions (practical activities). <b>MTH 106H</b>	Problems involving simple fractions, percentages or decimal fractions in familiar contexts <b>MNU 208H</b>  Equivalent forms of simple fractions, decimal fractions and percentages; choose preferred form when solving a problem; explain choice of method. <b>MNU 209H</b>  Finding equivalent fractions; simplest form; compare and order the most commonly used fractions. <b>MTH 210H</b>	Problems involving a wide range of fractions, decimal fractions and percentages, using the answers to make comparisons and informed choices for real life situations. <b>MNU 308H</b>  Add and subtract commonly used fractions. <b>MTH 309H</b>  Convert between whole or mixed numbers and fractions. <b>MTH 310H</b>	Choose the most appropriate form of fractions, decimal fractions or percentages to use when making calculations and use the solutions to make comparisons, decisions and choices. <b>MNU 406H</b>  Solve problems involving fractions and mixed numbers in context, using addition, subtraction or multiplication. <b>MTH 407H 5</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 15. Fractions	<i>Level B (1<sup>B</sup>)</i> Ch 15. Fractions <i>Level C (1<sup>1</sup>)</i> Ch 15. Fractions	<i>Level D/E (1<sup>2</sup>)</i> Ch 15 Fractions and Percentages <i>Level E/F (2<sup>2</sup>)</i> Ch 15 Fractions and	<i>Level E/F (2<sup>2</sup>)</i> Ch 15 Fractions and percentages	

			percentages		
<b>Ratio and Proportion</b>				Increase or decrease related quantities proportionally; apply this to problems in familiar contexts. <b>MNU 311J</b>	Using proportion, calculate the change in one quantity caused by a change in a related quantity; solve real life problems. <b>MNU 408J</b>
<b>Maths in Action</b>				<i>Level D/E (1<sup>2</sup>)</i> Ch 15 Fractions and percentages (ratios) <i>Level E/F (2<sup>2</sup>)</i> Ch 14 Ratio and Proportion	<i>Level E/F (2<sup>2</sup>)</i> Ch 14 Ratio and Proportion <i>General Level (3<sup>2</sup>)</i> Ch7 Proportion and variation
<b>Money</b>	Develop an awareness of how money is used; recognise and use a range of coins. <b>MNU004K</b>	Use money to pay for items; work out the change. <b>MNU 107K</b>  Investigate how different combinations of coins and notes can be used to make up given amounts <b>MNU 108K</b>	Manage money; compare costs; determine what is affordable. <b>MNU 211K</b>  Costs, benefits, risks of using bank; realise that budgeting is important. <b>MNU 212K</b>  Profit and loss. <b>MNU 213K</b>	Source, compare and contrast different financial products, services and contracts and explain which offer best value. <b>MNU 312K</b>  Budget effectively, making use of technology and other methods, to manage money and plan for future expenses. <b>MNU 313K</b>	Discuss and illustrate the facts salient to determining what is affordable, in order to manage credit and debt and lead a responsible lifestyle. <b>MNU 409K</b>  Source information on earnings and deductions; determine net income. <b>MNU 410K</b>  Research, compare and contrast a range of personal finance products; explain preferred choices. <b>MNU 411K</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 2. Decimals	<i>Level A is on CD for 1<sup>B</sup></i> Ch 11. Money <i>Level B (1<sup>B</sup>)</i> Ch 2 Decimals Ch 11 Maths in Context	<i>Level C (1<sup>1</sup>)</i> Ch 2. Decimals <i>Level D/E (1<sup>2</sup>)</i> Ch 2 Decimals	<i>General Level (3<sup>2</sup>)</i> Ch 4 Money	<i>General Level (3<sup>2</sup>)</i> Ch 4 Money
<b>Time</b>	Routines and events linking with times and seasons; record and display these using clocks, calendars and other methods. <b>MNU005L</b>	Tell the time using 12 and 24 hour clocks; explain the impact on daily routine <b>MNU 109L</b>  Use a calendar to plan <b>MNU 110L</b>  Develop a sense of duration by measuring the time taken to complete a range of activities using a variety of timers. <b>MNU 111L</b>	Use and interpret electronic and paper-based timetables and schedules; make time calculations <b>MNU 214L</b>  Practical tasks and investigations involving timed events; choose most appropriate units. <b>MNU 215L</b>  Estimate duration of journey using the link between time, speed and distance. <b>MNU216L</b>	Using simple time periods and the link between time, speed and distance find one given the other two. <b>MNU 314L</b>	Research, compare and contrast aspects of time and time management <b>MNU 412L</b>  Use the link between time, speed and distance to carry out related calculations. <b>MNU 413L</b>
<b>Reference</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 6. Time	<i>Level B (1<sup>B</sup>)</i> Ch 6 Time <i>Level C (1<sup>1</sup>)</i> Ch 6. Time	<i>Level D/E (1<sup>2</sup>)</i> Ch 6 Time and Temperature <i>Level E/F (2<sup>2</sup>)</i> Ch 6 Time, distance and speed	<i>Level E/F (2<sup>2</sup>)</i> Ch 6 Time, distance and speed	<i>Level E/F (2<sup>2</sup>)</i> Ch 6 Time, distance and speed <i>General Level (3<sup>2</sup>)</i> Ch 9 Time, distance and speed
<b>Measurement</b>	Experiment with everyday items as units of measure to investigate and compare	Estimate length or weight or capacity, using everyday things as a guide, then with	Use knowledge of the sizes of familiar objects or places to base an estimate of	Solve practical problems by applying knowledge of measure, choosing the appropriate units and degree of	Apply knowledge and understanding of measure to everyday problems and tasks; appreciate the practical importance of accuracy

	sizes and amounts in the environment, <b>MNU 006M</b>	appropriate instruments and units. <b>MNU 112M</b>  Estimate the area of a shape by counting squares or other methods. <b>MNU 113M</b>	measure. <b>MNU 217M</b>  Use the common units of measure; convert between related units of the metric system; carry out calculations <b>MNU 218M</b>  Find the perimeter and area of a simple 2D shape or volume of a simple 3D object. <b>MNU 219M</b>	accuracy for the task; use a formula to calculate area or volume when required. <b>MNU 315M</b>  Find the area of compound 2D shapes and the volume of compound 3D objects <b>MTH 316M</b>	when making calculations. <b>MNU 414M</b>  Surface area of simple 3D shapes (make the most efficient use of materials) <b>MTH 415M</b>  The use of 3D objects in everyday life; volume of a prism, using a formula to make related calculations when required. <b>MTH 416M</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 9. Length Ch 14 Volume and weight	<i>Level B (1<sup>B</sup>)</i> Ch 9 Length Ch 14 Volume and weight <i>Level C (1<sup>1</sup>)</i> Ch 9. Length Ch 14 Volume and weight	<i>Level D/E (1<sup>2</sup>)</i> Ch 9 Length (inc Perimeter) Ch 11 Area Ch 14 Volume and weight	<i>Level E/F (2<sup>2</sup>)</i> Ch 11 Area Ch 17 Three Dimensions	<i>Level E/F (2<sup>2</sup>)</i> Ch 11 Area Ch 17 Three Dimensions <i>General Level (4<sup>2</sup>)</i> Ch 1 Area Ch 2 Surface area and volume
<b>Mathematics – its impact on the world, past, present and future</b>		The role of numbers in the world; examine a variety of systems that have been used by civilisations throughout history to record numbers. <b>MTH 114N</b>	How mathematics impacts on the world especially in advances and inventions. (A presentation) <b>MTH 220N</b>	Research a famous mathematician and the work for which they are known, or investigate a mathematical topic (A presentation). <b>MTH 317N</b>	The importance of mathematics in the real world, ... the mathematical skills required for different career paths ... how mathematics can be applied in the workplace. (A presentation). <b>MTH 417N</b>
<b>Maths in Action</b>	<i>Historical pointers are to be found at the start of each chapter in the Teacher's notes, immediately after the tables dealing with curriculum coverage. [not in 1B]</i>				
<b>Patterns and Relationships</b>	Spot, explore, copy, continue, create patterns in the environment <b>MTH 007P</b>	Continue, devise more involved repeating patterns or designs, using a variety of media. MTH 115P  Recognise and continue simple number sequences; communicate the rule applied. <b>MTH 116P</b>	Explore more complex number sequences, including well-known named number patterns; explain the rule used to generate the sequence, and apply it to extend the pattern. <b>MTH 221P</b>	Establish the set of numbers generated by a given rule; determine a rule for a given sequence using appropriate notation. <b>MTH 318P</b>	Explore how real life situations can be modelled by number patterns; establish a number sequence to represent a physical or pictorial pattern; determine a general formula to describe the sequence, then use it to make evaluations and solve related problems. <b>MTH418P</b>  The definition of gradient as line and use it to make relevant calculations, interpreting the answer for the context of the problem. <b>MTH 419P</b>  Equation of a horizontal or vertical line <b>MTH420P</b>  Use the equation of a straight line to create a graphical representation then use this to answer related questions. <b>MTH 421P</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 3. Lines Ch 12 Letters Numbers and sequences	<i>Level B (1<sup>B</sup>)</i> Ch 12 Letters Numbers and sequences <i>Level C (1<sup>1</sup>)</i> Ch 12 Letters Numbers and sequences	<i>Level D/E (1<sup>2</sup>)</i> Ch 12 Letters, numbers, sequences	<i>Level E/F (2<sup>2</sup>)</i> Ch 12 Sequences	<i>Level F (2<sup>3</sup>)</i> Ch 7 Scales and Coordinates (for straight line) <i>General Level (3<sup>2</sup>)</i> Ch 7 Proportion and variation <i>General Level (4<sup>2</sup>)</i>

					<a href="#">Ch 10 Trigonometry</a>
<b>Expressions and Equations</b>		<p>Use appropriate vocabulary and the symbols for equals, not equal to, less than and greater than. <b>MTH 117R</b></p> <p>When a picture or symbol is used to replace a number in a number statement, find its value <b>MTH 118R</b></p>	<p>Solve problems where an unknown value is represented by a symbol or letter. <b>MTH 222R</b></p>	<p>Collect like algebraic terms; simplify expressions ; evaluate using substitution. <b>MTH 319Q</b></p> <p>Construct, and use appropriate methods to solve, a range of simple equations. <b>MTH 320R</b></p> <p>Create and evaluate a simple formula representing information contained in a diagram, problem or statement. <b>MTH 321R</b></p>	<p>Simplify and evaluate simple algebraic terms involving a bracket. <b>MTH 422Q</b></p> <p>Find the factors of algebraic terms; identify common factors to factorise expressions. <b>MTH 423Q</b></p> <p>Construct and solve in equations and an extended range of equations to model situations. <b>MTH 424R</b></p>
<b>Maths in Action</b>		<p><i>Level B (1<sup>B</sup>)</i> Ch 1 Whole numbers Ch 8 Letters and Numbers</p>	<p><i>Level C (1<sup>C</sup>)</i> Ch 8 Solving equations <i>Level D/E (1<sup>D</sup>)</i> Ch 8 Solving Equations (inc. inequations)</p>	<p><i>Level D/E (1<sup>D</sup>)</i> Ch 4 Letters and numbers Ch 8 Solving Equations (inc. inequations) <i>Level E/F (2<sup>E</sup>)</i> Ch 4 Algebraic notation: expressions and formulae. Ch 8 Solving equations and inequations. Ch 12 Sequences (<i>inter alia</i>)</p>	<p><i>Level E/F (2<sup>E</sup>)</i> Ch 4 Algebraic notation: expressions and formulae. Ch 8 Solving equations and inequations. Ch 12 Sequences (<i>inter alia</i>) <i>General Level (3<sup>G</sup>)</i> Ch 3 Brackets and equations Ch 5 Factors <i>General Level (4<sup>G</sup>)</i> Ch 6 Equations and inequations</p>

<b>Shape, Position and Movement</b>	<b>Early</b>	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
Properties of 2D Shapes and 3D Objects	Investigate objects and shapes; sort, describe and be creative with them. <b>MTH 008S</b>	Simple 3D objects and 2D shapes: identify, name and describe their features using appropriate vocabulary. <b>MTH 119S</b>  Explore and discuss how and why different shapes fit together and create a tiling pattern with them. <b>MTH 120S</b>	3D objects and 2D shapes: use mathematical language to describe their properties, and through investigation discuss where and why particular shapes are used in the environment. <b>MTH 223S</b>  Show an understanding of the relationship between 3D objects and their nets. <b>MTH 224S</b>  Draw 2D shapes and make representations of 3D objects using an appropriate range of methods <b>MTH 225S</b>	Accurately draw 2D shapes using appropriate mathematical instruments and methods. <b>MTH 322S</b>	Pythagoras; Elementary Trigonometry; MTH 425S  The relationships between the radius, diameter, circumference and area of a circle <b>MTH 426S 11</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 13. Triangle Ch 16 2D-Shapes Ch 17 3Dimensions	<i>Level B (1<sup>B</sup>)</i> Ch 13. Triangle Ch 16 2D-Shapes Ch 17 3Dimensions	<i>Level C (1<sup>1</sup>)</i> Ch 13 The Triangle Ch 16 2D-Shapes Ch 17 3Dimensions <i>Level D/E (1<sup>2</sup>)</i> Ch 13 The Triangle Ch 16 2D-Shapes Ch 17 3Dimensions	<i>Level D/E (1<sup>2</sup>)</i> Ch 13 The Triangle Ch 16 2D-Shapes Ch 17 3Dimensions <i>Level E/F (2<sup>2</sup>)</i> Ch 13 The triangle Ch 16 2D Shapes	<i>Level E/F (2<sup>2</sup>)</i> Ch 9 Calculating Distance Ch 11 Area <i>General Level (3<sup>2</sup>)</i> Ch 8 Pythagoras Ch 11 Angles and the triangle (trig) <i>General Level (4<sup>2</sup>)</i> Ch 1 Area
<b>Angle, Symmetry and Transformation</b>	In movement, games, and using technology use simple directions and describe positions. <b>MTH 009T/U</b>	Describe, follow and record routes and journeys using signs, words and angles associated with direction and turning. <b>MTH 121T</b>	Discuss, describe and classify angles using appropriate mathematical vocabulary. <b>MTH 226T</b>  Accurately measure and draw angles using appropriate equipment <b>MTH 227T</b>  The link between compass points and bearings; describe, follow and record directions, routes and journeys using appropriate vocabulary. <b>MTH 228T</b>  Use scales to interpret simple models, maps and plans. <b>MTH 229T</b>	Name angles and find their sizes using knowledge of the properties of a range of 2D shapes and the angle properties associated with intersecting and parallel lines. <b>MTH 323T</b>  Use bearings and scale to interpret maps and plans and create accurate plans, and scale drawings of routes and journeys. <b>MTH 324T</b>  Use scale when enlarging or reducing pictures and shapes, using different methods, including technology. <b>MTH328T</b>	Radius/tangent theorem angle in a semi-circle <b>MTH 427T</b>  Similar figures (length and area) <b>MTH428T</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 7. Position and	<i>Level B (1<sup>B</sup>)</i> Ch 7. Position and	<i>Level C (1<sup>1</sup>)</i> Ch 3 Angles	<i>Level D/E (1<sup>2</sup>)</i> Ch 3 Angles	<i>General Level (3<sup>2</sup>)</i> Ch 10 Angles and circle

	Movement	Movement	Ch 7 Position and Movement <i>Level D/E (1<sup>2</sup>)</i> Ch 3 Angles Ch 7 Position and Movement	Ch 7 Position and Movement <i>Level E/F (2<sup>2</sup>)</i> Ch 3 Angles Ch 7 Scales and coordinates Ch 10 Transformations (for enlargement and reduction)	<i>General Level (4<sup>2</sup>)</i> Ch 4 Similarity
<b>Angle, Symmetry and Transformation</b>	Create a range of symmetrical pictures and patterns using a range of media. <b>MTH 013V</b>	Use of grid reference systems in everyday contexts to locate and describe position. <b>MTH 122U</b>  Explore, create and recognise symmetrical pictures, patterns and shapes. <b>MTH 123V</b>	Plot and describe the location of a point on a grid. <b>MTH 230U</b>  Draw lines of symmetry for a range of 2D shapes; create and complete symmetrical pictures and patterns. <b>MTH 231V</b>		Plot and describe the position of a point on a 4-quadrant co-ordinate grid. <b>MTH429U</b>  Use co-ordinates to describe the transformation of, a point or shape on a grid. <b>MTH430U</b>  Use appropriate mathematical vocabulary to discuss the rotational properties of shapes, pictures and patterns and can apply understanding when completing or creating designs. <b>MTH431V</b>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 10. Tiling and Symmetry <i>Level B (1<sup>B</sup>)</i> Ch 10. Tiling and Symmetry	<i>Level B (1<sup>B</sup>)</i> Ch 10. Tiling and Symmetry Ch 7. Position and Movement <i>Level C (1<sup>1</sup>)</i> Ch 7 Position and movement Ch 10 Tiling and Symmetry	<i>Level D/E (1<sup>2</sup>)</i> Ch 10 Tiling and Symmetry Ch 7 Position and Movement	<i>Level E/F (2<sup>2</sup>)</i> Ch 7 Scales and coordinates	<i>Level D/E (1<sup>2</sup>)</i> Ch 7 Position and Movement Ch 10 Tiling and Symmetry <i>Level E/F (2<sup>2</sup>)</i> Ch 7 Scales and coordinates Ch 10 Transformations (for enlargement and reduction)

<b>Information Handling</b>	<b>Early</b>	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Fourth</b>
<b>Data and Analysis</b>	<p>Collect objects and ask questions to gather information, organising and displaying findings in different ways. <b>MNU010W</b></p> <p>Match objects, and sort using pupil's own and others' criteria. <b>MNU011W</b></p> <p>Use signs and charts in the environment for information, that help to plan and make choices and decisions in daily life. <b>MNU012W</b></p>	<p>Explore ways which data is presented and can ask and answer questions about the information contained. <b>MNU 124W</b></p> <p>Use a range of ways to collect information and sort it in a logical, organised and imaginative way <b>MNU 125W</b></p> <p>Using technology and other methods, display data simply, clearly and accurately by creating tables, charts and diagrams, using simple labelling and scale. <b>MTH 126X</b></p>	<p>Interpret and draw conclusions from information displayed, recognising that the presentation may be misleading. <b>MNU 232W</b></p> <p>Carry out investigations and surveys, devising and using a variety of methods to gather information and work with others to collate, organise and communicate the results in an appropriate way. <b>MNU 233W</b></p> <p>Display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology. <b>MTH 234X</b></p>	<p>Work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether the information is robust, vague or misleading. <b>MNU 325W</b></p> <p>Understand how sample size and bias can affect the reliability of data being gathered, and how to check or ensure that the results are unprejudiced. <b>MTH 326W</b></p>	<p>Evaluate and interpret raw and graphical data using a variety of methods; comment on relationships within the data and communicate findings <b>MNU 432W</b></p> <p>Find the mean, median, mode and range of sets of numbers; decide which type of average is most appropriate to use and discuss how using an alternative type of average could be misleading. <b>MTH433W</b></p> <p>Select appropriately from a wide range of tables, charts, diagrams and graphs when displaying discrete, continuous or grouped data, clearly communicating the significant features of the data. <b>MTH 434X</b></p>
<b>Maths in Action</b>	<i>Level A is on CD for 1<sup>B</sup></i> Ch 5. Information Handling 1	<i>Level B (1<sup>B</sup>)</i> Ch 5. Information Handling 1 Ch 18. Information Handling 2 <i>Level C (1<sup>I</sup>)</i> Ch 5. Information Handling 1 Ch 18. Information Handling 2	<i>Level D/E (1<sup>2</sup>)</i> Ch 5 Information Handling 1 Ch 18 Information Handling 2	<i>Level E/F (2<sup>2</sup>)</i> Ch 5 Information Handling 1 Ch 18 Information Handling 2	<i>Level E/F (2<sup>2</sup>)</i> Ch 5 Information Handling 1 Ch 18 Information Handling 2 <i>General Level (3<sup>2</sup>)</i> Ch 12 More Statistics
<b>Ideas of Chance and Uncertainty</b>		Use appropriate vocabulary to describe the likelihood of events occurring, <b>MNU 127Y</b>	Conduct simple experiments involving chance and communicate predictions and findings using the vocabulary of probability. <b>MNU 235Y</b>	Find the probability of a simple event happening; explain why the consequences of the event, as well as its probability, should be considered when making choices. <b>MNU 327Y</b>	Expected frequency; its use to make predictions, risk assessment, informed choices and decisions. <b>MNU 435Y</b>
<b>Maths in Action</b>		<i>Level A is on CD for 1<sup>B</sup></i> Ch 5. Information Handling A simple game/experiment with dice is included in the level A provision which will address this <i>Level B (1<sup>B</sup>) No coverage</i>	<i>Level E/F (2<sup>2</sup>)</i> Ch 18 Information Handling 2	<i>Level E/F (2<sup>2</sup>)</i> Ch 18 Information Handling 2	