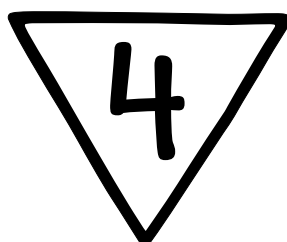



Collins Primary Maths Teacher's Guide



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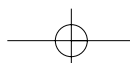
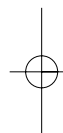
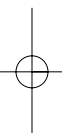
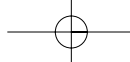
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Teacher's Guide Contents

I Introduction	5
I.1 Introducing Collins Primary Maths <ul style="list-style-type: none"> – Peter Clarke and the CPM team – The philosophy of the course – CPM, the National Numeracy Strategy and Framework for Teaching Mathematics – Detailed CPM contents and coverage of the Framework* 	
I.2 How to use Collins Primary Maths <ul style="list-style-type: none"> – Year 4 structure and components – The CPM daily maths lesson plan – The pupil materials – Homework, games and software – Assessment 	30
2 Oral work and mental calculation	47
<ul style="list-style-type: none"> – Summary of objectives covered – Strand 1 Numbers and the Number System – Strand 2 Calculations – Strand 3 Solving Problems – Strand 4 Handling Data – Strand 5 Measures, Shape and Space 	
3 Lesson Plans	87
<ul style="list-style-type: none"> – Autumn – Spring – Summer 	
4 Resource Copymasters (RCM1–RCM18)*	413
5 Assessment	431
<ul style="list-style-type: none"> – Progress charts and templates* – Assess and Review Part A* – Assess and Review Part B* 	

* Elements of this Teacher's Guide which may be photocopied according to the requirements laid down on page 2.





I INTRODUCTION

I.1 Introducing Collins Primary Maths

Peter Clarke and the CPM team



Peter Clarke, Series Editor of CPM

Peter Clarke is Maths Advisory Teacher for Barking and Dagenham, and has been involved in the highly regarded numeracy project underway in the Authority. The work of the project has been cited by the Numeracy Task Force in its recommendations for the National Numeracy Strategy. Peter lectures on a PGCE course and has extensive experience as an INSET provider. Peter has also written for the National Numeracy Strategy and is a widely published author.

The other members of the writing and development team all have extensive experience of teaching mathematics to a wide range of ability. In particular, the team has a wealth of expertise in the whole-class interactive methodological approach which underpins the *Framework for Teaching Mathematics*.

The philosophy of the course

Collins Primary Maths is a modern mathematics programme with the recommendations of the National Numeracy Strategy at its heart.

The course aims to offer:

- Complete coverage of the yearly teaching programmes of the *Framework for Teaching Mathematics*.
- A straightforward yet flexible approach to the interactive whole-class teaching of mathematics.
- Daily lesson plans following closely the structure and planning recommended by the *Framework for Teaching Mathematics*.
- A systematic approach to the development of mental maths strategies.
- Extensive teacher support through materials which:
 - are sufficiently detailed to aid confidence
 - are rich enough to be varied and developed
 - take into account issues of pace and classroom management
 - give careful consideration to the key skill of appropriate, effective questioning
 - provide a careful balance of teacher intervention and pupil participation
 - encourage communication of methods and foster mathematical rigour.
- Pupil materials which are enjoyable and purposeful.

CPM, the National Numeracy Strategy and Framework for Teaching Mathematics

How the strands of mathematics are organised

The yearly objectives summarised in the *Framework for Teaching Mathematics* are set out in the strands and topics listed below.

To help teachers use CPM in conjunction with the Framework, all materials are referenced to the relevant Strand, Topic and Objective(s) being covered.

YEAR 4 STRANDS	TOPICS
Numbers and the number system	<ul style="list-style-type: none"> ● Place value, ordering and rounding (whole numbers) ● Properties of numbers and number sequences. ● Fractions and decimals.
Calculations	<ul style="list-style-type: none"> ● Understanding addition and subtraction. ● Rapid recall of addition and subtraction facts. ● Mental calculation strategies (+ and -). ● Pencil and paper procedures (+ and -) ● Understanding multiplication and division. ● Rapid recall of multiplication and division facts. ● Mental calculation strategies (\times and \div). ● Pencil and paper procedures (\times and \div). ● Checking results of calculations.
Solving problems	<ul style="list-style-type: none"> ● Making decisions. ● Reasoning about numbers and shapes. ● Problems involving 'real life', money, and measures.
Handling data	<ul style="list-style-type: none"> ● Organising and interpreting data.
Measures, shape and space	<ul style="list-style-type: none"> ● Measures. ● Shape and space.

The strand and topic names above are organised in such a way as to emphasise the mathematical connections between them. Learning mathematics, and becoming confidently numerate, requires such connections to be properly comprehended. It is of particular importance that pupils gain a sense of where a number fits into the number system.

It is also vital that children:

- know number facts by heart
- use the facts they know to deduce other facts
- use and feel comfortable with a variety of calculation strategies
- recognise when to use appropriate operations and methods
- judge whether answers are reasonable and have strategies for checking them
- calculate accurately and efficiently, both mentally and using pencil and paper
- make sense of number problems.

To see in detail how CPM covers the Year 4 objectives, please turn to the charts on pages 12 to 29.

To see how CPM materials match and give reference to the strands, topics and objectives, please see section 1.2 (*How to use Collins Primary Maths*).

Planning

A key aim of Collins Primary Maths is to support teachers in planning a successful mathematics programme for their teaching context. The CPM lessons and accompanying materials have been written and planned based on the following principles:

- A clear understanding of pupils' pre-requisite skills before undertaking particular tasks, and learning new concepts.
- Considered progression from one lesson to another.
- Regular revisiting and extension of previous learning.
- A judicious balance of objectives, and the time dedicated to each one.
- The use of a consistent format and structure.

CPM is presented in the order suggested by the *Framework for Teaching Mathematics* (see the planning grids found in the Framework). CPM provides lessons for every day of every week in every term of the school year. To see the CPM Y4 teaching programme in more detail, please see the charts on pages 12 to 29. The suggested term, week and day is also highlighted on each CPM lesson plan. To see how this straightforward approach works in more detail, please see section 1.2 (*How to use Collins Primary Maths*).

At the same time, CPM offers a high level of flexibility to teachers, who should not feel constrained by the suggested order. By presenting the lessons in ring-binder format, we have ensured that lessons can be re-arranged easily. The clear references in the lesson plans to strand, topic and objective, also enable teachers to order them by whichever criteria they feel are most appropriate for themselves and their pupils.

The elements of CPM which form a basis for planning can be summarised as follows:

Long-term plans

Clearly, the *Framework for Teaching Mathematics* itself constitutes a long-term plan for schools to follow. By closely reflecting the Framework, the CPM course from Reception to Year 6 embodies this long-term plan.

Medium-term plans

The CPM charts showing termly outlines of units of work, and their main teaching objectives, offer a medium-term plan to schools. Please see pages 12 to 29 for the Year 4 charts.

Short-term plans

The CPM lesson plans represent the majority of each yearly Teacher's Guide. The lessons provide short-term plans which can be either followed closely, or used as a 'springboard' and varied to suit the specific needs of particular classes.

Teaching the Daily Maths Lesson

Below is a selected summary of the three-stage daily maths lesson. The purposes and comments listed are drawn from those recommended in the *Framework for Teaching Mathematics*. Though not comprehensive, this summary represents a guide to the elements on which CPM focuses most strongly.

Oral work and mental calculation (whole-class, about 5 to 10 minutes)

Main Purposes:

- rehearse and sharpen skills (sometimes for the main part of the lesson)

Opportunities:

- practise mental calculations and rapid recall of facts
- figure out new facts from known facts
- build on and develop strategies already learnt
- review work done at home.

Features:

- make a clear start to the lesson
- keep up a brisk pace and avoid running over 10 minutes
- use a range of open/closed questions.

Main teaching input and pupil activities (whole-class/group/pair/indiv., about 30 to 40 minutes)

Main purposes:

- introduce a new topic, consolidate or extend previous work
- develop vocabulary, using correct notation and terms
- use and apply concepts and skills.

Features:

- make the objectives and format of the lesson explicit
- involve pupils through planned questioning, pupil demonstration and sharing of methods
- identify, correct, and discuss constructively mistakes, misconceptions and forgotten ideas
- keep up the pace by varying questions and giving deadlines for tasks
- with groups, use a manageable number (e.g. maximum of 4 groups); control the degree of differentiation (e.g. tasks at a maximum of 3 levels); work with 1 or 2 groups intensively (rather than being with all groups for short periods)
- with pairs, encourage discussion and co-operation
- with individuals, ensure that the class works on related activities, focused on the same objectives.

The plenary session (whole-class, about 10 to 15 minutes)

Main purposes:

- help pupils clarify misconceptions and assess their attainment of knowledge/skills
- bring the lesson to a close and evaluate its success

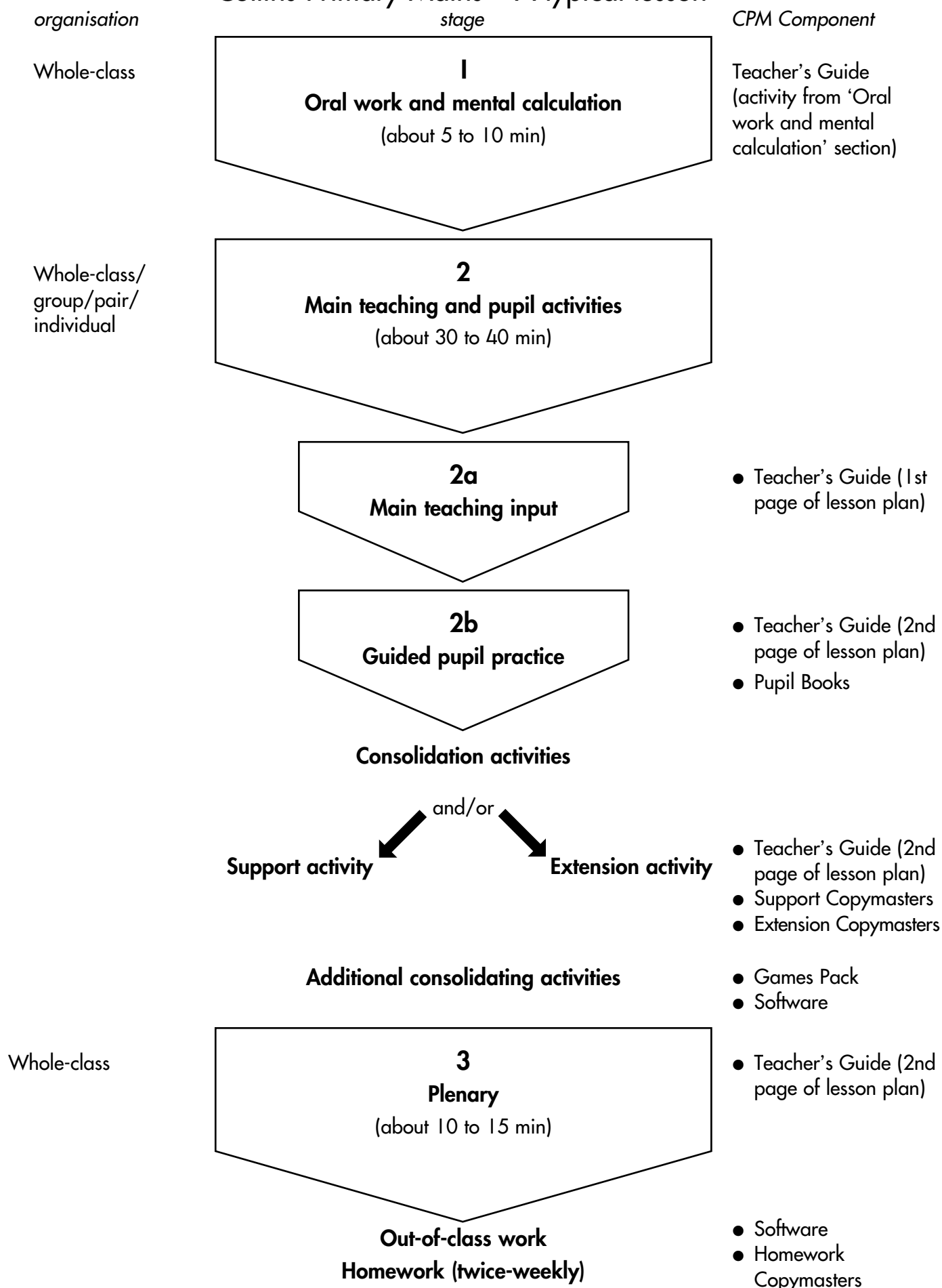
Opportunities:

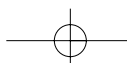
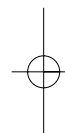
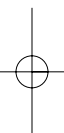
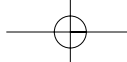
- draw together what was learnt, reflect on what was important, summarise key facts, ideas, vocabulary, and what needs to be remembered
- make links to other work and highlight what the class will do next
- relate maths to work in other subjects
- help pupils to generalise a rule from examples generated in the lesson
- ask pupils to present and explain their work
- discuss and compare the efficiency of different calculation methods
- provide tasks for pupils to do at home.

Features:

- have a clear purpose for the plenary in mind, and how pupils are to present their work
- ensure that there is sufficient time for the plenary.

Collins Primary Maths – A typical lesson





Detailed CPM contents and coverage of the Framework

The charts provided on the following pages show the objectives covered by CPM Y4 lessons, on a weekly basis for each term. It may be useful to look at the charts in conjunction with the yearly teaching programme and planning grids in the *Framework for Teaching Mathematics*. A comparison will show how CPM is matched to the Framework, and will allow teachers to see the choices that the CPM team has made in covering the objectives.

In order to see the objectives of individual lessons, use the references in the chart and turn to the relevant page in section 3 of this Teacher's Guide (*Lesson plans*).

The yearly teaching programmes in the *Framework for Teaching Mathematics* have been devised with the curriculum and national targets in mind. The Year 4 objectives for each strand correspond to National Curriculum descriptions for the consolidation of level 3, and start on level 4.

Key to abbreviations for Scottish 5–14 Guidelines

CPM is a comprehensive primary maths course, and teachers in Scotland will find that it offers complete coverage of all relevant attainment outcomes and targets.

References to the 5 to 14 guidelines for Scotland have therefore been given in the following charts. The bullet lists of abbreviations correspond to the weekly objectives, and follow the same order.

PSE = Problem Solving and Enquiry skills

all = Starting a task/Doing a task/Reporting on a task

IH = Information Handling

C = Collect

O = Organise

D = Display

I = Interpret

NMM = Number, Money and Measurement

RTN = Range and type of numbers

M = Money

A&S = Add and subtract

M&D = Multiply and divide

RN = Round numbers

FPR = Fractions, percentages and ratio

P&S = Patterns and sequences

F&E = Fractions and equations

M&E = Measure and estimate

T = Time

PFS = Perimeter, formulae, scales

SPM = Shape, Position and Movement

RS = Range of shapes

P&M = Position and movement

S = Symmetry

A = Angle



YEAR 4 : AUTUMN TERM – first half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	Out-come	MATHEMATICS 5–14 Strand/Level/Target
1 Week 1							87
	Lesson 1	Numbers and the number system	Place value, ordering and rounding (whole numbers)	<ul style="list-style-type: none">• To read and write whole numbers to at least 10 000 in figures and words, and know what each digit represents• To partition numbers into thousands, hundreds, tens and ones• To add/subtract 1, 10, 100 or 1000 to/from any integer, and count on or back in tens, hundreds or thousands from any whole number up to 10 000.		NMM	<ul style="list-style-type: none">• RTN / C / 1• A&S / C / 1
	Lesson 2	Numbers and the number system	Place value, ordering and rounding (whole numbers)	<ul style="list-style-type: none">• To round any positive integer less than 1000 to the nearest 10 or 100• To read and write the vocabulary of estimation and approximation.		NMM	<ul style="list-style-type: none">• RN / C / 1• RN / D / 1
	Lesson 3	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To record estimates and readings from scales to a suitable degree of accuracy.		NMM	<ul style="list-style-type: none">• M&E / C / 6
2 Week 2							93
	Lesson 1	Calculations	Understanding addition and subtraction	<ul style="list-style-type: none">• To consolidate understanding of the relationship between + and –• To understand the principle(not the name) of commutative law as it applies or not to addition and subtraction.		NMM	<ul style="list-style-type: none">• A&S / C / 1-3• A&S / D / 1
			Mental calculation strategies (+ and -)	<ul style="list-style-type: none">• To use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers (not crossing the 10 or 100 boundary).			
	Lesson 2	Calculations	Mental calculation strategies (+)	<ul style="list-style-type: none">• To identify near doubles, using known doubles.		NMM	<ul style="list-style-type: none">• A&S / C / 1
	Lesson 3	Calculations	Pencil and paper procedures (+)	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain additions: empty number line.		NMM	<ul style="list-style-type: none">• RTN / C / 1
			Mental calculation strategies (+)	<ul style="list-style-type: none">• To count on or back in repeated steps of 1, 10 or 100.			
	Lesson 4	Calculations	Pencil and paper procedures (+)	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain additions: adding the most significant digits first.		NMM	<ul style="list-style-type: none">• A&S / B / 2• A&S / C / 3
			Mental calculation strategies (+)	<ul style="list-style-type: none">• To consolidate knowing by heart: addition and subtraction facts for all numbers to 20.			
	Lesson 5	Calculations	Pencil and paper procedures (+)	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain additions: compensation (add too much, take off).		NMM	<ul style="list-style-type: none">• A&S / B / 2• A&S / C / 3
			Mental calculation strategies (+)	<ul style="list-style-type: none">• To consolidate knowing by heart: addition and subtraction facts for all numbers to 20.			

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
3	Week 3						
		Lesson 1	Calculations	Pencil and paper procedures (–) Rapid recall of addition and subtraction facts	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain subtractions: complementary addition (counting up).• To consolidate knowing by heart: addition and subtraction facts for all numbers to 20.	NMM	<ul style="list-style-type: none">• A&S / B / 2• A&S / C / 3
		Lesson 2	Calculations	Pencil and paper procedures (–) Checking results of calculations	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain subtractions: compensation (take too much, add back).• To check with an equivalent calculation.	NMM	<ul style="list-style-type: none">• A&S / C / 3
		Lesson 3	Solving problems	Problems involving money	<ul style="list-style-type: none">• To use all four operations to solve word problems involving numbers in money using one or more steps, including converting pounds to pence and vice versa.	NMM	<ul style="list-style-type: none">• M / C / 1• A&S / C / 5• M&D / C / 5
		Lessons 4 and 5	Solving problems	Problems involving “real life” and money Making decisions	<ul style="list-style-type: none">• To use addition and subtraction to solve word problems involving numbers in money using one or more steps.• To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems• To explain how the problem was solved.	NMM PSE	<ul style="list-style-type: none">• A&S / C / 1-3, 5• all / C
4	Week 4						
		Lesson 1	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To use, read and write standard metric units (km, m, cm, mm), including their abbreviations• To suggest suitable units and measuring equipment to estimate or measure length; To know and use the relationships between familiar units of length.	NMM	<ul style="list-style-type: none">• M&E / C / 4, 5
		Lesson 2	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To record estimates and readings from scales to a suitable degree of accuracy• To suggest suitable units and measuring equipment to estimate or measure length: record metres and centimetres using decimals, and other measurements using mixed units• To convert up to 1000 centimetres to metres, and vice versa.	NMM	<ul style="list-style-type: none">• M&E / C / 4-6
		Lesson 3	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To know and use the relationships between familiar units of length• To know the equivalent of one half, one quarter, three quarters and one tenth of 1 kilometre in m, 1 metre in cm or mm.	NMM	<ul style="list-style-type: none">• M&E / C / 4
		Lesson 4	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To suggest suitable units and measuring equipment to estimate or measure length• To record estimates and readings from scales to a suitable degree of accuracy.	NMM	<ul style="list-style-type: none">• M&E / C / 5, 6
	Lesson 5	Measures, shape and space	Measures: (length)	<ul style="list-style-type: none">• To use, read and write standard metric units (km, m, cm, mm), including their abbreviations.	NMM	<ul style="list-style-type: none">• M&E / C / 1• A&S / C / 5• M&D / C / 5	
		Solving problems	Problems involving length	<ul style="list-style-type: none">• To use all four operations to solve word problems involving numbers in measures (length), using one or more steps, including converting metres and centimetres and vice versa.	PSE	<ul style="list-style-type: none">• all / C	
			Making decisions	<ul style="list-style-type: none">• To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems			

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14	
						Out-come	Strand/Level/Target
5	Week 5				123		
	Lesson 1	Measures, shape and space	Measures: (perimeter)	<ul style="list-style-type: none"> To measure and calculate the perimeter and area of rectangles and other simple shapes, using counting methods and standard units (cm). 		NMM	<ul style="list-style-type: none"> PFS / D / 1 M&E / C / 3, 4
	Lesson 2	Measures, shape and space	Shape and space: (2D) Reasoning about shapes	<ul style="list-style-type: none"> To recognise equilateral and isosceles triangles. To make and investigate a general statement about familiar shapes by finding examples that satisfy it. 		SPM PSE	<ul style="list-style-type: none"> RS / D / 3 all / D
	Lesson 3	Measures, shape and space	Shape and space: (3D) Reasoning about shapes	<ul style="list-style-type: none"> To describe and visualise 3D shapes, including the tetrahedron. To make and investigate a general statement about familiar shapes by finding examples that satisfy it. 		SPM PSE	<ul style="list-style-type: none"> RS / C / 3 RS / E / 4 all / C
	Lesson 4	Measures, shape and space	Shape and space: (2D) Reasoning about shapes	<ul style="list-style-type: none"> To describe and visualise 2D shapes, including the heptagon To classify polygons using criteria such as number of right angles, whether or not they are regular, symmetry properties. To make and investigate a general statement about familiar shapes by finding examples that satisfy it. 		SPM PSE	<ul style="list-style-type: none"> RS / D / 1 S / D / 1 A / C / 2 all / C-D
	Lesson 5	Measures, shape and space	Shape and space: (position and direction)	<ul style="list-style-type: none"> To recognise positions and directions: for example, describe and find the position of a point on a grid of squares where the lines are numbered. 		NMM	<ul style="list-style-type: none"> P&M / D / 3
6	Week 6				133		
	Lessons 1 and 2	Measures, shape and space	Measures: (area)	<ul style="list-style-type: none"> To measure and calculate the area of rectangles and other simple shapes, using counting methods and standard units (cm²). 		NMM	<ul style="list-style-type: none"> M&E / C / 3
	Lesson 3	Measures, shape and space	Measures: (area and perimeter)	<ul style="list-style-type: none"> To measure and calculate the area of rectangles and other simple shapes, using counting methods and standard units (cm²) To measure and calculate the perimeter of rectangles and other simple shapes, using counting methods and standard units (cm). 		NMM	<ul style="list-style-type: none"> M&E / C / 3 PFS / D / 1
		Solving problems	Reasoning about shapes	<ul style="list-style-type: none"> To solve mathematical problems or puzzles, recognise and explain patterns and relationships. 		PSE	<ul style="list-style-type: none"> all / C
7	Days 4 and 5		ASSESS AND REVIEW		437		



YEAR 4: AUTUMN TERM – second half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14
						Out-come Strand/Level/ Target
8 Week 7						
	Lessons 1 and 2	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise and extend number sequences formed by counting from any number in steps of constant size: count on in steps of 25 to 500. 		NMM • P&S / C / I
	Lesson 3	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise odd and even numbers up to 1000, and some of their properties, including the outcome of sums or differences of pairs of odd/even numbers. 		NMM • P&S / C / I
	Lessons 4 and 5	Solving problems	Reasoning about numbers	<ul style="list-style-type: none"> To solve mathematical problems or puzzles, recognise simple patterns and relationships, generalise and predict. Suggest extensions by asking "What if...?" To explain methods and reasoning about numbers orally and in writing. 		NMM PSE • P&S / C / I • all / C
9 Week 8						
	Lesson 1	Calculations	Understanding multiplication and division Rapid recall of multiplication and division facts Mental calculation strategies (\times and \div) Rapid recall of multiplication and division facts Checking results of calculations	<ul style="list-style-type: none"> To extend understanding of the operations of \times and \div, and their relationship to each other and to $+$ and $-$. To know by heart multiplication facts for the 2, 3, 4, 5 and 10 times tables. To use doubling or halving, starting from known facts, to multiply by 4, double, then double again. To check with an equivalent calculation 		NMM • M&D / B / I • M&D / C / I, 3
	Lesson 2	Calculations	Understanding multiplication and division Mental calculation strategies (\times and \div) Rapid recall of multiplication and division facts Checking results of calculations	<ul style="list-style-type: none"> To extend understanding of the operations of \times and \div, and their relationship to each other and to $+$ and $-$. To derive quickly division facts corresponding to the 2, 3, 4, 5 and 10 times tables To multiply and divide whole numbers by 10. To check with an equivalent calculation. 		NMM • M&D / B / I • M&D / C / I-3
	Lesson 3	Calculations	Mental calculation strategies (\times) Rapid recall of multiplication facts Pencil and paper procedures	<ul style="list-style-type: none"> To derive quickly doubles of all whole numbers to 50. Approximate first: use informal pencil and paper methods to support, record or explain multiplications. To use doubling starting from known facts: double two-digit numbers by doubling the tens first. 		NMM • M&D / C / I-3
	Lesson 4	Calculations	Pencil and paper procedures (\div)	<ul style="list-style-type: none"> Approximate first: use informal pencil and paper methods to support, record or explain divisions. 		NMM • M&D / C / 3
	Lesson 5	Solving problems Calculations	Problems involving numbers in "real life" and money Making decisions Checking results of calculations	<ul style="list-style-type: none"> To use \times and \div to solve word problems involving numbers in "real life" and money, using one or more steps. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jotting, pencil and paper) to solve problems. To check with an equivalent calculation. 		NMM • M&D / C / 3, 5

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14 Out-come	Strand/Level/ Target
10	Week 9				159		
	Lesson 1	Calculations	Mental calculation strategies (x and ÷) Checking results of calculations	<ul style="list-style-type: none"> To multiply and divide whole numbers by 10 • To use doubling or halving, starting from known facts: to multiply by 5, multiply by 10 then halve. To check with an equivalent calculation. 		NMM	• M&D / C / 2, 3
	Lesson 2	Calculations	Mental calculation strategies (x and ÷) Checking results of calculations	<ul style="list-style-type: none"> To multiply and divide whole numbers by 10 • To use doubling or halving, starting from known facts: to multiply by 5, multiply by 10 then halve. To check with an equivalent calculation. 		NMM	• M&D / C / 1-3
	Lesson 3	Calculations	Mental calculation strategies (x and ÷)	<ul style="list-style-type: none"> To use doubling or halving, starting from known facts: find the 8 times table facts by doubling the 4 times table. 		NMM	• M&D / C / 1, 3
	Lesson 4	Calculations	Mental calculation strategies (x and ÷) Rapid recall of multiplication and division facts Checking results of calculations	<ul style="list-style-type: none"> To use doubling or halving, starting from known facts: halve two-digit numbers by halving the tens first: find quarters by halving halves. To derive quickly halves of all numbers to 100. To check with and equivalent calculation 		NMM	• M&D / C / 1-3
	Lesson 5	Solving problems	Problems involving "real life" and money Making decisions	<ul style="list-style-type: none"> To use x and ÷ to solve word problems involving numbers in "real life" and money, using one or more steps. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems • To explain and record methods. 		NMM PSE	• M&D / C / 3, 5 • all / C
11	Week 10				169		
	Lessons 1 and 2	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none"> To use fraction notation • To begin to relate fractions to division • To recognise simple fractions that are several parts of a whole, such as $\frac{2}{3}$ or $\frac{3}{4}$ and mixed numbers such as $5\frac{3}{4}$ • To find fractions such as $\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{10}$... of shapes. 		NMM	• RTN / C / 2
	Lesson 3	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none"> To begin to relate fractions to division and find simple fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ of numbers or quantities. 		NMM	• RTN / C / 2 • FPR / C / 1
	Lesson 4	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none"> To begin to relate fractions to division and find simple fractions such as $\frac{1}{5}$, $\frac{1}{10}$ of numbers or quantities. 		NMM	• FPR / C / 1
	Lesson 5	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none"> To recognise simple fractions that are several parts of a whole, such as $\frac{2}{3}$ or $\frac{5}{8}$ • To begin to relate fractions to division and find simple fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$... of numbers or quantities. 		NMM	• RTN / C / 2 • FPR / C / 1

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	Out-come	MATHEMATICS 5-14 Strand/Level/Target
12 Week 11179							
	Lesson 1	Calculations	Mental calculation strategies (+ and -)	<ul style="list-style-type: none">• To use known number facts and place value: to add or subtract a pair of two-digit numbers crossing the tens but not the hundreds boundary• To find a small difference by counting up• To continue to use the relationship between addition and subtraction.		NMM	• A&S / C / 1-3
	Lesson 2	Calculations	Pencil and paper procedures (+ and -) Rapid recall of addition and subtraction facts	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain additions: adding the least significant digits, preparing for 'carrying'.• To consolidate knowing by heart: addition and subtraction facts for all numbers to 20• To write a subtraction fact corresponding to a given addition fact and vice versa.		NMM	• A&S / B / 2 • A&S / C / 3
	Lesson 3	Calculations	Pencil and paper procedures (+ and -)	<ul style="list-style-type: none">• To use informal pencil and paper methods to support, record or explain subtractions: decomposition.		NMM	• A&S / C / 3
	Lesson 4	Measures, shape and space Solving problems	Measures: (time) Problems involving measures (time)	<ul style="list-style-type: none">• To read the time from an analogue clock to the nearest minute, and from a 12-hour digital clock• To use am and pm and the notation 9:53.• To use all four operations to solve word problems involving numbers in measures (time), using one or more steps.		NMM	• T / C / 1-3 • A&S / C / 5 • M&D / C / 5
	Lesson 5	Measures, shape and space Solving problems	Measures: (time) Problems involving measures (time)	<ul style="list-style-type: none">• To use, read and write the vocabulary related to time• To estimate/check times using seconds, minutes, hour.• To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems• To explain and record methods.		NMM	• T / C / 1-3 • A&S / C / 5 • M&D / C / 5
13 Week 12189							
	Lesson 1	Handling data	Organising and interpreting data	<ul style="list-style-type: none">• To solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, for example: tally charts and frequency tables.		IH	• C / C / 1 • O / C / 1, 3 • D / C / 1 • I / C / 2, 3
	Lessons 2, 3, 4 and 5	Handling data	Organising and interpreting data	<ul style="list-style-type: none">• To solve a problem by collecting quickly, organising, representing data in tables, charts, graphs and diagrams, including those generated by a computer, for example: frequency tables: pictograms – symbol representing 2, 5 or 10 units.		IH	• C / C / 1 • O / C / 1, 3 • D / C / 1 • A / C / 2, 3
14 Days 4 and 5ASSESS AND REVIEW441							

YEAR 4: SPRING TERM – first half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14
						Out-come Strand/Level/ Target
1		Week 1			199	
	Lesson 1	Numbers and the number system	Place value, ordering and rounding (whole numbers)	<ul style="list-style-type: none"> To read a write whole numbers to at least 10 000 in figures and words, and know what each digit represents To multiply or divide any integer up to 10 000 by 10 (whole-number answers), and understand the effect. 		NMM • RTN / C / I • M&D / D / 2
	Lesson 2	Numbers and the number system	Place value, ordering and rounding (whole numbers)	<ul style="list-style-type: none"> To read a write the vocabulary of comparing and ordering numbers To use symbols correctly, including less than (<), greater than (>), equals (=) To give one or more numbers lying between two given numbers. 		NMM • RTN / C / I
	Lesson 3	Numbers and the number system Measures, shape and space	Place value, ordering and rounding (whole numbers)	<ul style="list-style-type: none"> To read and write the vocabulary of approximation To round any positive integer less than 1000 to the nearest 10 or 100 To record estimates and readings from scales to a suitable degree of accuracy. To record negative numbers in context (eg on a number line, on a temperature scale). 		NMM • RN / C / I • RN / D / I • M&E / C / 6
2		Week 2			205	
	Lesson 1	Calculations	Mental calculation strategies (+ and -)	<ul style="list-style-type: none"> To add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11. 		NMM • A&S / C / 3
	Lesson 2	Calculations	Mental calculation strategies (+ and -)	<ul style="list-style-type: none"> To add three two-digit multiples of 10. 		NMM • A&S / C / 3
	Lesson 3	Calculations	Mental calculation strategies (+ and -) Understanding addition and subtraction	<ul style="list-style-type: none"> To add/subtract a pair of two-digit numbers (crossing 10 but not 100 boundary) To partition into tens and units, adding the tens first. To understand the principle (not the name) of the commutative law as it applies or not to addition and subtraction. 		NMM • A&S / C / I-3
	Lessons 4 and 5	Calculations	Pencil and paper procedures (+)	<ul style="list-style-type: none"> To develop and refine written methods for column addition of two whole numbers less than 1000: adding the least significant digits first. 		NMM • A&S / C / 3

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
3	Week 3	215					
	Lesson 1	Calculations	Pencil and paper procedures (–)	• To develop and refine written methods for column subtraction of two whole numbers less than 1000: decomposition.		NMM	• A&S / C / 3
	Lesson 2	Calculations	Pencil and paper procedures (–) Rapid recall of addition and subtraction facts	• To develop and refine written methods for column subtraction of two whole numbers less than 1000: decomposition. • To consolidate knowing by heart all addition and subtraction facts for all numbers to 20.		NMM	• A&S / B / 1 • A&S / C / 3
	Lesson 3	Calculations	Pencil & paper procedures (+&–)	• To develop and refine written methods for money calculations.		NMM	• A&S / C / 5
	Lesson 4	Calculations	Rapid recall of addition and subtraction facts	• To know by heart all number pairs that total 100 • To derive quickly all pairs of multiples of 50 with a total of 1000.		NMM	• A&S / C / 1, 3 • A&S / D / 1
	Lesson 5	Solving problems	Problems involving “real life” and money Making decisions	• To use addition and subtraction to solve word problems involving numbers in “real life” or money, using one or more steps • To explain and record methods. • To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems.		NMM	• A&S / C / 5
						PSE	• all / C
4	Week 4	225					
	Lesson 1	Measures, shape and space	Measures: (mass)	• To use, read and write standard metric units (kg, g) including their abbreviations • To know and use the relationships between familiar units of mass • To know the equivalent of one half, one quarter, three quarters and one tenth of 1 kg in grams.		NMM	• M&E / C / 1
	Lesson 2	Measures, shape and space Solving problems	Measures: (mass) Making decisions	• To use, read and write standard metric units (kg, g), including their abbreviations; To measure and compare using kilograms and grams • To know and use the relationships between familiar units of mass. • To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems.		NMM	• M&E / C / 1 • A&S / C / 5 • M&D / C / 5
						PSE	• all / C
	Lesson 3	Measures, shape and space Solving problems	Measures: (mass) Making decisions	• To record measurements using mixed units, or the nearest whole/half/quarter unit (eg 3.25 kg) • To know and use the relationships between familiar units of mass. • To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems • To explain and record methods.		NMM	• RTN / D / 4 • M&E / C / 1 • A&S / C / 5 • M&D / C / 5
						PSE	• all / C
	Lesson 4	Measures, shape and space Solving problems	Measures: (mass) Problems involving measures (mass)	• To suggest suitable units and measuring equipment to estimate or measure mass • To record estimates and readings from scales to a suitable degree of accuracy • To record measurements using mixed units, or the nearest whole/half/quarter unit (eg 3.25 kg). • To use all four operations to solve word problems involving numbers in measures (mass), using one or more steps.		NMM	• RTN / D / 4 • M&E / C / 1, 6 • A&S / C / 5 • M&D / C / 5
						PSE	• all / C
	Lesson 5	Measures, shape and space	Shape and space: (position and direction)	• To recognise simple examples of horizontal and vertical lines.		SPM	• RS / D / 1

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14 Out-come	Strand/Level/ Target
5	Week 5				235		
	Lesson 1	Measures, shape and space	Shape and space: (2D)	<ul style="list-style-type: none"> To make shapes: for example construct polygons To visualise 3D shapes from 2D drawings and identify simple nets of solid shapes. 		SPM	<ul style="list-style-type: none"> RS / C / 3 RS / D / 6
	Lesson 2	Measures, shape and space	Shape and space: (position and direction/angle and rotation)	<ul style="list-style-type: none"> To use the eight compass directions N, S, E, W, NE, NW, SE, SW To make and measure clockwise and anti-clockwise turns: for example from SW to N, or from 4 to 10 on a clock face; To begin to know that angles are measured in degrees. 		SPM	<ul style="list-style-type: none"> P&M / D / 2 A / C / 1, 3
	Lesson 3	Measures, shape and space	Shape and space: (position and direction) Reasoning about numbers and shapes	<ul style="list-style-type: none"> To use the eight compass directions N, S, E, W, NE, NW, SE, SE. To solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. Suggest extensions by asking "What if...?" To explain methods and reasoning orally and in writing. 		SPM PSE	<ul style="list-style-type: none"> P&M / D / 2 all / D
	Lesson 4	Measures, shape and space	Shape and space: (angle and rotation)	<ul style="list-style-type: none"> To begin to know that angles are measured in degrees To start to draw, measure and order a set of angles less than 180°. 		SPM	<ul style="list-style-type: none"> A / C / 1, 3
	Lesson 5	Measures, shape and space	Measures: (time)	<ul style="list-style-type: none"> To estimate/check times using seconds, minutes, hours. 		NMM	<ul style="list-style-type: none"> T / C / 3 T / D / 3
6	Week 6				245		
	Lesson 1	Measures, shape and space	Shape and space: (3D)	<ul style="list-style-type: none"> To visualise 3D shapes from 2D drawings and identify simple nets of solid shapes. 		SPM	<ul style="list-style-type: none"> RS / C / 3 RS / D / 6
	Lesson 2	Measures, shape and space	Shape and space: (2D) Reasoning about shapes	<ul style="list-style-type: none"> To make shapes: for example, construct polygons by paper folding or using pinboard, and discuss properties such as lines of symmetry. To solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. 		SPM PSE	<ul style="list-style-type: none"> RS / D / 1 S / D / 1 all / D
	Lesson 3	Measures, shape and space	Shape and space: (3D)	<ul style="list-style-type: none"> To solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. Suggest extensions by asking "What if...?" To explain methods and reasoning orally. 		SPM PSE	<ul style="list-style-type: none"> RS / D / 1 all / D
7	Days 4 and 5		Reasoning about shapes ASSESS AND REVIEW		453		<ul style="list-style-type: none"> all / D



YEAR 4: SPRING TERM – second half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14
						Out-come
8 Week 7						
	Lesson 1	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise and extend number sequences formed by counting from any number in steps of constant size, extending beyond zero when counting back. To recognise and extend number sequences 	251	NMM • P&S / C / I
	Lesson 2	Numbers and the number system	Properties of numbers and number sequences			NMM • P&S / C / I
	Lessons 3 and 4	Solving problems	Reasoning about numbers	<ul style="list-style-type: none"> To solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict To explain methods and reasoning about numbers orally and in writing. 		PSE • all / C
	Lesson 5	Solving problems	Reasoning about numbers	<ul style="list-style-type: none"> To make and investigate a general statement about familiar numbers by finding examples that satisfy it. 		PSE • all / C
9 Week 8						
	Lesson 1	Calculations	Understanding multiplication and division Rapid recall of multiplication and division facts Checking results of calculations	<ul style="list-style-type: none"> To understand the principles (not the names) of the commutative laws as they apply to multiplication.. To know by heart multiplication facts for 2, 3, 4, 5 and 10 times tables. To derive quickly division facts corresponding to the 2, 3, 4, 5 and 10 times tables. To derive quickly doubles of multiples of 10 to 500, and the corresponding halves. To check with the inverse operation. 		NMM • M&D / B / I • M&D/C/I, 2
	Lesson 2	Calculations	Rapid recall of multiplication and division facts Checking results of calculations			NMM • M&D / C / 2
	Lesson 3	Calculations	Understanding multiplication and division Rapid recall of multiplication facts Mental calculation strategies (x)	<ul style="list-style-type: none"> To understand the principles (not the names) of the commutative and associative laws as they apply to multiplication. To begin to know multiplication facts for the 6 times table. To use closely related facts (eg develop the x6 table from the x4 and x2 tables). 		NMM • M&D / C / I-3
	Lesson 4	Calculations	Understanding multiplication and division Rapid recall of multiplication facts	<ul style="list-style-type: none"> To understand the principles (not the name) of the commutative law as it applies to multiplication. To begin to know multiplication facts for the 8 times table. 		NMM • M&D / C / I-3
	Lesson 5	Calculations Solving problems	Understanding multiplication and division Mental calculation strategies (x and ÷) Problems involving “real life” and money Checking results of calculations	<ul style="list-style-type: none"> To divide a whole number of pounds by 2, 3, 4, 5 or 10 to give £. To use known number facts and place value to multiply and divide a whole number by 10. To use x and ÷ to solve word problems involving numbers on “real life” and money, using one or more steps: explain and record methods. To check with the inverse operation. 		NMM • M&D / C / 2, 3, 5 PSE • all / C



UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
10 Week 9						271	
	Lessons 1 and 2	Calculations	Mental calculation strategies (x and ÷)	<ul style="list-style-type: none">• To use known number facts and place value to multiply whole numbers by 10• To use closely related facts (eg to multiply by 9, multiply by 10 and adjust).• To partition (eg $23 \times 4 = (20 \times 4) + (3 \times 4)$).• To develop and refine written methods for TU x U – partitioning.		NMM	• M&D / C / 1, 2
	Lessons 3 and 4	Calculations	Mental calculation strategies (x) Pencil and paper procedures (x)			NMM	• M&D / C / 3
	Lesson 5	Solving problems	Problems involving “real life” and money Making decisions	<ul style="list-style-type: none">• To use x and ÷ to solve word problems involving numbers in “real life” and money, using one or more steps.• To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems; To explain and record methods.		NMM PSE	• M&D / C / 5 • all / C
11 Week 10						281	
	Lesson 1	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To identify two simple fractions with a total of 1.		NMM	• RTN / C / 2
	Lesson 2	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To recognise equivalence of simple fractions.0		NMM	• RTN / C / 2
	Lesson 3	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To order simple fractions: for example, decide whether fractions such as $\frac{5}{8}$ or $\frac{7}{10}$ are greater or less than one half.		NMM	• RTN / C / 2
	Lesson 4	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To understand decimal notation and place value for tenths and hundredths, and use it in context• To order decimals with one decimal place.		NMM	• RTN / C / 3
	Lesson 5	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To understand decimal notation and place value for tenths and hundredths, and use it in context. For example: order amounts of money; convert a sum of money such as £13.25 to pence, or a length such as 125cm to metres.		NMM	• RTN / C / 3
12 Week 11						291	
	Lessons 1, 2, 3, 4 and 5	Handling data	Organising and interpreting data	<ul style="list-style-type: none">• To solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, for example: bar charts – intervals labelled in 2s, 5s, 10s and 20s.		IH	• C / C / 1 • O / C / 1, 3 • D / C / 1, 2 • I / C / 2, 3
13 Days 4 and 5						457	
ASSESS AND REVIEW							

YEAR 4: SUMMER TERM – first half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
1 Week 1						301	
	Lesson 1	Numbers and the number system	Place value, ordering and rounding (whole numbers)	• To read and write whole numbers to at least 10 000 in figures and words, and know what each digit represents • To add/subtract 1, 10, 100 or 1000 to/from any whole number up to 10 000.		NMM	• RTN / C / 1
	Lesson 2	Numbers and the number system	Place value, ordering and rounding (whole numbers)	• To read and write the vocabulary of comparing and ordering numbers • To order a set of whole numbers less than 10 000; To begin to multiply by 100.		NMM	• RTN / C / 1 • M&D / D / 2
	Lesson 3	Numbers and the number system Measures, shape and space	Place value, ordering and rounding (whole numbers) Measures	• To make and justify estimates up to about 250, and estimate a proportion; • To record estimates and readings from scales to a suitable degree of accuracy • To round any positive integer less than 10 000 to the nearest 10 or 100.		NMM	• M&E / C / 6 • RN / D / 1
2 Week 2						307	
	Lesson 1	Calculations	Mental calculation strategies (+ and –) Rapid recall of addition and subtraction facts	• To use known number facts and place value to add or subtract mentally: continue to add or subtract two-digit multiples of 10, add or subtract a pair of multiples of 100, crossing 1000. • To consolidate knowing by heart addition and subtraction facts for all numbers to 20.		NMM	• A&S / D / 1 • A&S / C / 3
	Lesson 2	Calculations Numbers and the number system	Mental calculation strategies (+ and –) Place value, ordering and rounding (whole numbers)	• To use known number facts and place value to add or subtract mentally: revise adding/subtracting a multiple of 10 to/from a two- or three-digit number to a multiple of 10, 100 or 1000. • To add/subtract 10, 100 or 1000 to/from any two-/three-digit number.		NMM	• A&S / C / 1-3 • A&S / D / 1, 2
	Lesson 3	Calculations	Mental calculation strategies (+ and –) Rapid recall of addition and subtraction facts	• To use known number facts and place value to add or subtract mentally: revise adding/subtracting a multiple of 10 to/from a two- or three-digit number, without crossing the hundreds boundary. Revise adding a two- or three-digit number to a multiple of 10, 100 or 1000. • To add/subtract 10, 100 or 1000 to/from any two-/three-digit number.		NMM	• A&S / C / 1-3 • A&S / D / 1, 2
	Lesson 4	Calculations	Mental calculation strategies (+ and –) Rapid recall of addition and subtraction facts	• To use known number facts and place value to add or subtract mentally: add a single digit to any three- or four-digit number crossing the tens boundary; subtract a single digit from a multiple of 100 or 1000; subtract a single digit from a three- or four-digit number crossing the tens boundary. • To consolidate knowing by heart addition and subtraction facts for all numbers to 20.		NMM	• A&S / C / 1-3 • A&S / D / 1, 2
	Lesson 5	Calculations	Mental calculation strategies (+ and –)	• To use known number facts and place value to add or subtract mentally: add or subtract any pair of two-digit numbers, including crossing the tens boundary • To add or subtract the nearest multiple of ten and then adjust.		NMM	• A&S / C / 1-3



UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14	
						Out-come	Strand/Level/Target
3	Week 3				317		
	Lesson 1	Calculations	Pencil and paper procedures (+) Rapid recall of addition facts	<ul style="list-style-type: none"> To develop and refine written methods for column addition of two whole numbers less than 1000, and addition of more than two such numbers. To derive quickly all pairs of multiples of 50 with a total of 1000. 		NMM	• A&S / C / 3
	Lesson 2	Calculations	Pencil and paper procedures (+)	<ul style="list-style-type: none"> To develop and refine written methods for column addition of two whole numbers less than 1000, and money calculations. 		NMM	• A&S / C / 3, 5
	Lesson 3	Calculations Solving problems	Pencil and paper procedures (-) Making decisions	<ul style="list-style-type: none"> To develop and refine written methods for column subtraction of two whole numbers less than 1000, including money. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems. 		NMM PSE	• A&S / C / 3, 5 • all / C
	Lesson 4	Calculations	Pencil and paper procedures (-) Mental calculation strategies (-)	<ul style="list-style-type: none"> To develop and refine written methods for column subtraction of two whole numbers less than 1000. To use known number facts and place value to add or subtract mentally: find a small difference between a pair of numbers lying either side of a multiple of 1000. 		NMM	• A&S / D / 3 • A&S / D / 1
	Lesson 5	Solving problems	Problems involving "real life" and money Making decisions	<ul style="list-style-type: none"> To use addition and subtraction to solve word problems involving numbers in "real life" or money, using one or more steps. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems. 		NMM PSE	• A&S / C / 3, 5 • all / C
4	Week 4				327		
	Lesson 1	Measures, shape and space	Measures: (capacity)	<ul style="list-style-type: none"> To use, read and write standard metric units (l, ml) including their abbreviations, and imperial unit (pint) To know and use the relationships between familiar units of capacity To know the equivalent of one half, one quarter, three quarters and one tenth of 1 litre in ml To record estimates and readings from scales to a suitable degree of accuracy. 		NMM	• M&E / D / 3, 6, 8
	Lesson 2	Measures, shape and space	Measures: (capacity)	<ul style="list-style-type: none"> To suggest suitable units and measuring equipment to estimate or measure capacity To record estimates and readings from scales to a suitable degree of accuracy. 		NMM	• M&E / D / 3, 6, 8
	Lessons 3, 4 and 5	Measures, shape and space Solving problems	Measures: (capacity) Problems involving measures (capacity) Making decisions	<ul style="list-style-type: none"> To record estimates and readings from scales to a suitable degree of accuracy: record measurements using mixed units, or the nearest whole/half/quarter unit (eg 3.25 litres). To use all four operations to solve word problems involving numbers in measures (capacity) using one or more steps. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems To explain and record methods. 		NMM PSE	• RTN / D / 4 • M&E/D/3,6,8 • A&S / D / 2 • M&D / D / 2 • all / D

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
5	Week 5	337					
	Lesson 1	Measures, shape and space	Shape and space: (reflective symmetry, reflection and translation)	● To sketch the reflection of a simple shape in a mirror line parallel to one side (all sides parallel or perpendicular to the mirror line).		SPM	● S / C / 1, 2
	Lesson 2	Measures, shape and space	Shape and space: (reflective symmetry, reflection and translation)	● To sketch the reflection of a simple shape in a mirror line parallel to one side (all sides parallel or perpendicular to the mirror line): to know that equivalent points are the same (shortest) distance from the line of symmetry		SPM	● S / C / 1, 2
	Lessons 3, 4 and 5	Measures, shape and space	Shape and space: (reflective symmetry, reflection and translation)	● To sketch the reflection of a simple shape in a mirror line parallel to one side (all sides parallel or perpendicular to the mirror line): to know that equivalent points are the same (shortest) distance from the line of symmetry.		SPM	● S / E / 2
6	Week 6	347					
	Lesson 1	Measures, shape and space	Shape and space: (angle and rotation)	● To begin to know that angles are measured in degrees and that: one whole turn in 360° or 4 right angles: a quarter turn is 90° or one right angle: half a right angle is 45°.		SPM	● A / C / 1, 2
	Lessons 2 and 3	Measures, shape and space	Shape and space: (angle and rotation)	● To begin to know that angles are measured in degrees and that: one whole turn in 360° or 4 right angles: a quarter turn is 90° or one right angle: half a right angle is 45°.		SPM	● A / C / 1, 2
		Solving problems	Reasoning about shapes	● To solve mathematical shape problems or puzzles, recognise and explain patterns and relationships, generalise and predict: suggest extensions by asking “What if...?” ● To explain methods and reasoning orally and in writing.		PSE	● all / C
7	Days 4 and 5	ASSESS AND REVIEW					469

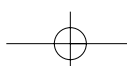
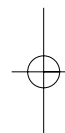
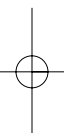
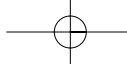
YEAR 4: SUMMER TERM – second half

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14
						Out-come
8	Week 7				353	Strand/Level/Target
	Lesson 1	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise and extend number sequences formed by counting from any number in steps of constant size, extending beyond zero when counting back. 		NMM • P&S / C / I
	Lesson 2	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise and extend number sequences formed by counting from any number in steps of constant size, count on in steps of multiples of 20 to 200, extending beyond zero when counting back, to say, –100. 		NMM • P&S / C / I
	Lesson 3	Numbers and the number system	Properties of numbers and number sequences	<ul style="list-style-type: none"> To recognise multiples of 2, 3, 4, 5 and 10, up to the tenth multiple. 		NMM • P&S / C / I
	Lessons 4 and 5	Solving problems	Reasoning about numbers	<ul style="list-style-type: none"> To solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. Suggest extensions by asking “What if...?” To explain methods and reasoning about numbers orally and in writing. 		PSE • all / C

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14	
						Out-come	Strand/Level/Target
9	Week 8				363		
	Lesson 1	Calculations	Rapid recall of multiplication and division facts Mental calculation strategies (x and ÷) Understanding multiplication and division	<ul style="list-style-type: none"> To derive quickly division facts corresponding to 2, 3, 4, 5 and 10 times tables. To use the relationship between multiplication and division. To find remainders after division. 		NMM	<ul style="list-style-type: none"> M&D / B / I M&D/C/1, 2
	Lesson 2	Calculations	Understanding multiplication and division Mental calculation strategies (x and ÷) Rapid recall of multiplication and division facts Problems involving "real life"	<ul style="list-style-type: none"> To round up or down after division, depending on the context. To derive quickly division facts corresponding to 2, 3, 4, 5 and 10 times tables. To use the relationship between multiplication and division. 		NMM	<ul style="list-style-type: none"> M&D / B / I M&D/C/1-3, 5
	Solving problems					PSE	all / C
	Lesson 3	Calculations	Rapid recall of multiplication and division facts Mental calculation strategies (x and ÷)	<ul style="list-style-type: none"> To use ÷ to solve word problems involving numbers in "real life" using one step. To begin to know multiplication facts for the 9 times table. To use closely related facts (eg to multiply by 9, multiply by 10 then adjust). 		NMM	M&D / C / I-3
	Lesson 4	Calculations	Understanding multiplication and division Rapid recall of multiplication facts	<ul style="list-style-type: none"> To begin to know multiplication facts for the 7 times table. To understand the principles (not the name) of the commutative law as it applies to multiplication. 		NMM	M&D / C / I-3
	Lesson 5	Calculations	Understanding multiplication and division Mental calculation strategies (x and ÷) Rapid recall of multiplication and division facts Checking results of calculations	<ul style="list-style-type: none"> To understand the principles of the distributive law as it applies to multiplication. To know by heart multiplication facts for 2, 3, 4, 5 and 10 times tables. To partition (eg $23 \times 4 = (20 \times 4) + (3 \times 4)$): multiply TU x U, eg 13 x 3. To estimate and check by approximating (round to the nearest 10 or 100). 		NMM	<ul style="list-style-type: none"> M&D/C/I-3 RN / C / I RN / D / I

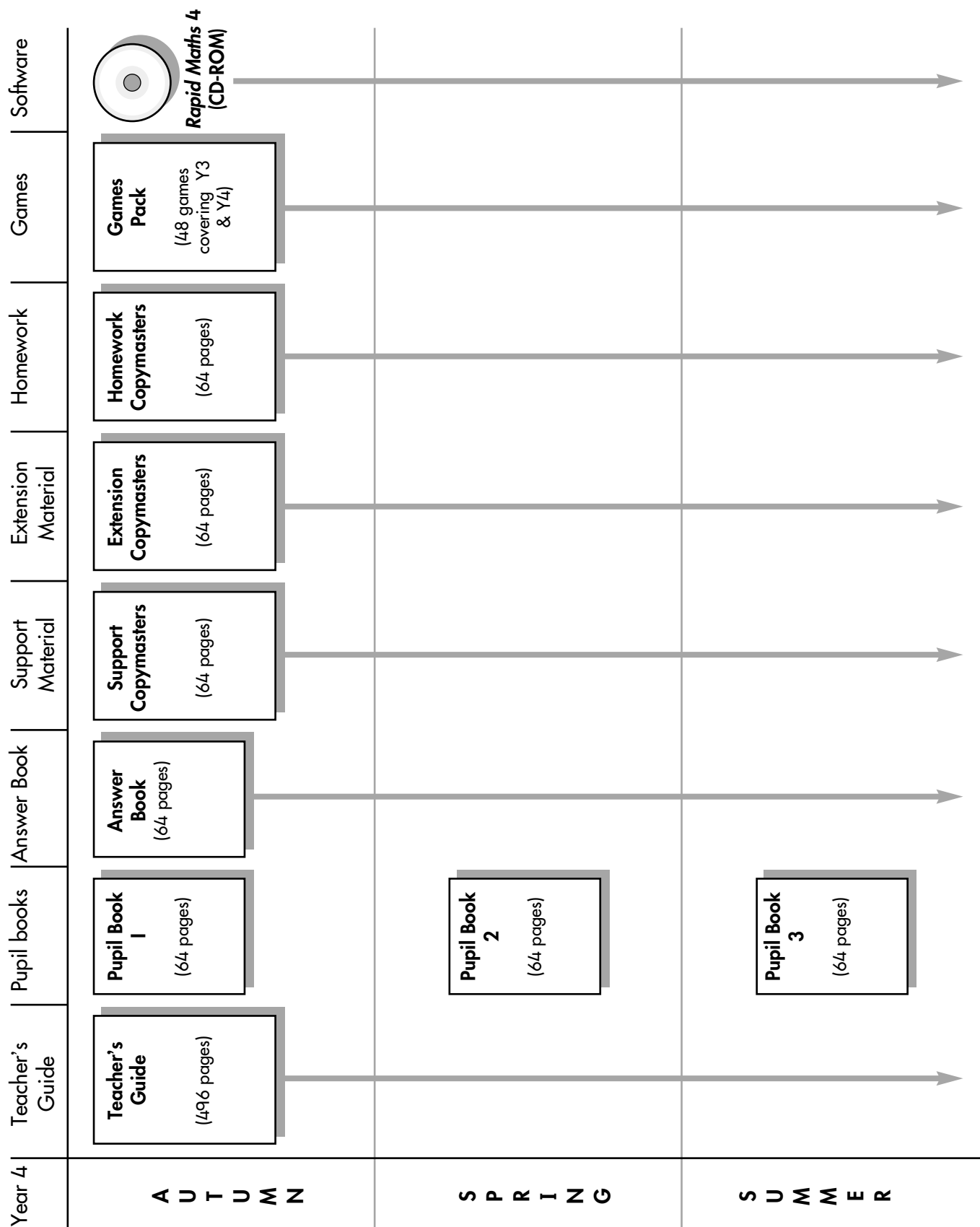
UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5–14	
						Out-come	Strand/Level/Target
10 Week 9						373	
	Lesson 1	Solving problems	Problems involving “real life” and money	<ul style="list-style-type: none">• To use \times and \div to solve word problems involving numbers in “real life” and money, using one or more steps• To divide a whole number of pounds by 2, 3, 4, 5 or 10 to give £.p.		NMM	<ul style="list-style-type: none">• M&D / C / I-3, 5
		Calculations	Understanding multiplication and division	<ul style="list-style-type: none">• To choose and use appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems.		PSE	<ul style="list-style-type: none">• all / C
	Lesson 2	Calculations	Rapid recall of multiplication and division facts	<ul style="list-style-type: none">• To derive quickly doubles of multiples of 100 to 5000 (eg 3400×2) and the corresponding halves (eg $\frac{1}{2}$ of 6800).		NMM	<ul style="list-style-type: none">• M&D / D / I, 2
	Lesson 3	Calculations	Mental calculation strategies (\times and \div)	<ul style="list-style-type: none">• To use known number facts and place value to multiply and divide integers, including by 10 and then 100 (whole number answers).		NMM	<ul style="list-style-type: none">• M&D / C / I, 2• M&D / D / I, 2
	Lesson 4	Calculations	Pencil and paper procedures (\times and \div)	<ul style="list-style-type: none">• To develop and refine written methods for $TU \div U$.		NMM	<ul style="list-style-type: none">• M&D / C / 3• RN / C / I• RN / D / I
			Checking results of calculations	<ul style="list-style-type: none">• To estimate and check by approximating (round to the nearest 10 or 100).			
	Lesson 5	Solving problems	Problems involving numbers in “real life” and money	<ul style="list-style-type: none">• To use \times and \div to solve word problems involving numbers in “real life” and money, using one or more steps.		NMM	<ul style="list-style-type: none">• M&D / C / I-3, 5
			Making decisions	<ul style="list-style-type: none">• To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems.		PSE	<ul style="list-style-type: none">• all / C
11 Week 10						383	
	Lesson 1	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To begin to use ideas of simple proportion: for example, ‘one in every...’		NMM	<ul style="list-style-type: none">• FPR / E / 5
	Lesson 2	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To begin to use ideas of simple proportion: for example, ‘one in every...’		NMM	<ul style="list-style-type: none">• FPR / E / 5
	Lessons 3, 4 and 5	Numbers and the number system	Fractions and decimals	<ul style="list-style-type: none">• To recognise the equivalence between the decimal and fraction forms of one half and one quarter, and tenths such as 0.3• To begin to use ideas of simple proportion: for example, ‘one for every...’		NMM	<ul style="list-style-type: none">• RTN / D / 3• FPR / E / 5

UNIT	SUGGESTED ORDER	STRAND	TOPIC	OBJECTIVE	Page	MATHEMATICS 5-14 Out-come Strand/Level/ Target
12	Week 11				393	
	Lesson 1	Calculations	Understanding addition and subtraction Rapid recall of addition and subtraction facts Mental calculation strategies (+ and -) Checking results of calculations	<ul style="list-style-type: none"> To derive quickly all number pairs that total 100 To understand the principle (not the name) of the associative law as it applies or not to addition and subtraction. To use known number facts and place value to add or subtract mentally, including any pair of two-digit whole numbers. To check the sum of several numbers by adding in reverse order. 		NMM • A&S / C / 3
	Lesson 2	Calculations	Rapid recall of addition and subtraction facts Pencil and paper procedures (+ and -)	<ul style="list-style-type: none"> To consolidate knowing by heart addition and subtraction facts for all numbers to 20. To develop and refine written methods for column addition of two whole numbers less than 1000, and addition of more than two such numbers. 		NMM • A&S / C / 3
	Lesson 3	Calculations	Rapid recall of subtraction facts Pencil and paper procedures (-)	<ul style="list-style-type: none"> To derive quickly all pairs of multiples of 50 with a total of 1000. To develop and refine written methods for column subtraction of two whole numbers less than 1000, and money calculations. 		NMM • A&S / C / 3, 5
	Lessons 4 and 5	Measures, shape and space Solving problems	Measures: (time) Problems involving measures (time) Making decisions	<ul style="list-style-type: none"> To read simple timetables and use this year's calendar. To use all four operations to solve word problems involving measures (time), using one or more steps. To choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems To explain and record methods. 		NMM • T / C / 1-4 • A&S / C / 5 • M&D / C / 5 PSE • all / C
13	Week 12				403	
	Lessons 1, 2, 3, 4 and 5	Handling data	Organising and interpreting data	<ul style="list-style-type: none"> To solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, for example: Venn diagrams (two criteria). 	IH	• C / C / 1 • O / C / 2, 3 • D / C / 1, 2 • I / C / 1-3
14	Days 4 and 5		ASSESS AND REVIEW		473	



1.2 How to use Collins Primary Maths

Year 4 structure and components



Information on each component is provided overleaf, followed by a diagrammatic description and guide to their features.



Y4 Introduction

Component chart

CPM Components Chart

Autumn Term

Week	Lesson	Workbook	page	SCM	ECM	HCM
1	1	Pupil Book 1	5	1		1
1	2	Pupil Book 1	6		1	
1	3	Pupil Book 1	7			
2	1	Pupil Book 1	8		2	
2	2	Pupil Book 1	9			2
2	3	Pupil Book 1	10	2	3	
2	4	Pupil Book 1	11		4	3
2	5	Pupil Book 1	12	3		
3	1	Pupil Book 1	13	4		
3	2	Pupil Book 1	14	5	5	4
3	3	Pupil Book 1	15		6	
3	4	Pupil Book 1	16			5
3	5	Pupil Book 1	17	6		
4	1	Pupil Book 1	18		7	
4	2	Pupil Book 1	19	7		
4	3	Pupil Book 1	20			6
4	4	Pupil Book 1	21			7
4	5	Pupil Book 1	22			
5	1	Pupil Book 1	23	8	8	
5	2	Pupil Book 1	24			8
5	3	Pupil Book 1	25			
5	4	Pupil Book 1	26			9
5	5	Pupil Book 1	27	9	9	
6	1	Pupil Book 1	28			
6	2	Pupil Book 1	29	10	10	10
6	3	Pupil Book 1	30	11	11	
7	1	Pupil Book 1	31	12	12	
7	2	Pupil Book 1	32		13	11

Week	Lesson	Workbook	page	SCM	ECM	HCM
7	3	Pupil Book 1	33			
7	4	Pupil Book 1	34			12
7	5	Pupil Book 1	35	13		
8	1	Pupil Book 1	36	14		13
8	2	Pupil Book 1	37		14	
8	3	Pupil Book 1	38	15		14
8	4	Pupil Book 1	39		15	
8	5	Pupil Book 1	40			
9	1	Pupil Book 1	41	16	16	
9	2	Pupil Book 1	42			15
9	3	Pupil Book 1	43	17		16
9	4	Pupil Book 1	44		17	
9	5	Pupil Book 1	45			
10	1	Pupil Book 1	46	18		
10	2	Pupil Book 1	47			17
10	3	Pupil Book 1	48	19	18	
10	4	Pupil Book 1	49			18
10	5	Pupil Book 1	50		19	
11	1	Pupil Book 1	51	20		
11	2	Pupil Book 1	52		20	19
11	3	Pupil Book 1	53	21		
11	4	Pupil Book 1	54			20
11	5	Pupil Book 1	55		21	
12	1	Pupil Book 1	56/57			12
12	2	Pupil Book 1	58/59	22		21
12	3	Pupil Book 1	60/61		22	
12	4	Pupil Book 1	62/63			22
12	5	Pupil Book 1	64			

Spring Term

Week	Lesson	Workbook	page	SCM	ECM	HCM
1	1	Pupil Book 2	5			
1	2	Pupil Book 2	6	23	23	23
1	3	Pupil Book 2	7			
2	1	Pupil Book 2	8	24		
2	2	Pupil Book 2	9		24	24
2	3	Pupil Book 2	10	25		
2	4	Pupil Book 2	11		25	
2	5	Pupil Book 2	12			25
3	1	Pupil Book 2	13			
3	2	Pupil Book 2	14		26	26
3	3	Pupil Book 2	15		27	
3	4	Pupil Book 2	16	26		27
3	5	Pupil Book 2	17	27		
4	1	Pupil Book 2	18			28
4	2	Pupil Book 2	19			
4	3	Pupil Book 2	20			29

Week	Lesson	Workbook	page	SCM	ECM	HCM
4	4	Pupil Book 2	21			
4	5	Pupil Book 2	22/23			
5	1	Pupil Book 2	24/25			30
5	2	Pupil Book 2	26/27			
5	3	Pupil Book 2	28	28	28	31
5	4	Pupil Book 2	29	29	29	
5	5	Pupil Book 2	30			
6	6	Pupil Book 2	31	30	30	
6	2	Pupil Book 2	32/33	31	31	32
6	3	Pupil Book 2	34			
7	1	Pupil Book 2	35	32	32	33
7	2	Pupil Book 2	36		33	34
7	3	Pupil Book 2	37			
7	4	Pupil Book 2	38	33		
7	5	Pupil Book 2	39			
8	1	Pupil Book 2	40	34	34	35



Y4 Introduction

Component chart

Spring Term

Week	Lesson	Workbook	page	SCM	ECM	HCM
8	2	Pupil Book 2	41			
8	3	Pupil Book 2	42	35		36
8	4	Pupil Book 2	43			
8	5	Pupil Book 2	44		35	
9	1	Pupil Book 2	45	36		37
9	2	Pupil Book 2	46		36	
9	3	Pupil Book 2	47	37		38
9	4	Pupil Book 2	48		37	
9	5	Pupil Book 2	49			
10	1	Pupil Book 2	50			

Week	Lesson	Workbook	page	SCM	ECM	HCM
10	2	Pupil Book 2	51	38	38	39
10	3	Pupil Book 2	52			
10	4	Pupil Book 2	53	39		40
10	5	Pupil Book 2	54		39	
11	1	Pupil Book 2	55	40		
11	2	Pupil Book 2	56/57			41
11	3	Pupil Book 2	58/59			
11	4	Pupil Book 2	60/61		40	42
11	5	Pupil Book 2	62/63			

Summer Term

Week	Lesson	Workbook	page	SCM	ECM	HCM
1	1	Pupil Book 3	5			
1	2	Pupil Book 3	6	41	41	43
1	3	Pupil Book 3	7			
2	1	Pupil Book 3	8		42	
2	2	Pupil Book 3	9	42		44
2	3	Pupil Book 3	10	43		
2	4	Pupil Book 3	11			45
2	5	Pupil Book 3	12		43	
3	1	Pupil Book 3	13	44	44	
3	2	Pupil Book 3	14			46
3	3	Pupil Book 3	15	45		
3	4	Pupil Book 3	16			47
3	5	Pupil Book 3	17		45	
4	1	Pupil Book 3	18	46	46	
4	2	Pupil Book 3	19			48
4	3	Pupil Book 3	20			
4	4	Pupil Book 3	21			49
4	5	Pupil Book 3	22	47	47	
5	1	Pupil Book 3	23	48	48	
5	2	Pupil Book 3	24			50
5	3	Pupil Book 3	25			
5	4	Pupil Book 3	26			51
5	5	Pupil Book 3	27			
6	1	Pupil Book 3	28	49	49	
6	2	Pupil Book 3	29	50	50	
6	3	Pupil Book 3	30			
7	1	Pupil Book 3	31	51		
7	2	Pupil Book 3	32			

Week	Lesson	Workbook	page	SCM	ECM	HCM
7	3	Pupil Book 3	33	52	51	52
7	4	Pupil Book 3	34			
7	5	Pupil Book 3	35		52	53
8	1	Pupil Book 3	36	53		54
8	2	Pupil Book 3	37			
8	3	Pupil Book 3	38			
8	4	Pupil Book 3	39		53	55
8	5	Pupil Book 3	40	54	54	
9	1	Pupil Book 3	41			
9	2	Pupil Book 3	42			56
9	3	Pupil Book 3	43	55	55	
9	4	Pupil Book 3	44	56	56	
9	5	Pupil Book 3	45			
10	1	Pupil Book 3	46			
10	2	Pupil Book 3	47		57	57
10	3	Pupil Book 3	48	57		
10	4	Pupil Book 3	49			58
10	5	Pupil Book 3	50	58	58	
11	1	Pupil Book 3	51			59
11	2	Pupil Book 3	52		59	
11	3	Pupil Book 3	53	59		
11	4	Pupil Book 3	54			60
11	5	Pupil Book 3	55			
12	1	Pupil Book 3	56/57	60		
12	2	Pupil Book 3	58/59			
12	3	Pupil Book 3	60/61			
12	4	Pupil Book 3	62/63			
12	5	Pupil Book 3	64		60	

The Teacher's Guides



The Teacher's Guides are at the heart of CPM, and are the driving component of the course. Each guide provides materials for the year's daily maths lessons, and for assessment. The guides contain four sections in addition to the introduction: Oral work and mental calculation; Lesson plans; Resource copymasters, and Assessment.

Oral work and mental calculation

A bank of 5–10 minute 'warm-up' or 'starter' activities is provided for teachers to use as the first stage in their daily maths lessons. Reference is given in each lesson plan to appropriate activities for that lesson. The 94 oral work and mental calculation activities are organised by strand (e.g. Strand 2: Calculations) and topic (e.g. Topic: 2.1 Addition), and a guide to their coverage of objectives is provided at the beginning of the section. It is suggested that activities are chosen from a strand and topic which is linked to the lesson, or consolidates previously taught concepts.

The activities are written in a clear style, and careful attention has been given to pace and timing. Summary advice is also provided in each activity on the resources needed, the numbers used, and any opportunities for varying the activity. All the activities are for whole-class work. However, where pairs or individual children are involved in demonstrating something to rest of the class, this is indicated with a relevant icon

Lesson plans

The majority of the Teacher's Guide comprises prepared daily maths lessons which are the foundation of the course. The lessons have been carefully written to provide a clear, structured, step-by-step approach to teaching maths according to the Framework objectives. Support is given with regard to the level of questioning needed for classes, and how best to balance teacher explanation/intervention with pupil participation. There are often suggestions on how to pitch questions up  or down  in difficulty alongside lessons. Each lesson has been written in a comprehensive way to give teachers maximum support. It is intended, however, that the lessons will act as a model to be varied with the particular needs of each class.

To see how the lesson and accompanying starter activity is used, please turn to pages 38 and 39 where all the features of the plan are expanded upon.

Resource copymasters

Where specific manipulatives are needed for lesson activities, they are provided as copymasters in the Teacher's Guide. Use of the copymasters, or RCMs, is indicated in the resources box of the relevant lesson plan.

The following resources and equipment are also used in various CPM lessons, and are assumed to be found in most classrooms.

Set rings	Jigsaw puzzles
Large and small counters	Dominoes – various
Pattern tiles	Board games
	Construction material
	Playing cards
Various dice (1–6 dot, 1–6 numeral, 7–12, 1–9, 1–12, 1–20, blank)	Blank playing cards
Number lines 1–100	Interlocking cubes

Y4 Introduction

How to use CPM

Long number line to 100	Polydrons
Number lines (numbered and blank to include negative numbers)	Plane shapes for tessellation
Individual number lines (marked and unmarked)	Stencils of plane shapes
Cuisenaire rods	3D geometric shapes
0–9 cards	Attribute blocks
0–100 cards	Interlocking prisms
100 number square	Geoboards and elastic bands
1–100 grids	Geo strips
Addition and subtraction number fact cards	Mirrors
Multiplication number fact cards	Protractors
Place value cards	Compasses
Cards 0 to 9, 10 to 90, 100 - 900	
Symbol cards	Pan balances
Fraction apparatus	Numbered beam balances
Fraction strips	Sand, water, pasta, rice
Square dot paper	Weights
Isometric dot paper	Weighing scales
Calculators	
	1 litre containers of different shapes
Money	Set of graded capacity cylinders
Money stamps	Set of graded capacity measures
	Various bottles, containers, funnels, pipes, pumps, sieves, spoons, buckets
Rulers	
Metre sticks	Timers (sand, water, etc.)
Trundle wheels	Large geared clocks
Tape measures (1 m and 5 m)	Small clocks
Height measure	Stop watch
	Clock stamp

Assessment

CPM provides material to help teachers gauge how successfully they are covering objectives, and to assess pupils' attainment. The Teacher's Guide contains the following tools for review, in line with the Framework's recommendations for short, medium and long-term assessment:

- **Records of on-going assessment** to help chart short-term progress in covering objectives with the class. This record can be used for observations noted during lessons or at appropriate intervals such as every half term. By the end of the year, these summative records will help to inform medium and longer term assessment.
- Termly **Teacher/Pupil Review** sheets where strengths and difficulties in particular Framework objectives can be recorded, and personal targets negotiated individually.
- A chart for yearly **Class Evaluation of Key Objectives** to help assess medium-term progress of the whole class. This information can be updated on a half-termly basis to feed into longer term assessment and may be passed on to colleagues in subsequent years.

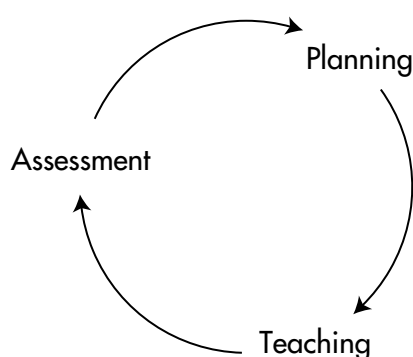


- Half-termly exercises to be completed during time allocated in the Framework for 'Assess and Review'. The exercises recycle and check the maths that pupils have covered over half the term. Both oral and written activities are provided (Parts A and B respectively). Recording of pupils' results will help teachers decide which objectives to review at the end of each half term.

Collins Primary Maths also takes care to prepare pupils for important milestones such as National tests in Years 2 and 6 by providing relevant practice tests.

To see how the assessment templates and questions are used, please turn to pages 44 to 46 where all the features are expanded upon.

With the aid of the elements described above, CPM aims to support effective teaching practice which can be represented as the following cycle:



Pupil Books

There are three Pupil Books for each year in Key Stage 2, each covering one term's work. All Pupil Book activities reinforce and build on the main teaching input and objectives of a particular lesson in the Teacher's Guide. These books now take the form of textbooks and are not designed for children to write in. Each page (or sometimes a double page) is divided into two sections: Refresher and Practice. The Refresher section is aimed at those children who need revision or who may find the Practice activity difficult. The Practice section contains the main activity of the lesson and is pitched at the central ability band of the class.

A summary of the relevant Pupil Book activity and page reference is given in each lesson plan.

Support material

A set of copymasters, or SCMs, accompanies the course. These provide activities specifically written for children who need extra support following the main teaching input of the daily maths lesson. This work is designed to help pupils attain the competence necessary to master the objectives of the lesson.

Extension material

Each lesson plan also includes activities for children able to attempt more challenging work within the time allocated for pupil activities in the daily maths lesson. The activities are carefully written to provide depth without going beyond the objectives of the lesson.

Depending on the topic and objectives being covered, this extension is provided either as an activity written into the lesson plan itself, or as a copymaster, or both. The set of copymasters, or ECMs, that accompanies the course in each year only

provides worksheets where relevant and necessary. In this way, teachers' time is not taken up copying large amounts of resources.

Homework

For each year, a set of homework copymasters, or HCMs, accompanies the course. The activities reinforce work learnt in the daily maths lesson and, reflecting the levels employed in the Pupil Books, have a Refresher and Practice section where relevant.

The instructions are clearly written and directed at the pupils.

Games

The Key Stage 2 Games Packs contain 24 games per year, each of which focuses on particular objectives. The games involve group or pair work guided and monitored by the teacher. The games are intended to help make practice fun, facilitate discussion and give teachers an opportunity to assess pupils' use of mathematical vocabulary.

To find out more about the games, please turn to page 42.

Software

For each Year, interactive games and quizzes are provided on a CD-ROM (*Rapid Maths*). The work practises skills in the key objectives of the Calculations strand and is intended for use by individuals or pairs, usually after the daily maths lesson.

To find out more about the software (*Rapid Maths*), please turn to page 43.

The CPM Daily Maths Lesson Plan

(It may also be useful to refer to the flow chart on page 9).

Strand reference

The relevant strand covered in the lesson is stated clearly at the top of the page.

When to teach the lesson

Lessons are organised into a suggested order which appears at the top of the page. The lessons may, however, be re-ordered to suit other preferences.

Topic reference

The relevant topic covered is identified at the beginning of the lesson.

Objectives

The lesson objectives are clearly listed and match those found in the Framework.

Vocabulary box

A summary is provided of key maths terms particularly relevant to the lesson, and drawn from vocabulary recommended by the National Numeracy Strategy.

Resources box

To aid preparation, the resources needed for the main teaching input are listed. Resources used in subsequent stages appear, under their respective headings.

Extra notes are added in the margin when relevant to a particular step. The notes may cover differentiation, with suggestions for easier \downarrow or harder \uparrow questions, or information \textcircled{i} .

Main teaching and pupil activities

The main teaching input is found on the first page of the plan. Guided pupil activities follow on the second page.

The activity is broken down into clear steps to support teachers in achieving the lesson objectives, and facilitate interaction with the whole class.

Suggested questions are provided to support the teacher. A mix of open and closed questions are used where appropriate and language has been carefully chosen. Where relevant, model answers are given (in parentheses).

Y4 Numbers and the number system Suggested order: Autumn Term, Week 1, Lesson 1

Place value, ordering and rounding (whole numbers)

Objectives

- To read and write whole numbers to at least 10 000 in figures and words, and know what each digit represents.
- To partition numbers into thousands, hundreds, tens and ones.
- To add/subtract 1, 10, 100 or 1000 to/from any integer, and count on or back in tens, hundreds or thousands from any whole number up to 10 000.

Vocabulary number; zero, one, two ... ten, thousand; units; ones; tens; hundreds; thousands; column; digit; figure; one- two- three- four-digit number; place; place value; worth; stands for; represents; count on/back

Oral work and mental calculation (about 5 to 10 min)
Choose an activity from Strand 1 Topic 1.1.

Main teaching and pupil activities (about 30 to 40 min)

Resources large place value chart; four sets of 0-9 digit cards; selection of one-, two-, three- and four-digit place value cards; Blu-tack

Draw the place value chart on the board for all to see.

Place digit cards on the place value chart to make 35. Ask: **How many tens/units does this number have?** (3 tens, 5 units)

Ask: **How do you say this number? Who can write it on the board?**

Ask: **If we add one unit, what does the number become?** (36) Make 36 with digit cards on the place value chart. Ask: **If we add one ten, what does the number become?** (46) Make 46 with digit cards. Say: **Let's count on in tens.** Count in tens from 46 to 96. Then, count in ones to 99.

Ask: **What comes after 99?** (100) **Who can make 100 with the digit cards? If we add four units, what does the number become?** (104) **Who can make this number on the board? If we add three tens, what does the number become?** (134) **If we add one hundred, what does the number become?** (234) Count in hundreds up to 934. Then, count in tens to 994. Then, count in ones to 999.

Ask: **What comes after 999?** (1000) Remove the digit cards, point to the thousands column and say: **We need a thousands column. Who can write "thousands"? Who can make 1000 with the digit cards?** Gradually build the number to 9999. Children write some of the numbers in words.

Work backwards to 0. Ask: **Now subtract a thousand?**

Make 674 using digit cards. Say: **Let's count on five tens. Cheryl, change the digits as we count. Use your fingers to keep count of the tens.** Repeat, counting on six hundreds from 724 to 1324. Repeat, counting back from four-digit numbers in tens then hundreds.

Clear the columns. Ask: **Who can make the number 2637 using the digit cards? Who can make a number with three hundreds and five units?**

Make a four-digit number, e.g. 5804. Ask: **How many units/tens/hundreds/thousands does this number have? What is one/ten/hundred/thousand more/less than this number?**

Make another four-digit number, e.g. 9471. Ask: **What does the 9/4/7/1 represent?** (9000, 400, 70, 1) Record this on the board: $9471 = 9000 + 400 + 70 + 1$. Repeat with other four-digit numbers.

Collins Primary Maths 85

Oral work and mental calculation

Reference is given to relevant activities from the pool of Oral work and mental calculation found in section 2 of the Teacher's Guide. Other activities may also be chosen from the section.

Place value, ordering and rounding (whole numbers)

Teacher resources
Selection of two- three- and four-digit number cards.

Numbers to use
0-10 000.

1. Digit value

What to do:

- Give each child a number card.
- Ask individuals to stand up, show their card and answer questions such as:
 - to read out the number
 - to say how many units, tens, hundreds, thousands it has
 - to say the value of one of the digits, e.g. the 4 of 2345
 - to add/subtract 1, 10, 100, 1000.

Variation:
Restrict the numbers to 0-500. Say: **Stand up if your number is 300, rounded to the nearest 100.** Ask each child one of the above questions.

Y4 Introduction

How to use CPM

Group, pair or individual activities are shown by relevant icons.

**Pupil consolidation**

The main teaching activity is followed by pupil practice and consolidation. Reference to Pupil Book pages is given in a 'page' icon, next to a summary of the pupil activity. The activities in this section of the lesson allow all pupils to focus on their newly-acquired knowledge and are divided into Refresher and Practice sections.

Support

For pupils needing extra support, activities are provided to help them attain the competence necessary to master the objectives. The activities are often a variation on the consolidation work, with careful grading of difficulty. Support work may be provided through group/pair work described in the lesson plan itself. Alternatively, there may be reference to a Support Copymaster, as is the case here.

Plenary

The important 10–15 minute plenary session offers the whole class a chance to feedback, discuss misconceptions and recapitulate what they have learnt. The plenary is broken down into accessible steps. You may wish to select only a few of the steps, or cover them all.

Y4 Numbers and the number system Suggested order: Autumn Term, Week 1, Lesson 1

Pupil Book 1: Footprint figures 5 **Pupil consolidation**

Refresher

- 1 Children write a partitioned number in figures, e.g. 3 hundreds, 2 tens and 6 units gives 326.
- 2 They write the value of a digit in a number.

Practice

- 1 Children construct a number from its parts, e.g. 300, 1, 5000, 20 gives 5321.
- 2 They add/subtract 10, 100 or 1000 from numbers.
- 3 They write four-digit numbers in words.

Support CM: Making numbers 1 **Support**

- 1 Children write numbers up to 999 and multiples of 1000 using words and figures.
- 2 Children construct a number from its parts.
- 3–5 Children add 1, 100, 1000 to numbers.

Extension

- 1 Challenge children to make the largest and smallest numbers from four given digits, e.g. 2, 9, 3, 2.
- 2 Write a range of calculations involving adding/subtracting multiples of 10, 100 and 1000 to numbers, e.g. $4367 + 200$, $5836 - 70$, $8024 - 3000$.

Game 31 2 **Games Pack 2**
Snake race

Plenary (about 10 to 15 min)

- Arrange the children so they can see the board. Write a range of three- and four-digit numbers on the board, e.g. 289, 700, 806, 1724, 4000, 2013, 9991, 6008, 7748, 5407.
- Point to a number, e.g. 1724 and ask: **How do you say this number? How many thousands/hundreds/tens/units does it have? Jason, come and write the number in words. What does the digit 8 represent/stand for? What is the figure 5 worth? What is one/ten/hundred/thousand more/less than the number? Who can count on past 1800 in tens/2000 in hundreds/5000 in thousands? Which numbers have no units/tens/hundreds/thousands?**

Homework CM: Writing whole numbers 1 **Homework** (about 20 min)

Refresher

- 1 Children write a partitioned number in figures.
- 2 They write the value of a digit in a number.
- 3 They partition a four-digit number.

Practice

- 1 Children construct a number from its parts.
- 2 They add/subtract 100 or 1000 from numbers.
- 3 They write four-digit numbers in words.
- 4 They count on or back in tens, hundreds or thousands.

86 Collins Primary Maths

Extension

For more able pupils there are activities which build on the work covered with the class, whilst remaining focused on the objectives. Extension may be provided through group/pair work described in the lesson plan itself. Alternatively, there may be reference to an Extension Copymaster.

From section 3 of this Teacher's Guide

Homework

There are an average of two sheets of homework per week, which are referenced to relevant lesson plans, as is the case here.



When there is opportunity to play a game covering the lesson objectives, reference is made under **Pupil consolidation** in the lesson plan.



When there is opportunity for out-of-class practice in calculation, links are made to a CPM Software (*Rapid Maths*) game following the **Plenary** in the lesson plan.

The Pupil Materials

Reference to objectives

The objectives being covered are summarised at the top of each pupil book page for ease of reference. The objectives correspond directly to the relevant lesson plan.

● Read and write whole numbers to at least 10 000 in figures and words, and know what each digit represents

Au 1, 1

Footprint figures

Refresher

1 Make the number from its parts. 2000 + 500 + 40 + 6 makes 2546

a 6000 + 900 + 20 + 4 makes

b 3000 + 200 + 90 + 7 makes

c 4000 + 200 makes

2 Write the number that each red digit represents. 5874 800

a 4923 b 3260

c 1684 d 6759

e 1059 f 5411

Practice

1 Add these parts to make a number.

a 70 8 200 4000

b 20 5000 3

2 Copy and complete the calculations.

a $3597 - 10 =$

b $8132 + 1000 =$

c $3000 - 100 =$

d $5093 - 1000 =$

e $6192 + 10 =$

f $4678 + 100 =$

3 Write these numbers using words.

a 2198 b 9509 c 7013 d 2003 e 6520

5

Consolidation activities

All pupil book activities reinforce and build on the main teaching points and objectives of a particular lesson in the Teacher's Guide. The work is divided into Refresher and Practice sections and the exercises have been written by teachers with extensive classroom experience. To ensure that children enjoy using the books, attractive colour illustrations have been combined with a child-friendly layout.

From Year 4 Pupil Book 1, to go with
Autumn Term, Week 1, Lesson 1

Pupil instructions

Instructions are clearly written to enable pupils to work alone.

Y4 Introduction

How to use CPM

Support Copymaster

For particular lessons, copymasters are provided with activities written specifically for pupils who need support. The activities help pupils attain the competence necessary to master the lesson objectives.

Reference to objectives

The objectives being covered are summarised at the top of each support and extension copymaster for ease of reference. The objectives correspond directly to the relevant lesson plan.

● Read and write whole numbers to at least 10 000 in figures and words. **SCM 1**

Name _____ Date _____

Making numbers

1 Fill in the spaces with words and figures.



a two 2
b _____ 9
c eleven _____
d _____ 17
e twenty _____
f _____ 100
g one hundred and twenty-five _____
h _____ 5000

2 Complete the calculations.
a $4000 + 500 + 70 + 9 = 4579$ b $9000 + 200 + 30 + 5 =$ _____
c $7000 + 400 + 60 + 1 =$ _____ d $1000 + 900 + 90 + 9 =$ _____

3 Add 1 to these numbers.
a $624 + 1 = 625$ b $57 + 1 =$ _____
c $1294 + 1 =$ _____ d $7320 + 1 =$ _____
e $1046 + 100 =$ _____ f $3908 + 1 =$ _____

4 Add 100 to these numbers.
a $9321 + 100 = 9431$ b $4297 + 100 =$ _____
c $5132 + 100 =$ _____ d $7209 + 100 =$ _____
e $1046 + 100 =$ _____ f $3908 + 100 =$ _____

5 Add 1000 to these numbers.
a $5381 + 1000 = 6381$ b $2922 + 1000 =$ _____
c $7905 + 1000 =$ _____ d $3205 + 1000 =$ _____
e $6000 + 1000 =$ _____ f $329 + 1000 =$ _____

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From Year 4 Support Copymasters,
to go with Autumn Term, Week 1, Lesson 1

Extension Copymaster

For particular lessons, copymasters are provided which develop and extend the work covered in the main pupil practice. The activities offer pupils challenging material without going beyond the scope of the lesson objectives.

Pupil instructions

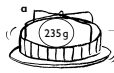
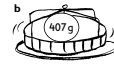




Instructions are clearly written to enable pupils to work alone.

● Round any positive integer less than 1000 to the nearest 10 or 100. **ECM 1**

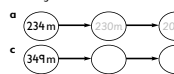
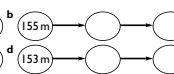
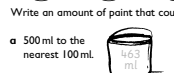
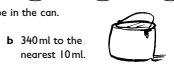
Name _____ Date _____

Roundabouts







1 Round these weights to the nearest 10 g.

a  _____
b  _____
c  _____
d  _____
e  _____
f  _____

2 Look at the lengths below. Round each length to the nearest 10 m.
3 Round your answer to the nearest 100 m.

a  b 
c  d 

4 Write an amount of paint that could be in the can.

a 500 ml to the nearest 100 ml.  b 340 ml to the nearest 10 ml. 
c 700 ml to the nearest 100 ml.  d 60 ml to the nearest 10 ml. 
e 1000 ml to the nearest 100 ml.  f 200 ml to the nearest 10 ml. 

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From Year 4 Extension Copymasters,
to go with Autumn Term, Week 1, Lesson 2

Y4 Introduction

How to use CPM

Homework, Games and Software

Homework Copymasters

An average of two sheets of homework are provided per week, which are referenced to relevant lesson plans. The activities reinforce work learnt in the daily maths lessons, and have been written to be suitable for the home environment. The copymasters offer exercises at the Refresher and Practice levels corresponding to the Pupil Books.

Reference to objectives

The objectives being covered are summarised at the top of each homework copymaster for ease of reference. The objectives correspond directly to a particular lesson plan.

Instructions

Instructions are provided to help pupils work through the activities at home.

● Read and write whole numbers to at least 10 000 in figures and words

HCM 1

Name _____ Date _____

Writing whole numbers

Refresher

1 Complete the calculations by making the number from its parts.

a $4000 + 800 + 50 + 2 =$

b $6000 + 500 + 20 + 7 =$

c $9000 + 200 + 3 =$

2 What is each underlined digit worth? a 2681 b 5082

3 Complete the calculation. $5649 =$ $+ 600 + 40 +$

Practice

1 Add these parts to make a number. 200 8 4000 60 makes

2 Complete the calculations.

a $1971 + 1000 =$ b $5843 - 100 =$

3 Write these numbers using words.

a 2491

b 9060

4 a Count on in tens. 6782

b Count on in hundreds. 2850

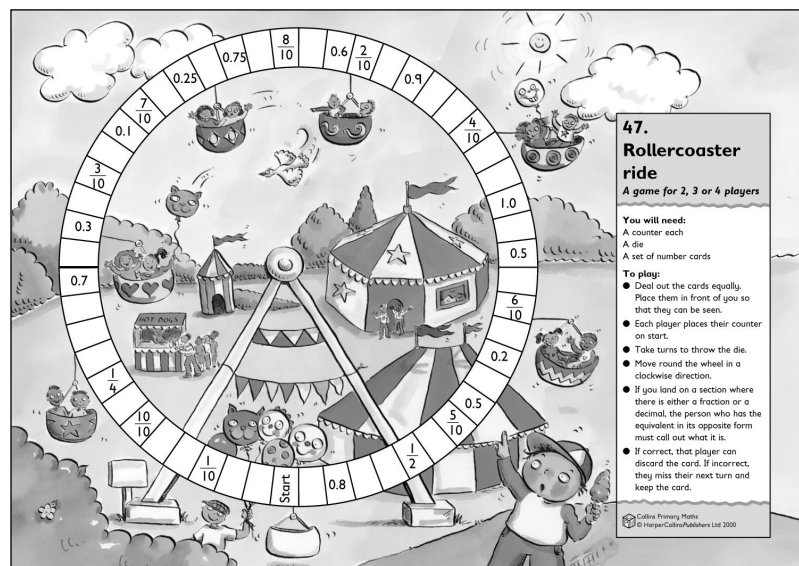
c Count back in thousands. 7209

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From Year 4 Homework Copymasters,
to go with Autumn Term, Week 1, Lesson 1

Games

The 24 colourful games for Year 4 come in A3 laminated format, making them large and sturdy enough for repeated classroom use. The games also come with teaching notes and cut-out colour resources such as spinners and counters. Each game has been written to cover particular objectives, and is linked to relevant lessons. The games, which involve pair or group work, create an engaging forum for discussion and feedback between pupils and teachers.

**Teaching Notes**

Detailed teaching notes are provided for each game. The notes give information on coverage of objectives, and expand on the summary information found on the game board itself.

A7. Recognise the equivalence between the decimal and fraction forms of one half and one quarter, and tenths such as 0.3
A8. Read standard metric units (l, ml) including their abbreviations, and imperial units (gal)

47. Rollercoaster ride A game for 2, 3 or 4 players

Resources and preparation

- A counter for each player
- A die
- A set of number cards

Cut out the number cards from the resource material and shuffle.

Teaching notes

As the children are playing the game, ask questions such as: "Are you beginning to see a pattern or a rule?" "Do you think this would work with other numbers?" "What have you learned or found out today through playing this game?" "Did you use any new words?" "What do they mean?" Encourage the children to talk about what they notice about the equivalencies. There is a double set of answer cards, so children need to be quick with their responses. If they miss it the first time, they may well be able to discard the card next time round.

Variation

Instead of players continuing around the wheel until one of them has discarded all of their cards, players can go once round and

The aim of the game

The aim is to give children experience of recognising equivalence in both decimal and fraction forms.

How to win

The player who discards all of their cards first is the winner.

How to play

- Deal out the cards equally. Place them in front of you so that they can be seen.
- Each player places their counter on start.
- Take turns to throw the die.
- Move round the wheel in a clockwise direction.
- If you land on a section where there is either a fraction or a decimal, the person who has the equivalent in its opposite form must call out what it is.
- If correct, that player can discard the card. If incorrect, they miss their next turn and keep the card.

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From Games Pack 2
(Y3 – Y4)

Software

Rapid Maths, the CPM Software, practises the key objectives of the Calculations strand, and is intended mainly for use outside the daily maths lesson. The games and quizzes found in the software allow individuals and pairs to gain proficiency in calculation skills learnt during their lessons.

The Year 4 CD ROM provides enjoyable, purpose-driven games, each of which:

- requires pupils to recognise number relationships and actively use mental skills
- uses audio-visual features to consolidate concepts and reinforce mathematical vocabulary
- rewards success through animation and score-keeping.

Care has also been taken to feed back and give remedial help to pupils when they make mistakes.

Each piece of software provides assessment tools which allow teachers to chart pupils' progress and isolate particular difficulties. By recording the results of each pupil's performance on the games and quizzes, the software enables teachers to identify patterns of weakness.

There are 3 levels of difficulty for each game. Pupils and/or teachers can decide on the appropriate level.



This icon returns players to the main menu

This icon enables players to register their names (which in turn ensures that teachers can review progress)

The player icon is highlighted to indicate whose turn it is.

The microphone is used to hear the question again.

Framework Objectives

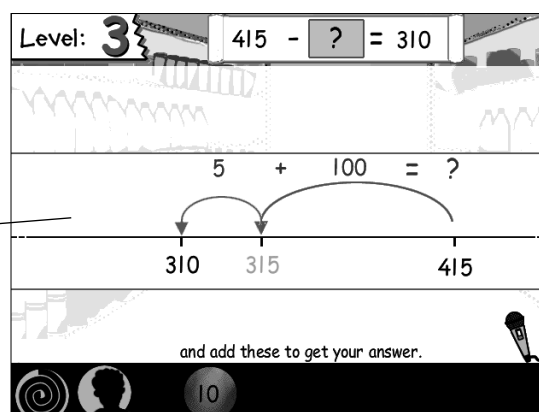
- Use informal paper and pencil methods to support, record or explain additions/subtractions. Develop and refine written methods for: column addition and subtraction of two whole numbers less than 1000, and addition of more than two such numbers.

Game Levels

- Level 1** – Addition and subtraction of HTU plus and minus TU.
Level 2 – Addition and subtraction of any HTU plus and minus up to four HTU.
Level 3 – Addition and subtraction of any HTU plus and minus any HTU.

Feedback is given when children have difficulties. Tools such as number lines and number squares help to guide them to understanding mistakes and give correct answers.

Souperbowl – a game from *Rapid Maths 4 Software*



Wrong answer feedback

- First wrong answer** – Try again.
Second wrong answer – a number line is shown to aid in the calculation.

Y4 Introduction

How to use CPM

Assessment

Part A: Oral questions

A set of 10 oral questions is provided for the end of every half term in Part A of the *Assess and Review* sheets. The questions are representative of the work covered during the half term.

The Teacher's page for Part A provides the questions to be asked, the objectives covered and a mark scheme. Teachers can use this information to identify areas of weakness for their class. This diagnostic opportunity can then inform the focus of review lessons at the end of each half term.

Y4 Teacher's Notes

Autumn Term, First Half

Assess and Review – Part A

Duration: about 40 minutes

Resources

pencils
rulers
red, blue and yellow coloured pencils

Objective	What to ask	Answer	Mark
1. Read and write whole numbers to at least 10 000 in figures and words	<i>Write the number seven thousand, two hundred and ninety-one</i>	7291	1
2. Read and write whole numbers to at least 10 000 in figures and words and know what each digit represents	<i>What place value does the four represent in the number: three thousand, six hundred and forty-two?</i>	tens	1
3. Partition numbers into thousands, hundreds, tens and units	<i>Write down the number that has nine thousands, two hundreds, five tens and one unit</i>	9251	1
4. Add 100 to any integer	<i>What number is 100 more than 4569?</i>	4669	1
5. Round any three-digit number to the nearest 100	<i>What is 768 rounded to the nearest 100?</i>	800	1
6. Consolidate knowing by heart addition facts for all numbers to 20	<i>12 add 7?</i>	19	1
7. Consolidate knowing by heart subtraction facts for all numbers to 20	<i>16 subtract 9?</i>	7	1
8. Identify near doubles, using known doubles	<i>120 plus 130?</i>	250	1
9. Choose and use appropriate number operations to solve problems	<i>I am going to tell you a word problem. I want you to put a circle around the calculation that will give you the answer to the problem. 16 people are in a queue at the bank. 7 people get served. How many people are still waiting?</i>	16 - 7	1
10. Use all four operations to solve word problems involving numbers in 'real life', using one step	<i>There are 52 playing cards in a pack. Brian deals 7 to Sylvia. How many are left?</i>	45	1

Part A Total: 10

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435

From section 5 of this *Teacher's Guide*

Y4 Autumn Term, First Half

Assess and Review – Part A

Name: _____

1.

2.

3.

4.

5.

6.

7.

8.

9. 16×7 $16 + 7$
 $16 - 7$ $16 \div 7$

10.

Jottings

Part A Total: 10

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A pupil-friendly copymaster is provided for children to complete their answers.

For pupils who finish part B early, there are activities described in the teacher's notes involving the shapes around the border of part A.

From section 5 of this *Teacher's Guide*

Y4 Introduction

How to use CPM

Part B: Written questions

A set of written questions is provided for the end of every half term in Part B of the *Assess and Review* sheets. The questions are representative of the work covered during the half term. For consistency, and to aid comparisons over time, marks for the questions always total 40.

The Teacher's page for Part B provides the instructions to questions, the objectives covered and a mark scheme. Teachers can use this information to identify areas of weakness for their class. This diagnostic opportunity can then inform the focus of review lessons at the end of each half term.

Y4 Teacher's Notes

Autumn Term, First Half

Assess and Review – Part B

Objective	Instructions	Answer	Mark
1. Read and write whole numbers to at least 10 000 in figures and words	Write the number 4879 in words	four thousand eight hundred and seventy-nine	1
2. Read and write whole numbers to at least 10 000 in figures and words and know what each digit represents	Circle the digit that represents hundreds in each of these numbers	1 and 0	1
3. Partition numbers into thousands, hundreds, tens and units	What's the number? Write the number in figures	3604	1
4. Subtract 1, 10, 100 or 1000 from any integer	Complete the table	see page xxx	2 *
5. Count on in hundreds from any whole number up to 10 000	Continue the pattern	6015, 6115, 6215	1
6. Round any three-digit number to the nearest 10	Round each of these numbers to the nearest 10	570, 840	1
7. Round any three-digit number to the nearest 100	Round each of these numbers to the nearest 100	400, 300	1
8. Record estimates and readings from scales to a suitable degree of accuracy	Measure the length of the line	8½ cm or 8.5 cm	1
9. Record estimates and readings from scales to a suitable degree of accuracy	In the box draw a line 5½ cm	1	*
10. Consolidate knowing by heart addition facts for all the numbers to 20	Complete the table	see page xxx	2 *
11. Consolidate knowing by heart subtraction facts for all the numbers to 20	Complete the table	see page xxx	2 *
12. Add a pair of two-digit numbers (not crossing 10 or 100 boundary)	Complete the calculation	78	1
13. Subtract a pair of two-digit numbers (not crossing 10 or 100 boundary)	Complete the calculation	33	1
14. Identify near doubles, using known doubles	Complete the calculation	310	1
15. Use informal paper and pencil methods to support, record or explain additions	Complete the calculation	512	2 *
16. Use informal paper and pencil methods to support, record or explain additions	Complete the calculation	531	2 *
17. Use informal paper and pencil methods to support, record or explain subtractions	Complete the calculation	488	2 *

436

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Total: 40

Total: 50 (at teacher discretion)

Y4

Autumn Term, First Half

Assess and Review – Part B

Name: _____

- Write the number 4879 in words
- Circle the digit that represents hundreds in each of these numbers 3178 2051
- What's the number? Write the number in figures
6 hundreds 4 units 3 thousands no tens
- Complete the table

4618
-1
-10
-100
-1000
- Continue the pattern
- Round each of these numbers to the nearest 10
567 843
- Round each of these numbers to the nearest 100
439 271
- Measure the length of the line
- In the box draw a line 5½ cm long
- Complete the table

+	8	6	7	10
6				
9				
5				
- Complete the table

-	9	6	11	5
17				
13				
18				
- 46 + 32 =
- 58 - 25 =
- 150 + 160 =

444

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445

Part A and B Total:

50

0 1 2 3 4 5 6

446

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Referring to the border on Part A, ask the children to colour all the equilateral triangles red, isosceles triangles blue and right-angled triangles yellow.

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437

From section 5 of this *Teacher's Guide*

The Part B pupil sheets are photocopiable, and have been laid out in a clear, accessible way.

From section 5 of this *Teacher's Guide*

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45

Y4 Introduction

How to use CPM

Templates for recording assessment

A **Record of on-going assessment copymaster** is provided for each strand. The record can be used to help teachers jot down informal observations in the short term. This chart can be used during lessons or at appropriate intervals such as every half term.

Space has been given for comments on the progress of lessons such as: objectives which were not fully achieved; teaching/learning strategies which worked particularly well, and points which may need revisiting.

Space has also been allocated for notes regarding differentiation. Teachers may wish to make a note of pupils who achieve a task particularly well, or who have specific problems in grasping certain concepts.

By the end of the year, these summative records will help inform medium and longer term assessment.

The form is titled 'Year 4 Record of on-going assessment'. It has fields for 'Term', 'Week(s)', 'Lesson(s)', and 'Class'. The main section is titled 'NUMBERS AND THE NUMBER SYSTEM'. It contains three main areas for notes: 'General comments (e.g. general progress of lessons, objectives not covered/understood, points that need revisiting etc.)', 'Comments on links with other strands/topics (e.g. with Calculations/Understanding addition and subtraction, or with Solving problems/Reasoning about numbers)', and a split section for 'Support - Notes' and 'Extension - Notes'. The form is marked with 'Y4' at the top right and 'Assessment' vertically on the right side.

From section 5 of this *Teacher's Guide*

The form is titled 'Y4 Teacher/Pupil Review'. It has a header with 'Y4' and 'Assessment'. The main title is 'Y4 Teacher/Pupil Review' followed by 'Autumn Term'. Below this is a line for '(Pupil) and (Teacher) on (Date)'. There are sections for 'Achievements' and 'Agreed Plans and Targets'. At the bottom, there are lines for 'Signed: (Pupil)' and 'Signed: (Teacher)'. The form is marked with 'Y4' at the top left and 'Assessment' at the top right.

From section 5 of this *Teacher's Guide*

A **Teacher/Pupil Review** copymaster is also provided to be used with individual pupils once a term. It is suggested that achievements/strengths are discussed in conference with the pupil, and noted in the space provided. Similarly, particular difficulties can be isolated and set as a target for improvement. The sheet can then be signed by teacher and pupil, copied, and taken home to parents for their information on the short to medium-term goals set for their child.

CPM also provides a template to evaluate pupils' understanding of the Key Objectives in Year 4 (please see page 436 of this guide). The chart can be updated on a half-termly basis and will inform medium-term assessment of the class as well as longer term plans.