Chapter 4 Modules and Units

The content of learning for pupils should be orderly arranged into modules and units so that the teaching can be better organised for effective learning.

An attempt has been made to organize the Mathematics curriculum for Key Stage 2 into modules and units. This is shown in the tables below, which also include a reference to the corresponding items and the time ratios in the *Syllabuses for Primary Schools: Mathematics, 1983*. A similar organization of the Mathematics curriculum for Key Stage 1 can be found in Appendix C for reference. Teachers should note that the proposed organization is not prescriptive, as there can be various ways of organizing the curriculum into modules and units.

Exemplar Showing the Overview of Modules and Units for Key Stage 2

Learning Dimension	Module		Unit		Syllabus Reference (Remarks and additional notes on teaching are listed in brackets)	Time Ratio
	No.	Organizing Focus	No.	Organizing Focus		
Number	N6	Nature of numbers	N6-1	H.C.F. and L.C.M. by listing	4.1 Multiples 4.2 Factors (presentation by 'Venn diagrams', i.e. diagrams in point 2, not included)	5 6
			N6-2	H.C.F. and L.C.M. by factorization	5.10 Factorization (prime numbers within 150)	11
			N6-3	H.C.F. and L.C.M. by short division	6.3 Highest common factor and lowest common multiple (not including ' problem solving')	10
			N6-4	Prime and composite numbers	5.2 Prime numbers and composite numbers	9
			N6-5	Squares and square roots	6.10 Squares and square roots (finding square roots from numbers within 200; not including 'finding square roots by factorization' and point 3)	9
			N6-6	Ancient numerals	6.1 Ancient numerals (the topic is shifted to Primary 6 second term)	6
			N6-7	Stories of calculating devices	6.15 Stories of calculating devices (points 2 and 3 are changed as enrichment topics)	8
	N7	Operations of whole numbers	N7-1	Recognition of large numbers with rounding off and estimation	5.1 Large numbers	4
			N7-2	Multiplication (with 2-digit multiplier) and division (with 2-digit divisor)	4.3 Multiplication 4.4 Division	8 12
			N7-3	Mixed operations on four rules (including use of brackets)	(Newly added topic; including sums and problems; the number of operations in each question should not exceed four, and the numbers involved should be as simple as possible) 4.11 Brackets (not including 'square brackets')	5
			N7-4	Multiplication (with 3-digit multiplier)	(Newly added topic)	3

Learning Dimension	Module		Unit		Syllabus Reference (Remarks and additional notes on teaching are listed in brackets)	Time Ratio
	No.	Organizing Focus	No.	Organizing Focus		
Number (cont)	N7	Operations of Whole numbers	N7-5	Division (with 3-digit divisor)	4.12 Division	10
			N7-6	Direct proportion by unitary method	4.5 Direct proportion	6
			N7-7	Inverse proportion by unitary method	5.11 Inverse proportion	7
	N8	Operations of fractions, decimals and percentages	N8-1	Addition and subtraction of fractions with the same denominator	4.6 Fractions (the number of operations in each question should not exceed two, and the numbers involved should be as simple as possible)	18
			N8-2	Addition and subtraction of fractions with different denominators	4.13 Fractions (the number of operations in each question should not exceed two, and the numbers involved should be as simple as possible)	18
			N8-3	Multiplication and division of fractions	5.3 Fractions (the number of operations in each question should not exceed two, and the numbers involved should be as simple as possible) 5.4 Distributive property of multiplication	23 5
			N8-4	Addition and subtraction of decimals	4.7 Decimals	10
			N8-5	Multiplication and division of decimals	4.14 Decimals (the number of operations in each question should not exceed two)	13
			N8-6	Averages	4.15 Averages	4
			N8-7	Further multiplication and division of decimals	5.12 Decimals	18
			N8-8	Percentages	5.14 Percentages ('simple problems' is shifted to Topic 6.5 of Primary 6 first term)	13
			N8-9	Applications of percentages	6.5 Percentages ('simple interest' not included, but including 'simple problems' of Topic 5.14)	25
Measures	M2	Further measurement	M2-1	Millilitre	4.8 Capacity	3
			M2-2	Cubic centimetre and cubic metre	5.17 Volume	10
			M2-3	Square centimetre, square metre, areas of squares and rectangles	4.19 Area	10
			M2-4	Areas of parallelograms, triangles, trapeziums and polygons	5.7 Area	14
			M2-5	Circumferences of circles	6.7 Circumference (use $\pi = 3.14$ or $\frac{22}{7}$ in calculations)	10
			M2-6	The 24-hour clock	5.15 Time (the topic is shifted to Primary 6 second term)	5
			M2-7	Metre per second and kilometre per hour	6.13 Speed	10
			M2-8	Angle measures in degrees	6.6 Angles	9
			M2-9	Drawing plans	6.18 Simple surveying (including point 1 only)	6

Algebra	A1	Algebra	A1-1	Algebraic symbols	4.16 Algebraic symbols (including only points 1 and 2a; 2b is shifted to Topic 5.5 of Primary 5 first term)	5
			A1-2	Concepts of simple equations	5.5 Simple equations (also including point 2b of Topic 4.16)	14
			A1-3	Solving simple equations	5.13 Simple equations (not including the operation of like terms in algebra in point 1c; but including 'ask pupils to check the answers after solving an equation'; points 2 and 3 are shifted to Topic 6.4 of Primary 6 first term)	10
			A1-4	Solving simple equations	6.4 Simple equations (including points 2 and 3 of Topic 5.13 and solving problems by equations involving fractions and decimals, but not including the operation of like terms in algebra)	20
			A1-5	Number patterns	6.11 Number patterns (including 'square numbers' but not including 'magic squares')	16
Shape & Space	S2	Further 2-D and 3-D shapes	S2-1	Properties of quadrilaterals	4.18 Quadrilaterals (including only points 1 to 4; presentation by 'Venn diagrams', i.e. diagrams in point 4, not included)	6
			S2-2	Circles	5.16 Circles	5
			S2-3	Properties of pyramids and prisms	4.9 Solids	8
			S2-4	8 compass points	5.8 Directions	4
			S2-5	Bearings	6.18 Simple surveying (including only points 2 to 5)	10
Data Handling	D2	Statistical charts	D2-1	Pictograms of greater frequency counts	4.10 Pictograms	4
			D2-2	Bar charts and compound bar charts	4.20 Compound bar charts	6
			D2-3	Further techniques on bar charts	5.9 Graphs	7
			D2-4	Further techniques on straight line graphs	5.18 Straight line graphs	6
			D2-5	Pie charts	6.9 Pie charts (not including point 2)	6
			D2-6	Appropriate use of graphical representation	6.19 Graphs (not including point 2)	10

Remark 1: On teaching time allocation of mathematics lessons, it is assumed that the total number of class periods of mathematics in a school year is 160, and on average 80 periods in one school term, with ETV lessons included. The days not included in the allocation are those for school examinations at mid-term, end of term and end of school year, and for school activities such as games day, speech day and picnic day, etc.

Remark 2: Teachers should provide opportunities for pupils in learning through tasks or other activities, in order to strengthen their ability in solving practical or mathematical problems by integrative use of subject knowledge and procedures.

Remark 3: Besides the additional notes listed in brackets in the above table, the following are the changes in the *Syllabuses for Primary Schools: Mathematics, 1983*

(a) The following topics are changed as enrichment topics:

(1)	Topic 4.17	Changing units in metric system			
(2)	Topic 6.8	Curve stitching			
(3)	Topic 6.12	Recurring decimals			
(4)	Topic 6.15	Stories of Calculating devices:	[2]	—	(Notation on the Chinese abacus)
			[3]	—	(Addition and subtraction on the Chinese abacus)
(5)	Topic 6.16	Symmetry			
(6)	Topic 6.18	Simple surveying	[6]	—	(Horizontal and vertical)
			[7]	—	(Angle of elevation)

(b) The following topics are deleted:

(1)	Topic 4.18	Quadrilaterals:	[5]	—	(Method of making a quadrilateral rigid)
(2)	Topic 5.6	Time		—	(Changing units and simple four rules)
(3)	Topic 6.2	Divisibility			
(4)	Topic 6.9	Pie charts	[2]	—	(Making pie charts)
(5)	Topic 6.10	Squares and square roots:	[2]	—	(Finding square roots by factorization)
			[3]	—	(Plotting the graph of numbers against their squares)
(6)	Topic 6.14	Positive and negative numbers:			(Introducing negative numbers)
(7)	Topic 6.17	Area of a circle			
(8)	Topic 6.19	Simple curve graphs:	[2]	—	(Drawing curve graphs)