Mathematics Album

		start	"end"	additional notes/pre-requisites
	Great Lesson: Story of Numbers	1		repeat yearly
Early Work - Numeration				
Mathematics: Early Work - Numeration	Wooden Hierarchical Material	1	1	bridge from golden bead
Mathematics: Early Work - Numeration	Large Bead Frame	1	1	start where child is
Mathematics: Early Work - Numeration	Commutative and Distributive Laws of Multiplication			parallel - bead frame
Mathematics: Early Work - Numeration	Multiples	1	1	
Mathematics: Early Work - Numeration	Factors - 1: Introduce Concept	1	1	
Mathematics: Early Work - Numeration	Least Common Multiples - 1: Introduction	1	2	
Mathematics: Early Work - Numeration	Last Steps of Least Common Multiples to Abstraction	2	2	Factors confidence
Mathematics: Early Work - Numeration	Divisibility: by 2, 5, 25 (3 presentations)	1	2	
Operations				
Mathematics: Operations	Large Bead Frame Long Mult	1	1	
Mathematics: Operations	Bank Game	1	3	(this is with cards, NOT with beads)
Mathematics: Operations	Flat Bead Frame - Step 1	1	2	large bead frame mult done
Mathematics: Operations	Checker Board	1	2	
Mathematics: Operations	Geometrical Form of Multiplication	2	3	after checkerboard
Mathematics: Operations	Category Multiplication	2	3	could be 1st year
Mathematics: Operations	Long Division (Distributive) Racks and Tubes	1	3	1-digit divisor experience
Mathematics: Operations	Group Division	3	4	Comfort with Long Div
Mathematics: Operations	Group Division & Word Problems	3	5	
Squares and Cubes of Numbers				
Mathematics: Squares and Cubes	Prerequisites to Squares and Cubes of Numbers	1	1	
Mathematics: Squares and Cubes	Notation of Squares	1	1	
Mathematics: Squares and Cubes	Notation of Cubes	1	2	
Mathematics: Squares and Cubes	Games 1-4 (pyramid, tower, decanomial square)	1	3	
Mathematics: Squares and Cubes	Paper Decanomial	2	3	
Mathematics: Squares and Cubes	Sums Using Squares and Cubes	2	3	
Fractions				
Mathematics: Fractions	Introduction to Fractions (many stages)	1	1	could have had in primary; add more details
Mathematics: Fractions	Equivalence of Fractions (stages)	1	1	follow the child
Mathematics: Fractions	Simple Operations	1	2	could have had in primary; build
Mathematics: Fractions	Add & Subt of Fraction w/ Diff Denominators	1	2	pre-req: add/sub simple

Mathematics: Fractions	Exercises Leading to Abstraction of the Above	2	3
Mathematics: Fractions	Multiplication by Fraction (stages)	2	3 can be year 1
Mathematics: Fractions	Division by a Fraction	2	3

Decimal Fractions

Mathematics: Decimal Fractions	Quantity - Symbol - Link	2	3 see page for pre-reqs
Mathematics: Decimal Fractions	Operations	2	3
Mathematics: Decimal Fractions	Convert Common to Decimal Fractions	2	3
Mathematics: Decimal Fractions	Effects of Mult or Div by Powers of 10	2	3
Mathematics: Decimal Fractions	Multiplying a DF by a DF - Ex 1: 1-digit multiplier	2	3
Mathematics: Decimal Fractions	Decimal Checkerboard	2	3
Mathematics: Decimal Fractions	Relative Size of Terms/Numbers	2	5
Mathematics: Decimal Fractions	Division of a Decimal Fraction by a Decimal Fraction	2	4
Mathematics: Decimal Fractions	Leading to Abstraction of Multiplication of Decimal Fractions	2	5
Mathematics: Decimal Fractions	Division of a Decimal Fraction on Paper	3	5

Squaring and Cubing

Mathematics: Squaring and Cubing	Transformation of a Square	2	3 parallel with later multiples and factors
Mathematics: Squaring and Cubing	Passing From One Square to Another	2	3
Mathematics: Squaring and Cubing	Squaring a Sum: Binomial - Trinomial - Formula	2	3
Mathematics: Squaring and Cubing	Squaring with a Hierarchical Value: stages	3	4
Mathematics: Squaring and Cubing	Pass From One Cube to Another	3	4 beginnings overlap with square work
Mathematics: Squaring and Cubing	Cubing a Binomial	3	4
Mathematics: Squaring and Cubing	Cubing a Trinomial	3	5
Mathematics: Squaring and Cubing	Cubing a Quadrinomial	4	5
Mathematics: Squaring and Cubing	Cubing a Trinomial having Numerical Value	3	4
Mathematics: Squaring and Cubing	The Story of the Three Kings	3	4
Mathematics: Squaring and Cubing	Cubing a Number with Decimal Value	3	4
Mathematics: Squaring and Cubing	Square Roots	3	4
Mathematics: Squaring and Cubing	Square Roots - Abstraction stages	4	5
Mathematics: Squaring and Cubing	Special Cases - stages	4	5
Mathematics: Squaring and Cubing	Square Roots: review process and rules	5	6
Mathematics: Squaring and Cubing	Cube Roots	3	5
Mathematics: Squaring and Cubing	Cube Roots: Review concept and rule	5	6

Other Topics

NOTE: Much of this area depends on the child

Mathematics: Signed Numbers	Signed Numbers: Negative Snake Game	3	4 NOTE 2: Anything 4-6 could start in year 5
Mathematics: Signed Numbers	Signed Numbers: Operations (stages)	4	6

Mathematics: Powers of Numbers	Powers of 2	4	6
Mathematics: Powers of Numbers	Powers of 3: Full work	4	6
Mathematics: Powers of Numbers	Powers of 2 and 3: Combined	4	6
Mathematics: Powers of Numbers	Powers of 10	4	6
Mathematics: Powers of Numbers	Operations Using Exponential Notation	4	6
Mathematics: Powers of Numbers	Expanded Power Notation - Intro and Operations	4	6
Mathematics: Word Problems	Word Problems	1	6 Introduce early on with concrete materials
Mathematics: Word Problems	Distance/Velocity/Time	3	4 be sure to begin before end of year 3
Mathematics: Word Problems	Principal/Interest/Rate/Time	3	5
Mathematics: Other Number Bases	Non-Decimal Bases: Intro and Operations	4	6 Follow the child's interests to start sooner
Mathematics: Other Number Bases	Conversion of Number Bases	4	6
Mathematics: Algebra	Balancing an Equation using operations	4	6
Mathematics: Algebra	Solve for Unknown: Operations	4	6
Mathematics: Algebra	Algebra Word Problems	4	6
Mathematics: Algebra	Solve for Two Unknowns	4	6
Mathematics: Ratio and Proportion	All stages in upper elementary typically	4	6 later work could extend into lower adolescence