

Contents

Preface		vii
Chapter 1	Foundation	1
	<i>Piaget's Developmental Theory, 1; Bruner's Levels of Learning, 4; Gagné's Learning Hierarchy, 6; Bruner's and Gagné's Levels of Learning Related to Selected Mathematics Content, 12.</i>	
2	Mainstreaming and Exceptional Children	17
	<i>The Visually Impaired Student, 18; The Hearing Impaired Child, 21; The Educable Mentally Retarded Student, 21; The Learning Disabled Child, 22; The Orthopedically Handicapped Student, 23; The Emotionally Disturbed Child, 23; The Mathematically Gifted Child, 24.</i>	
3	Instructional Procedures and Materials	30
	<i>A Teaching Sequence, 30; Instructional Materials, 35; The Laboratory Approach, 47.</i>	
4	Diagnosis in the Cognitive Domain	54
	<i>Conducting Diagnostic Interviews, 54; Piagetian-task Interviews, 55; Standardized Diagnostic Tests, 67; Teacher-constructed Diagnostic Tests, 68.</i>	
5	Prenumber and Number Concepts and Skills	80
	<i>Observing and Describing Objects and Groups of Objects in the Environment, 81; Comparing Objects, 81; Generating Sets and Identifying Subsets, 82; Classifying Objects, 84; Ordering Objects and Events, 85; Putting Sets into One-to-one Correspondence, 86; Identifying and Generating Equivalent Sets, 87; Copying and Discovering Patterns, 89; Reading and Writing Numerals, 90; Counting, 91; Determining the Cardinal Number of a Set, 92; Identifying</i>	

the Ordinal Number of an Element in a Series, 96; Uniting, or Joining, Sets, 98; Separating Sets, 99; Using Logical Words, 100.

- | | | |
|-----------|--|------------|
| 6 | Numeration
<i>Place Value, 105; Roman Numerals, 112.</i> | 104 |
| 7 | Early Work in Addition and Subtraction of Whole Numbers
<i>Introducing Addition, 116; Properties of Addition, 121; Introducing Subtraction, 127; Properties of Subtraction, 131; Summarizing the Basic Facts of Addition and Subtraction, 135; Practice in the Basic Facts, 138.</i> | 116 |
| 8 | Early Work in Multiplication and Division of Whole Numbers
<i>Introducing Multiplication, 146; Properties of Multiplication, 152; Introducing Division, 158; Properties of Division, 163; Summarizing the Basic Facts of Multiplication and Division, 167; Practice in the Basic Facts, 169.</i> | 145 |
| 9 | Extending Addition and Subtraction of Whole Numbers
<i>Higher level Addition Tasks, 176; Computational Errors in the Final Addition Algorithm, 181; Sequencing Addition of Whole Numbers, 183; Higher level Subtraction Tasks, 185; Computational Errors in Subtraction Algorithms, 190; Sequencing Subtraction of Whole Numbers, 192.</i> | 175 |
| 10 | Extending Multiplication and Division of Whole Numbers
<i>Higher level Multiplication Tasks, 197; Sequencing Multiplication, 200; Higher level Division Tasks, 201; Sequencing Division, 205.</i> | 197 |
| 11 | Fractional Numbers
<i>Beginning Work with Fractional Numbers, 210; Equivalence and Comparison of Fractional Numbers, 214.</i> | 209 |
| 12 | Geometry
<i>Topological Concepts, 220; Euclidean Geometry, 223.</i> | 219 |
| 13 | Measurement
<i>Length, 236; Perimeter and Circumference, 241; Area, 242; Capacity, 245; Mass, 246; Temperature, 247; Money, 247; Time, 249; Graphing, 251.</i> | 235 |

14	Number Theory <i>Even and Odd Whole Numbers, 260; Prime and Composite Numbers, 264.</i>	260
15	Problem Solving <i>Story Problems, 269; Discovery Situations, 276.</i>	268
16	Closing	284
Appendix	Mathematics Materials List	287
Index		291