

# Contents

<b>Preface .....</b>	<b>vii</b>
<b>Preface to Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics .....</b>	<b>viii</b>
<b>Acknowledgments .....</b>	<b>ix</b>
<b>1. Introduction .....</b>	<b>1</b>
Purpose of This Guide.....	1
Learning Similarities across Number and Operations, Geometry, and Measurement .....	2
The Need for Focused Mathematics Teaching Time in Pre-K.....	3
Effective Teaching-Learning Practices .....	4
Organization of This Book.....	6
<b>2. Number and Operations.....</b>	<b>9</b>
Overview of Number and Operations .....	9
The Number Core: Early 2s/3s.....	9
Overview.....	9
Sees cardinality (seeing how many there are) for 1, 2, 3 .....	11
Says number word list accurately to six .....	13
Counting: one-to-one correspondences.....	13
Written number symbols.....	14
The Number Core: Later 2s/3s.....	15
Overview.....	15
Coordinating the components of the number core.....	15
Extending cardinality .....	16
Coordinating count words, quantities, and written numerals.....	19
The Number Core: 4s/Pre-Ks .....	21
Overview .....	21
Relating counting and cardinality.....	21
Relating quantities, count words, and written number symbols .....	22
Cardinality .....	23
Number-word list.....	24
Counting correspondences .....	28
Written number symbols.....	29
The Relations (More Than/Less Than) Core.....	29
Overview .....	29
The relations core: 2s/3s.....	30
The relations core: 4s/pre-Ks .....	30

## Contents — Continued

The Operations (Addition and Subtraction) Core .....	34
Overview .....	34
Language learning .....	34
The operations core (addition and subtraction): 2s/3s.....	37
The operations core (addition and subtraction): 4s pre-Ks.....	37
Number Lines Are Not Appropriate for 2s/3s/Pre-Ks/Ks/or Grade 1 Children.....	43
<b>3. Geometry, Spatial Reasoning, and Measurement.....</b>	<b>47</b>
Shape and Structure: Overview .....	47
Shape and structure: 2s/3s.....	47
Shape and structure: 4s/pre-Ks.....	50
Spatial Relations: Overview.....	54
Spatial relations: 2s/3s .....	54
Spatial relations: 4s/pre-Ks.....	55
Compositions and Decompositions in Space: Overview .....	56
Compositions and decompositions in space: 2s/3s .....	57
Compositions and decompositions in space: 4s/pre-Ks.....	57
Measurement.....	59
Length: overview.....	59
Area: overview .....	61
Volume: overview .....	62
Geometry, Spatial Reasoning, and Measurement: Final Words.....	63
<b>4. Mathematizing: Solving Problems, Reasoning, and Communicating, Connecting, and Representing Ideas in Prekindergarten.....</b>	<b>65</b>
<b>References.....</b>	<b>67</b>