



Contents

Preface	vii
Organization of the Book	vii
Organization of the Content Chapters	ix
Acknowledgments	xi
1 Why and How to Differentiate Math Instruction	1
The Challenge in Math Classrooms	1
The Particular Challenge in Grades 6–12	2
What It Means to Meet Student Needs	2
Assessing Students' Needs	3
Principles and Approaches to Differentiating Instruction	3
Two Core Strategies for Differentiating Mathematics Instruction:	
Open Questions and Parallel Tasks	7
Creating a Math Talk Community	16
2 Algebra	17
Topics	17
The Big Ideas for Algebra	18
Open Questions for Grades 6–8	19
Open Questions for Grades 9–12	29
Parallel Tasks for Grades 6–8	46
Parallel Tasks for Grades 9–12	52
Summing Up	61
3 Number and Operations	63
Topics	63
The Big Ideas for Number and Operations	64
Open Questions for Grades 6–8	64
Open Questions for Grades 9–12	73
Parallel Tasks for Grades 6–8	78
Parallel Tasks for Grades 9–12	84
Summing Up	88

4	Geometry	89
	Topics	89
	The Big Ideas for Geometry	90
	Open Questions for Grades 6–8	91
	Open Questions for Grades 9–12	100
	Parallel Tasks for Grades 6–8	109
	Parallel Tasks for Grades 9–12	115
	Summing Up	122
5	Measurement	123
	Topics	123
	The Big Ideas for Measurement	124
	Open Questions for Grades 6–8	124
	Open Questions for Grades 9–12	132
	Parallel Tasks for Grades 6–8	141
	Parallel Tasks for Grades 9–12	145
	Summing Up	151
6	Data Analysis and Probability	153
	Topics	153
	The Big Ideas for Data Analysis and Probability	154
	Open Questions for Grades 6–8	155
	Open Questions for Grades 9–12	163
	Parallel Tasks for Grades 6–8	172
	Parallel Tasks for Grades 9–12	178
	Summing Up	186
	Conclusions	187
	The Need for Manageable Strategies	187
	Developing Open Questions and Parallel Tasks	188
	The Benefits of These Strategies	189
	Appendix: Worksheet for Open Questions and Parallel Tasks	191
	Glossary	193
	Bibliography	206
	Index	208
	Index of Subjects and Cited Authors	208
	Index of Big Ideas	210
	About the Authors	212