

# Table of Contents

<b>Preface .....</b>	<b>v</b>
<b>Part I An Introduction to Teaching Mathematical Modeling .....</b>	<b>1</b>
Chapter 1. What Is Mathematical Modeling?.....	3
Chapter 2. Practices and Perspectives in Mathematical Modeling .....	11
Chapter 3. Empowering Students through Action-Focused Critical Thinking.....	23
Chapter 4. Building a Classroom Community to Support Mathematical Modeling.....	31
Chapter 5. A Framework for Teaching Modeling.....	39
<b>Part II The Four Big Ideas in Teaching Mathematical Modeling.....</b>	<b>47</b>
Chapter 6. Big Idea 1: Modeling Begins and Ends outside the Mathematical World .....	49
Chapter 7. Big Idea 2: Modeling Deals with Situations That Are Open and Complex .....	59
Chapter 8. Big Idea 3: Modelers Exercise Judgment.....	69
Chapter 9. Big Idea 4: Modelers Decide When a Solution Is Good Enough.....	77
<b>Part III Including Mathematical Modeling in Your Teaching.....</b>	<b>83</b>
Chapter 10. Mathematical Modeling and the Elementary School Curriculum.....	85
Chapter 11. Reflections from the Classroom .....	91
<b>References .....</b>	<b>99</b>