## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Figures and Tables</td>
<td>ix</td>
</tr>
<tr>
<td>DVD Contents</td>
<td>xi</td>
</tr>
<tr>
<td>Foreword</td>
<td>xiii</td>
</tr>
<tr>
<td>Preface</td>
<td>xvii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>xxi</td>
</tr>
<tr>
<td>About the Authors</td>
<td>xxv</td>
</tr>
</tbody>
</table>

**PART ONE** Some Thinking About Thinking

**ONE** Unpacking Thinking

Beyond Bloom                                     | 3    |
Beyond Memorization, Work, and Activity          | 6    |
A Map of Thinking Involved in Understanding      | 8    |
Other Kinds of Thinking                          | 11   |
Uncovering Students’ Thinking About Thinking     | 14   |

**TWO** Putting Thinking at the Center of the Educational Enterprise

How Does Visibility Serve Both Learning and Teaching? | 27   |
How Can We Make the Invisible Visible?             | 30   |
PART TWO Using Thinking Routines to Make Thinking Visible 41

THREE Introduction to Thinking Routines 43
Three Ways of Looking at Thinking Routines 45
How Are the Thinking Routines Organized? 49

FOUR Routines for Introducing and Exploring Ideas 53
See-Think-Wonder 55
Zoom In 64
Think-Puzzle-Explore 71
Chalk Talk 78
3–2–1 Bridge 86
Compass Points 93
The Explanation Game 101

FIVE Routines for Synthesizing and Organizing Ideas 109
Headlines 111
CSI: Color, Symbol, Image 119
Generate-Sort-Connect-Elaborate: Concept Maps 125
Connect-Extend-Challenge 132
The 4C’s 140
The Micro Lab Protocol 147
I Used to Think . . . , Now I Think . . . 154

SIX Routines for Digging Deeper into Ideas 163
What Makes You Say That? 165
Circle of Viewpoints 171
Step Inside 178
Red Light, Yellow Light 185
Claim-Support-Question 191
Tug-of-War 199
Sentence-Phrase-Word 207

Contents
PART THREE Bringing the Power of Visible Thinking to Life 215

SEVEN Creating a Place Where Thinking Is Valued, Visible, and Actively Promoted 217
Making Room for Reflection 222
Making Time for Our Own Learning 229
The Making of an Elaborated Conversation 234
The Forces That Shape Culture 240

EIGHT Notes from the Field 247
The Challenges of Making Thinking Visible in a Mathematics Class and Beyond: The Case of Mark Church 250
Content + Routines + Students = A Culture of Thinking: The Case of Sharonne Blum 256
What These Cases Reveal About the Use of Routines 261
Stages of Development in the Use of Thinking Routines 262
Common Pitfalls and Struggles 267
In Conclusion 272

References 275
Index 281
How to Use the DVD 293