

# CONTENTS

Foreword by Robert Q. Berry III and Matt Larson	xvi
Preface	xviii
Acknowledgments	xxi
About the Authors	xxiii

## **1** Jumping on Board: What Is the Mathematics Whole School Agreement? **1**

What Is the Mathematics Whole School Agreement?	2
Why Students Need a Cohesive Approach to Instruction	4
How Does an MWSA Provide a Solution?	5
<i>An MWSA Is an Agreement Among All Stakeholders</i>	5
<i>An MWSA Helps Students Make Sense of the Content</i>	6
<i>An MWSA Helps Teachers Align Their Teaching With Standards and Assessments</i>	7
Committing to Equitable and High-Quality Mathematics Instruction	12
<i>Equitable Instruction</i>	12
<i>High-Quality Mathematics Instruction</i>	13
Prioritizing the Development of Deep Mathematical Understanding	14
The MWSA Process	15
Putting It All Together!	18
Next Steps	18

## **2** Watching What We Say! Using Correct and Consistent Language **19**

Introduction to Mathematical Language	20
Commonly Used Words That Expire in Elementary School	22
<i>Introducing Vocabulary</i>	29
Avoiding Messy, Misaligned, and Sometimes Meaningless Mnemonics	31
Communicating These Changes in Mathematical Language to Others	34
Putting It All Together!	37
Next Steps	37

### **3 Symbol Sense Is Foundational: Noting the Importance of Precise Notation** **38**

Why the Use of Precise Notation Can Be Challenging	39
Critical Notation to Be Learned in the Elementary Grades	39
<i>Equal Sign</i>	40
<i>Greater Than and Less Than Signs</i>	42
Commonly Used Notation in Elementary School That Needs Attention	44
Putting It All Together!	46
Next Steps	47

### **4 Mental Images That Last: Cohesive and Consistent Representations** **48**

What Are Representations?	49
Representations: Concrete, Semiconcrete, and Abstract	50
Selecting Aligned and Consistent Representations	52
<i>Concrete Representations</i>	52
<i>Semiconcrete and Abstract Representations</i>	57
Commonly Used Representations in Elementary School	60
Sharing With Stakeholders	67
Putting It All Together!	69
Next Steps	69

### **5 Why Was I Taught That? Evaluating Rules That Expire** **70**

What Are RTEs?	71
<i>Examples of RTEs</i>	72
<i>Negative Impacts of Teaching RTEs</i>	76
Commonly Used RTEs in the Elementary Grades	78
Putting It All Together!	88
Next Steps	88

### **6 Building Generalizations: Developing Instructional Strategies the MWSA Way** **89**

Generalizations Versus Rules	90
<i>Generalizations to Last a Lifetime</i>	92
Common Overgeneralizations Made by Elementary School Students	94
Instructional Strategies for Supporting Students in Developing Generalizations	97
<i>Tasks to Promote Generalizations</i>	97

Putting It All Together!	105
Next Steps	106

## **7 Embodying the MWSA in Every Lesson: No Teaching by Telling!** **107**

Getting Ready to Implement an MWSA in Instruction	108
<i>Making Teacher Lesson- and Unit-Planning Time Nonnegotiable</i>	109
<i>Using Appropriate and Vetted Resources</i>	110
Embodying Your Team’s MWSA in Instructional Lessons and Units	115
<i>Language and Notation</i>	117
<i>Representations</i>	119
<i>Rules That Expire</i>	123
<i>Generalizations</i>	127
Putting It All Together!	129
Next Steps	131

## **8 Getting to the Heart of the Matter: Building and Enacting the MWSA** **132**

Enacting Change	133
<i>Collaborative Teamwork</i>	133
<i>Planning for Change as a Team</i>	133
Moving MWSA Beyond Your School	139
<i>Establishing a Horizontally Articulated MWSA</i>	140
<i>Establishing a Vertically Articulated MWSA</i>	143
Ensuring That All Stakeholders Are Involved	145
Putting It All Together!	147
Next Steps	147

## **9 Sharing Successes From the Field: MWSA Heroes Tell Their Stories** **148**

Examples of MWSAs in Action	149
<i>A Conference Session Leads to Teachers’ Action: A Small Group of Thoughtful, Committed People</i>	149
<i>One Educator Spearheads an MWSA in His School</i>	154
<i>A Mathematics Coach Takes the Lead: Helping Change Direction</i>	157
Next Steps: You’re Ready for Action—Consider Change Often	161
References	162
Index	171



Visit the companion website at  
[resources.corwin.com/mathpact-elementary](https://resources.corwin.com/mathpact-elementary)  
 for downloadable resources.