CONTENTS

Foreword by Robert Q. Berry III and Matt Larson	xi۱
Preface	xv
Acknowledgments	xix
About the Authors	xx
Jumping on Board: What Is the Mathematics	-
Whole School Agreement?	6
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
An MWSA Is an Agreement Among All Stakeholders	5
An MWSA Helps Students Make Sense of the Content	5
An MWSA Helps Teachers Align Their Teaching With Standards	
and Assessments	6
Committing to Equitable and High-Quality Mathematics	11
Instruction Equitable Instruction	11
High-Quality Mathematics Instruction	12
Prioritizing the Development of Deep Mathematical	12
Understanding	13
The MWSA Process	14
Putting It All Together!	17
Next Steps	17
Watching What We Say! Using Correct and	
Consistent Language	18
Introduction to Mathematical Language	19
Commonly Used Words That Expire in High School	21
Introducing Vocabulary	27
Avoiding Messy, Misaligned, and Sometimes Meaningless	
Mnemonics	29
Communicating These Changes in Mathematical	
Language to Others	32
Putting It All Together!	35
Next Steps	35

Dougherty_SAGE.indb 11 04/09/20 3:09 PM

Symbol Sense Is Foundational: Noting the Importance of Precise Notation	36
Why the Use of Precise Notation Can Be Challenging Critical Notation to Be Learned in the High School Courses Equal Sign	37 37 38
Greater Than and Less Than Signs Commonly Used Notation in High School That	40
Needs Attention	40
Putting It All Together!	43
Next Steps	43
Mental Images That Last: Cohesive and	·
Consistent Representations	44
What Are Representations?	45
Representations: Concrete, Semiconcrete, and Abstract	46
Selecting Aligned and Consistent Representations	48
Concrete Representations	48
Semiconcrete and Abstract Representations	51
Commonly Used Representations in High School	56
Sharing With Stakeholders	63
Putting It All Together!	64
Next Steps	65
Why Was I Taught That? Evaluating Rules	
That Expire	66
What Are RTEs?	67
Examples of RTEs	68
Negative Impacts of Teaching RTEs	71
Commonly Used RTEs in High School Courses	74
Putting It All Together!	85
Next Steps	86
Building Generalizations: Developing	
Instructional Strategies the MWSA Way	87
Generalizations Versus Rules	88
Generalizations to Last a Lifetime	90
Common Overgeneralizations Made by High School Students	92
Instructional Strategies for Supporting Students in	
Developing Generalizations	95
Tasks to Promote Generalizations	95
Putting It All Together! Next Steps	103
MEXI MEDS	1111.

Dougherty_SAGE.indb 12 04/09/20 3:09 PM

T Embodying the MWSA in Every Lesson:	
No Teaching by Telling!	104
Getting Ready to Implement an MWSA in Instruction	105
Making Teacher Lesson- and Unit-Planning Time Nonnegotiable	106
Using Appropriate and Vetted Resources	107
Embodying Your Team's MWSA in Instructional	
Lessons and Units	110
Language and Notation	113
Representations	115
Rules That Expire	119
Generalizations	122
Putting It All Together!	125
Next Steps	127
Getting to the Heart of the Matter:	
Building and Enacting the MWSA	128
Enacting Change	129
Collaborative Teamwork	129
Planning for Change as a Team	129
Moving MWSA Beyond Your School	136
Establishing a Horizontally Articulated MWSA	137
Establishing a Vertically Articulated MWSA	140 143
Ensuring That All Stakeholders Are Involved	143
Putting It All Together!	144
Next Steps	144
Sharing Successes From the Field:	
MWSA Heroes Tell Their Stories	145
	146
Examples of MWSAs in Action A Department Chair Coordinates a Process: Supporting Student	140
Learning	146
A Mathematics Coach Takes the Lead: Helping Change Direction	147
One Educator Spearheads an MWSA in His School	152
Next Steps: You're Ready for Action—Consider	152
Change Often	155
5g5 5.15	.00
References	156
Index	164



Visit the companion website at resources.corwin.com/mathpact-highschool for downloadable resources.

Dougherty_SAGE.indb 13 04/09/20 3:09 PM