

CONTENTS

Catalyzing Change in Middle School Mathematics

Task Force and Writing Team vii

Acknowledgments ix

Preface: Broadening the Critical Conversations xi

Chapter 1: Why We Need to Catalyze Change 1

Progress Needed in Middle School Mathematics 2

Identified Challenges 3

Initiating Critical Conversations 4

Key Recommendations 5

Chapter 2: The Purposes of Middle School Mathematics 7

Develop Deep Mathematical Understanding 8

Understand and Critique the World Through Mathematics 11

Experience the Wonder, Joy, and Beauty of Mathematics 15

The Power of Multiple Purposes 17

Chapter 3: Creating Equitable Structures 19

Shifting from Deficit-Based to Strength-Based Beliefs about Students ... 21

Ability Grouping and Student Tracking 24

Teacher Tracking 31

Dismantling Tracking 33

Distinguishing Tracking from Appropriate Acceleration 37

Equitable Structures for Student Success 39

Chapter 4: Implementing Equitable Mathematics

Instruction..... 41

 Identity, Agency, and Shared Classroom Authority 42

 Equitable Mathematics Teaching Practices..... 43

 Supporting the Implementation of Equitable Mathematics Instruction .. 62

Chapter 5: Developing Deep Mathematical Understanding..... 65

 Developing Mathematical Proficiencies, Practices, and Processes..... 66

 Middle School Mathematics Content Domains 73

 Supporting the Implementation of Mathematical Practices,
 Processes, and Content..... 93

Chapter 6: Next Steps for Catalyzing Change..... 95

 Key Recommendations Restated..... 95

 Actions for Districts, Schools, and Teachers..... 96

 Actions for Paraprofessionals, Substitute Teachers,
 and Families and Communities 97

 Actions for Elementary Schools 97

 Actions for High Schools 98

 Actions for Policymakers..... 98

 Actions for Mathematics Teacher Educators and Researchers 99

 Actions for NCTM 99

 Conclusion.....100

References101

Additional resources supporting the Catalyzing Change Series are available at www.nctm.org/change.

