

# Knowing And Teaching Elementary Mathematics Teachers Understanding Fundamental In China The United States Liping Ma

Results from national and international assessments indicate that school children in the United States are not learning mathematics well enough. Many students cannot correctly apply computational algorithms to solve problems. Their understanding and use of decimals and fractions are especially weak. Indeed, helping all children succeed in mathematics is an imperative national goal. However, for our youth to succeed, we need to change how we're teaching this discipline. *Helping Children Learn Mathematics* provides comprehensive and reliable information that will guide efforts to improve school mathematics from pre--kindergarten through eighth grade. The authors explain the five strands of mathematical proficiency and discuss the major changes that need to be made in mathematics instruction, instructional materials, assessments, teacher education, and the broader educational system and answers some of the frequently asked questions when it comes to mathematics instruction. The book concludes by providing recommended actions for parents and caregivers, teachers, administrators, and policy makers, stressing the importance that everyone work together to ensure a mathematically literate society.

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This book examines the critical roles and effects of mathematics education. The exposition draws from the author's forty-year mathematics career, integrating his research in the psychology of mathematical thinking into an overview of the true definition of math. The intention for the reader is to undergo a "corrective" experience, obtaining a clear message on how mathematical thinking tools can help all people cope with everyday life. For those who have struggled with math in the past, the book also aims to clarify that math learning difficulties are likely a result of improper pedagogy as opposed to any lack of intelligence on the part of the student. This personal treatise will be of interest to a variety of readers, from mathematics teachers and those who train them to those with an interest in education but who may lack a solid math background. This book presents several key principles for teaching mathematics for understanding that you can use to reflect on your own teaching, make more informed decisions, and develop more effective systems of instruction.

Not all mathematics discussions are alike. It's one thing to ask students to share how they solved a problem, to get ideas out on the table so that their thinking becomes visible; but knowing what to do with students' ideas--where to go with them--can be a daunting task. Intentional Talk provides teachers with a framework for planning and facilitating purposeful mathematics discussions that enrich and deepen student learning. According to Elham Kazemi and Allison Hintz, the critical first step is to identify a discussion's goal and then understand how to structure and facilitate the conversation

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to meet that goal. Through detailed vignettes from both primary and upper elementary classrooms, the authors provide a window into what teachers are thinking as they lead discussions and make important pedagogical and mathematical decisions along the way. Additionally, the authors examine students' roles as both listeners and talkers and, in the process, offer a number of strategies for improving student participation and learning. A collection of planning templates included in the appendix helps teachers apply the right structure to discussions in their own classrooms. *Intentional Talk* provides the perfect bridge between student engagement and conceptual understanding in mathematical discussions.

*Growing Mathematical Minds* is the documentation of an innovative, bi-directional process of connecting research and practice in early childhood mathematics. The book translates research on early mathematics from developmental psychology into terms that are meaningful to teachers and readily applicable in early childhood classrooms. It documents teacher responses, and conveys their thoughts and questions back to representative researchers, who reply in turn. In so doing, this highly useful book creates a conversation, in which researchers and teachers each bring their expertise to bear; their communication about these topics—informed by the thinking, commitment, and experience of both groups—helps us better understand how developmental psychology can improve math teaching, and how math teaching can, in turn, inform developmental science. The book bridges the gap between research and practice,

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helping teachers to adopt evidence-based practices and apply cutting-edge research findings, and prompting developmental researchers to consider their work within the framework of practice. *Growing Mathematical Minds* identifies and elucidates research with profound implications for teaching children from three to eight years so they develop foundational math knowledge and skills, positive attitudes toward math, and basic abilities to think mathematically.

Although Chinese students typically outperform U.S. students on comparisons of mathematics competency, Chinese teachers receive far less education than U.S. teachers. This book describes the development of the profound understanding of fundamental mathematics that elementary teachers need.

*How Students Learn: Science in the Classroom* builds on the discoveries detailed in the best-selling *How People Learn*. Now these findings are presented in a way that teachers can use immediately, to revitalize their work in the classroom for even greater effectiveness. Organized for utility, the book explores how the principles of learning can be applied in science at three levels: elementary, middle, and high school. Leading educators explain in detail how they developed successful curricula and teaching approaches, presenting strategies that serve as models for curriculum development and classroom instruction. Their recounting of personal teaching experiences lends strength and warmth to this volume. This book discusses how to build straightforward science experiments into true understanding of scientific principles. It also features

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illustrated suggestions for classroom activities.

This is a textbook for pre-service elementary school teachers and for current teachers who are taking professional development courses. By emphasizing the precision of mathematics, the exposition achieves a logical and coherent account of school mathematics at the appropriate level for the readership. Wu provides a comprehensive treatment of all the standard topics about numbers in the school mathematics curriculum: whole numbers, fractions, and rational numbers. Assuming no previous knowledge of mathematics, the presentation develops the basic facts about numbers from the beginning and thoroughly covers the subject matter for grades K through 7. Every single assertion is established in the context of elementary school mathematics in a manner that is completely consistent with the basic requirements of mathematics. While it is a textbook for pre-service elementary teachers, it is also a reference book that school teachers can refer to for explanations of well-known but hitherto unexplained facts. For example, the sometimes-puzzling concepts of percent, ratio, and rate are each given a treatment that is down to earth and devoid of mysticism. The fact that a negative times a negative is a positive is explained in a leisurely and comprehensible fashion.

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Note: This is the bound book only and does not include access to the Enhanced Pearson eText. To order the Enhanced Pearson eText packaged with a bound book, use ISBN 0134090691. Helping students make connections between mathematics and their worlds—and helping them feel empowered to use math in their lives—is the focus of this widely popular guide. Designed for classroom teachers, the book focuses on specific grade bands and includes information on creating an effective classroom environment, aligning teaching to various standards and practices, such as the Common Core State Standards and NCTM’s teaching practices, and engaging families. The first portion of the book addresses how to build a student-centered environment in which children can become mathematically proficient, while the second portion focuses on practical ways to teach important concepts in a student-centered fashion. The new edition features a corresponding Enhanced Pearson eText version with links to embedded videos, blackline masters, downloadable teacher resource and activity pages, lesson plans, activities correlated to the CCSS, and tables of common errors and misconceptions. Invigorate learning with the Enhanced Pearson eText The Enhanced Pearson eText provides a rich, interactive learning environment designed to improve student mastery of content with the following multimedia features: NEW! Embedded videos. The Enhanced Pearson eText now includes links to videos

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throughout the text that provide examples of students' misconceptions, expand on key concepts, and demonstrate how to implement strategies and techniques in real classrooms. NEW! Downloadable Teacher Resource and Activity Pages that support teaching activities such as formative assessment and team-building are now available in the Enhanced Pearson eText at the point of use. NEW! Downloadable Blackline Masters in Part 2 Chapters. Readers may download Blackline Masters that support the activities and Expanded Lessons by clicking on hyperlinks embedded in the Enhanced Pearson eText. Appendix E includes a list of the Blackline Masters and a thumbnail version of each. \*The Enhanced eText features are only available in the Pearson eText format. They are not available in third-party eTexts or downloads. \*The Pearson eText App is available on Google Play and in the App Store. It requires Android OS 3.1-4, a 7" or 10" tablet, or iPad iOS 5.0 or later.

In this important new book for pre- and in-service teachers, early math experts Douglas Clements and Julie Sarama show how "learning trajectories" help teachers become more effective professionals. By opening up new windows to seeing young children and the inherent delight and curiosity behind their mathematical reasoning, learning trajectories ultimately make teaching more joyous. They help teachers understand the varying level of knowledge and thinking of their classes and the individuals within them as key in serving the needs of all children. In straightforward, no-nonsense language, this book summarizes what is known about how children learn mathematics, and how to

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build on what they know to realize more effective teaching practice. It will help teachers understand the learning trajectories of early mathematics and become quintessential professionals.

Select the right task, at the right time, for the right phase of learning How can you best help K–2 students to become assessment-capable visible learners in mathematics? This book answers that question by showing Visible Learning strategies in action in high-impact mathematics instruction. Walk in the shoes of K–2 teachers as they mix and match strategies, tasks, and assessments, demonstrating that it's not only what works, but when. A decision-making matrix and grade-leveled examples help you leverage the most effective teaching practices at the most effective time to meet the surface, deep, and transfer learning needs of every young student.

Knowing and Teaching Elementary Mathematics Teachers' Understanding of Fundamental Mathematics in China and the United States Routledge

Elementary mathematics specialists are teacher leaders who are responsible for supporting effective PK–6 mathematics instruction and student learning. The Association of Mathematics Teacher Educators (AMTE), the Association of State Supervisors of Mathematics, the National Council of Supervisors of Mathematics, and the National Council of Teachers of Mathematics, in a 2010 joint position paper on Elementary Mathematics Specialists (EMSs), all advocate for the use of EMSs to support the teaching and learning of mathematics. The specific roles and expectations

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of EMSs will vary according to the needs of each setting, “but their expertise and successful experience at the elementary level is critical” (p 1). Elementary Mathematics Specialists: Developing, Refining, and Examining Programs that Support Mathematics Teaching and Learning is AMTE’s latest resource supporting the important work of EMSs. It has five sections related to the preparation and professional development of EMSs: (a) Overview and Current State of Affairs; (b) Models of EMS Program Development & Delivery; (c) Supporting EMSs in the Field; (d) The Mathematics Specialist Research; and (e) Future Directions. The book provides support to EMS practitioners, program providers/developers, and researchers seeking to answer important questions about how to prepare Mathematics Specialists, support them in the field, and research their effectiveness.

There are many questions about the mathematical preparation teachers need. Recent recommendations from a variety of sources state that reforming teacher preparation in postsecondary institutions is central in providing quality mathematics education to all students. The Mathematics Teacher Preparation Content Workshop examined this problem by considering two central questions: What is the mathematical knowledge teachers need to know in order to teach well? How can teachers develop the mathematical knowledge they need to teach well? The Workshop activities focused on using actual acts of teaching such as examining student work, designing tasks, or posing questions, as a medium for teacher learning. The Workshop proceedings,

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Knowing and Learning Mathematics for Teaching, is a collection of the papers presented, the activities, and plenary sessions that took place.

This paperback edition, with a new introduction, offers a powerful, compelling, and unassailable argument for reforming America's schooling methods and ideas--by one of America's most important educators, and author of the bestselling Cultural Literacy. For over fifty years, American schools have operated under the assumption that challenging children academically is unnatural for them, that teachers do not need to know the subjects they teach, that the learning "process" should be emphasized over the facts taught. All of this is tragically wrong. Renowned educator and author E. D. Hirsch, Jr., argues that, by disdaining content-based curricula while favoring abstract--and discredited--theories of how a child learns, the ideas uniformly taught by our schools have done terrible harm to America's students. Instead of preparing our children for the highly competitive, information-based economy in which we now live, our schools' practices have severely curtailed their ability, and desire, to learn. With an introduction that surveys developments in education since the hardcover edition was published, *The Schools We Need* is a passionate and thoughtful book that will appeal to the millions of people who can't understand why America's schools aren't educating our children. *Banish math anxiety and give students of all ages a clear roadmap to success* *Mathematical Mindsets* provides practical strategies and activities to help teachers and parents show all children, even those who are convinced that they

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are bad at math, that they can enjoy and succeed in math. Jo Boaler—Stanford researcher, professor of math education, and expert on math learning—has studied why students don't like math and often fail in math classes. She's followed thousands of students through middle and high schools to study how they learn and to find the most effective ways to unleash the math potential in all students. There is a clear gap between what research has shown to work in teaching math and what happens in schools and at home. This book bridges that gap by turning research findings into practical activities and advice. Boaler translates Carol Dweck's concept of 'mindset' into math teaching and parenting strategies, showing how students can go from self-doubt to strong self-confidence, which is so important to math learning. Boaler reveals the steps that must be taken by schools and parents to improve math education for all.

Mathematical Mindsets: Explains how the brain processes mathematics learning  
Reveals how to turn mistakes and struggles into valuable learning experiences  
Provides examples of rich mathematical activities to replace rote learning  
Explains ways to give students a positive math mindset Gives examples of how assessment and grading policies need to change to support real understanding  
Scores of students hate and fear math, so they end up leaving school without an understanding of basic mathematical concepts. Their evasion and departure

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hinders math-related pathways and STEM career opportunities. Research has shown very clear methods to change this phenomena, but the information has been confined to research journals—until now. Mathematical Mindsets provides a proven, practical roadmap to mathematics success for any student at any age. Written by an education consultant with widespread experience of teaching mathematics in the UK and internationally, Understanding and Teaching Primary Mathematics seamlessly combines pedagogy and subject knowledge to build confidence and equip you with all the skills and know-how you need to successfully teach mathematics to children of any age. This 3rd edition has been fully updated to reflect the latest research developments and initiatives in the field, as well as key changes to both the UK National Curriculum and International Baccalaureate, including a brand new chapter on ‘Algebra’ and a reworked focus on the early years. Extra features also include helpful call-outs to the book’s revised and updated companion website, which offers a shared site with a range of resources relevant to both this book and its new companion volume, Teaching for Mathematical Understanding. Stimulating, accessible and well-illustrated, with comprehensive coverage of subject knowledge and pedagogy, Understanding and Teaching Primary Mathematics is an essential purchase for trainee and practising teachers alike. Companion website features

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new to this edition include: video clips in which the author demonstrates the concepts covered in the book through teaching to a real class PowerPoint presentations which provide support for those using the book as a part of a teacher training course updated weblinks to external sites with useful teaching information and resources

Now is a time of great interest in mathematics education. Student performance, curriculum, and teacher education are the subjects of much scrutiny and debate. Studies on the mathematical knowledge of prospective and practicing U. S. teachers suggest ways to improve their mathematical educations. It is often assumed that because the topics covered in K-12 mathematics are so basic, they should be easy to teach. However, research in mathematics education has shown that to teach well, substantial mathematical understanding is necessary--even to teach whole-number arithmetic. Prospective teachers need a solid understanding of mathematics so that they can teach it as a coherent, reasoned activity and communicate its elegance and power. This volume gathers and reports current thinking on curriculum and policy issues affecting the mathematical education of teachers. It considers two general themes: (1) the intellectual substance in school mathematics; and (2) the special nature of the mathematical knowledge needed for teaching. The underlying study was funded

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by a grant from the U.S. Department of Education. The mathematical knowledge needed for teaching is quite different from that required by students pursuing other mathematics-related professions. Material here is geared toward stimulating efforts on individual campuses to improve programs for prospective teachers. This report contains general recommendations for all grades and extensive discussions of the specific mathematical knowledge required for teaching elementary, middle, and high-school grades, respectively. It is also designed to marshal efforts in the mathematical sciences community to back important national initiatives to improve mathematics education and to expand professional development opportunities. The book will be an important resource for mathematics faculty and other parties involved in the mathematical education of teachers.

The need to improve the mathematical proficiency of elementary teachers is well recognized, and it has long been of interest to educators and researchers in the U.S. and many other countries. But the specific proficiencies that elementary teachers need and the process of developing and improving them remain only partially conceptualized and not well validated empirically. To improve this situation, national workshops were organized at Texas A&M University to generate focused discussions about this important topic, with participation of

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mathematicians, mathematics educators and teachers. Developing Mathematical Proficiency for Elementary Instruction is a collection of articles that grew out of those exciting cross-disciplinary exchanges. Developing Mathematical Proficiency for Elementary Instruction is organized to probe the specifics of mathematical proficiency that are important to elementary teachers during two separate but inter-connected professional stages: as pre-service teachers in a preparation program, and as in-service teachers teaching mathematics in elementary classrooms. From this rich and inspiring collection, readers may better understand, and possibly rethink, their own practices and research in empowering elementary teachers mathematically and pedagogically, as educators or researchers. .

What sorts of mathematics competencies must teachers have in order to teach the discipline well? This book offers a novel take on the question. Most research is focused on explicit knowledge—that is, on the sorts of insights that might be specified, catalogued, taught, and tested. In contrast, this book focuses on the tacit dimensions of teachers' mathematics knowledge that precede and enable their competencies with formal mathematics. It highlights the complexity of this knowledge and offers strategies to uncover it, analyze it, and re-synthesize it in ways that will make it more available for teaching. Emerging from 10 years of

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collaborative inquiry with practicing teachers, it is simultaneously informed by the most recent research and anchored to the realities of teachers' lives in classrooms.

In 1999, Liping Ma published her book *Knowing and Teaching Elementary Mathematics: Teachers' Understanding of Fundamental Mathematics in the United States and China*, which probed the kinds of knowledge that elementary school teachers need to convey mathematical concepts and procedures effectively to their students. Later that year, Roger Howe, a member of the U.S. National Commission on Mathematics Instruction (USNC/MI), reviewed the book for the *Notices of the American Mathematical Society*, concluding that it 'has lessons for all educational policymakers.' Intrigued by the idea of superrank teachers, the USNC/MI sponsored a workshop entitled 'The Teacher Development Continuum in the United States and China'. The purpose of the workshop was to examine the structure of the mathematics teaching profession in the United States and China. The main presentations and discussion from the workshop are summarized in this volume.

Differentiation that shifts your instruction and boosts ALL student learning! Nationally recognized math differentiation expert Nanci Smith debunks the myths surrounding differentiated instruction, revealing a practical approach to real

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learning differences. Theory-lite and practice-heavy, this book provides a concrete and manageable framework for helping all students know, understand, and even enjoy doing mathematics. Busy K-5 mathematics educators learn to Provide practical structures for assessing how students learn and process mathematical concepts Design, implement, manage, and formatively assess and respond to learning in a standards-aligned differentiated classroom; and Adjust current instructional materials to better meet students' needs Includes classroom videos and a companion website.

This easy-to-read summary is an excellent tool for introducing others to the messages contained in Principles and Standards.

THE book for elementary education mathematics content courses! Designed to help prospective teachers of elementary school mathematics learn content beyond the rote level, this text stimulates readers to think beyond just getting the problem right and fosters their development into thoughtful, reflective, self-motivated, life-long learners. It stresses the what and why of elementary school mathematics content. Hints are provided about how to teach the content but this is mostly left to courses and texts that are dedicated to that purpose. The text is organized around the National Council for Teachers of Mathematics' Principles and Standards for School Mathematics. The Standards dictate the basic sections of the text. Within each section, appropriate specific topics are developed, intertwined with technology, problem solving, assessment, equity issues, planning, teaching skills, use of manipulatives,

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sequencing, and much more. In addition, major focal points of the Standards are emphasized throughout: effective teachers of mathematics should be able to motivate all students to learn, should understand the developmental levels of how children learn, should concentrate on what children need to become active participants in the learning environment, and should be engaged in ongoing investigations of new mathematical concepts and teaching strategies.

Mathematics Content for Elementary Teachers is based on several fundamental premises:

- \*The focus of mathematics education should be on the process, not the answer.
- \*Elementary teachers should know the mathematics content they are teaching, know more than the content they are teaching, and teach from the overflow of knowledge.
- \*It is important for teachers to be flexible in allowing students to use different procedures--teaching from the "overflow of knowledge" implies knowing how to do a given operation more than one way and being willing to examine many different ways.
- \*Teachers need to learn to carefully cover the topics to be taught, to reflect upon them, and to be able to organize them.

To help prospective elementary teachers concentrate on the mathematics content they will be expected to teach and begin to build the foundation for the methods they will use, this text includes only elementary mathematics content and does not address middle school concepts. Pedagogical features:

- \*The text is organized according to NCTM Standards.
- \*An informal writing style speaks directly to readers and is geared to pre-service teachers.
- \*Focus is given to multiple methods of problem solving at four developmental levels.
- \*Questions, exercises, and activities are interspersed throughout each section rather than gathered at the end of each chapter.
- \*Complete solutions for exercises are provided.

The 20th anniversary edition of this groundbreaking and bestselling volume offers powerful

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examples of the mathematics that can develop the thinking of elementary school children. Studies of teachers in the U.S. often document insufficient subject matter knowledge in mathematics. Yet, these studies give few examples of the knowledge teachers need to support teaching, particularly the kind of teaching demanded by reforms in mathematics education. Knowing and Teaching Elementary Mathematics describes the nature and development of the knowledge that elementary teachers need to become accomplished mathematics teachers, and suggests why such knowledge seems more common in China than in the United States, despite the fact that Chinese teachers have less formal education than their U.S. counterparts. Teachers' knowledge is a mirror that reflects the mathematics they teach and were taught. Along with the original studies of U.S. and Chinese teachers' mathematical understanding, this 20th anniversary edition includes a new preface and a 2013 journal article by Ma, "A Critique of the Structure of U.S. Elementary School Mathematics" that describe differences in U.S. and Chinese elementary mathematics. These are augmented by a new series editor's introduction and two key journal articles that frame and contextualize this seminal work.

Explains how children between the ages of four and eight construct a deep understanding of numbers and the operations of addition and subtraction.

How Chinese Acquire and Improve Mathematics Knowledge for Teaching takes a unique approach to present new research that views knowledge acquisition and improvement as part of teachers' life-long professional learning process in China.

How do you generate that lightbulb "aha" moment of understanding for your students? This book helps to answer that question by showing Visible Learning strategies in action in high-impact mathematics classrooms. Walk in the shoes of teachers as they engage in the

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countless micro-decisions required to balance strategies, tasks, and assessments, demonstrating that it's not only what works, but when. A decision-making matrix and grade-leveled examples help you leverage the most effective teaching practices at the most effective time to meet the surface, deep, and transfer learning needs of every student.

First released in the Spring of 1999, *How People Learn* has been expanded to show how the theories and insights from the original book can translate into actions and practice, now making a real connection between classroom activities and learning behavior. This edition includes far-reaching suggestions for research that could increase the impact that classroom teaching has on actual learning. Like the original edition, this book offers exciting new research about the mind and the brain that provides answers to a number of compelling questions. When do infants begin to learn? How do experts learn and how is this different from non-experts? What can teachers and schools do—with curricula, classroom settings, and teaching methods—to help children learn most effectively? New evidence from many branches of science has significantly added to our understanding of what it means to know, from the neural processes that occur during learning to the influence of culture on what people see and absorb. *How People Learn* examines these findings and their implications for what we teach, how we teach it, and how we assess what our children learn. The book uses exemplary teaching to illustrate how approaches based on what we now know result in in-depth learning. This new knowledge calls into question concepts and practices firmly entrenched in our current education system. Topics include: How learning actually changes the physical structure of the brain. How existing knowledge affects what people notice and how they learn. What the thought processes of experts tell us about how to teach. The amazing learning potential of infants. The relationship

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of classroom learning and everyday settings of community and workplace. Learning needs and opportunities for teachers. A realistic look at the role of technology in education.

Comprehensive coverage of all essential kindergarten math topics in one easy-to-use bundle! Packed with effective instructional strategies, this book explores why certain K-5 students struggle with math and provides a framework for helping these learners succeed. The authors present empirically validated practices for supporting students with disabilities and others experiencing difficulties in specific areas of math, including problem solving, early numeracy, whole-number operations, fractions, geometry, and algebra. Concrete examples, easy-to-implement lesson-planning ideas, and connections to state standards, in particular the Common Core standards, enhance the book's utility. Also provided is invaluable guidance on planning and delivering multi-tiered instruction and intervention.

A schoolwide solution for mathematics success! When “rules” seem to change from year to year, mathematics can seem like a disconnected mystery for students. Clear up the confusion with a Mathematics Whole-School Agreement! Expanded from the highly popular “Rules that Expire” series of NCTM articles, this essential guide leads educators through the collaborative step-by-step process of establishing a coherent and consistent learner-centered and equitable approach to mathematics instruction. You’ll learn to avoid “rules that expire”—tricks that may seem to help students in one grade but hurt in the long run. Features include · Abundant grade-specific examples · Effective working plans for sustainability · Barrier-busting tips, to-dos, and try-it-outs · PLC prompts and discussion points

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Early childhood mathematics is vitally important for young children's present and future educational success. Research demonstrates that virtually all young children have the capability to learn and become competent in mathematics. Furthermore, young children enjoy their early informal experiences with mathematics. Unfortunately, many children's potential in mathematics is not fully realized, especially those children who are economically disadvantaged. This is due, in part, to a lack of opportunities to learn mathematics in early childhood settings or through everyday experiences in the home and in their communities. Improvements in early childhood mathematics education can provide young children with the foundation for school success. Relying on a comprehensive review of the research, *Mathematics Learning in Early Childhood* lays out the critical areas that should be the focus of young children's early mathematics education, explores the extent to which they are currently

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being incorporated in early childhood settings, and identifies the changes needed to improve the quality of mathematics experiences for young children. This book serves as a call to action to improve the state of early childhood mathematics. It will be especially useful for policy makers and practitioners—those who work directly with children and their families in shaping the policies that affect the education of young children.

YOU are the architect in the mathematics classroom. This daily reference offers practical guidance for when and how to pull together mathematics routines, resources, and effective teaching techniques into a coherent and manageable set of lesson plans. This resource will lead teachers through a process of lesson planning based on various learning objectives. Set the stage for lesson planning using relatable vignettes. Offer sample lesson plans for Grades 3–5. Create opportunities to reflect on each component of a mathematics lesson. Suggest next steps for building a unit from the lessons. Provide teachers the space and tools to create their own lesson plans going forward.

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