

Elementary Mathematics For Teachers

Tasks in Primary Mathematics Teacher Education is intended to advance relevant research and innovative international practices in the preparation and professional development of mathematics teachers. Emerging from discussion at the ICMI study on teacher professional development, this volume, focused on primary and elementary teachers, culls a richness that can only be found by gathering wisdom from varied experiences around the world. The choice of tasks, and the associated pedagogies, is a key aspect of teaching and learning mathematics. Arguing that what students learn is largely defined by the tasks they are given, several major themes are presented. One such major strand, the form, function and focus of tasks, is discussed throughout several chapters, offering analysis, discussion of implementation, and exemplars of a broader category of illustrative techniques for developing critical understanding.

THE book for elementary education mathematics content

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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, 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,

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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,

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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.

This book combines accessible explanations of mathematical concepts with practical advice on effective ways of teaching the subject. Section A provides a framework of good practice. Section B aims to support and enhance teachers subject knowledge in mathematical topics beyond what is taught to primary children. Each chapter also highlights teaching issues and gives examples of tasks relevant to the classroom. Section C is a collection of papers from tutors from four universities centred around the theme of effective

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teaching and quality of learning during this crucial time for mathematics education.

Textbook on numbers, arithmetic, and prealgebra for elementary school mathematics teachers. Designed to be used with five Primary Mathematics books (textbooks 3A, 4A, 5A, 6A, and workbook 5A; all U.S. ed.), part of an elementary mathematics curriculum designed by Singapore's Ministry of Education and adapted for use in the U.S.

Teaching K-6 Mathematics

A Guide for Teachers and Leaders

Smarter Together! Collaboration and Equity in Elementary Mathematics

Mathematics For Primary Teachers

Teaching Elementary School Mathematics

Mathematics for Elementary Teachers

Learn the most effective ways to teach elementary math, no matter how much experience you have with the subject. In this book, Fuchang Liu takes you through many common mistakes in math instruction and explains the misunderstandings behind them. He points out practices that should be avoided, helping you to adjust your lessons so that all students can achieve success.

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You'll discover how to... - Increase your confidence with core math principles and reasoning - Set your students on the path toward eventually developing more complex math skills - Improve student achievement by approaching problems in logical yet creative ways - Overcome common challenges faced by students and teachers - Teach problem solving for different learning styles

Every chapter reconsiders well-established ways of teaching all areas of elementary math, from addition and subtraction to statistics and graphs. Helpful examples and tips are scattered throughout the book, offering revisions to the way these topics are often presented in the classroom. Also included are group study ideas for principals and instructional coaches so your school or district can work on the book together. With this practical guide, you'll be ready to help students truly develop their math understanding.

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 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

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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.

This book compiles and synthesizes existing research on teachers' use of mathematics curriculum materials and the impact of curriculum materials on teaching and teachers, with a particular emphasis on – but not restricted to – those materials developed in the 1990s in response to the NCTM's Principles and Standards for School Mathematics. Despite the substantial amount of curriculum development activity over the last 15 years and growing scholarly interest in their use, the book represents the first compilation of research on teachers and mathematics curriculum materials and the first volume with this focus in any content area in several decades.

Mathematics teacher education has a critical role to play in preparing teachers to put at center stage goals to support equity in mathematics education and to diversify student interest and participation in mathematics. These goals must also resonate with broader public interest goals to improve educational and social conditions both in the U.S. and abroad. The Mathematics Teacher Education in the Public Interest book aims to support mathematics teacher educators to prepare teachers with new knowledge and skills to support all students to learn mathematics and

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to become informed, engaged, and critical citizens within their community, nation, and world. While internationally there is considerable interest among mathematics educators in issues of equity and social justice, the literature on mathematics teacher education for equity and social justice thus far has been very limited. The book provides theoretical discussions on the need for equity and social justice emphases in mathematics teacher education, as well as practical examples from mathematics teacher educators, documenting their own professional efforts to center practices on equity and social justice. Section emphases include critical perspectives on mathematics teacher education, the use of equity and social justice-themed activities in mathematics teacher preparation courses, and issues of identity and community and cultural contexts in mathematics teacher education. In addition syntheses of major ideas of the book are offered by experienced researchers.

Answers to Your Biggest Questions About Teaching Elementary Math

Elementary Mathematics from a Higher Standpoint

Elementary Mathematics Pedagogical Content Knowledge

Teaching by Design in Elementary Mathematics, Grades 4–5

Mathematics Content for Elementary Teachers

Complete Package /

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

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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 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.

Although proving is core to mathematics as a sense-making activity, it currently has a marginal place in elementary classrooms internationally. Blending research with practical perspectives, this book addresses what it would take to elevate the place of proving at elementary school. The book uses classroom episodes from two countries to examine different kinds of proving tasks and the proving activity they can generate in the elementary classroom. It examines further the role of teachers in mediating the relationship between proving tasks and proving activity, including major mathematical and pedagogical issues that arise for teachers as they implement each kind of proving task. In addition to its contribution to research knowledge, the book has important

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implications for teaching, curricular resources, and teacher education.

Your game plan for unlocking mathematics by focusing on students' strengths. What if instead of focusing on what students haven't mastered, we identify their mathematical strengths and build on students' points of power? Beth McCord Kobett and Karen S. Karp highlight five key teaching turnarounds are presented: identify teaching strengths, leverage students' strengths, design instruction from a strengths-based perspective, help students identify their points of power, and promote strengths in the school community. Each chapter provides opportunities to reflect and transfer practice while also sharing · Downloadable resources, activities, and tools · Examples of student work within Grades K–6 · Real teachers' notes and reflections for discussion

This activities manual includes activities designed to be done in class or outside of class. These activities promote critical thinking and discussion and give students a depth of understanding and perspective on the concepts presented in the text.

Mathematics for Elementary and Middle School Teachers

Elementary and Middle School Mathematics: Pearson New International Edition

Elementary Mathematics Curriculum Materials

Equity and Social Justice

An Activity Approach

Developing Mathematical Proficiency for Elementary Instruction

This book is designed for a mathematics for elementary school teachers course where instructors choose to focus on and/or take an activities approach to learning. It provides inductive activities for prospective elementary school teachers and incorporates the use of

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physical models, manipulatives, and visual images to develop concepts and encourage higher-level thinking. This text contains an activity set that corresponds to each section of the companion text, *Mathematics for Elementary Teachers: A Conceptual Approach* which is also by Bennett/Nelson. The *Activities Approach* text can be used independently or along with its companion volume. The authors are pleased to welcome Laurie Burton, PhD, Western Oregon University to this edition of *Mathematics for Elementary Teachers: An Activity Approach*.

"This book is centered on the mathematical content of prekindergarten through grade 8. It addresses almost all of the K-8 CCSSM Standards for Mathematical Content from a teacher's perspective, with a focus on how ideas develop and connect and on powerful ways of representing and reasoning about the ideas"--

The emergence of the National Council of Teachers of Mathematics Standards in 1989 sparked a sea change in thinking about the nature and quality of mathematics instruction in U.S. schools. Much is known about transmission forms of mathematics teaching and the influence of this teaching on students' learning, but there is still little knowledge about the alternative forms of instruction that have evolved from the recent widespread efforts to reform mathematics education. *Beyond Classical Pedagogy: Teaching Elementary School Mathematics* reports on the current state of knowledge about these new instructional practices, which differ in significant ways from the traditional pedagogy that has permeated mathematics education in the past. This book provides a research-based view of the nature of facilitative teaching in its relatively mature form, along with opposing views and critique of this form of pedagogy. The focus is on elementary school mathematics classrooms, where

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the majority of the reform-based efforts have occurred, and on the micro level of teaching (classroom interaction) as a source for revealing the complexity involved in teaching, teachers' learning, and the impact of both on children's learning. The work in elementary mathematics teaching is situated in the larger context of research on teaching. Research and insights from three disciplinary perspectives are presented: the psychological perspective centers on facilitative teaching as a process of teachers' learning; the mathematical perspective focuses on the nature of the mathematical knowledge teachers need in order to engage in this form of teaching; the sociological perspective attends to the interactive process of meaning construction as teachers and students create intellectual communities in their classrooms. The multidisciplinary perspectives presented provide the editors with the necessary triangulation to provide confirming evidence and rich detail about the nature of facilitative teaching. Audiences for this book include scholars in mathematics education and teacher education, teacher educators, staff developers, and classroom teachers. It is also appropriate as a text for graduate courses in mathematics education, teacher education, elementary mathematics teaching methods, and methods of research in mathematics education.

Elementary Mathematics for Teachers Ingram

Bringing Understandings To Light

Mathematics Teacher Education in the Public Interest

Powerful Ideas for Teachers

Success from the Start

Strengths-Based Teaching and Learning in Mathematics

Knowing and Teaching Elementary Mathematics

These three volumes constitute the first complete English translation of Felix Klein's seminal series "Elementarmathematik vom höheren Standpunkte aus". "Complete" has a twofold meaning here: First, there now exists a translation of volume III into English, while until today the only translation had been into Chinese. Second, the English versions of volume I and II had omitted several, even extended parts of the original, while we now present a complete revised translation into modern English. The volumes, first published between 1902 and 1908, are lecture notes of courses that Klein offered to future mathematics teachers, realizing a new form of teacher training that remained valid and effective until today: Klein leads the students to gain a more comprehensive and methodological point of view on school mathematics. The volumes enable us to understand Klein's far-reaching conception of elementarisation, of the "elementary from a higher standpoint", in its implementation for school mathematics. This volume II presents a paradigmatic realisation of Klein's approach of elementarisation for teacher education. It is shown how the various geometries, elaborated particularly since the beginning of the 19th

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century, are revealed as becoming unified in a new restructured geometry. As Klein liked to stress: "Projective geometry is all geometry". Non-Euclidean geometry proves to constitute a part of this unifying process. The teaching of geometry is discussed in a separate chapter, which provides moreover important information on the history of geometry teaching and an international comparison.

Elementary mathematics for teachers (EMFT) is oriented for pre-service teachers in a semester or two-quarter university course although it is appropriate for practicing K-8 teachers as well. The textbook is designed to be used in conjunction with five volumes of the Primary Mathematics series. The aim is to develop an understanding of elementary mathematics at the level of 'teacher knowledge' and is organized around numbers and arithmetic with topics covered roughly in the order they are developed in an elementary school. It utilizes the Concrete > Pictorial > Abstract approach of teaching arithmetic and focuses on the principle that mathematics is best learned by solving problems. For that reason it incorporates almost no external information or discussions of non-mathematical topics. Further explorations in elementary mathematics centering on measurement

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and geometry are covered in the sequel: Elementary geometry for teachers.

An introduction to teaching elementary and junior-high school mathematics, it incorporates recommendations of the NCTM. Focuses on the "how" and "why" of each mathematical topic, with stress on good pedagogy and development of problem-solving skills. The Second Edition contains a new chapter on the Logo computer language.

References to NCTM standards now appear in every chapter and there are many new problems.

This book highlights how students learn math and the pedagogy behind it. Using vignettes based on real classroom discussions, the authors illustrate effective teaching practices to support math learning.

Success from the Start: Your First Years Teaching Elementary Mathematics acts as a supportive and reassuring companion that you can return to throughout your journey as an elementary mathematics teacher. As a beginning elementary mathematics teacher you might already be asking yourself these questions: How can I differentiate my teaching to meet the diverse needs of my students? What assessments best advance student learning? How can students understand math if I

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do not show them different strategies and tell them about the underlying mathematical structures and properties? What advice do I give parents about how to support their children's math learning?

Primary Mathematics

Your First Years Teaching Elementary Mathematics

Elementary Mathematics Specialists

Initiating Critical Conversations

Tasks in Primary Mathematics Teacher Education

Beyond Classical Pedagogy

Your guide to grow and learn as a math teacher! Let's face it, teaching elementary math can be hard. So much about how we teach math today may look and feel different from how we learned it. Today, we recognize placing the student at the center of their learning increases engagement, motivation, and academic achievement soars. Teaching math in a student-centered way changes the role of the teacher from one who traditionally "delivers knowledge" to one who fosters thinking. Most importantly, we must ensure our practice gives each and every student the opportunity to learn, grow, and achieve at high levels, while providing opportunities to develop their agency and authority in the classroom which results in a positive math identity. Whether you are a brand new teacher or a veteran, if you find teaching math to be quite the challenge, this is

the guide you want by your side. Designed for just-in-time learning and support, this practical resource gives you brief, actionable answers to your most pressing questions about teaching elementary math. Written by four experienced math educators representing diverse experiences, these authors offer the practical advice they wish they received years ago, from lessons they've learned over decades of practice, research, coaching, and through collaborating with teams, teachers and colleagues—especially new teachers—every day. Questions and answers are organized into five areas of effort that will help you most thrive in your elementary math classroom: 1. How do I build a positive math community? 2. How do I structure, organize, and manage my math class? 3. How do I engage my students in math? 4. How do I help my students talk about math? 5. How do I know what my students know and move them forward? Woven throughout, you'll find helpful sidebar notes on fostering identity and agency; access and equity; teaching in different settings; and invaluable resources for deeper learning. The final question—Where do I go from here?— offers guidance for growing your practice over time. Strive to become the best math educator you can be; your students are counting on it! What will be your first step on the journey? One of the boys in the group responded, "That's so smart! That's so smart! That's what we should do!" Complex Instruction (CI) is a response to the paradox that group work offers much potential but often creates circumstances where few students seem to learn. CI is a set of ideas and strategies that address the problems that confound group work, but that create powerful learning for

children. This book offers guidance to readers on how to use these strategies and ideas. The authors describe the lessons they learned using group work, explain how complex instruction helps unsuccessful students and analyse how to design assignments that support group learning - using group-worthy tasks - giving readers examples of good tasks and help in adapting math problems from their own curricula.

This book illustrates the experiences of elementary school teachers across one year's time as they participated in a teacher development seminar focused on mathematics, and as a result changed their beliefs, their knowledge, and their practices. It explores these experiences as a means of understanding the learning that takes a teacher from a more traditional teaching practice to one that is focused on the ideas and understandings that students and teachers have of the subject matter. The work emerges from and reports on a unique data set from a two-year study of teacher learning that was funded by the Spencer and MacArthur foundations. The teachers, whose work is at the center of this study, were participants in the Developing Mathematical Ideas seminar (DMI), a mathematics teacher development seminar for elementary school teachers. This seminar is one example of intensive, domain-specific professional development. In this seminar teachers study elementary mathematics content to deepen their own understanding of it, they study the development among children of the ideas central to elementary mathematics, and they experience a teaching and learning environment consistent with the pedagogy envisioned by the National Council for

Teachers of Mathematics' Principles and Standards for School Mathematics. The seminar is a nationally available teacher development curriculum, thus interested educators can gain access to the resources necessary to offer similar seminars in their own communities. **Teachers' Professional Development and the Elementary Mathematics Classroom: Bringing Understandings to Light** will be widely interesting to a broad audience, including mathematics teacher educators, teacher education researchers, policymakers, and classroom teachers. It will serve well as a text in a range of graduate courses dealing with teacher cognition/knowledge for teaching, mathematics methods, psychology of learning, and pedagogical theory.

Sure-fire techniques of visualizing, dramatizing, and analyzing numbers promise to attract and retain students' attention and understanding. Topics include basic multiplication and division, algebra, word problems, graphs, negative numbers, fractions, many other practical applications of elementary mathematics. 1964 ed. Answers to Problems.

**Five Teaching Turnarounds for Grades K-6
Level 3**

**Teaching by Design in Elementary Mathematics, Grades 2-3
Developing, Refining, and Examining Programs That Support Mathematics
Teaching and Learning
Mathematics Teachers at Work
Purpose, Use and Exemplars**

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"Catalyzing Change in Elementary and Early Childhood Mathematics presents four key recommendations to guide conversations that take a critical look at current mathematics programs in order to identify practices, policies, and instructional approaches that hinder any child from becoming confident and capable mathematics learners. The book uses classroom vignettes and student work to illustrate how the eight effective mathematics teaching practices form a framework for equitable instruction and to discuss the teaching of important mathematics topics in number and operations, early algebra, geometry, and data"--

The book presents comparative analyses of five elementary mathematics curriculum programs used in the U.S. from three different perspectives: the mathematical emphasis, the pedagogical approaches, and how authors communicate with teachers. These perspectives comprise a framework for examining what curriculum materials are comprised of, what is involved in reading and interpreting them, and how curriculum authors can and do support teachers in this process. Although the focus of the analysis is 5 programs used at a particular point in time, this framework extends beyond these specific programs and illuminates the complexity of curriculum materials and their role in teaching in general. Our analysis of the

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mathematical emphasis considers how the mathematics content is presented in each program, in terms of sequencing, the nature of mathematical tasks (cognitive demand and ongoing practice), and the way representations are used. Our analysis of the pedagogical approach examines explicit and implicit messages about how students should interact with mathematics, one another, the teacher, and the textbook around these mathematical ideas, as well as the role of the teacher. In order to examine how curriculum authors support teachers, we analyze how they communicate with teachers and what they communicate about, including the underlying mathematics, noticing student thinking, and rationale for design elements. The volume includes a chapter on curriculum design decisions based on interviews with curriculum authors.

How to build productive relationships in math education I wasn't taught this way. I can't help my child! These are common refrains from today's parents and guardians, who are often overwhelmed, confused, worried, and frustrated about how to best support their children with what they see as the "new math." The problem has been compounded by the shift to more distance learning in response to a global pandemic. Partnering With Parents in Elementary School Math provides educators with long overdue guidance on how to productively partner and communicate with families about their

children's mathematics learning. It includes reproducible surveys, letters, and planning documents that can be used to improve the home-school relationship, which in turn helps students, parents, teachers, and education leaders alike. Readers will find guidance on how to:

- Understand and empathize with what fuels parents' anxieties and concerns*
- Align as a school and set parents' expectations about what math instruction their children will experience and how it will help them*
- Communicate clearly and productively with parents about their students' progress, strengths, and needs in math*
- Run informative and fun family events*
- support homework*
- Coach parents to portray a productive disposition about math in front of their children*

Educators, families, and students are best served when proactive, productive, and healthy relationships have been developed with each other and with the realities of today's math education. This guide shows how these relationships can be built.

Strengthen mathematics lessons through collaborative learning with this research-based professional development program. Included are grade-appropriate number and operations topics aligned with the Common Core State Standards.

Elementary Mathematics for Teachers

Elementary Mathematics and Science Methods Teachers' Understanding of Fundamental Mathematics in China and the United States

With Activities

Proving in the Elementary Mathematics Classroom

*This developmentally sound, research-based, practical text speaks directly to preservice elementary mathematics students about the multitude of ways they can help their future students learn to see the power, beauty, necessity, and usefulness of mathematics in the world. Part 1 deals with guiding principles that permeate the text, while Parts 2-11 deal with the specific NCTM Standards for grades K-6. Teaching K-6 Mathematics: *is aligned with the current NCTM Curriculum and Evaluation Standards for School Mathematics; *integrates content and methodology; *emphasizes use of technology as a teaching/learning tool; *stresses problem solving; *provides basic information on current research in mathematics education; *focuses on identification of error patterns and analysis; *uses a down-to-earth, friendly writing style that engages the student rather than prescribing what to do; and *includes many activities and exercises, including games, tricks, and amusements that can be used in the classroom to increase student interest in mathematics. Features:*

**Technology is integral throughout the text. Students are expected to perform Internet searches, investigate new sites appropriate for elementary students, sample new software that could be used in the classroom, and develop ways to blend calculators into the*

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*curriculum. *Manipulatives are considered essential for students to learn elementary mathematics concepts. Cuisenaire rods, base 10- blocks, chips, number lines, and geoboards are all part of the manipulative landscape that is created in this text. *Careful attention is given to blending rote work, developmental activities, fun, application, technology, manipulatives, assessment, and planning, so that prospective teachers become accustomed to using varied approaches and decision making as a curriculum is determined. *Tricks, Activities, and Games (TAG) provide a wealth of ideas to attract students to learning mathematics.*

Schwartz Powerful Ideas in Elementary Mathematics: Pedagogical Content Knowledge for Teachers, 1/e ISBN: 0205493750 "This book would be a great tool for helping [today's future elementary teachers] acquire a 'gut level' understanding of mathematics concepts." - Hester Lewellen, Baldwin-Wallace College, OH "The writing in this text is very clear and would easily be understood by the intended audience. The real-world examples put the various math concepts into a context that is easily understood. The vignettes at the beginning of each chapter are interesting and they get the reader to begin thinking about the math concepts that will follow. Each of the chapters seem to build on one another and the author often refers back to activities and concepts from previous chapters which is meaningful to the reader because it lets the reader know that the information they are learning builds their conceptual understanding of other mathematical concepts. " - Melany L. Rish, University of South Carolina, Aiken Organized around five key concepts or "powerful ideas" in mathematics, this text presents elementary mathematics content in a concise and nonthreatening manner for teachers. Designed to sharpen teachers' mathematics

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pedagogical content knowledge, the friendly writing style and vignettes relate math concepts to "real life" situations so that they may better present the content to their students. The five "powerful ideas" (composition, decomposition, relationships, representation, and context) provide an organizing framework and highlight the interconnections between mathematics topics. In addition, the text thoroughly integrates discussion of the five NCTM process strands. Features: Icons highlighting the NCTM process standards appear throughout the book to indicate where the text relates to each of these. Practice exercises and activities and their explanations reinforce math concepts presented in the text and provide an opportunity for reflection and practice. Concise, conversational chapters and opening vignettes present math contents simply enough for even the most math-anxious pre-service teachers.

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.

These materials were developed, in part, by a grant from the federally-funded Mathematics and Science Partnership through the Center for STEM Education. Some of the activities were adapted from the National Council of Teachers of Mathematics Illuminations, the National

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Library of Virtual Manipulatives, Hands-On Math Projects with Real Applications by Judith A. Muschla and Gary R. Muschla, *Learning Math with Calculators: Activities for Grades 3-8* by Len Sparrow and Paul Swan, and *Mathematical Ideas* by Charles D. Miller, Vern E. Heeren and John Hornsby. The following UNC Charlotte, Charlotte, North Carolina graduates contributed to the development of the work products: Anna Athanasopoulou, Stephen Chambers, Fabio Franco, Jen Krieger, Morgan Leith, Chris Muellenbach, Ashley Nagowski, Jamie Pursley, Brandy Reece, Lauren Selvey and Linda Xiong.

Catalyzing Change in Early Childhood and Elementary Mathematics
Five to Thrive [series]

Teaching Elementary Mathematics to Struggling Learners

Common Mistakes in Teaching Elementary Math—And How to Avoid Them

Teachers' Professional Development and the Elementary Mathematics Classroom

MATHEMATICS FOR ELEMENTARY TEACHERS. (PRODUCT ID 23864410).

For Elementary Mathematics Methods or Middle School Mathematics Methods Covers preK-8 Written by leaders in the field, this best-selling book will guide teachers as they help all PreK-8 learners make sense of math by supporting their own mathematical understanding and cultivating effective planning and instruction. Elementary and Middle School Mathematics: Teaching Developmentally provides an unparalleled depth of ideas and discussion to help teachers develop a real understanding of the

mathematics they will teach and the most effective methods of teaching the various mathematics topics. This text reflects the NCTM and Common Core State Standards and the benefits of problem-based mathematics instruction.

Using constructivist theory and inquiry learning methods, Foster presents a text that both meets national standards and satisfies the needs of this emerging market. This book will appeal to those who have embraced the NCTM standards and the reform philosophy of using collaborative learning, real-world applications, and the discovery method for teaching math and science concepts. Students learn how to teach children about math through science, and science through math. Parallels are drawn between the two subjects to make them applicable to everyday life. Foster shows the student how to encourage learning in their students (teaching how to learn) rather than merely teaching their students what to learn (i.e., memorization). The text uses practical activities for students to use in their future classroom to facilitate learning and create inquisitive learners.

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 recent 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. The anniversary edition of this bestselling volume includes the original studies that compare U.S and Chinese elementary school teachers' mathematical understanding and offers a powerful framework for grasping the mathematical content necessary to understand and develop the thinking of school children. Highlighting notable changes in the field and the author's work, this new edition includes an updated preface, introduction, and key journal articles that frame and contextualize this seminal work.

Based on the Primary Mathematics series from Singapore. Designed to equip students with a strong foundation in mathematics and critical thinking skills, the program offers an integrated solution to

different learning needs in the classroom.

Elementary Mathematics in Context

Partnering With Parents in Elementary School Math

Connecting Curriculum Materials and Classroom Instruction

Volume II: Geometry

Designs for Student Learning and Teacher Enactment

The Teaching of Elementary Mathematics