

Elementary Middle School Mathematics Higher Education

Nctm Past President Cathy L. Seeley shares her messages on today's most relevant topics and issues in education. Based on Cathy L. Seeley's award-winning nctm President's Messages, and including dozens of new messages, this must-have k-12 resource offers straight talk and common sense about some of today's most important, thought-provoking issues in education. With topics ranging from the impact of rising expectations and the trap of timed tests to the role of technology and the phenomenon of jumping on bandwagons, this book provides a base for lively discussion among elementary, middle, and high school teachers; leaders; policy makers; and families. This book contains 41 messages included in three sections: (1) School Mathematics for the 21st Century: Elementary and Secondary Mathematics in America; (2) Great Ideas Whose Time Has Come (and Gone?): Mathematics Issues Facing Schools and Districts; and (3) Real Students and Real Teachers: Mathematics in Today's Classroom. This book also contains the following: (1) Foreword by Marilyn Burns; (2) Introduction; (3) How to Use This Book; (4) Afterword: The Sum of the Parts Is Greater than Some of the Parts; (5) Acknowledgments; (6) Readings and References; (7) Index; and (8) About the Author.

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 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 teach 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.

This practical new text will empower those educators responsible for math instruction to successfully teach students in grades six through eight, as well as other students, to master computation of integers. Integration of picture-led, step-by-step instruction with accompanying dialogue will aid educators to deliver the exact vocabulary and stepwise procedures necessary for success—that of their students learning the mathematical process to computing integers. Written for math educators including elementary, middle school, special education teachers, tutors and home school teachers, this accessible guide will improve instructors' ability to teach integers, and the confidence in their students to master the subject matter. Special pedagogical features include: Student Work Pages for every lesson! Scripted, step-by-step examples outline how to teach each stage using hands-on, pictorial and abstract approaches. Concrete to Representational to Abstract sequence of instruction (CRA) in each section of the book and materials. Instructional lessons with assessment matching inform both the student and the teacher what learning occurred and where to start in order to master the skill. Cumulative reviews to help each student successfully retain information.

Standards-based School Mathematics Curricula

Teaching Developmentally

Pre-Kindergarten Through Middle School

Teaching Developmentally, Student Value Edition Plus NEW MyEducationLab with Pearson EText -- Access Card Package

Computation of Integers

Mathematics for Elementary School Teachers

Written by leaders in the field, this best-selling book will guide teachers as they help all Pre-K – 8 learners make sense of math by supporting their own mathematical understanding and effective planning and instruction. Elementary and Middle School Mathematics: Teaching Developmentally was written to help teacher candidates and practicing teachers understand mathematics and become more confident in their ability to teach the subject to children in pre-K through eighth grade. Structured for easy reference, offering 23 chapters reflecting the latest research to consult throughout one's teaching career, the revised edition infuses NCTM and Common Core State Standards with the benefits of problem-based mathematics instruction. The Eighth Edition better prepares teachers to teach mathematics to all learners by including new strategies for English language learners and students with disabilities. The amount of coverage relating to mathematics in early childhood has been increased. More activities infusing technology and samples of authentic student work are introduced. Increased emphasis on formative assessment, showcased with an icon and notes throughout, guide teachers to master this difficult practice.

The Curriculum and Evaluation Standards for School Mathematics published by the National Council of Teachers of Mathematics in 1989 set forth a broad vision of mathematical content and pedagogy for grades K-12 in the United States. These Standards prompted the development of Standards-based mathematics curricula. What features characterize Standards-based curricula? How well do such curricula work? To answer these questions, the editors invited researchers who had investigated the implementation of 12 different Standards-based mathematics curricula to describe the effects of these curricula on students' learning and achievement, and to provide evidence for any claims they made. In particular, authors were asked to identify content on which performance of students using Standards-based materials differed from that of students using more traditional materials, and content on which performance of these two groups of students was virtually identical. Additionally, four scholars not involved with the development of any of the materials were invited to write critical commentaries on the work reported in the other chapters. Section I of Standards-Based School Mathematics Curricula provides a historical background to place the current curriculum reform efforts in perspective, a summary of recent recommendations to reform school mathematics, and a discussion of issues that arise when conducting research on student outcomes. Sections II, III, and IV are devoted to research on mathematics curriculum projects for elementary, middle, and high schools, respectively. The final section is a commentary by Jeremy Kilpatrick, Regents Professor of Mathematics Education at the University of Georgia, on the research reported in this book. It provides a historical perspective on the use of research to guide mathematics curriculum reform in schools, and makes additional recommendations for further research. In addition to the references provided at the end of each chapter, other references about the Standards-based curriculum projects are provided at the end of the book. This volume is a valuable resource for all participants in discussions about school mathematics curricula—including professors and graduate students interested in mathematics education, curriculum development, program evaluation, or the history of education; educational policy makers; teachers; parents; principals and other school administrators. The editors hope that the large body of empirical evidence and the thoughtful discussion of educational values found in this book will enable readers to engage in informed civil discourse about the goals and methods of school mathematics curricula and related research.

I take great pleasure in recommending this book to all students, but especially those involved in the IB and AP programs. Use it alongside your textbooks and notes for maximum results.

This popular text addresses the urgent need for curriculum materials that cross traditional boundaries to include many of the elements that are integrated in the teaching/learning enterprise: mathematics content, teacher understanding, student thinking, teaching methods, instructional activities, and assessment. The book pushes readers beyond the limits of their current understanding of rational numbers, challenging them to refine and explain their thinking—without falling back on rules and procedures they have relied on throughout their lives. Written in a conversational and easy to understand style, this is not a textbook as much as it is a resource book. An underlying assumption is that facilitating teacher understanding using the same questions and activities that may be used with children is one way to help teachers build the comfort and confidence they need to begin talking to children about complex ideas. Unlike a textbook that is used to study formal theory and then discarded when it comes to putting ideas into practice, the many problems and activities included to facilitate teacher learning are valuable resources for use in elementary and middle school classrooms. Changes in the second edition include: *even more student work incorporated in every chapter; *discussion of the connectivity between the topics addressed in the book and the elementary and middle school mathematics curricula; *an increased emphasis on measurement; *expansion of some topics, including number sense, percent, scale factors, similarity, and linear graphs; *clarification of the characteristics of ratio and proportions and how to use these to generate discussion with children; and *content-related interview questions for exploring children's thinking. This book is a valuable resource for researchers and curriculum developers in mathematics education, pre-service and in-service teachers of mathematics, those involved in the mathematical and pedagogical preparation of mathematics teachers, and graduate students in mathematics education. The methods and activities it includes have been tested with students in grades 3-8 and with pre-service and in-service teachers and other adults. This text is accompanied by MORE—a supplement that is not merely an answer key but a resource that includes in-depth discussions of all the problems in the text; develops and extends discussion of the issues, teaching problems, and other considerations raised in the chapters; and contains additional problems—with and without solutions—that instructors may find helpful for assessment purposes.

Using Design Research and History to Tackle a Fundamental Problem with School Algebra

Faster Isn't Smarter

Mathematics for Elementary Teachers with Activities

Achieving Instructional Coherence Within and Across Grades

Get a Higher Score in Less Time

The Math Pact, Elementary

Children spend more time in school than in any social institution outside the home. And schools probably exert more influence on children's development and life chances than any environment beyond the home and neighbourhood. The purpose of this book is to document some important ways schools influence children's development and to describe various models and methods for studying schooling effects. Key features include: Comprehensive Coverage - this is the first book to provide a comprehensive review of what is known about schools as a context for human development. Topical coverage ranges from theoretical foundations to investigative methodologies and from classroom-level influences such as teacher-student relations to broader influences such as school organization and educational policies. Cross-Disciplinary - this volume brings together the divergent perspectives, methods and findings of scholars from a variety of disciplines, among them educational psychology, developmental psychology, school psychology, social psychology, psychiatry, sociology, and educational policy. Chapter Structure - to ensure continuity, chapter authors describe 1) how schooling influences are conceptualized 2) identify their theoretical and methodological approaches 3) discuss the strengths and weaknesses of existing research and 4) highlight implications for future research, practice, and policy. Methodologies - chapters included in the text feature various methodologies including longitudinal studies, hierarchical linear models, experimental and quasi-experimental designs, and mixed methods.

In response to the lack of intervention resources available to middle school teachers to help their struggling students, the authors present this collection of easy-to-implement, research-based lesson plans to help those who struggle with mathematical fractions.

This book provides 25 easily administered assessments of learners' math knowledge that help teachers monitor learning in real time and improve all students' math skills.

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School Mathematics: Teaching Developmentally, 10/e

Teaching Developmentally (with MyEducationLab)

Essential Content Knowledge and Instructional Strategies for Teachers

Teaching Student-Centered Mathematics

Uncovering Student Thinking in Mathematics, Grades K-5

Teaching to the Math Common Core State Standards

Math Intervention for Elementary and Middle Grades Students

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.

Finding your Math Power: Concepts in Mathematics for Elementary School Teachers helps pre-service teachers become more effective problem-solvers so they can better teach their students. This manual features practical suggestions and tools that transcend rote procedures and emphasize methods that work best for students. After a brief history of math education and an examination of current standards, the book discusses different areas of instruction and how to teach them effectively. Target skills include sets and Venn diagrams, whole numbers, fractions and decimals, percent, integers, and real numbers. Readers learn various ways to approach and work through the problems to meet the varied needs of their students. The second edition features a new chapter on addition, subtraction, multiplication, and division utilizing the Base 5 numeration system, fresh review problems throughout, and new problem-solving content in Chapter 7: Problem Solving Revisited. Finding your Math Power helps readers increase their abilities and embrace their math power. The book is appropriate for elementary and middle school education programs for pre-service teachers. It is also an excellent reference for teaching professionals seeking to improve their skills as math educators. Karla Karstens is a senior lecturer and Kroepsch-Maurice Award winner at the University of Vermont. Karla taught high school mathematics in Elk River, Minnesota, after graduating from the College of St. Benedict. She then continued her studies and earned a master's degree in mathematics at the University of Vermont. Upon graduation, she was hired by the University of Vermont to teach math to prospective elementary and middle school teachers. For nearly 30 years, Karla has instructed future educators in the math they need to know in order to be successful in their classrooms.

"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"--

In this well-illustrated book the authors, Sinan Kanbir, Ken Clements, and Nerida Ellerton, tackle a persistent, and universal, problem in school mathematics—why do so many middle-school and secondary-school students find it difficult to learn algebra well? What makes the book important are the unique features which comprise the design-research approach that the authors adopted in seeking a solution to the problem. The first unique feature is that the authors offer an overview of the history of school algebra. Despite the fact that algebra has been an important component of secondary-school mathematics for more than three centuries, there has never been a comprehensive historical analysis of factors influencing the teaching and learning of that component. The authors identify, through historical analysis, six purposes of school algebra: (a) algebra as a body of knowledge essential to higher mathematical and scientific studies, (b) algebra as generalized arithmetic, (c) algebra as a prerequisite for entry to higher studies, (d) algebra as offering a language and set of procedures for modeling real-life problems, (e) algebra as an aid to describing structural properties in elementary mathematics, and (f) algebra as a study of variables. They also raise the question whether school algebra represents a unidimensional trait. Kanbir, Clements and Ellerton offer an unusual hybrid theoretical framework for their intervention study (by which seventh-grade students significantly improved their elementary algebra knowledge and skills). Their theoretical frame combined Charles Sanders Peirce's triadic signifier-interpretant-signified theory, which is in the realm of semiotics, with Johann Friedrich Herbart's theory of apperception, and Ken Clements' and Gina Del Campo's theory relating to the need to expand modes of communications in mathematics classrooms so that students engage in receptive and expressive modes. Practicing classroom teachers formed part of the research team. This book appears in Springer's series on the "History of Mathematics Education." Not only does it include an important analysis of the history of school algebra, but it also adopts a theoretical frame which relies more on "theories from the past," than on contemporary theories in the field of mathematics education. The results of the well-designed classroom intervention are sufficiently impressive that the study might have created and illuminated a pathway for future researchers to take.

Handbook of Research on Schools, Schooling and Human Development

METHODS OF SOLVING PROBLEMS IN Elementary, Middle, and High School MATHEMATICS

Determinants of Success in Higher Education Mathematics for Kindergarten, Elementary, and Middle School Pre-service Teachers

Helping Children Learn Mathematics

Initiating Critical Conversations

For courses in Math for Future Elementary Teachers. Empowering Tomorrow's Math Teachers Mathematics for Future Elementary Teachers, 5th Edition connects the foundations of teaching elementary math and the "why" behind procedures, formulas and reasoning so students gain a deeper understanding to bring into their own classrooms. Through her text, Beckmann teaches mathematical principles while addressing the realities of being a teacher. With in-class collaboration and activities, she challenges students to be actively engaged. An inquiry-based approach to this course allows fu.

The Field Experience Guide, a supplement to Elementary and Middle School Mathematics, is for observation, practicum, and student teaching experiences at the elementary and middle school levels. The guidebook contains three parts: Part I provides tasks for preservice teachers to do in the field; Part II provides three types of activities: Expanded Lessons, Mathematics Activities, and Balanced Assessment Tasks. Part III of this guide contains a full set of reproducible Blackline Masters referenced in the 7th edition of Elementary and Middle School Mathematics as well as additional Blackline Masters for use with the Expanded Lessons in Part II. We hope this Field Experience Guide Connections section will help you better integrate information from the text with your work in schools.

NOTE: Used books, rentals, and purchases made outside of Pearson If purchasing or renting from companies other than Pearson, the access codes for the Enhanced Pearson eText may not be included, may be incorrect, or may be previously redeemed. Check with the seller before completing your purchase. For courses in Elementary Mathematics Methods and for classroom teachers. 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 0134090683. A practical, comprehensive, student-centered approach to effective mathematical instruction for grades Pre-K-2. 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. This book is part of the Student-Centered Mathematics Series, which is designed with three objectives: to illustrate what it means to teach student-centered, problem-based mathematics, to serve as a reference for the mathematics content and research-based instructional strategies suggested for the specific grade levels, and to present a large collection of high quality tasks and activities that can engage students in the mathematics that is important for them to learn. Improve mastery and retention with the Enhanced Pearson eText* The Enhanced Pearson eText provides a rich, interactive learning environment designed to improve student mastery of content. The Enhanced Pearson eText is: Engaging. The new interactive, multimedia learning features were developed by the authors and other subject-matter experts to deepen and enrich the learning experience. Convenient. Enjoy instant online access from your computer or download the Pearson eText App to read on or offline on your iPad® and Android® tablet.* Affordable. Experience the advantages of the Enhanced Pearson eText along with all the benefits of print for 40% to 50% less than a print bound book. *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.

For the 2021 Exam! AP® Calculus AB & BC Crash Course A Higher Score in Less Time! REA's Crash Course quick-review study guide is the top choice for AP® students who want to make the most of their study time and earn a high score. Here's why more AP® teachers and students turn to REA's AP® Calculus Crash Course: Targeted, Focused Review – Study Only What You Need to Know. REA's new 3rd edition addresses all the latest test revisions. We cover only the information tested on the exam, so you can make the most of your valuable study time. Expert Test-taking Strategies and Advice. Authored by a team of AP® Calculus teachers, the book gives you the tips and topics that matter most on exam day. Crash Course relies on the authors' extensive analysis of the test's structure and content. By following their advice, you can boost your score in every section of the test. Realistic Practice Questions – a Mini-Test in the Book, a Full-Length Exam Online. Are you ready for your exam? Try our focused practice set inside the book. Then take our full-length online practice exam (one each for Calculus AB & BC) to ensure you're ready for test day. If you're cramming for the exam or looking for a concise course review,

Crash Course is the study guide every AP® student needs. About Our Authors Joan Marie Rosebush teaches calculus courses at the University of Vermont. Ms. Rosebush has taught mathematics to elementary, middle school, high school, and college students. She taught AP® Calculus via satellite television to high school students scattered throughout Vermont. Ms. Rosebush earned her B.A. degree in elementary education, with a concentration in mathematics, at the University of New York in Cortland, N.Y. She received her Master's Degree in education from Saint Michael's College, Colchester, Vermont. Flavia Banu graduated from Queens College of the City University of New York with a B.A. in Pure Mathematics and an M.A. in Pure Mathematics in 1997. Ms. Banu was an adjunct professor at Queens College where she taught Algebra and Calculus II. Currently, she teaches mathematics at Bayside High School in Bayside, New York, and coaches the math team for the school. Her favorite course to teach is AP Calculus because it requires “the most discipline, rigor and creativity.” About Our Revisions Editor Stu Schwartz has been teaching mathematics since 1973. For 35 years he taught in the Wissahickon School District, in Ambler, Pennsylvania, specializing in AP Calculus AB and BC and AP Statistics. Mr. Schwartz received his B.S. degree in Mathematics from Temple University, Philadelphia. Mr. Schwartz was a 2002 recipient of the Presidential Award for Excellence in Mathematics Teaching and also won the 2007 Outstanding Educator of the Year Award for the Wissahickon School District. Mr. Schwartz's resource-rich website, www.mastermathmentor.com, is geared toward helping educators teach AP® Calculus, AP® Statistics, and other math courses. Mr. Schwartz is always looking for ways to provide teachers with new and innovative teaching materials, believing that it should be the goal of every math teacher not only to teach students mathematics, but also to find joy and beauty in math as well.

Finding Your Math Power: Concepts in Mathematics for Elementary School Teachers

Elementary and Middle School Mathematics

Cool Problems to Get Students Thinking and Connecting

Focus on Kindergarten to Grade 5

Field Experience Guide for Elementary and Middle School Mathematics

With Activities

Text is appropriate for courses in Mathematics for the Elementary School. Built on the foundation of the new 2000 NCTM Principles and Standards, this major new entry for K-8 math methods has impacted the market because of its point-of-use links to the standards and its emphasis on the importance of a child-centered approach creating a learning environment that informs teachers how to support children as they build understandings of math concepts. Designed to be neither skimpy nor exhaustive, this text presents theory in an accessible manner and models a wealth of practical activities for teaching. Five videos from the Annenberg/CPB TEACHING MATH video series bring real classrooms to life for teachers and are integrated into the text as four/color, resourceful inserts.

Help students make sense of mathematics Rather than merely discussing how to improve students' ability to do mathematics, this fifth edition focuses on helping them make sense of mathematics. Based on research on the functioning of the mind as it engages in learning, the text supports teachers as they promote mathematical understanding, strengthen students' abilities to think, and help students to attain computational fluency. Features A rich collection of ready-to-use learning activities Fully integrated language and intent of Principles and Standards for School Mathematics (PSSM). A greater emphasis on problem solving and higher-level thinking A greater focus on teaching mathematics to diverse learners Descriptions of a variety of promising and effective mathematics programs for the K - 8 levels

This research attempted to determine variables predictive of success in mathematics achievement among pre-service teachers at UMKC. It was conducted during the Winter 2006 semester at a medium-sized urban university. The participants (all students enrolled in geometry courses) were invited to volunteer; 49 agreed to participate. Three structured performance surveys were used to gather data: and information sheet, a beliefs survey, and a study habits survey. The fourth measure used was the final course grade. Logistic regressions were used to determine whether race, age, gender, SES, mathematical ability, beliefs, and study habits were predictive of successful achievement in pre-service mathematics courses. They found that race and age were the only significant contributors to success in the content class studied. The research also looked at trends among the predictive variables and their interactions. No significant interactions were found. Interesting differences in beliefs and study habits were discovered between the sample and non-successful students, but the small sample precluded the ability to determine statistic significance.

First published in 2001. Routledge is an imprint of Taylor & Francis, an informa company.

Understanding Middle School Math

AP® Calculus AB & BC Crash Course 3rd Ed., For the 2021 Exam, Book + Online

Encyclopedia of Mathematics Education

Departments of Labor, Health and Human Services, Education, and Related Agencies Appropriations for Fiscal Year 2007: Justifications: Department of Education

25 Formative Assessment Probes for the Elementary Classroom

Departments of Labor, Health and Human Services, Education, and Related Agencies Appropriations for 2007: Department of Education

A book of cool problems for middle school mathematics classrooms--does it get any better? Yes, it does. Art Hyde and his colleagues go far beyond providing a collection of problems. They address big ideas, make connections, nurture the use of varied representations, and provide vivid accounts of actual classroom implementation. --Judith Zawojewski Board of Directors, NCTM **Imagine handing students state-by-state data on the number of gallons of soft drinks sold per person in one year. Imagine using it to lead a vibrant problem-solving session in which students energetically pose and answer mathematical questions: Why does it say sold instead of consumed? What IS a soft drink? Is it the same as soda? Who would collect this kind of data? Why would they collect it? How was gallons per person calculated? What was the total amount of soda sold in our state? How many 12 ounce cans is that? 20 ounce bottles? How many of each per person? Understanding Middle School Math gathers 50 cool problems like this that lead to deep thinking. Problems such as the Renovation Problem, in which students uncover ideas about how perimeter, area, length, and cost affect a construction project. Or Chocolate Algebra, where they discover linear relationships among the pocket money available to buy two differently priced chocolate candies. Arthur Hyde combines the latest research and decades of classroom experience to braid language, cognition, and math. His approach can help any student, including underprepared ones, with the rigors of math in middle school and beyond. He has created and adapted problems that strongly connect math to the real world, to students' lives, and to prior knowledge. Problems that scaffold content and processes, and give students multiple entry points into learning. Every problem has been extensively field tested and refined by classroom teachers. And for each cool problem practicing middle school teachers describe how they used it to differentiate over a wide range of students and extend learning. For fantastic problems your students won't soon forget and teaching solutions that are exciting, substantial, and transformative, turn to Art Hyde. Read and use Understanding Middle School Math and pass your love of math on as you meet your classroom goals. Discover more resources for developing mathematical thinking at Heinemann.com/Math**

This leading K-8 math methods text has the most coverage of the NCTM Standards, the strongest coverage of middle school mathematics, and the highest student approval of any text currently available. Elementary and Middle School Mathematics: Teaching Developmentally provides an unparalleled depth of ideas and discussion to help students develop a real understanding of the mathematics they will teach. This text reflects the NCTM Principles and Standards and the benefits of constructivist-or student-centered-mathematics instruction. It is structured for maximum flexibility, offering 23 brief, compartmentalized chapters that may be mixed and matched to fit any course or teaching approach. Practical and concise, it offers readers a strong theoretical perspective of how children learn mathematics and then shows them the best way to teach it. The text is organized into two sections. The first section introduces trends in mathematics education and the process of doing mathematics. It then develops the core ideas of learning, teaching, planning, and assessment. Additional perspectives on mathematics for special children and the role of technology are also discussed. Chapters 3 and 4 are the most critical as they describe the constructivist view of learning and how it is applied as well as what it means to teach through problem solving. Section II serves as the application of the core ideas in Section I. Chapters on every major area of content in the K-8 mathematics curriculum are included. Numerous problem-based activities to engage students are interwoven with a discussion of the mathematical content and how children develop their understanding of that content. The appendices at the end of the book provide additional information on the Principles and Standards of the NCTM, the Professional Standards, and Guides for Blackline Masters and suggestions for use of construction materials. Both a comprehensive textbook and a reference as students begin their teaching careers; Van de Walle's book will help teachers and students alike to find the excitement that happens when mathematics makes sense. NEW! Revises Chapter 5 on assessment--Discusses increased testing pressure and accountability, adds more information on equitable assessments, creates more explicit links between objectives and assessment, and includes assessments for students with special needs."

Elementary and Middle School Mathematics Teaching Developmentally

"Cheryl Beaver, Laurie Burton, Maria Fung, Klay Kruczek, editors"--Cover.

Messages about Math, Teaching, and Learning in the 21st Century : a Resource for Teachers, Leaders, Policy Makers, and Families

Teaching Fractions and Ratios for Understanding

What Are They? What Do Students Learn?

Teaching and Learning Elementary and Middle School Mathematics

Computation of Fractions

Teaching and Learning Mathematics

"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"--

This is a methods book for elementary majors and preservice/beginning elementary teachers. It takes a very practical approach to learning to teach elementary school mathematics in an emerging Age of the Common Core State Standards. The Common Core State Standards in Mathematics (CCSSM) is not meant to be "the" official mathematics curriculum; it was purposefully developed primarily to provide clear learning expectations of mathematics content that are appropriate at every grade level and to help prepare all students to be ready for college and the workplace. A quick glance at the Table of Contents in this book indicates a serious engagement with the recommended mathematics underlying the kindergarten through grade 5 portions of the CCSSM first, with issues in content-practice assessment, learning, teaching, and classroom management pursued next and in that order. In this book we explore what it means to teach to the CCSSM within an alignment mindset involving content-practice learning, teaching, and assessment. The CCSSM content standards, which pertain to mathematical knowledge, skills, and applications, have been carefully crafted so that they are teachable, learnable, coherent, fewer, clearer, and higher. The practice standards, which refer to institutionally valued mathematical actions, processes, and habits, have been conceptualized in ways that will hopefully encourage all elementary students to engage with the content standards more deeply than merely acquiring mathematical knowledge by rote and imitation. Thus, in the CCSSM, proficiency in content alone is not sufficient, and so does practice without content, which is limited. Content and practice are both equally important and, thus, must come together in teaching, learning, and assessment in order to support authentic mathematical understanding. This blended, multisourced text is a "getting smart" book. It helps elementary majors and preservice/beginning elementary teachers work within the realities of accountable pedagogy and develop a proactive disposition that is capable of supporting all elementary students in order for them to experience growth in mathematical understanding necessary for middle school and beyond, including future careers.

This leading K-8 math methods book has the most coverage of the NCTM standards, the strongest coverage of middle school mathematics, and the highest student approval of any math methods book currently available. Elementary and Middle School Mathematics provides an unparalleled depth of ideas and discussion to help readers develop a real understanding of the mathematics they teach. John Van de Walle, one of the foremost experts on how children learn mathematics, finds that 80 percent of the students who purchase this book keep it for reference when they begin their professional teaching careers. This book reflects the NCTM Principles and Standards and the benefits of constructivist-or student-centered-mathematics instruction. Improvements for the sixth edition include sections on planning for a diverse classroom and a completely new section addressing planning in a classroom where there are English language learners.

"It is fun to figure out the puzzle of how children go about making sense of mathematics and then how to help teachers help kids." John A. Van de Walle, Late of Virginia Commonwealth University This is the philosophy behind Elementary and Middle School Mathematics: Teaching Developmentally. John A. Van de Walle wrote this book to help students understand mathematics and become confident in their ability to teach the subject to children in kindergarten through eighth grade. Although he could not have foreseen the changes in mathematics teaching over the last three decades, he was at the forefront of the movement towards a constructivist view of teaching, or teaching developmentally. Constructivism says that children construct their own knowledge. They are not blank slates waiting to absorb whatever the teacher tells them. Teachers must understand both mathematics itself and how students learn mathematics in order to teach it effectively. Learning through problem solving is another major theme of this book. Students solve problems not just to apply mathematics, but also to learn new mathematics. Effective problems will take into account where students are, the problematic or engaging aspect of the problem must be due to the mathematics that the students are to learn and not be diluted by non-mathematical activities such as cutting or pasting, and the problem must require justifications and explanations for answers and methods. Learning then becomes an outcome of the problem solving process. The book also addresses in more detail than any other book on the market the effect that the trends of standards-based education, increased pressure to test, and increased teacher accountability have had on teaching mathematics. He addresses the 2000 NCTM Standards in depth, in Chapter 1 on Teaching Mathematics in the Era of the NCTM Standards, through the NCTM icon that appears in the margins throughout the text, and in two appendices in the back of the book. Chapter 5 on Building Assessment into Instruction has also been heavily revised to focus on increased testing pressure, creating more explicit links between objectives and assessment, and including assessments for students with special needs. Elementary and Middle School Mathematics: Teaching Developmentally is a book for doing math today—for both students who want to become teachers, and the students they will eventually teach. New To This Edition: NEW! Revises Chapter 5 on assessment--Discusses increased testing pressure and accountability, adds more information on equitable assessments, creates more explicit links between objectives and assessment, and includes assessments for students with special needs. NEW! Updates the Literature Connections feature to remove all out of print children's literature and include more non-fiction, poetry, and other types of readings. NEW! Weaves the Focal Points throughout the chapters as well as links them with the Big Ideas feature—Focal Points have also been added to the Appendix. NEW! Includes expanded coverage of working with diverse learners. NEW! Gives greater emphasis on dealing with math anxiety.

MyLab Education with Pearson EText -- Access Card -- for Elementary and Middle School Mathematics

Mathematics for Elementary and Middle School Teachers

Fundamental Concepts of Elementary School Mathematics

Catalyzing Change in Early Childhood and Elementary Mathematics

(Second Edition)

Resources for Preparing Middle School Mathematics Teachers

MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS, 6E offers future teachers a comprehensive mathematics course designed to foster concept development through examples, investigations, and explorations. In this text, intended for the one- or two-semester course required of Education majors, Bassarear demonstrates that there are many paths to solving a problem, and sometimes problems have more than one solution. The author presents real-world problems/problems that require active learning in a method similar to how archaeologists explore an archaeological find: they carefully uncover the site, slowly revealing more and more of the structure. Visual icons throughout the main text allow instructors to easily connect content to the hands-on activities in the corresponding Explorations Manual. With this exposure, future teachers will be better able to assess student needs using diverse approaches. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Finding Your Math Power: Concepts in Mathematics for Elementary School Teachers helps pre-service teachers become more effective problem-solvers so they can better teach their students. This manual features practical suggestions and tools that transcend rote procedures and emphasize methods that work best for students. After a brief history of math education and an examination of current standards, the book discusses different areas of instruction and how to teach them effectively. Target skills include sets and Venn diagrams, whole numbers, fractions and decimals, percent, integers, and real numbers. Readers learn various ways to approach and work through the problems to meet the varied needs of their students. The second edition features a new chapter on addition, subtraction, multiplication, and division utilizing the Base 5 numeration system, fresh review problems throughout, and new problem-solving content in Chapter 7: Problem Solving Revisited. Finding Your Math Power helps readers increase their abilities and embrace their math power. The book is appropriate for elementary and middle school education programs for pre-service teachers. It is also an excellent reference for teaching professionals seeking to improve their skills as math educators.

Guide teachers to help all PreK-K learners make sense of mathematics. Elementary and Middle School Mathematics: Teaching Developmentally illustrates how children learn mathematics, and then shows pre-service teachers the most effective methods of teaching PreK-K math through hands-on, problem-based activities. As teacher candidates engage with the activities, they boost their own knowledge of the math and learn concrete, developmentally appropriate ways to incorporate problem-based tasks in their classrooms. Examples of real student work and new common challenges and misconception tables allow readers to visualize good mathematics instruction and assessment that supports and challenges all learners. An important reference to consult throughout a teaching career, this book reflects the Common Core State Standards and NCTM's Principles to Actions, as well as current research and coverage of the latest teaching technology. -- Provided by publisher.

Resources in Education

Learning Mathematics in Elementary and Middle Schools

Elementary and Middle School Mathematics: Pearson New International Edition